



thermokon®

Keep in touch with the future



Products

2012·2013

World Edition





Thermokon at a Glance

- 1987** Company foundation in Mittenaar
- 1994** New building in Aarstr. 6 in Mittenaar
- 1997** Extension of company building
- 2000** Extension of company building to 2000 sqm office and production space
- 2007** Extension of the building by 600 sqm
- 2011** Another extension of the building by 600 sqm

Foundation of subsidiaries:

- 1998** Thermokon Components GmbH Austria
- 2002** Thermokon-Danelko Elektronik AB Sweden
- 2011** Thermokon Automation Equipment Co. Ltd., China

Managing Directors: H. Zygan & J. Teichmann **Number of employees:** 130

Export Initiative Energy Efficiency

Thanks to energy-efficient products and services in the field of energy efficiency, Thermokon also contributes internationally to a safe and cost-effective energy supply, which is of paramount importance to the climate protection.

Thermokon: We build the future – by sensors made in Germany!



25 Years of Energy-efficient Technology at Highest Stage



Thermokon has committed to a responsible use of natural resources and the climate protection. By means of energy-efficient sensors we are contributing actively to a lasting reduction of the CO2 emission.

Long-Standing Experience in Technology

Thermokon offers 25 years of international know-how in technology and market experience. Thanks to the core expertise in the field of sensors for heating systems and buildings, our technical know-how can be found in all our products and meets highest demands on technology and quality.

Strong Export Business

Worldwide presence in the global market is guaranteed by having a headquarter in Germany, branches in Austria, Sweden and China and sales offices as well as various distributors in many parts of the world. Thermokon's portfolio is exported to more than 80 countries.

Lasting Performance – Continuous Development

Ever since Thermokon was founded, the main pillars of our success in the international market have been a lasting performance and achievement potential as well as continuous further development of our portfolio. Besides new innovative product concepts also redesigns and further developments of existing products towards their marketability are of paramount importance.

Flexibility, Efficiency, Sustainability

Nowadays, the topic “sustainability” is of paramount importance for strategic corporate planning. In the field of building automation, the idea of “green buildings” is omnipresent and stands for a sustainable and energy-efficient use of existing resources in buildings. Besides flexibility and efficiency, the top requirements on functional buildings are also potentials for energy savings.

The complete portfolio of Thermokon is designed for intelligent and sustainable buildings which shall make it to premium classifications according to the directives DIN EN 15232, LEED or Green Star. We are pleased to support our customers to select appropriate products for high energy-efficient buildings.

High-Grade Materials – Best Quality

Thanks to a close cooperation with our German partners only high-tensile plastics and stainless steel are used. Last but not least we are guaranteeing best accuracy and compliance with highest safety classes in premium quality which is approved regularly by the certification DIN EN ISO 9001



» Managing Director
Harald Zygan

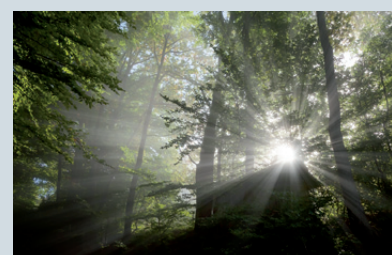


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EasySens – Wireless Sensor System

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****NEW**

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Temperature



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Intelligent and Interoperable System Integration for high Energy Efficiency in Buildings

Interoperable System Integration

For a high energy efficiency in buildings, the system integration is a fundamental precondition.

Hereby the basis for an intelligent and interoperable interaction of all components is formed and a synergy is enabled to create energy-efficient and eco-friendly buildings.

Our membership in the organizations of the progressive BUS systems guarantees a continuous exchange of intelligent, innovative and interoperable technologies.



EnOcean Alliance

Thanks to the creation of interoperable system solutions based on low-power RF technology, the EnOcean Alliance contributes to make buildings more energy-efficient, more flexible and more cost-effective.



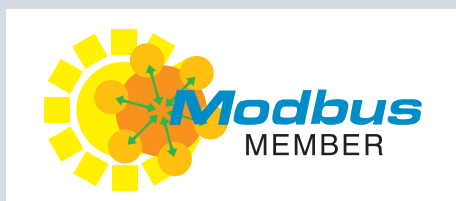
LONMark Germany / International

Promotion of diffusion process of LON technology and further development of technology and applications. Extension of markets for LON.



BIG-EU BACnet Interest Group

Promotion of diffusion process of BACnet-standards in Europe. Representation of European interests in the further developments of norms.



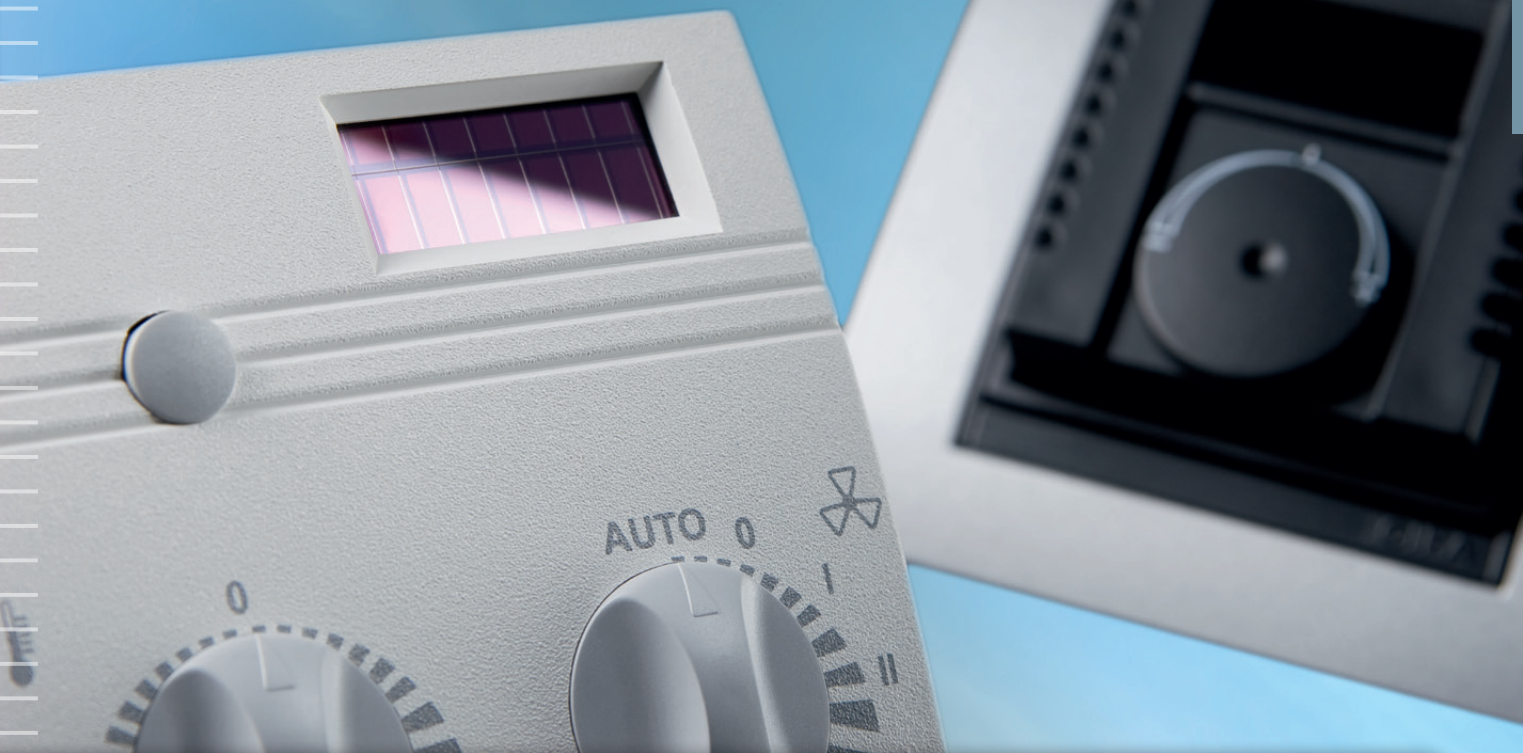
Modbus Organization

Taking over of Modbus communication protocol and development of a local build-up for automation systems via Modbus to focus on different market segments.



KNX-Association

Promotion of the development of home and building systems in general and of KNX as an open standard for home and building automation.



EasySens®

Innovative wireless technology enabling the harvest of ambient light. Interoperable, cost-effective and energy-efficient solutions in the building automation can be easily realized by our wireless sensor system EasySens.

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» EasySens – Wireless Sensor System

Innovative wireless solar technology enables the harvesting of ambient light sources for temperature and fan control in buildings.

Time-consuming installation works such as wiring or cabling including chiselling become unnecessary. Low material costs and time saving enable reasonable priced system solutions.

EasySens offers significantly more flexibility with regard to the sensor location. Thus, a variable room layout in modern buildings does not present any problems at all.

Even in heritage protected buildings in which no architectural changes are allowed, the integration of sensors for the air-conditioning technology can be easily enabled.

The EasySens system uses a fixed data frame according to the EnOcean (IEC-Standard 14543-3-10). Thus, it is guaranteed that the wireless sensors and receivers by Thermokon can be combined with devices of other manufacturers without any problems.

There are different devices for temperature monitoring, relative humidity, light, set point adjustment and status detection.

Among others, the receivers are available with LON-, EIB/KNX-, RS485-, BACnet- or MPBus-interface and are designed as a gateway for superior control systems. Connection to other bus systems are feasible without any problems.

Advantages at a Glance

- **No batteries, thus almost maintenance-free**
- **Easy installation, no wiring**
- **Flexibility with modernisations**
- **Direct mounting at representative measuring points**
- **Cost-effective system solutions**
- **Safe radio transmission in 868MHz-frequency range 315MHz also available (for US market)**
- **Minimal transmitting power (10mW) with safe transmission**
- **Transmitting range up to 30m in buildings and up to 300m in free field**
- **Saving of environment and resources**
- **Interoperable**
- **International standard (IEC 14543-3-10)**





THE SQUAIRE
FRANKFURT, GERMANY



MUSEUM FOLKWANG
ESSEN, GERMANY



AIRPORT FRANZ JOSEF STRAUSS
MUNICH, GERMANY



EUROPEAN PATENT OFFICE
MUNICH, GERMANY



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GRENSEVEIEN,
OSLO, NORWAY



UNIVERSITY OF CANTERBURY
CHRISTCHURCH, NEW ZEALAND

» EasySens – Touch Room Operating Panel thanos



thanos L black



thanos S white

Application

The touch room operating panel **thanos** is designed for detection of temperature and humidity as well as integrated operation of HVAC, lighting and blinds applications for single room control. Thanks to high-graded optics, the device is specially ideal for design-oriented applications. The operating functions can be flexibly adapted to the most different room layouts.

Functions and Features at a glance:

- 868MHz (for the European market) or 315MHz
- Control of automated HVAC applications by simple touch
- Temperature and humidity detection
- For wireless communication an EnOcean based interoperability (bidirectional) is given
- Connection to LON, BACnet, Modbus or KNX
- Touch surface made of glass for intuitive operation
- High resolution of 3,5"-TFT graphic display
- Anodised aluminium function clip
- Configuration via SD card
- Power supply 110-230V



TOUCH ROOM OPERATING PANEL		Stand-Alone
thanos SR		PG2
EasySens wireless		
Type	Sensor	Wireless
SR L white / black	Temperature	
SR LQ white / black	Temperature	
SR S white / black	Temperature	
SR rH L white / black	Temperature / humidity	
SR rH LQ white / black	Temperature / humidity	
SR rH S white / black	Temperature / humidity	

TOUCH ROOM OPERATING PANEL		Gateway-Function			
thanos SR		PG2			
BUS + EasySens wireless (868MHz)*		BUS-System			
Type	Sensor	LON	BACnet	Modbus	KNX
SR L white / black	Temperature				
SR LQ white / black	Temperature				
SR S white / black	Temperature				
SR rH L white / black	Temperature / humidity				
SR rH LQ white / black	Temperature / humidity				
SR rH S white / black	Temperature / humidity				

Accessory: SD card 10,94 €

*315MHz on request

For technical details and further types please see 46/47

thanos®



SR04



SR04P MS



SR04PST

TYPES AVAILABLE

Type	Operating elements
SR04	No operating elements
SR04P	Set point adjuster
SR04T	Presence button
SR04P MS	Set point adjuster, slide switch
SR04PT	Set point adjuster, presence button
SR04PS	Set point adjuster, fan stage adjuster
SR04PST	Set point adjuster, fan stage adjuster, Presence button

TECHNISCHE DATEN

Measuring range	0°C...+40°C
Accuracy	Typ. ±0,4K
Data logging	Every 100 seconds
Transmission interval	Every 100 seconds with changes >0,8K or angle of rotation set point adjuster >3° or circuit stage rotary or slide switch. Every 1000 sec. with changes <0,8K or angle of rotation <3°.
Set point adjuster (P)	Rotation angle 0...270°; resolution 1,1°
Rotary switch (S)	Max. 5 (e.g. Auto, 0, I, II, III)
Slide switch (MS)	Max. 2 circuit stages (e.g. 0, 1)
Enclosure	Material ASA, colour pure white similar to RAL9010, mountable on standard flush-mounting box, housing bottom can be pre-mounted separately from housing cover
Ambient temperature	-25°C...+65°C
Protection	IP30
Norms and standards	FCC, IC, Japan
Notice	As a standard, the devices are supplied with integrated battery holder. Special legends feasible (see page 225)

ROOM SENSORS/ ROOM OPERATING PANELS

ROOM SENSORS/ ROOM OPERATING PANELS			PG1
Type	Art. No. 868MHz*	Art. No. 315MHz	
SR04	228848	389006	
SR04P	226172	397735	
SR04T	229968	397742	
SR04P MS	312219	397759	
SR04PT	227353	397766	
SR04PS	250900	397773	
SR04PST	226851	397797	

* for the European market

ACCESSORY

ACCESSORY		PG1
Description	Art. No.	
Battery LS14250 – transport by air not possible (IATA DGR, Dangerous Goods Regulations)	315098	

» EasySens – Room Sensors / Operating Panels Temperature



SR06 pure white,
Gira Esprit Glass



SR07P pure white,
Gira Event aluminium



SR07PS anthracite,
Gira Event aluminium

TYPES AVAILABLE

Type	Operating elements
SR06	No operating elements
SR07P	Set point adjuster, presence button
SR07P MS	Set point adjuster, slide switch

TECHNICAL DATA

Measuring range	0°C...+40°C
Accuracy	Typ. ±0,4K
Data logging	Every 100 seconds
Transmission interval	Every 100 seconds with changes >0,8K or angle of rotation set point adjuster >3° or circuit stage rotary and slide switch. Every 1000 sec. with changes <0,8K or angle of rotation <3°.
Set point adjuster (P)	Rotation angle 0...270°; resolution 1,1°
Slide switch (MS)	Max. 2 circuit stages (e.g. day, night)
Enclosure	Material PC
Colours available	Pure white, anthracite, aluminium
Ambient temperature	-25°C...+65°C
Protection	IP20
Notice	As a standard, the devices are supplied with integrated battery holder

Insert with intermediate frame is **compatible to frames** with **55x55mm insert** of the following switch manufacturers:

Berker: S1, B1, B3, B7 Glas

Gira: Standard 55, E2, Event, Esprit

Jung: A500, AS500, Aplus

Merten: M-Smart, M-Arc, M-Plan

Peha: Aura

Siemens: Delta-Profil, Delta-Style, Delta-Miro, Delta-Vita, Delta-Line

Please specify switch programme and colour when placing an order!

ROOM SENSORS / ROOM OPERATING PANELS

SR06 / SR07 (incl. frame Gira E2)

PG1

Type	Art. No.	868MHz
SR06 pure white	298162	
SR06 anthracite	298186	
SR06 aluminium	298216	
SR07P pure white	298230	
SR07P anthracite	298254	
SR07P aluminium	298278	
SR07P MS pure white	298292	
SR07P MS anthracite	298315	
SR07P MS aluminium	298339	

ACCESSORY

SR06 / SR07

PG1

Description	Art. No.
Coin cell CR2032	347013



SR04 rH



SR04P MS rH



SR04PT rH

TYPES AVAILABLE

Type	Operating elements
SR04 rH	No operating elements
SR04P rH	Set point adjuster
SR04P MS rH	Set point adjuster, slide switch
SR04PT rH	Set point adjuster, presence button

TECHNICAL DATA

Measuring range temp.	0°C...+40°C
Accuracy	Typ. ±0,4K
Measuring range hum.	0...100%rF
Accuracy	Typ. ±3% between 35...75%rF
Data logging	Every 100 seconds
Transmission interval	Every 100 seconds with changes >0,8K or >1,6%rH or angle of rotation set point adjuster >14° or circuit stage rotary and slide switch. Every 1000 sec. with changes <0,8K or <1,6%rH or angle of rotation <14°.
Set point adjuster (P)	Rotation angle 0...270°; resolution 1,1°
Slide switch (MS)	Max. 2 circuit stages (e.g. day, night)
Enclosure	Material ASA, colour pure white similar to RAL9010, mountable on standard flush-mounting box, housing bottom can be pre-mounted separately from housing cover
Ambient temperature	-25°C...+65°C
Protection	IP30
Norms and standards	FCC, IC, Japan
Notice	As a standard, the devices are supplied with integrated battery holder. Special legends feasible (see page 225)

ROOM SENSORS / ROOM OPERATING PANELS

SR04 rH			PG1
Type	Art. No. 868MHz*	Art. No. 315MHz	
SR04 rH	252317	389013	
SR04P rH	252331	397803	
SR04P MS rH	361644	397810	
SR04PT rH	261593	397827	

* for the European market

ACCESSORY

SR04 rH			PG1
Description			Art. No.
Battery LS14250 – transport by air not possible (IATA DGR, Dangerous Goods Regulations)			315098

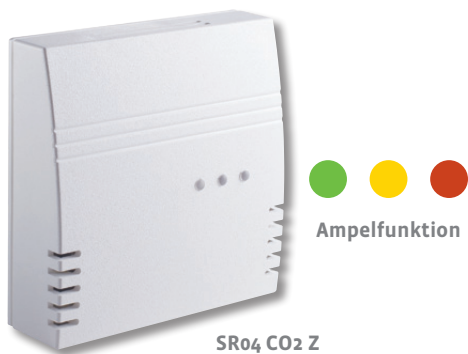
» EasySens – Room Sensor CO₂/Temperature/Humidity



SR04 CO₂



SR04 CO₂ LCD



SR04 CO₂ Z

  
Ampelfunktion

TYPES AVAILABLE

Type	Description
SR04 CO ₂	For measuring of CO ₂ concentration and temperature.
SR04 CO ₂ LCD	For measuring of CO ₂ and temperature. With LCD for display of measuring values.
SR04 CO ₂ Z	For measuring of CO ₂ , and temperature. With 3 LEDs for indication of air quality (traffic light function).
SR04 CO ₂ rH	For measuring of CO ₂ , temperature and relative humidity.
SR04 CO ₂ rH LCD	For measuring of CO ₂ , temperature and relative humidity. With LCD for display of measuring values.
SR04 CO ₂ rH LCD Z	For measuring of CO ₂ , temperature and relative humidity. With LCD for display of measuring values and 3 LEDs for indication of air quality (traffic light function).

TECHNICAL DATA

CO ₂ -Sensor	NDIR (non dispersive infrared), no calibration necessary (see page 198)
Measuring range CO ₂	0...2.550ppm
Accuracy CO ₂	±40ppm+4% vom Messwert (bei 21°C)
Measuring range Temp	0°C...50°C
Accuracy temperature	Typ. 1% of measuring range
Meas. range humidity	0...100%rH
Accuracy humidity	Typ. ±3% between 20...80%rH
Ambient humidity	>85%rH
Ambient temperature	0°C...50°C
Power supply	15-24V= (±10%) orr 24V~ (±10%)
Power consumption	Max. 1,5W/3,6VA
Terminal clamp	Screwing terminal, max. 1,5mm ²
Housing	Material ASA, colour pure white similar to RAL9010, mountable on standard flush-mounting box, housing cover can be mounted separately from housing bottom
Protection	IP20

ROOM SENSOR CO₂/TEMPERATURE/HUMIDITY

SR04 CO ₂	PG1	
Type	Art. No. 868MHz*	Art. No. 315MHz
SR04 CO ₂	442510	500319
SR04 CO ₂ LCD	467131	504126
SR04 CO ₂ Z	436557	504164
SR04 CO ₂ rH	434768	491815
SR04 CO ₂ rH LCD	462228	504133
SR04 CO ₂ rH LCD Z	474757	504140



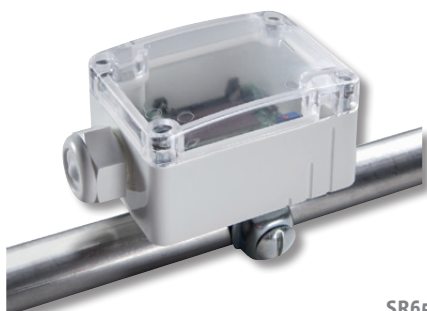
SR65



SR65 AKF



SR65 TF



SR65 VFG

TYPES AVAILABLE	
Type	Description
SR65	Outdoor temperature sensor
SR65 AKF	Duct temperature sensor (mounting length 135mm)
SR65 TF	Cable temperature sensor (connecting wire 1m, mounting length 50mm)
SR65 VFG	Pipe contact temperature sensor

TECHNICAL DATA	
Measuring range	SR65/SR65 TF: -20°C...+60°C SR65 AKF: +10°C...+90°C SR65 VFG: +10°C...+90°C
Accuracy	Typ. ±0,8K
Data logging	Every 100 seconds
Transmission interval	Every 100 seconds with changes >1,6K Every 1000 seconds with changes >1,6K
Enclosure	Material PA6, colour white (bottom) Material PC, colour crystal clear (cover)
Sensor pocket	SR65: stainless steel 1.4571, ø=6mm, L=40mm SR65 AKF: stainless steel 1.4571, ø=7mm, L=135mm SR65 TF: stainless steel 1.4571, ø=6mm, L=50mm SR65 VFG: brass, spring mounted sensor contact
Ambient temperature	-25°C...+65°C
Protection	IP65
Norms and standards	FCC, IC, Japan
Notice	As a standard, the devices are supplied with integrated battery holder. Other measuring ranges on request SR65 AKF: Other mounting lengths on request SR65 TF: Other mounting and cable lengths on request

TEMPERATURE SENSORS			
SR65 / SR65 AKF / SR65 TF / SR65 VFG			PG1
Type	Art. No. 868MHz*	Art. No. 315MHz	
SR65	230001	397834	
SR65 AKF, mounting l. 135mm	254632	397841	
SR65 TF, moun. l. 50mm, cable 1m	245647	397858	
SR65 VFG	239615	397865	

* for the European market

ACCESSORY	
SR65 / SR65 AKF / SR65 TF / SR65 VFG	PG1
Description	Art. No.
Batterie LS14250 – transport by air not possible (IATA DGR, Dangerous Goods Regulations)	315098



enocean alliance
No Wires, No Batteries, No Limits.

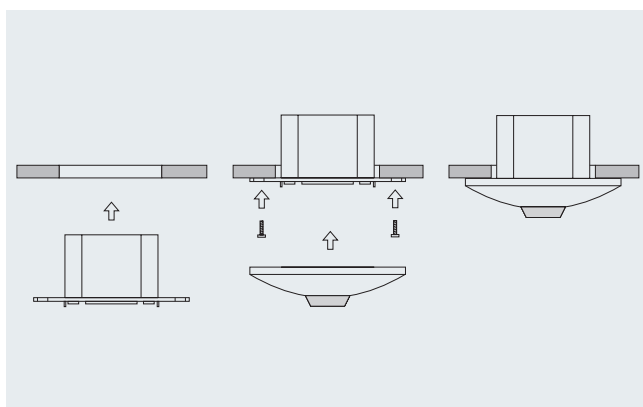
» EasySens – Ceiling Multi Sensor (battery-powered, 24V or 80-240V)

TYPES AVAILABLE	
Type	Description
SR-MDS BAT	Ceiling multi sensor for detection of light and motion, power supply via 3 batteries LS14250 (life expectancy >10 years)
SR-MDS 24V	Ceiling multi sensor for detection of light and motion, power supply 24V AC/DC
SR-MDS Netzspannung/ Mains	Ceiling multi sensor for detection of light and motion, power supply 80-240VAC



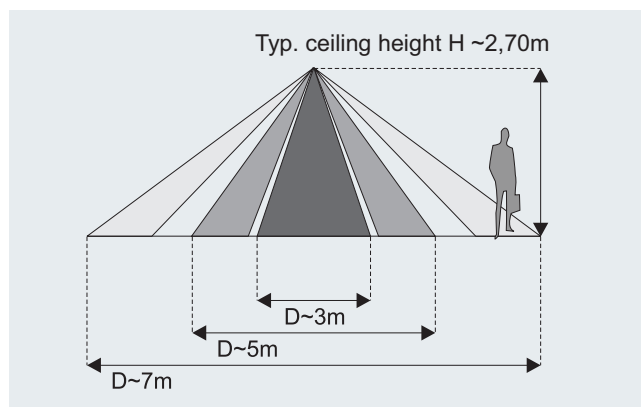
SR-MDS

Installation



TECHNICAL DATA	
Function	Wireless transmission of meas. signal
Measuring range	0...512Lux
Detection of motion	PIR (passive infrared)
Detection of measuring values	Every 100 seconds, if movement is detected every 10 seconds
Transmission interval	Every 100 seconds if brightness changes >10Lux, provided no movement is detected Every 1000 seconds if brightness changes >10Lux, provided no movement is detected Every 100 seconds if brightness changes <10Lux, provided no movement is detected Every 10 seconds if brightness changes <10Lux, provided no movement is detected Immediately upon status change from no movement to movement and the other way around
Enclosure	Basic enclosure: Material ABS, colour black Cover: Material ABS, colour pure white
Ambient temperature	+10°C...+50°C
Protection	IP20
Notice	For constant light control

Detection Range



CEILING MULTI SENSOR

SR-MDS BAT / SR-MDS 24V / SR-MDS NETZSPANNUNG-MAINS

PG1

Type	Art. No. 868MHz*	Art. No. 315MHz
SR-MDS BAT (incl. 3 batteries LS14250)	396462	433396
SR-MDS 24V	396493	433402
SR-MDS Netzspannung/Mains	396486	471909

* for the European market

ACCESSORY

SR-MDS BAT

PG1

Description	Art. No.
Battery LS14250 (3 pcs. required) – transp. by air not possible (IATA Dangerous Goods Regulations)	315098

Ceiling Multi Sensor (solar-powered) – EasySens «

TYPES AVAILABLE

Type	Description
SR-MDS Solar	Ceiling multi sensor for detection of light (proportional daylight) and motion, power supply via solar cell

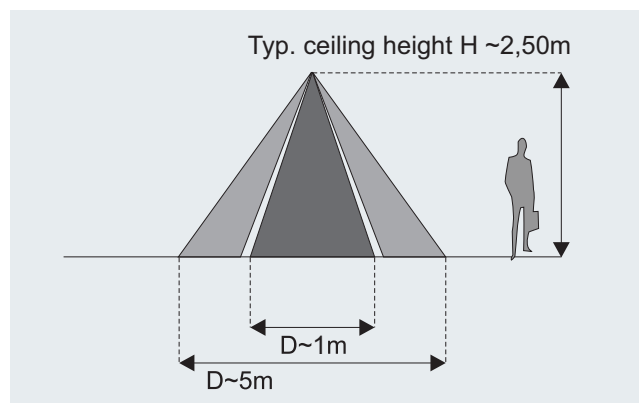
TECHNICAL DATA

Measuring range	0...512Lux (no artificial light)
Detection of motion	PIR (passive infrared)
Detection of measuring values	Every 100 seconds
Transmission interval	Every 100 seconds with changes of brightness >10Lux or switching-off of motion sensor Every 1000 seconds with changes of brightness <10Lux or if no motion is detected
Enclosure	Material PC, colour pearl white, similar to RAL1013
Ambient temperature	+10°C...+50°C
Protection	IP50
Notice	Not for constant light control



SR-MDS Solar

Detection Range



CEILING MULTI SENSOR

SR-MDS SOLAR

PG1

Type	Art. No. 868MHz*	Art. No. 315MHz
SR-MDS Solar	361651	407410

* for the European market

» EasySens – Outdoor Light Sensor



SR65 Li

TYPES AVAILABLE

Type	Description
SR65 Li	Outdoor light sensor

TECHNICAL DATA

Measuring ranges	300...30.000Lux (range 1, standard) resolution 117Lux 600...60.000Lux (range 2, adjustable via jumpers) resolution 234Lux
Detection of values	Every 10 seconds
Transmission interval	Every 10 seconds with changes of brightness >468Lux in range 1 Every 10 seconds with changes of brightness >1170Lux in range 2 Every 1000 seconds with changes of brightness <468Lux in range 1 Every 1000 seconds with changes of brightness <1170Lux in range 2
Enclosure	Material PC, colour grey (bottom), colour chrystal clear (cover)
Ambient temperature	-20°C...+55°C
Protection	IP65

OUTDOOR LIGHT SENSOR

SR65 Li

PG1

Type	Art. No. 868MHz*	Art. No. 315MHz
SR65 Li	306294	432009

* for the European market



SRG01
Aluminium, steel grey painted



SRG01
Aluminium, pure white painted



SRG01
Stainless steel

TYPES AVAILABLE	
Type	Description
SRW01	Window contact for status monitoring of windows and doors
SRG01	Window handle for status monitoring of windows

TECHNICAL DATA SRW01	
Detection principle	Status changes of internal reed contact
Transmission interval	Upon status changes, additionally every 1000 seconds
Enclosure	ABS, colour pure white, similar RAL9003
Ambient temperature	-25°C...+65°C
Protection class	IP40

TECHNICAL DATA SRG01	
Design	Aluminium steel-grey painted, Aluminium pure white painted, stainl. steel
Transmission interval	Upon actuation of window handle
Energy harvesting source	By maintenance-free, electrodynamic energy generator
Ambient temperature	0°C...+30°C
Notice	Side stop including precise position lock Automatic lock against unauthorized moving of window fittings and torsion of the square bolt from outsided Also as sliding door handled Lockable (optional)



SRW01



SRW01 315MHz

WINDOW CONTACT / WINDOW HANDLE

SRW01 / SRG01

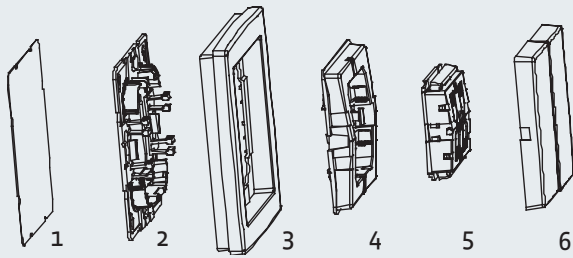
PG1

Type	Art. No. 315MHz	Art. No. 868MHz*
SRW01	407366	248051
SRG01 Aluminium steel grey	on request	362948
SRG01 Aluminium pure white	on request	362931
SRG01 Stainless steel	on request	362955

* for the European market

» EasySens – Wireless Switch

Principle Construction



- 1 adhesive foil 2 base plate 3 switch frame
4 intermediate frame 5 transmitting module
6 actuating rocker

As for the miniature wireless switches, the base plate is integrated in the switch frame, no intermediate frame is needed.

Suitable Switch Programmes

EasySens ABB/Busch-Jaeger:

Solo, Future-linear, Carat, Axcnt

Jung:

LS990, LS-design

Wireless switch 55x55

Berker: S1, B1, B3, B7 Glas

Elso: Riva, Scala, Fashion

Feller: Edizio Due

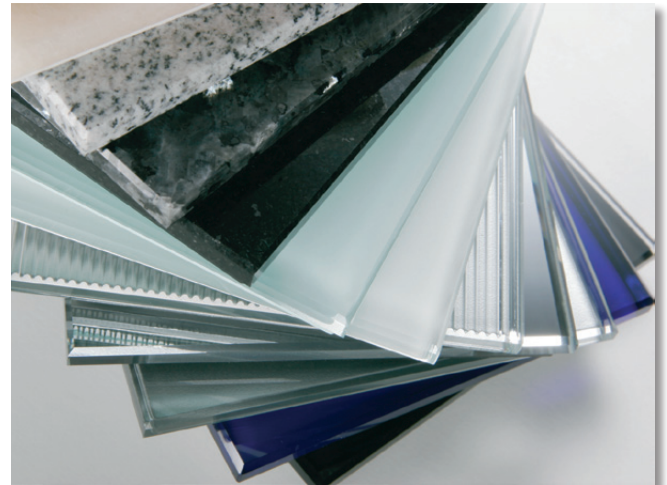
Gira: Standard55, E2, Event, Esprit

Jung: A500, AS500, Aplus, A creation

Merten: M-Smart, M-Arc, M-Plan

Peha: Aura

Siemens: Delta-Profil, Delta-Style, Delta-Miro, Delta-Vita, Delta-Line



By means of the wireless switches EasySens Busch-Jaeger, Jung and Easyfit a wireless control of EnOcean-based receivers and other consumers connected is feasible.

A wireless signal is produced when pressing and releasing a button. Dimmer and blind control can be realised by evaluating the switch status of the receivers.

The power generation of the wireless switch inserts is made by a maintenance-free electrodynamic energy generator.

The central plate of the switch inserts can be glued or screwed and thus be easily mounted to glass or plaster. The integration into the switch frame is done by a special intermediate frame.

Mini

The wireless switch series Mini is a cost-effective design option made by Thermokon.

Busch-Jaeger

The wireless switch insert Busch-Jaeger fits into the switch frames of the manufacturer Busch-Jaeger.

Jung

The wireless switch insert Jung fits into the switch programmes Jung LS990 and LS-design.

55X55

The universal wireless switch insert 55x55 fits to numerous switch frames with 55x55mm inserts of different manufacturers. Please note: Frames made of solid metal can reduce the transmission range.



2-channel light,
pure white glossy



4-channel blind,
pure white glossy



2-channel light,
aluminium



2-channel blind,
anthracite

TYPES AVAILABLE

Type	Model	Colour available
2-channel	Light or blind	pure white glossy, aluminium, anthracite
4-channel	Light or blind	pure white glossy, aluminium, anthracite

TECHNICAL DATA

Energy harvesting	Maintenance-free, electrodynamic energy generator
Dimensions	61 x 61mm
Mounting	Flat on the surface, glued (by means of included foil) or screw
Printing variants	Wireless switch insert: O I (model light) ^ v (model blind) Special legend feasible
Operating travel	2mm
Operating force	7N (at room temperature)
Switching cycles	>50.000 operations
Ambient temperature	-25°C...+65°C
Notice	Prices incl. frame

2-CHANNEL

WIRELESS SWITCH MINI (incl. design frame) PG1

Type	Art. No. 868MHz	Art. No. 315MHz
2-channel light pure white glossy	430647	467858
2-channel light aluminium	430661	467773
2-channel light anthracite	430623	467810
2-channel blind pure white glossy	430630	467841
2-channel blind aluminium	430654	467766
2-channel blind anthracite	430302	467803

4-CHANNEL

WIRELESS SWITCH MINI (incl. design frame) PG1

Type	Art. No. 868MHz	Art. No. 315MHz
4-channel light pure white glossy	430838	456821
4-channel light aluminium	430852	467797
4-channel light anthracite	430814	467834
4-channel blind pure white glossy	430821	456838
4-channel blind aluminium	430845	467780
4-channel blind anthracite	430807	467827

» EasySens – Wireless Switch Busch-Jaeger



4-channel blind,
studio white, Future-linear



2-channel light,
ivory-white, Future-linear



4-channel light,
alu-silver, Future-linear



2-channel blind,
anthracite, Future-linear

TYPES AVAILABLE

Type	Model	Colours available
2-channel	Light or blind	studio white, ivory white, alu silver, anthracite
4-channel	Light or blind	studio white, ivory white, alu silver, anthracite

TECHNICAL DATA

Switch programmes	Solo, Future-linear, Carat, Axcnt
Energy harvesting source	Maintenance-free, electrodynamic energy generator
Mounting	Glued (double-sided mounting film enclosed) or screwed to flat surface
Printing variants	Wireless switch insert: O (light) ^ v (blinds) special printing available
Operating travel	2mm
Operating force	7N (at room temperature)
Switching cycles	>50.000 operations
Ambient temperature	-25°C...+65°C

Notice Studio white matt and black matt on request

Same prices for switch frames Solo, Future and Axcnt. Carat on request

Prices incl. frames Gira E2.
When ordering other switch programmes, please specify colour

2-CHANNEL

WIRELESS SWITCH BUSCH-JAEGER (incl. frame Future-linear) PG1

Type	Art. No. 868MHz	Art. No. 315MHz
2-channel light studio white	342971	485371
2-channel light ivory white	342858	406925
2-channel light alu silver	338783	406963
2-channel light anthracite	324571	406932
2-channel blind studio white	469630	505000
2-channel blind ivory white	469661	505031
2-channel blind alu silver	459548	469555
2-channel blind anthracite	469593	505048

4-CHANNEL

WIRELESS SWITCH BUSCH-JAEGER (incl. frame Future-linear) PG1

Type	Art. No. 868MHz	Art. No. 315MHz
4-channel light studio white	342988	406574
4-channel light ivory white	365529	406949
4-channel light alu silver	327404	458023
4-channel light anthracite	324595	406956
4-channel blind studio white	469647	505086
4-channel blind ivory white	469685	505109
4-channel blind alu silver	469586	505116
4-channel blind anthracite	469609	469616



4-channel light,
alpin white, LS990



2-channel blind,
white, LS-design



2-channel light,
light grey, LS990



2-channel light,
black, LS990

TYPES AVAILABLE

Type	Model	Colours available
2-channel	Light or blind	white, alpin white, light grey, black
4-channel	Light or blind	white, alpin white, light grey, black

TECHNICAL DATA

Switch programmes available	LS990 and LS-design
Energy harvesting source	Maintenance-free, electrodynamic energy generator
Mounting	Glued (double-sided mounting film enclosed) or screwed to flat surface
Printing variants	Wireless switch insert: O I (model light) ^ v (model blind) Special legend feasible
Operating travel	2mm
Operating force	7N (at room temperature)
Switching cycles	>50.000 operations
Ambient temperature	-25°C...+65°C

Notice LS990 aluminium varnished and stainless steel varnished on request

Switch programme LS-design on request

Prices incl. frames LS990

2-CHANNEL

WIRELESS SWITCH JUNG (incl. frame LS990) PG1

Type	Art. No. 868MHz
2-channel light alpin white	435376
2-channel light white	435390
2-channel light light grey	435413
2-channel light black	435437
2-channel blind alpin white	435383
2-channel blind white	435406
2-channel blind light grey	435420
2-channel blind black	435444

4-CHANNEL

WIRELESS SWITCH JUNG (incl. frame LS990) PG1

Type	Art. No. 868MHz
4-channel light alpin white	435451
4-channel light white	435475
4-channel light light grey	435499
4-channel light black	435512
4-channel blind alpin white	435468
4-channel blind white	435482
4-channel blind light grey	435505
4-channel blind black	435529

» EasySens – Wireless Switch 55x55



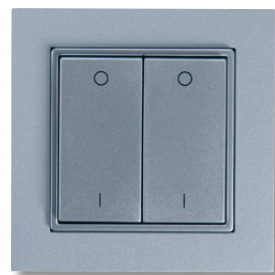
2-channel blind,
pure white, Gira E2 pure white



2-channel light,
aluminium, Gira E2 aluminium



4-channel blind,
anthracite, Gira E2 anthracite



4-channel light,
aluminium, Gira E2 aluminium

TYPES AVAILABLE

Type	Model	Colours available
2-channel	Light or blind	Pure white, pure white glossy, aluminium, anthracite
4-channel	Light or blind	Pure white, pure white glossy, aluminium, anthracite

TECHNICAL DATA

Energy harvesting source	Maintenance-free, electrodynamic energy generator
Mounting	Glued (double-sided mounting film enclosed) or screwed to flat surface
Labeling variants	Wireless switch insert: O I (light) ^ v (blinds)
Operating travel	2mm
Operating force	7N (at room temperature)
Switching cycles	>50.000 operations
Ambient temperature	-25°C...+65°C
Notice	Prices incl. frames Gira E2. When ordering other switch programmes, please specify colour

2-CHANNEL

WIRELESS SWITCH 55x55 (incl. frame Gira E2) PG1

Type	Art. No. 868MHz
2-channel light pure white	302852
2-channel light pure white glossy	363051
2-channel light aluminium	302807
2-channel light anthracite	302814
2-channel blind pure white	302845
2-channel blind pure white glossy	364577
2-channel blind aluminium	302821
2-channel blind anthracite	302838

4-KANAL

WIRELESS SWITCH 55x55 (incl. frame Gira E2) PG1

Type	Art. No. 868MHz
4-channel light pure white	302883
3-channel light pure white glossy	363068
4-channel light aluminium	302869
4-channel light anthracite	302876
4-channel blind pure white	302913
4-channel blind pure white glossy	364591
4-channel blind aluminium	302890
4-channel blind anthracite	302906



Hand-held transmitter
4-channel



SR-KCS



SR06-KCS

TYPES AVAILABLE

Type	Description
Hand-held 4-channel	Control of EnOcean-based receivers and connected consumers
SR-KCS	Control of lighting and air-conditioning based on room occupancy
SR06-KCS	Control of lighting and air-conditioning based on room occupancy

TECHNICAL DATA HAND-HELD TRANSMITTER

Energy harvesting source	Maintenance-free, electrodynamic energy generator
Legend	A B C D
Operating travel	2mm
Operating force	7N (at room temperature)
Switching cycles	>50.000 operations
Ambient temperature	-25°C...+65°C

TECHNICAL DATA SR-KCS

Energy harvesting source	Maintenance-free, electrodynamic energy generator
Mounting	Glued (double-sided mounting film enclosed) or screwed to flat surface
Switching cycles	>50.000 operations
Enclosure	Material PC, colour pure white
Dimensions (LxWxH)	114mm x 70mm x 35mm (max. height)
Ambient temperature	-25°C...+65°C

TECHNICAL DATA SR06-KCS

Energy harvesting source	Maintenance-free, electrodynamic energy generator
Mounting	Glued (double-sided mounting film enclosed) or screwed to flat surface
Switching cycles	>50.000 operations
Enclosure	Material PC, colour pure white
Dimensions (LxWxH)	82mm x 82mm x 15mm (max. height)
Ambient temperature	-25°C...+65°C

HAND-HELD TRANSMITTER 4-CHANNEL

HAND-HELD TRANSMITTER	PG1	
Type	Art. No. 868MHz*	Art. No. 315MHz
Hand-held transmitter 4-channel	314602	433358

WIRELESS KEY CARD ACTIVATED SWITCHES

SR-KCS / SR06-KCS	PG1	
Type	Art. No. 868MHz*	Art. No. 315MHz
SR-KCS	380317	446426
SR06-KCS	399449	-

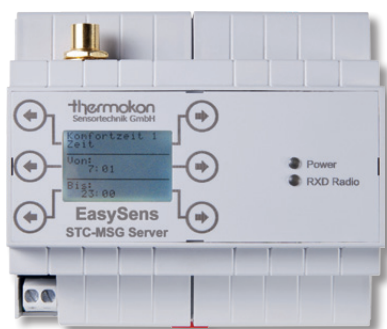
» EasySens – Wireless Valve Actuator / Heating Circuit Controller

TYPES AVAILABLE

Type	Description
SAB02 «NEW»	Wireless valve actuator for bidirectional communication. The SAB02 combines actuator drive, controller and transducer.
STC-MSG Server «NEW»	Wirelessly controlled heating regulator for operation of up to 16 valve actuators SAB02 in connection with the wireless room operating units SR04, SR04, SR07 and thanos. Furthermore, it is feasible to make use of the function "energy stop" by seamlessly connecting window contacts and -handels SRW01/SRG01.



SAB02



STC-MSG Server

TECHNICAL DATA SAB02

Functions and features	Frost protection 8°C, wake-up times parameterized, base set point for inherent regulation parameterized, window-open function can be activated
Operating mode	Actuator or inherent regulation
Motorized actuator	battery powered, synchronous with electronic turn-off, low-noise operation, status message for battery status via RF technology
Regulating distance	max. 3mm, automatic adaption by initialisation
Regulating time	5 s / mm
Mounting	by click lock to radiator valve of many reputed manufacturer
Behavior in case of RF interruption	Changing-over to inherent regulation, until radio signal is back
Failure message	via RF technology
Ambient temperature	0°C...+50°C
Protection	IP40
Included standard accessories	Adaptors for RAV, RAVL, Danfoss RA, (other adaptors on request) 2 batteries (AA)

TECHNICAL DATA STC-MSG SERVER

Transm./receiv. chann.	16
Time switch	Integrated, 8 timer clocks, week programme, buffered, with power reserve >24h
Terminal clamp	Screwing terminal, max. 1,5mm ²
Supply voltage	80-240V AC
Ambient temperature	0°C...+50°C
Protection	IP20
Incl. stand. accessory	External receiving antenna 2,5m

VALVE ACTUATOR / HEATING CIRCUIT CONTROLLER

SAB02 / STC-MSG SERVER		PG1	
Type		Art. No. 868MHz*	Art. No. 315MHz
SAB02		470476	474597
STC-MSG Server		501590	501164

* for the European market

ACCESSORIES

STC-MSG SERVER		PG1
Description		Art. No.
ANT10	Antenna extension cable 10m	257206
ANT20	Antenna extension cable 20m	257213

RECEIVERS WITH DIGITAL OUTPUTS

HEATING / FAN / AIR-CONDITIONING

PG1

Type		Art. No. 868MHz*	Art. No. 315MHz
SRC-DO 24V Typ1 Heating w. PWM-output	Thermostat control in living spaces, heating with PWM output, floating change-over contact, supply voltage 24V AC/DC	263733	-
SRC-DO 230V Typ1 Heating w. PWM-output	Thermostat control in living spaces, heating with PWM output, non-floating change-over, supply voltage 100-240V AC	283427	-
SRC-DO 24V Typ2 Signaling contact	Signaling contact for evaluation of up to 10 window/door contacts SRW01, floating change-over contact, supply voltage 24V AC/DC	270946	-
SRC-DO 230V Typ2 Signaling contact	Signaling contact for evaluation of up to 10 window/door contacts SRW01, non-floating change-over contact, supply voltage 100-240V AC	298391	-
SRC-DO 24V Typ3 Hygrostat control	Hygrostat control in living spaces, floating change-over contact, supply voltage 24V AC/DC	293853	-
SRC-DO 230V Typ3 Hygrostat control	Hygrostat control in living spaces, non-floating change-over contact, supply voltage 100-240V AC	304948	-
SRC-DO 24V Typ4 Heating ON/OFF	Thermostat control in living spaces, heating with 2-point output, floating change-over contact, supply voltage 24V AC/DC	325103	-
SRC-DO 230V Typ4 Heating ON/OFF	Thermostat control in living spaces, heating with 2-point output, non-floating change-over contact, supply voltage 100-240V AC	304931	-
SRC-DO 24V Typ6 Release of fan	Control of fresh air supply in living spaces with parallel operation of an exhaust air system and an open fireplace, floating change-over contact, supply voltage 24V AC/DC	415330	-
SRC-DO 230V Typ6 Release of fan	Control of fresh air supply in living spaces with parallel operation of an exhaust air system and an open fireplace, non-floating change-over contact, supply voltage 100-240V AC	415323	-
SRC-DO2 24V Typ1 Heating/cooling with PWM output	Thermostat control in living spaces, heating and cooling with PWM output, 2x non-floating change-over contact, supply voltage 24V AC/DC	290111	504102

RECEIVERS WITH ANALOGUE OUTPUTS

HEATING / FAN / AIR-CONDITIONING

PG1

Type		Art. No. 868MHz*	Art. No. 315MHz
SRC-AO Climate V Heating/cooling	Temperature control in living spaces, one output 0-10V, supply voltage 24V AC/DC	508278	508292
SRC-AO Climate VV Heating/cooling	Temperature control in living spaces, two outputs 0-10V, supply voltage 24V AC/DC	508285	508308
SRC-AO Multi V Multi actuator	Multifunctional actuator for output of different values (temperature, humidity, setpoint...) via one 0-10V output, supply voltage 24V AC/DC	508315	508339
SRC-AO Multi VV Multi actuator	Multifunctional actuator for output of different values (temperature, humidity, setpoint...) via two 0-10V outputs, supply voltage 24V AC/DC	508322	508346

SWITCH-/DIM RECEIVERS

LIGHTING / BLIND

PG1

Type		Art. No. 868MHz*	Art. No. 315MHz
SRC-AO Dim V 1-fold dim actuat.	For control of one 1-10V dim actuator resp. EVG, seamless connection of up to 32 wireless switches, supply voltage 24V AC/DC	499606	504096
SRC-AO Dim VV 2-fold dim actuat.	For control of two 1-10V dim actuators resp. EVG, seamless connection of up to 32 wireless switches, supply voltage 24V AC/DC	502931	504089
SRC-DO Lighting 230V	For switching of lighting – seamless connection of up to 30 wireless switches	335027	-
SRC-DO Blind 230V	For control of blinds/shutters – seamless connect. of up to 30 wireless switches	335034	-

* for the European market



SRC-DO / SRC-AO
(printing varies)

» EasySens – Universal Receivers

UNIVERSAL RECEIVERS WITH ANALOGUE AND DIGITAL OUTPUTS

0-10V / RELAY

PG1

Type		Art. No. 868MHz*	Art. No. 315MHz
SRC-ADO 4AA/2DA Typ1	For connection of EasySens sensors or wireless switches, 4 analogue outputs 0-10V, 2 relays outputs 230V-6A, dimming-heating-cooling (PI), incl. external receiving antenna 2,5m	267502	398015
SRC-ADO 4AA/4DA Typ1	For connection of EasySens sensors or wireless switches, 4 analogue outputs 0-10V, 4 relays outputs, 230V-6A, dimming-heating-cooling (PI), incl. external receiving antenna 2,5m	273275	398022
SRC-ADO 4AA/2DA Typ2	For connection of EasySens sensors or wireless switches, 4 analogue outputs 0-10V, 2 relays outputs 230V-6A, with fan coil controller and change-over function, heating/cooling (PI), incl. external receiving antenna 2,5m	423236	423335
SRC-ADO 4AA/4DA Typ2	For connection of EasySens sensors or wireless switches, 4 analogue outputs 0-10V, 4 relays outputs, 230V-6A, with fancoil controller and change-over function, incl. external receiving antenna 2,5m	423243	423328

UNIVERSAL RECEIVERS WITH DIGITAL OUTPUTS

RELAY

PG1

Type		Art. No. 868MHz*	Art. No. 315MHz
SRC-D08 100-240V Type1 Heating/cooling with PWM-output	For heating/cooling control, evaluation of EasySens sensors and control of up to 8 thermal actuators via floating relay outputs with programmable switching times, supply voltage 100-240V, incl. external receiving antenna 2,5m	396509	398008
SRC-D08 100-240V Type2 Fan coil, Heating/cooling with PWM output	Fan coil controller for up to 3 fan stages, additionally with 3 to 5 outputs with easy switch function (e.g. as signalling contact or for light/blind control), with programmable switching times, supply volt. 100-240V, incl. ext. antenna 2,5m	424066	424080
SRC-D08 100-240V Type3 Switch actuator	With 8 relay outputs for switching of lighting and control of blinds/shutters and as signaling contact for connection to superior control systems, with programmable switching times, supply voltage 100-240V, incl. external receiving antenna 2,5m	424059	424073

* for the European market






ACCESSORIES

UNIVERSAL RECEIVERS

PG1

Description		Art. No.
ANT10	Antenna extension cable 10m, for SRC-ADO and SRC-D08	257206
ANT20	Antenna extension cable 20m, for SRC-ADO and SRC-D08	257213



RECEIVERS (GATEWAYS)			
FOR BUS SYSTEMS			
Type		Art. No. 868MHz*	Art. No. 315MHz
SRC65-RS485 EVC	With serial interface RS485, unidirectional interface “Multiple Access”, IP42-enclosure, for connection of EasySens sensors or wireless switches to different controllers with RS485 interface, incl. external receiving antenna 2,5m	387248	397896
SRC65-RS485 MODBUS	 With serial interface RS485, MODBUS protocol, IP42-enclosure, for evaluation of EasySens sensors or wireless switches, incl. external receiving antenna 2,5m	387231	397902
SRC65-BACnet	 For seamless connection of up to 32 EasySens sensors or wireless switches to the BACnet bus, incl. external receiving antenna 2,5m	396431	397919
SRC65-MPBus	 With MPBus interface, IP42-housing, for evaluation of up to 8 EasySens sensors or wireless switches, transmission of free programmable telegram with 8 addresses, incl. external receiving antenna 2,5m	468145	468190
SRC-Dali	Gateway between EasySens wireless switches and the Dali bus, for individual lighting control and call off of saved light scenes, incl. external receiving antenna 2,5m	460934	460941
SRC-CLC-Dali	Receiver with Dali output for constant light control via a Dali controller in connection with the EasySens ceiling multi sensor SR-MDS and/or EasySens wireless switches and/or bidirectional gateways, incl. external receiving antenna 2,5m	460910	460927
SRC-KNX	 For connection of up to 32 EasySens sensors or wireless switches to the EIB/KNX-Bus	312424	-
SRC-KNX ext. Antenne	 For connection of up to 32 EasySens sensors or wireless switches to the EIB/KNX bus, incl. external receiving antenna 2,5m	444125	-

* for the European market

ACCESSORIES			
RECEIVERS FOR BUS SYSTEMS			
Description		Art. No.	
ANT10	Antenna extension cable 10m, for SRC65, SRC-Dali / KNX ext. Antenne	257206	
ANT20	Antenna extension cable 20m, for SRC65, SRC-Dali / KNX ext. Antenne	257213	



SRC65



SRC-KNX






SRC-Dali



SRC-CLC-Dali

» EasySens – Receivers for BUS Systems (Gateways)

RECEIVERS (GATEWAYS)			
FOR BUS SYSTEMS / BIDIRECTIONAL			
Type		Art. No. 868MHz*	Art. No. 315MHz
STC04-FTT	 Uni-/ bidirectional gateway with LON interface FT5000, as receiver for max. 16 sensors or wireless switches, as bidirectional gateway for max. 11 sensors or wireless switches, transmitting of field-programmed telegrams to 11 addresses	415118	-
STC65-FTT	 Uni-/ bidirectional gateway with LON interface FT5000, as receiver for max. 16 sensors or wireless switches, as bidirectional gateway for max. 11 sensors or wireless switches, transmitting of field-programmed telegrams to 11 addresses, IP42-enclosure, incl. external receiving antenna 2,5m	393904	397926
STC65-RS485 EVC	With serial interface RS485, bidirectional interface “Multiple Access”, IP42-enclosure, for connection of up to 32 EasySens sensors or wireless switches to different controllers with RS485 interface, transmitting of field-programmed telegrams to 127 addresses, incl. ext. receiving antenna 2,5m	393898	397933
STC65-RS485 MODBUS	 With interface RS485, MODBUS protocol, IP42 enclosure, for evaluation of up to 32 EasySens sensors or wireless switches, transmitting of field-programmed telegrams to 8 addresses, incl. external receiving antenna 2,5m	385695	397940
STC-Ethernet	With Ethernet interface, bidirectional gateway for evaluation of up to 30 EasySens sensors or wireless switches, incl. external receiving antenna 2,5m	403191	467445

ACCESSORIES			
RECEIVERS FOR BUS SYSTEMS / BIDIRECTIONAL			
Description		Art. No.	
ANT10	Antenna extension cable 10m, for STC65 and STC-Ethernet	257206	
ANT20	Antenna extension cable 20m, for STC65 and STC-Ethernet	257213	

* for the European market





GATEWAYS FOR AIR CONDITIONERS

GATEWAYS FOR AIR CONDITIONERS			PG1
Type	Art. No. 868MHz*	Art. No. 315MHz	
STC-Daikin	460972	460989	
STC-Mitsubishi	460958	460965	
STC-Daikin Sky/VRV	«NEW»	on request	
STC-Mitsubishi Heavy	«NEW»	on request	
STC-Panasonic Domestic (Etherea)	«NEW»	on request	
STC-Panasonic FS/FSM (VRF)	«NEW»	on request	
STC-Fujitsu General	«NEW»	on request	
STC-Hitachi	«NEW»	on request	

TYPES AVAILABLE

Type	Description
STC-Daikin	Bidirectional gateway for combination of Daikin split unit air conditioners with Easy Sens wireless sensors and integration of these air conditioners in standard BUS systems
STC-Mitsubishi	Bidirectional gateway for combination of Mitsubishi split unit air conditioners with Easy Sens wireless sensors and integration of these air conditioners in standard BUS systems

TECHNICAL DATA

Supported types Daikin	CTXU25 / CTXU35 / CTXU42 / CTXU50 FTXG25 / FTXG35 / CTXG-50 FDXS25 FDXS35 / FDXS50 / FDXS60 FLXS25 FLXS35 / FLXS50 / FTXR28 FTXR42 FTXR50 / FTXS20 / FTXS25 FTXS35 FTXS42 FTXS50 / FTXS60 FTXS71 FVXS25 / FVXS35 / FVXS50
Supported types Mitsubishi	MFZ-KA... / MLZ-KA... / MSZ-KA... MSZ-FD... / MSZ-GA... / MSZ-GB... MSZ-GC... / MSZ-GE... / MSZ SF... PCA-RP GA / PCA-RP KA / PEA RP200... PEA-RP400... / PEAD-JA... / PEAD-RP... PEFY-P XX VMA-E / PEH-RP200-250... PKA-RP35-50HAL / PKA-RP60-71-100KAL PKA RP100FAL / PLA-RP AA2 / PLA-RP BA PSA... / SEZ-KA... / SEZ-KD... / SLZ-KA...
Power supply	12V (supply via split unit)
Power consumption	Typ. 35mA
Ambient temperature	-25°C...+85°C
Enclosure	Material ABS, colour white
Protection	IP20



» EasySens – Binary Module / Energy Meter



SR65 DI



SR-MI

TYPES AVAILABLE

Type	Description
SR65 DI	Binary module for transmission of binary switching status
SR-MI	Wireless module for evaluation of SO signals

TECHNICAL DATA SR65 DI

Digital input	Two wire connector for floating contacts, contact current max. 0,5mA, contact resistance max. 1000Ohm
Transmission interval	Upon status changes of the input, additionally every 1000 seconds
Power supply	Battery type LS14250, 3,6V
Terminal clamp	Screwing terminal, max. 1,5mm ²
Ambient temperature	-25°C...+65°C
Enclosure	Material PA6, colour pure white (similar RAL9010), quick release fastener screws
Protection	IP65
Notice	Only available as battery-powered type

TECHNICAL DATA SR-MI

Inputs	3 So-interface input
Supply voltage	100-240V AC (±10%)
Power consumption	Typ. 0,2W / 0,4VA
Connecting terminal	Screwing terminal, max. 1,5mm ²
Ambient temperature	0°C...+50°C
Enclosure	Snap-in mounting on DIN rail accord. to DIN EN 50022, material ABS, dimensions LxBxH 53x90x65mm
Notice	Incl. ext. receiving antenna 2,5m

BINARY MODULE

SR65 DI	PG1	
Type	Art. No. 868MHz*	Art. No. 315MHz
SR65 DI	267731	305228

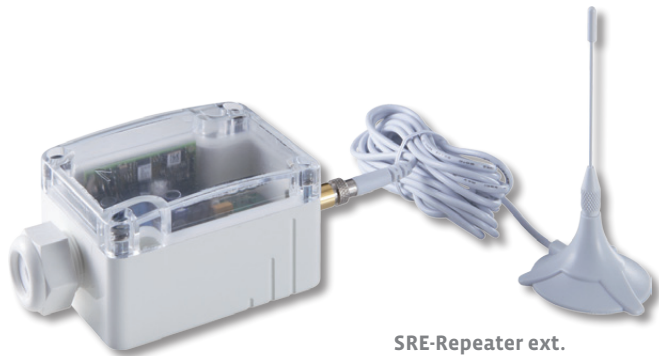
ENERGY METER

SR-MI	PG1	
Type	Art. No. 868MHz*	Art. No. 315MHz
SR-MI	471428	471459

* for the European market



SRE-Repeater



SRE-Repeater ext.

TYPES AVAILABLE

Type	Description
SRE-Repeater/B	Radio telegrams
SRE-Repeater/B ext.	Amplifier for EnOcean radio telegrams, incl. external receiving antenna 2,5m
SRE-Repeater 2-Level	Amplifier (2-Level) for EnOcean radio telegrams
SRE-Repeater 2-Level ext.	Amplifier (2-Level) for EnOcean radio telegrams, incl. external receiving antenna 2,5m

TECHNICAL DATA

Antenna	Internal or external 2,5m
Power supply	230V~
Power consumption	max. 2VA
Cable entry	M20
Enclosure	Material PA6, colour pure white (similar RAL9010), colour crystal clear (cover), quick release fastener screws
Ambient temperature	-20°C...+60°C
Protection	IP65, with ext. antenna IP42

REPEATER

SRE-REPEATER

PG1

Type	Art. No. 868MHz*	Art. No. 315MHz
SRE-Repeater/B	259415	-
SRE-Repeater/B ext. Antenna	362368	433372
SRE-Repeater 2-Level	321686	-
SRE-Repeater 2-Level ext. Antenna	362375	433389

* for the European market

» EasySens – Field Strength Measuring Instruments



EPM120



EPM300

TYPES AVAILABLE

Type	Description
EPM120	Field strength measuring instrument for finding optimal mounting place for transmitter and receiver, display of relevant data of EasySens radio telegrams, with integrated repeater for test installations
EPM300	Field strength measuring instrument for finding optimal mounting place for transmitter and receiver, with integrated repeater for test installations

TECHNICAL DATA EPM120

Included in delivery	USB-Stick Nano (1GB) USB cable 2 batteries (type AA)
Display	Graphic display monochrome, diagonal 5,2cm, LED-lighting can be switched on
Storage	All telegrams received on USB-Stick (>365 days)
Keyboard	4 keys, touch technology
Power supply	2 batteries or rechargeable battery (type AA), USB power supply unit or USB connector of a computer

TECHNICAL DATA EPM300

Included in delivery	2 batteries (type AA)
Display	Upside down LED traffic light for display of signal strength, LED („Valid“) for display of a valid Enocean telegram
Keyboard	2 sensor keys
Power supply	2 batteries or rechargeable battery

FIELD STRENGTH MEASURING INSTRUMENTS

EPM110 / EPM120 / EPM300	NET PRICES	
	Art. No. 868MHz*	Art. No. 315MHz
EPM120	462006	462013
EPM300	459129	459136

* for European market

0-10V-Gateway / Relay Contacts

The receiver SRC-ADO is designed for seamless connection of wireless EasySens sensors to single room controllers via a standard interface 0-10V or a floating relay contact. The wireless receiver has 4 analogue and up to 4 relay outputs.

Among others an averaging of up to 15 temperature sensors is feasible.

A multi stage fan stage control can be realized via a 0-10V output so that the single digital DDC-inputs are unnecessary.

By means of the configuration software included different functions can be parameterized.

**CONTROLLER
or
CONTROL
TECHNOLOGY
or
LIGHTING**

- 0-10V-signal room temperature
- 0-10V-signal set point temperature
- 0-10V-signal fan stage
- 0-10V-signal outdoor temperature
- Relay contact signal window handle
- Relay contact signal door contact
- Relais contact light switch 1
- Relais contact light switch 2



Receiver SRC-ADO



1 Wireless Switch Busch-Jaeger

Wireless switch with energy generator for light and blind control. Fitting into various switch frames of the manufacturer Busch-Jaeger.

2 SR04

The room operating panel is designed for temperature detection, set point and fan stage adjustment as well as presence message in room and office spaces etc.

3 SRW01

Window contact and window handle for status monitoring of windows.

4 SRG01



5 SR65

Sensor for temperature detection in outdoor areas.



» EasySens – Application

Building Control Technology for Bus Systems

SRC-receivers enable the evaluation of seamlessly connected wireless sensors and the transmission of information via the communication interface (LON, KNX, RS485 Modbus, RS485 EVC, Ethernet or BACnet).



1 SR06-SR07/Switch 55x55

The room sensor is designed for temperature detection (SR06) or local set point adjustment (SR07). SR07 is also available with a slide switch. Wireless switch 55x55 is an universal wireless switch insert with energy generator for light and blind control.



2 SR04

The room operating panel is designed for temperature detection, set point and fan stage adjustment as well as presence message in room and office spaces etc.



3 SR-MDS BAT/24V/80-240V

The ceiling multi sensor is designed for motion and light detection in room and office spaces. For constant light control.



4 SRG01

Window handle and window contact for status monitoring of windows.



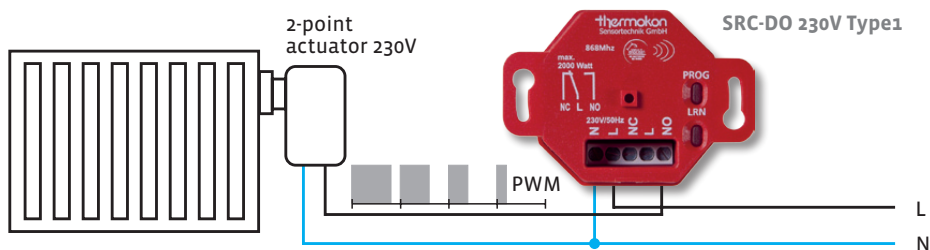
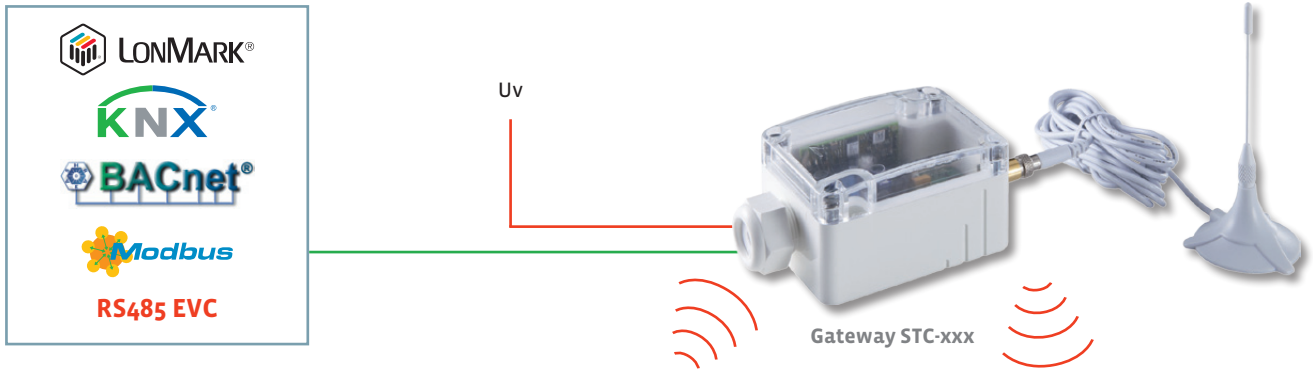
5 SRW01

Window handle and window contact for status monitoring of windows.

Wireless Receivers with Transmitting/Receiving Function for Bus Interfaces

TC-receivers enable the receipt and transmission of EnOcean based radio telegrams. For evaluation of seamlessly connected wireless sensors and transmission of information via the communication interface (LON, RS485 Modbus, RS485 EVC, BACnet or KNX).

Moreover, the receivers are designed for superior transmission to wireless actuators with relay or 0-10V outputs (e.g. for time controlled night lowering or switching of blinds or light).



1 SR04

The room operating panel is designed for temperature detection, set point and fan stage adjustment as well as presence message in room and office spaces etc.



2 SR-MDS Solar

The ceiling multi sensor is designed for motion and light detection (proportional daylight) in room and office spaces.



3 SRG01

Window handle for status monitoring of windows.



» EasySens – Application

Thermostat Controller

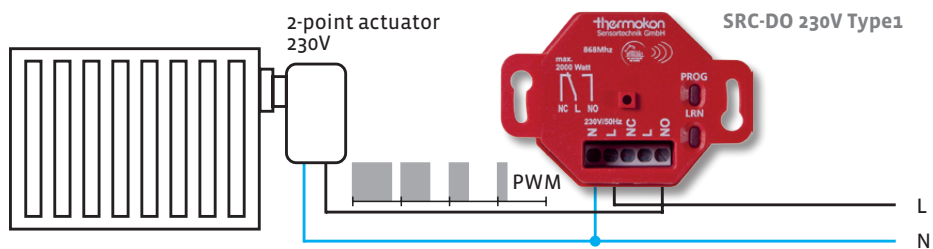
The switch SRC-DO Type 1 is designed for temperature control in room spaces (thermostat function). The floating relay output can be used for direct control of thermic 2-point valves.

Additional Function Energy Stop:

It is possible to make use of the function “energy stop“ by connecting wireless window handles type SRG01 or wireless window contacts type SRW01. Thus, the receiver switches-off the relay contact for the valves in case the window is opened.

Application in Hotels:

If the hotel guest leaves the room, the same is switched wirelessly via the key card activated switch SR-KCS or the wireless socket board.



1 SR04

The room operating panel is designed for temperature detection, set point and fan stage adjustment as well as presence message in room and office spaces etc.

2 SR-KCS

The wireless key card activated switch is designed for an occupancy based control of lighting or air-conditioning (e.g. in hotel or conference rooms).

3 SRG01

Window handle for status monitoring of windows.

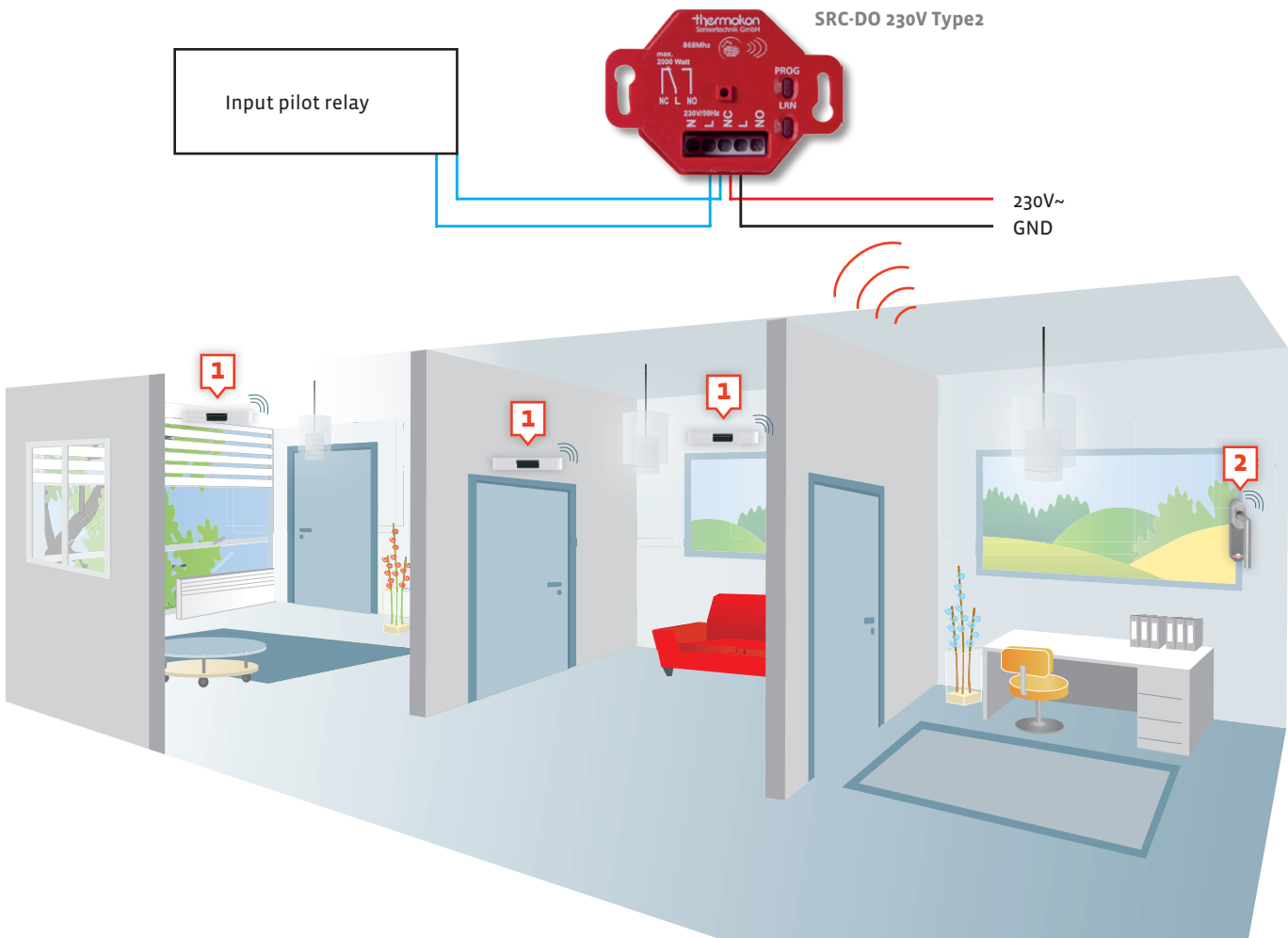


Signal Contact

The switch receiver SRC-DO Type2 is designed for evaluation of wireless window contacts SRW01 and wireless window handles SRG01. Optionally up to 10 wireless window contacts or window handles can be seamlessly connected to one receiver.

Therefore, the relay output of the receiver is designed as a signal output of the sensors. Thus, it can be used as a fault message contact for locking on controllers or monitoring systems.

The relay contact of the receiver is switched as soon as the message “window opened” is sent. All window contacts or window handles connected are logical OR circuit linked, i.e. as soon as any contact reports “window opened”, the relay is switched. In reverse order the relay is only reset if all contacts report “window closed”.



1 SRW01

Window contact for status monitoring of windows and doors.



2 SRG01

Window handle for status monitoring of windows.



Wireless Valve Actuator with Transmitting and Receiving Features

The SAB02 enables the receipt and transmission of radio telegrams corresponding to the EnOcean communication protocol. For evaluation of seamlessly connected wireless sensors. For supervisor transmission to receivers and actuators.



1 SR04 / thanos SR

The room operating units are designed for temperature detection, set point and fan stage adjustment as well as presence message in room and office spaces.



2 STC-MSG Server

Wirelessly controlled heating regulator for operation of up to 16 valve actuators SAB02 in connection with the wireless room operating units SR04, SR04, SR07 and thanos. Furthermore, it is feasible to make use of the function “energy stop” by seamlessly connecting window contacts and -handles SRW01/SRG01.



2 SAB02

The wireless valve actuator is designed for direct heating control.



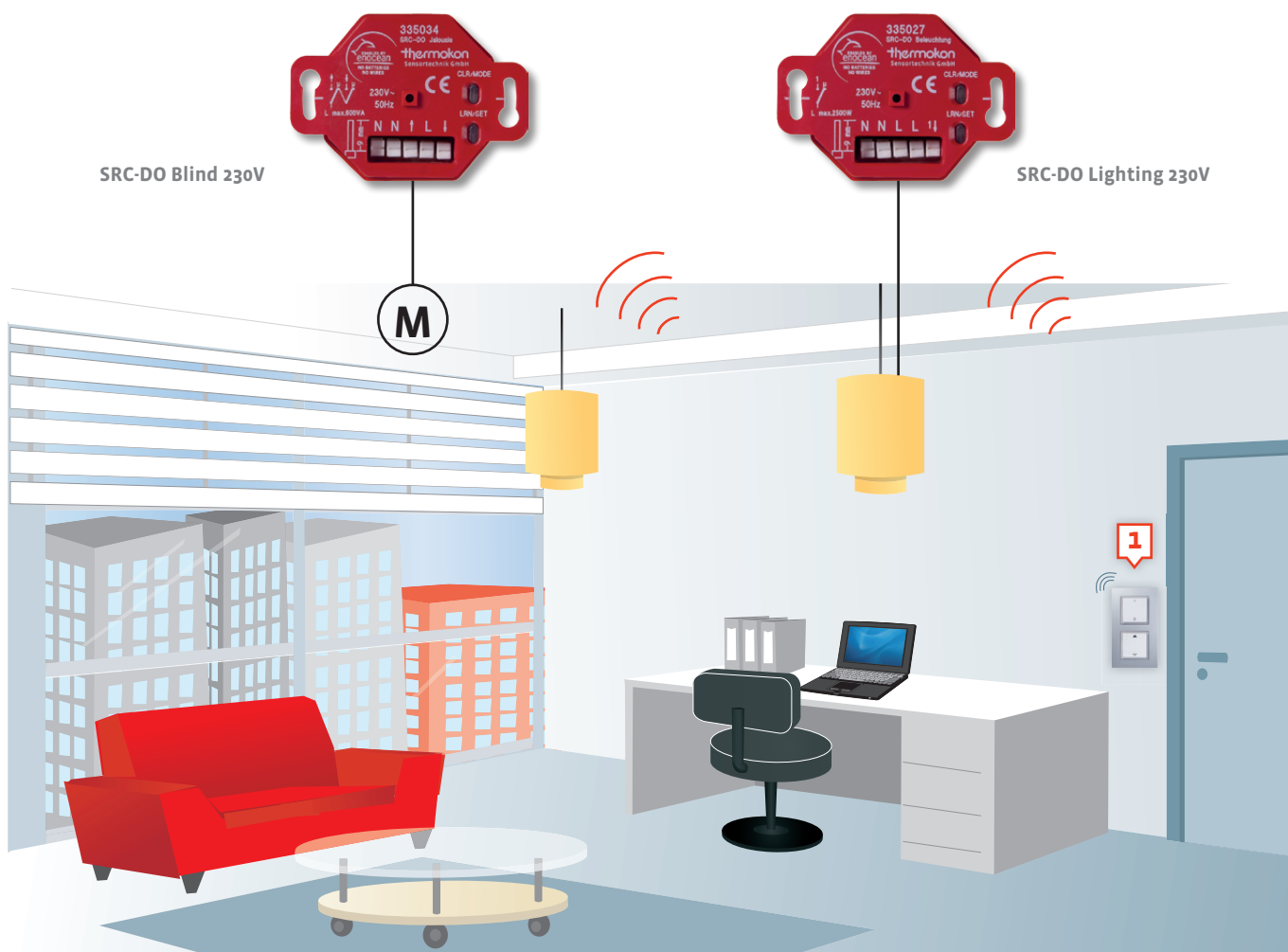
Controlling and Switching of Lighting /Blinds

SRC-DO Lighting 230V:

Seamless connection of up to 32 wireless switches. The switch receiver can also be used for light control in hallways with 8 preset time delays.

SRC-DO Blind 230V:

Seamless connection of up to 32 wireless switches. Adjustment of lamellas feasible. When controlling several blinds/shutters the current positions can be saved as scenes and called-off again.



1 Wireless Switch Busch-Jaeger

Wireless switch insert with energy generator for light and blind control. Fitting into various Busch-Jaeger switch programmes

1 Wireless Switch Mini

Wireless switch with energy generator for light and blind control.

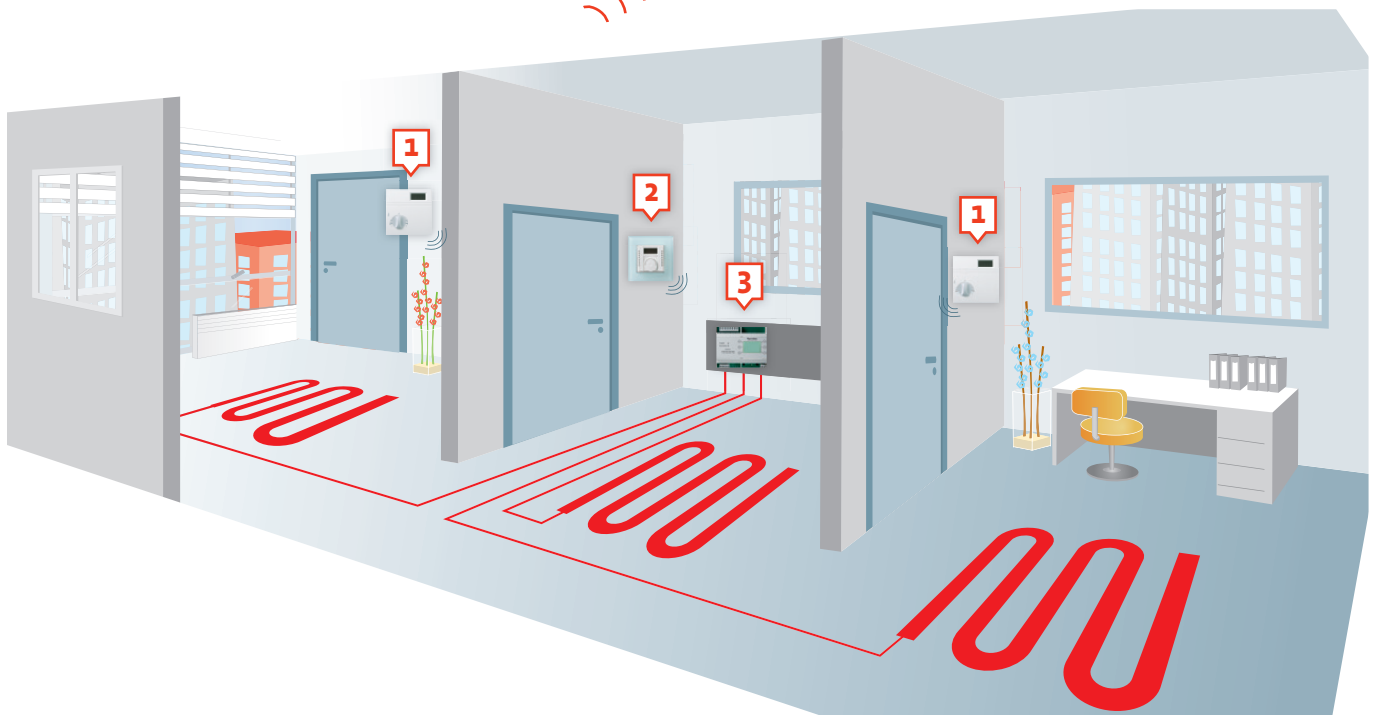
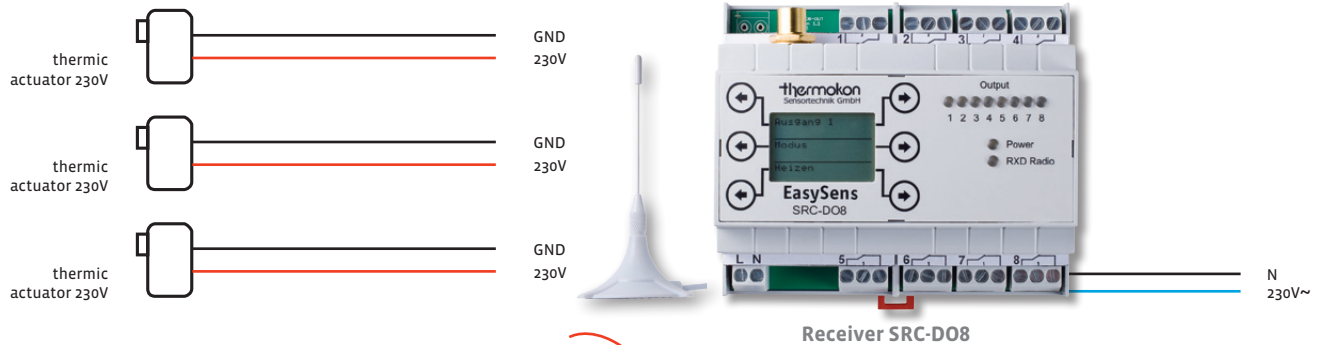


» EasySens – Application

Heating Circuit Distributor for Floor Heating

The receiver SRC-D08 is designed for evaluation of wireless room sensors with control of up to 8 thermic actuators via 230V make and break contacts. For efficient energy saving a time switch is integrated.

Furthermore, it is possible to make use of the function “energy stop” by seamlessly connecting a wireless window contact SRW01 and wireless window handle SRG01, i.e. if the window is opened, the receiver switches-off the relay contact for the valves.



1 SR04

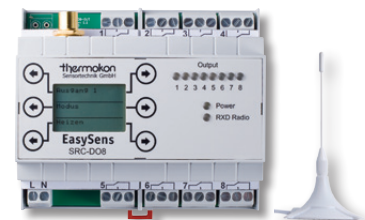
The room operating panel is designed for temperature detection, set point and fan stage adjustment as well as presence message in room and office spaces etc.

2 SR07P

The room operating panel is designed for temperature detection or local set point adjustment. Fitting into various switch frames with 55x55mm insert (Gira, Jung, Berker, Merten, Peha...)

3 SRC-D08

The receiver SRC-D08 (with integrated time switch) is designed for evaluation of wireless room sensors including a control of up to 8 thermic actuators via 230V make and break contacts.





Room Operating Panels

Our room operating panels are designed for temperature detection and integrated operation of HVAC, lighting and blinds for single room control. Thanks to the high-graded optics and a variety of different designs these products are ideal for design-oriented applications.

thanos	P. 46	WRF06	P. 55
WRF08	P. 48	WRF04	P. 58
WRF06LCD	P. 50	Design examples	P. 62
WRF07	P. 52		

» thanos – Touch Room Operating Panel



thanos L black

thanos®



thanos L white

thanos S black

Application

The touch room operating panel **thanos** is designed for temperature and humidity detection as well as for integrated operation of HVAC, lighting and blind for single room control. By means of high-graded optics, the device is specially ideal for design-oriented applications. The operating functions can be flexibly adapted to the most different room layouts.

Functions and Features at a glance:

- Control of automatic HVAC applications by simple touch
- Temperature and humidity detection
- For wireless communication compatible to EnOcean (bidirectional)
- Connection to LON, BACnet, Modbus or KNX
- Touch surface made of glass for intuitive operation
- High-resolution 3,5"-TFT graphic display
- Anodised aluminium function clip
- Wireless EasySens types available with 868MHz (for European market) or 315MHz



TECHNICAL DATA

Interfaces	LON: FT5000 RS485 Modbus: 9600 or 57600 Baud, configurable BACnet: MS/TP RS485 KNX: TP-UART
Operational functions	Light on/off/dimming, set point adjustment, blinds up/down/adjusting, fan stages, presence...
Display	Room temperature, set point, operating mode, fan stage, presence, failure, date and time ...
Display/Buttons	3,5" TFT, 320x640 pixel, 262.144 colours, capacitive touch technology, large thanos types additionally with up to 8 touch buttons
Legend of buttons	Individually by software configuration or inlaid foil
Function clip	Anodised aluminium, with proximity sensor, free parameterizable functions (occupied/unoccupied, light on/off...)
Measuring rang temp.	0°C...+50°C
Accuracy temperature	±0,5K
Measuring range hum.	0...100%rH, Humidity sensor optionally depending on device type
Accuracy humidity	typ. ±3% between 20...80%rF
Ambient temperature	0°C...+50°C
Power supply	15-24V= (±10%) or 24V~ (±10%)
Clamps	screwing terminal, max. 1,5mm ²
Dimensions (HxWxD)	thanos S: 125,0mmx80,8mmx17mm thanos L/LQ: 195,2mmx80,8mmx17mm
Mounting	Flush-mounting in standard deep installation box (1 pc.)
Enclosure	Materials glass and PC
Protection	IP20

Touch Room Operating Panel – thanos «

TOUCH ROOM OPERATING PANEL		BUS System			
thanos		PG2			
BUS		BUS System			
Type	Sensor	LON	BACnet	Modbus	KNX
L white / black	Temperature				
LQ white / black	Temperature				
S white / black	Temperature				
rH L white / black	Temperature/humidity				
rH LQ white / black	Temperature/humidity				
rH S white / black	Temperature/humidity				

TOUCH ROOM OPERATING PANEL		Gateway Function			
thanos		PG2			
BUS + EasySens wireless (868MHz)*		BUS System			
Type	Sensor	LON	BACnet	Modbus	KNX
SR L white / black	Temperature				
SR LQ white / black	Temperature				
SR S white / black	Temperature				
SR rH L white / black	Temperature/humidity				
SR rH LQ white / black	Temperature/humidity				
SR rH S white / black	Temperature/humidity				

TOUCH ROOM OPERATING PANEL		Stand-Alone
thanos		PG2
EasySens wireless (868MHz)*		
Type	Sensor	Funk
SR L white / black	Temperature	
SR LQ white / black	Temperature	
SR S white / black	Temperature	
SR rH L white / black	Temp. / humidity	
SR rH LQ white / black	Temp. / humidity	
SR rH S white / black	Temp. / humidity	

*315MHz on request

Please indicate requested colour when ordering



thanos LQ white



thanos L white

» WRF08 LON / RS485 MODBUS / BACnet – Multifunction Room Operating Panel



WRF08 12T anthrazit,
Rahmen Edelstahl poliert



LON	
WRF08	PG2
Typ	
WRF08 2T LON	
WRF08 4T LON	
WRF08 8T LON	
WRF08 12T LON	

RS485 MODBUS	
WRF08	PG2
Typ	
WRF08 2T RS485 MODBUS	
WRF08 4T RS485 MODBUS	
WRF08 8T RS485 MODBUS	
WRF08 12T RS485 MODBUS	

BACnet	
WRF08	PG2
Typ	
WRF08 2T BACnet	
WRF08 4T BACnet	
WRF08 8T BACnet	
WRF08 12T BACnet	

DESIGN FRAMES (others on request)	
WRF08	PG2
Type	Material
Dusk	Corian
Midnight	Corian
Glass grooved	Glass grooved
Stainless steel brushed	Alloy stainl. steel

Application

The room operating panel is designed for temperature detection and integrated operation of HVAC, lighting and blinds for single room control. By means of high-graded optics and corresponding design frames made of glass, stone or stainless steel, the device is specially ideal for design-oriented applications.

The operating functions can be flexibly adapted to the most different room layouts. Thus, various types with several numbers of operating buttons are available. The universal room operating panel has a LON, RS485 MODBUS or BACnet interface by which the functions of the operating buttons and the display can be polled and controlled.

TYPES AVAILABLE			
Type	Button	Interfaces	Colours
WRF08 2T	2	LON, RS485 MODBUS, BACnet	pure white, anthracite, aluminium
WRF08 4T	4	LON, RS485 MODBUS, BACnet	pure white, anthracite, aluminium
WRF08 8T	8	LON, RS485 MODBUS, BACnet	pure white, anthracite, aluminium
WRF08 12T	12	LON, RS485 MODBUS, BACnet	pure white, anthracite, aluminium

DESIGN FRAMES	
Type	Material
Dusk	Corian
Midnight	Corian
Glass grooved	Glass
Stainless steel brushed	Alloy stainless steel

TECHNICAL DATA	
Interfaces	LON: FT5000 RS485: 9600 or 57600 Baud, configurable, operating mode, half duplex, inside terminating resistor, parity even BACnet: MS/TP RS485
Operating functions	Light on/off/dim, set point adjustment blind up/down/adjust, fan stages
Display	Room temp., set point, operating mode, fan stage, presence, alarm
LCD	51mm x 39mm, black/white
Button labelling	Individually by paper strips
Ambient temperature	0°C...+50°C
Measuring range temp.	0°C...+50°C
Accuracy temperature	±0,5K
Power supply	15-24V= (±10%) oder 24V~ (±10%)
Power consumption	Typ. 1,5W/2,9VA
Clamps	Screwing terminal, max. 1,5mm ²
Dimensions (H x W x D)	158,3mm x 87,3mm x 32mm (incl. frame)
Mounting	Flush in standard installation box
Enclosure	Material ABS
Protection	IP30

Multifunction Room Operating Panel – **WRF08** LON / RS485 MODBUS / BACnet «



WRF08 2T pure white



WRF08 4T anthracite



WRF08 12T aluminium



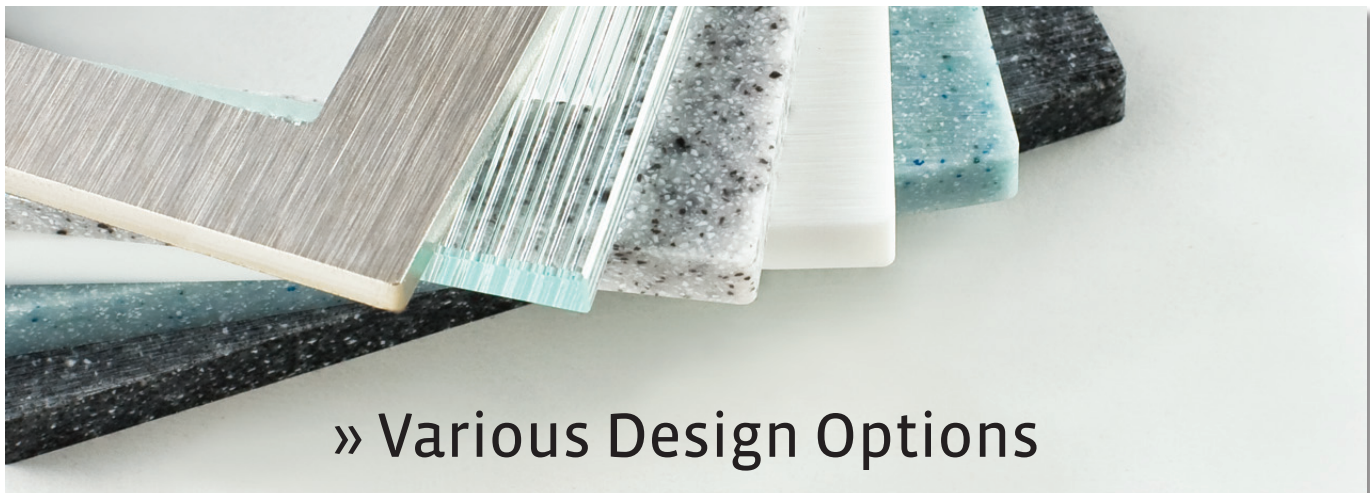
WRF08 12T pure white frame glass grooved



WRF08 8T anthracite, frame Dusk



WRF08 8T aluminium, frame Midnight



» Various Design Options

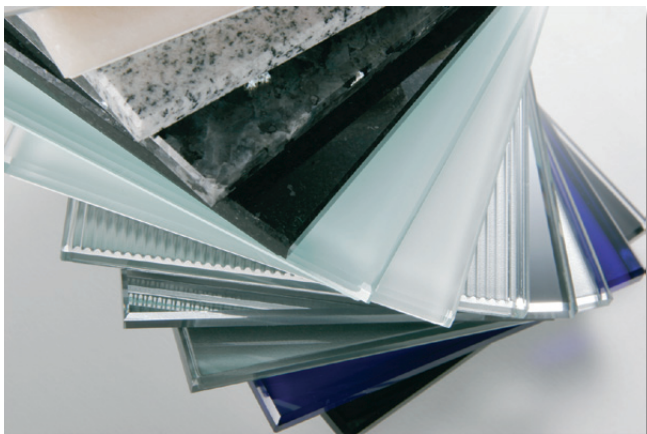
» WRFo6LCD – Multifunction Room Operating Panel



WRFo6LCD Type 2
pure white, Gira Esprit aluminium



WRFo6LCD Type 1
pure white, Gira E2 pure white



Various Design Options

Application

For temperature measuring, set point and fan stage adjustment as well as presence detection in living and office spaces etc. With integrated controller heating/cooling and digital inputs for window contacts/dew point detector and analogue outputs for control valves.

With IO-extension in deep or additional installation box with relay or triac outputs for control valves.

As stand-alone version, with LON FT or RS485-MODBUS interface.

TECHNICAL DATA

Outputs	LON FT5000, RS485 MODBUS or 2V (0-10V)
Colours available	Pure white, anthracite, aluminium
Display (selection)	Room temperature, set point adjustment, fan stage, presence, failure
LCD	34mm x 21mm, black/white
Ambient temperature	0°C...+50°C
Meas. range temp.	0°C...+50°C
Accuracy temperature	±0,5K
Power supply	15-24V= (±10%) or 24V~ (±10%)
Clamps	Screwing terminal, max. 1,5mm ²
Mounting	Flush in standard installation box
Frames	The multifunction room operating panel fits in various switch frames of different switch manufacturers having a 55x55mm recess
Protection	IP30
Notice	When ordering, please indicate printing layout WRFo6LCD 2V only available with printing variants Type 1 and Type 3 Prices incl. frame Gira E2

Suitable Switch Programmes

Berker: S1, B1, B3, B7 Glass
Gira: Standard55, E2, Event, Esprit
Jung: A500, AS500, Aplus
Merten: M-Smart, M-Arc, M-Plan
Peha: Aura

Printing Layout

Type 1 LON / RS485 / 2V				
Type 2 LON / RS485				
Type 3 2V				

Multifunction Room Operating Panel – WRF06LCD «

MULTIFUNCTION ROOM OPERATING PANEL

WRF06LCD (incl. frame Gira E2)

PG2

Type	Input	0-10V	Outputs	
	floating switch contact		Relay	Triac
WRF06LCD 2V (0-10V)	2	2	-	-
WRF06LCD LON FT / AO2V	2	2	-	-
WRF06LCD LON FT / DI4	4	-	-	-
WRF06LCD LON FT / DO2T*	2	-	-	2
WRF06LCD LON FT / DO2R*	2	-	2	-
WRF06LCD LON FT / OVR*	2	1	1	-
WRF06LCD LON FT / OVT*	2	1	-	1
WRF06LCD RS485 Modbus AO2V	2	2	-	-
WRF06LCD RS485 Modbus DI4	4	-	-	-
WRF06LCD RS485 Modbus DO2R*	2	-	2	-
WRF06LCD RS485 Modbus DO2T*	2	-	-	2
WRF06LCD RS485 Modbus OVR*	2	1	1	-
WRF06LCD RS485 Modbus OVT*	2	1	-	1

* with IO extension (double frame)

When ordering, please indicate printing layout



WRF06LCD Typ 2
pure white, Gira Esprit glass



WRF06LCD Type 1
anthracite, Peha Aura Glass grooved



WRF06LCD Type 2
pure white, Peha Aura light-grey



WRF06LCD Type 1 with IO-extension
pure white, Gira E2 pure white

» WRF07 – Room Operating Panel

For further design examples please refer to page 62



Design example:
WRF07PTD
Gira Standard 55 pure white
special legend



Design example:
WRF07P3T3D
Busch-Jaeger alpha nea studio white
standard legend



TECHNICAL DATA – PASSIVE OUTPUT

Switch programmes available	Berker, Busch-Jaeger, Gira, Jung, Merten, Siemens
Labelling	Standard of switch manufacturers
Ambient temperature	-35°C...+70°C
Clamps	Screwing terminal, max. 1,5mm ²
Mounting	Flushing-mounting in standard deep installation box, for pre-wiring the terminal screw can be withdrawn from the device
Protection	IP20
Notice	Rocker switch "S" not feasible for ABB/Busch-Jaeger switch programmes Special legend possible (see page 225) Other sensors, switch programmes and combinations of operating elements on request

Application

For temperature measuring, set point and fan stage adjustment as well as presence detection in living and office spaces etc. Designed for locking on control and display systems.

TYPES AVAILABLE

Type	Version	Output	Input
WRF07 with operating elements	no Sensor PTC/NTC TRV	- passive, resistor active, 0-10V	- - -
WRF07 LON DI4	LON	active, FTX	4x digital
WRF07 RS485 Modbus DI4	RS485	-	4x digital
WRF07 RS485 Modbus AO2V	RS485	active, 2x 0-10V	2x digital

POSSIBLE OPERATING ELEMENTS

Potentiometer „P“ for set point adjustment	Standard values 1kOhm, 5kOhm, 10kOhm (further values on request), 3-wire conduction as a standard, optionally with output 0-10V for Uv=15-24V~/24V~
Rocker switch „S“ for fan stage adjustment	Multi conductor, 2 or 3 stages, breaking capacity max. 5VA
Button „T“ for presence detection	2-wire conductor, breaking capacity max. 600mW
Light emitted diode „D“ for status response	2-wire conductor, Uv=15-24V~/24V~, several LEDs possible, available in the colours: green, red and yellow

TECHNICAL DATA – ACTIVE OUTPUT / LON / RS485

Measuring range	TRV 3: 0-10V / 0°C...+50°C LON/RS485: 0°C...+50°C
Accuracy	TRV 3/LON: ±1% of measuring range RS485: Typ. ±0,5K
Ambient temperature	0°C...+50°C
Switch programmes available	Berker, Busch-Jaeger, Gira, Jung, Merten, Siemens
Labelling	Standard of switch manufacturers
Power supply	15-24V= (±10%) or 24V~ (±10%)
Power consumption	TRV: max. 12mA/24V= LON FTX: max. 50mA/24V= RS485: Typ. 0,9W/1VA
Clamps	Screwing terminal, max. 1,5mm ²
Mounting	Flushing-mounting in standard deep installation box, for pre-wiring the terminal screw can be withdrawn from the device
Protection	IP20
Notice	Rocker switch "S" not feasible for ABB/Busch-Jaeger switch programmes Special legend possible (see page 225) Other sensors, switch programmes and combinations of operating elements on request

without sensor

WRF07 **PG1**

Type	Operating elements	Sensor
WRF07	P	without sensor
WRF07	PTD	without sensor
WRF07	PSD	without sensor

PT100 1/3 DIN

WRF07 **PG1**

Type	Operating elements	Sensor
WRF07	P	PT100 1/3 DIN
WRF07	PTD	PT100 1/3 DIN
WRF07	PSD	PT100 1/3 DIN

PT1000 1/3 DIN

WRF07 **PG1**

Type	Operating elements	Sensor
WRF07	P	PT1000 1/3 DIN
WRF07	PTD	PT1000 1/3 DIN
WRF07	PSD	PT1000 1/3 DIN

Ni1000TK5000

WRF07 **PG1**

Type	Operating elements	Sensor
WRF07	P	Ni1000TK5000
WRF07	PTD	Ni1000TK5000
WRF07	PSD	Ni1000TK5000

NTC1,8k

WRF07 **PG1**

Type	Operating elements	Sensor
WRF07	P	NTC1,8k
WRF07	PTD	NTC1,8k
WRF07	PSD	NTC1,8k

NTC10k Precon

WRF07 **PG1**

Type	Operating elements	Sensor
WRF07	P	NTC10k Precon
WRF07	PTD	NTC10k Precon
WRF07	PSD	NTC10k Precon

LM235Z

WRF07 **PG1**

Type	Operating elements	Sensor
WRF07	P	LM235Z
WRF07	PTD	LM235Z
WRF07	PSD	LM235Z

PT100

WRF07 **PG1**

Type	Operating elements	Sensor
WRF07	P	PT100
WRF07	PTD	PT100
WRF07	PSD	PT100

PT1000

WRF07 **PG1**

Type	Operating elements	Sensor
WRF07	P	PT1000
WRF07	PTD	PT1000
WRF07	PSD	PT1000

Ni1000

WRF07 **PG1**

Type	Operating elements	Sensor
WRF07	P	Ni1000
WRF07	PTD	Ni1000
WRF07	PSD	Ni1000

FeT

WRF07 **PG1**

Type	Operating elements	Sensor
WRF07	P	FeT
WRF07	PTD	FeT
WRF07	PSD	FeT

NTC10k

WRF07 **PG1**

Type	Operating elements	Sensor
WRF07	P	NTC10k
WRF07	PTD	NTC10k
WRF07	PSD	NTC10k

NTC20k

WRF07 **PG1**

Type	Operating elements	Sensor
WRF07	P	NTC20k
WRF07	PTD	NTC20k
WRF07	PSD	NTC20k

**ALL PRICES ARE BASED ON THE SWITCH PROGRAMME
BUSCH-JAEGER DURO 2000 SI**

» WRF07 – Room Operating Panel

TRV 3		0-10V / 0°C...+50°C
WRF07		PG1
Type	Operating elements	Output
WRF07	P	TRV 3
WRF07	PTD	TRV 3
WRF07	PSD	TRV 3

ALL PRICES ARE BASED ON THE SWITCH PROGRAMME
BUSCH-JAEGER DURO 2000 SI

DI4 LON FTT		
WRF07		PG2
Type	Operating elements	Input
WRF07	P	4x Digital
WRF07	PTD	4x Digital

DI4 RS485 MODBUS		
WRF07		PG2
Type	Operating elements	Input
WRF07	P	4x Digital
WRF07	PTD	4x Digital

AO2V RS485 MODBUS		
WRF07		PG2
Type	Operating elements	Input/Output
WRF07	P	2x Digital/2x 0-10V
WRF07	PTD	2x Digital/2x 0-10V

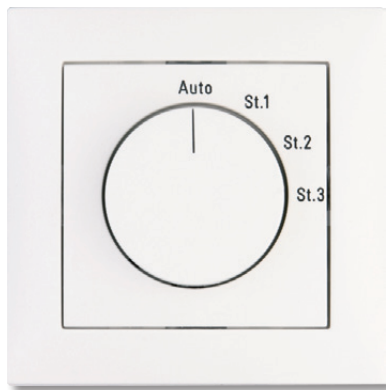
OPTIONS		
WRF07		PG1
Description		
Potentiometer 0-10V		
Switch programme Busch-Jaeger Reflex SI		
Switch programmes Busch-Jaeger Solo / Future / Impuls / Axcent		
Switch programme Gira Esprit Gira Esprit		
Switch programme stainless steel		
Other switch programmes		

Busch-Jaeger switch programmes not suitable for types
DI4 RS485 MODBUS and AO2V RS485 MODBUS

For further design examples please refer to page 62



WRFo63T3D
ABB/Busch-Jaeger Reflex SI alpine white special legend



Design Example:
WRFo6S
Berker S.1 polar white special legend

Application

For temperature measuring, fan stage adjustment and presence detection in living and office spaces etc. Designed for locking on control and display systems.



TYPES AVAILABLE

Type	Version	Output	Input
WRFo6 no operating elements	no Sensor	-	-
	PTC/NTC	passive, resistor	-
	TRV	active, 0-10V	-
	LON FTX	active, FTX	4x digital
WRFo6 with operating elements	no Sensor		
	PTC/NTC	passive, resistor	-

POSSIBLE OPERATING ELEMENTS

Button „T“ for presence detection	2-wire conductor, breaking capacity max. 600mW
Light emitted diode „D“ for status response	2-wire conductor, $U_v=15-24V= / 24V\sim$, several LEDs possible, available in the colours: green, red, yellow
Rotary switch „S“ for fan	Multi conductor, max. 5 fan stages on one level, breaking capacity max. 5VA, standard legend 0, I or 0, I, II or 0, I, II, III

TECHNICAL DATA – ACTIVE OUTPUT / LON

Measuring range	TRV 3: 0-10V / 0°C...+50°C LON: 0°C...+50°C
Accuracy	±1% of measuring range
Ambient temperature	0°C...+50°C
Switch programmes available	Berker, Busch-Jaeger, Gira, Jung, Merten, Siemens
Power supply	TRV/LON FTX: 15-24V= (±10%) or 24V~ (±10%)
Power consumption	TRV: max. 12mA/24V= LON FTX: max. 50mA/24V=
Clamps	Screwing terminal, max. 1,5mm ²
Mounting	Flush-mounting in standard deep installation box, for pre-wiring the terminal screw can be withdrawn from the device
Protection	IP20
Notice	TRV and LON only feasible in switch programme ABB/Busch-Jaeger Special legend possible (see page 225) Other sensors, switch programmes and combinations of operating elements on request

TECHNICAL DATA – PASSIVE OUTPUT

Switch programmes available	Berker, Busch-Jaeger, Gira, Jung, Merten, Siemens
Ambient temperature	-35°C...+70°C
Clamps	Screwing terminal, max. 1,5mm ²
Mounting	Flush-mounting in standard deep installation box, for pre-wiring the terminal screw can be withdrawn from the device
Protection	IP20
Notice	Special legend possible (see page 225) Other sensors, switch programmes and combinations of operating elements on request

» WRF06 – Room Operating Panel

without sensor

WRF06			PG1
Type	Operating elements	Sensor	
WRF06	-	without sensor	
WRF06	TD	without sensor	
WRF06	S	without sensor	

PT100 1/3 DIN

WRF06			PG1
Type	Operating elements	Sensor	
WRF06	-	PT100 1/3 DIN	
WRF06	TD	PT100 1/3 DIN	

PT1000 1/3 DIN

WRF06			PG1
Type	Operating elements	Sensor	
WRF06	-	PT1000 1/3 DIN	
WRF06	TD	PT1000 1/3 DIN	

Ni1000TK5000

WRF06			PG1
Type	Operating elements	Sensor	
WRF06	-	Ni1000TK5000	
WRF06	TD	Ni1000TK5000	

NTC1,8k

WRF06			PG1
Type	Operating elements	Sensor	
WRF06	-	NTC1,8k	
WRF06	TD	NTC1,8k	

NTC10k

WRF06			PG1
Type	Operating elements	Sensor	
WRF06	-	NTC10k	
WRF06	TD	NTC10k	

NTC20k

WRF06			PG1
Type	Operating elements	Sensor	
WRF06	-	NTC20k	
WRF06	TD	NTC20k	

PT100

WRF06			PG1
Type	Operating elements	Sensor	
WRF06	-	PT100	
WRF06	TD	PT100	

PT1000

WRF06			PG1
Type	Operating elements	Sensor	
WRF06	-	PT1000	
WRF06	TD	PT1000	

Ni1000

WRF06			PG1
Type	Operating elements	Sensor	
WRF06	-	Ni1000	
WRF06	TD	Ni1000	

FeT

WRF06			PG1
Type	Operating elements	Sensor	
WRF06	-	FeT	
WRF06	TD	FeT	

NTC5k

WRF06			PG1
Type	Operating elements	Sensor	
WRF06	-	NTC5k	
WRF06	TD	NTC5k	

NTC10k Precon

WRF06			PG1
Type	Operating elements	Sensor	
WRF06	-	NTC10k Precon	
WRF06	TD	NTC10k Precon	

LM235Z

WRF06			PG1
Type	Operating elements	Sensor	
WRF06	-	LM235Z	
WRF06	TD	LM235Z	

TRV 3 0-10V / 0°C...+50°C

WRFo6 PG1

Type	Operating elements	Output
WRFo6	-	TRV 3

DI4 LON FTT

WRFo7 PG2

Type	Operating elem.	Output	Input
WRFo6	-	LON FTX	4x Digital

**ALL PRICES ARE BASED ON THE SWITCH PROGRAMME
BUSCH-JAEGER DURO 2000 SI**

OPTIONEN

WRFo6 PG1

Description

Switch programme Busch-Jaeger Reflex SI

Switch programmes Busch-Jaeger Solo / Future / Impuls / Axcnt

Switch programme Gira Esprit

Switch programme stainless steel

Other switch programmes

» WRF04 – Room Operating Panel

Application

For temperature measuring, set point and fan stage adjustment as well as presence detection in living and office spaces etc. Designed for locking on control and display systems.

For further design examples please refer to page 62



Design Example:
WRF04PSTD



Design Example:
WRF04LCD PS



TECHNICAL DATA – PASSIVE OUTPUT

Legend	Potentiometer: -, 0, + Rotary switch: 0, I or 0, I, II, or 0, I, II, III or Auto, 0, I, II, III
Ambient temperature	-35°C...+70°C
Enclosure	Material ASA, colour pure white similar to RAL9010, housing bottom can be premounted and prewired separately from housing cover
Mounting	Surface in standard installation box
Clamps	Screwing terminal, max. 1,5mm ²
Cable entry	From behind or sidewise top/bottom
Protection	IP30
Notice	Special legend and special painting possible (see page 225) Other sensors and combinations of operating elements on request

TYPES AVAILABLE

Type	Version	Output
WRF04 with and without operating elements	no Sensor PTC/NTC TRV LON RS485 Modbus	- passive, resistor active, 0-10V active, FTX active, RS485 Modbus
WRF04LCD with and without operating elements	TRV LON RS485 Modbus	active, 0-10V active, FTX active, RS485 Modbus

POSSIBLE OPERATING ELEMENTS

Potentiometer „P“ for set point adjustment	Standard value 1kOhm, 5kOhm, 10kOhm (other values on request), 3-wire conductor as a standard, optionally with output 0-10V for Uv=15-24V~/24V~
Rotary switch „S“ for fan stage adjustment	Max. 5 switch stages on one level, breaking capacity max. 5VA
Button „T“ for presence detection	2-wire conductor, breaking capacity max. 600mW
Light emitted diode „D“ for status response	2-wire conductor, Uv=15-24V~/24V~, various LEDs possible, colours available: green, red and yellow

TECHNICAL DATA – ACTIVE OUTPUT / LON / RS485 MODBUS

Measuring range	TRV 3: 0-10V LON / RS485 Modbus: 0°C...+50°C
Accuracy	±1% of measuring range
Ambient temperature	-35°C...+70°C
Legend	Potentiometer: -, 0, + Rotary switch: 0, I or 0, I, II, or 0, I, II, III or Auto, 0, I, II, III
Power supply	15-24V= (±10%) or 24V~ (±10%)
Power consumption	TRV: max. 12mA/24V= LCD TRV: typ. 0,6W/1,0VA LON: typ. 0,6W/1,7VA LCD LON: typ. 0,8W/2,0VA RS485 MODBUS: typ. 0,4W/0,6VA LCD RS485 MODBUS: typ. 0,4W/0,6VA
Display	Room temperature
LCD	29mm x 12mm, black/white
Enclosure	Material ASA, colour pure white similar to RAL9010, housing bottom can be premounted and prewired separately from housing cover
Mounting	Surface in standard installation box
Cable entry	From behind or sidewise top/bottom
Protection	IP30
Notice	WRF04 without operating elements also available with output 4-20mA Special legend possible (see page 225) Other sensors and combinations of operating elements on request

without sensor		
WRF04		PG1
Type	Operating elements	Sensor
WRF04	-	without sensor
WRF04	TD	without sensor
WRF04	S	without sensor
WRF04	P	without sensor
WRF04	PTD	without sensor
WRF04	PSD	without sensor
WRF04	PSTD	without sensor

PT100		
WRF04		PG1
Type	Operating elements	Sensor
WRF04	-	PT100
WRF04	TD	PT100
WRF04	S	PT100
WRF04	P	PT100
WRF04	PTD	PT100
WRF04	PSD	PT100
WRF04	PSTD	PT100

PT100 1/3 DIN		
WRF04		PG1
Type	Operating elements	Sensor
WRF04	-	PT100 1/3 DIN
WRF04	TD	PT100 1/3 DIN
WRF04	S	PT100 1/3 DIN
WRF04	P	PT100 1/3 DIN
WRF04	PTD	PT100 1/3 DIN
WRF04	PSD	PT100 1/3 DIN
WRF04	PSTD	PT100 1/3 DIN

PT1000		
WRF04		PG1
Type	Operating elements	Sensor
WRF04	-	PT1000
WRF04	TD	PT1000
WRF04	S	PT1000
WRF04	P	PT1000
WRF04	PTD	PT1000
WRF04	PSD	PT1000
WRF04	PSTD	PT1000

PT1000 1/3 DIN		
WRF04		PG1
Type	Operating elements	Sensor
WRF04	-	PT1000 1/3 DIN
WRF04	TD	PT1000 1/3 DIN
WRF04	S	PT1000 1/3 DIN
WRF04	P	PT1000 1/3 DIN
WRF04	PTD	PT1000 1/3 DIN
WRF04	PSD	PT1000 1/3 DIN
WRF04	PSTD	PT1000 1/3 DIN

Ni1000		
WRF04		PG1
Type	Operating elements	Sensor
WRF04	-	Ni1000
WRF04	TD	Ni1000
WRF04	S	Ni1000
WRF04	P	Ni1000
WRF04	PTD	Ni1000
WRF04	PSD	Ni1000
WRF04	PSTD	Ni1000

Ni1000TK5000		
WRF04		PG1
Type	Operating elements	Sensor
WRF04	-	Ni1000TK5000
WRF04	TD	Ni1000TK5000
WRF04	S	Ni1000TK5000
WRF04	P	Ni1000TK5000
WRF04	PTD	Ni1000TK5000
WRF04	PSD	Ni1000TK5000
WRF04	PSTD	Ni1000TK5000

FeT		
WRF04		PG1
Type	Operating elements	Sensor
WRF04	-	FeT
WRF04	TD	FeT
WRF04	S	FeT
WRF04	P	FeT
WRF04	PTD	FeT
WRF04	PSD	FeT
WRF04	PSTD	FeT

» WRF04 – Room Operating Panel

NTC1,8k		
WRF04		PG1
Type	Operating elements	Sensor
WRF04	-	NTC1,8k
WRF04	TD	NTC1,8k
WRF04	S	NTC1,8k
WRF04	P	NTC1,8k
WRF04	PTD	NTC1,8k
WRF04	PSD	NTC1,8k
WRF04	PSTD	NTC1,8k

NTC10k		
WRF04		PG1
Type	Operating elements	Sensor
WRF04	-	NTC10k
WRF04	TD	NTC10k
WRF04	S	NTC10k
WRF04	P	NTC10k
WRF04	PTD	NTC10k
WRF04	PSD	NTC10k
WRF04	PSTD	NTC10k

NTC20k		
WRF04		PG1
Type	Operating elements	Sensor
WRF04	-	NTC20k
WRF04	TD	NTC20k
WRF04	S	NTC20k
WRF04	P	NTC20k
WRF04	PTD	NTC20k
WRF04	PSD	NTC20k
WRF04	PSTD	NTC20k

NTC5k		
WRF04		PG1
Type	Operating elements	Sensor
WRF04	-	NTC5k
WRF04	TD	NTC5k
WRF04	S	NTC5k
WRF04	P	NTC5k
WRF04	PTD	NTC5k
WRF04	PSD	NTC5k
WRF04	PSTD	NTC5k

NTC10k Precon		
WRF04		PG1
Type	Operating elements	Sensor
WRF04	-	NTC10k Precon
WRF04	TD	NTC10k Precon
WRF04	S	NTC10k Precon
WRF04	P	NTC10k Precon
WRF04	PTD	NTC10k Precon
WRF04	PSD	NTC10k Precon
WRF04	PSTD	NTC10k Precon

LM235Z		
WRF04		PG1
Type	Operating elements	Sensor
WRF04	-	LM235Z
WRF04	TD	LM235Z
WRF04	S	LM235Z
WRF04	P	LM235Z
WRF04	PTD	LM235Z
WRF04	PSD	LM235Z
WRF04	PSTD	LM235Z

OPTIONS

WRF04		PG1
Description		
Potentiometer 0-10V		
Ball stroke protection (for types without operating elements and display)		
Rawplugs and screws (2 pcs. each)		

TRV 3			0-10V / 0°C...+50°C
WRF04		PG1	
Type	Operating elements	Output	
WRF04	-	TRV 3	
WRF04	P	TRV 3	
WRF04	PTD	TRV 3	
WRF04	PSD	TRV 3	

LCD			0-10V / 0°C...+50°C
WRF04LCD		PG1	
Type	Operating elements	Output	
WRF04LCD	-	TRV 3	
WRF04LCD	P	TRV 3	
WRF04LCD	PTD	TRV 3	
WRF04LCD	PSD	TRV 3	

Room Operating Panel – WRF04 «

LON		
WRF04		PG1
Type	Operating elements	Output
WRF04	-	LON
WRF04	P	LON
WRF04	PTD	LON
WRF04	PSD	LON

LCD		
WRF04LCD		PG1
Type	Operating elements	Output
WRF04LCD	-	LON
WRF04LCD	P	LON
WRF04LCD	PTD	LON
WRF04LCD	PSD	LON

RS485 MODBUS					
WRF04					PG1
Type		Input		Outputs	
		floating switch contact	0-10V	Relay	Triac
WRF04	RS485 Modbus AO2V	2	2	-	-
WRF04P	RS485 Modbus AO2V	2	2	-	-
WRF04PTD	RS485 Modbus AO2V	2	2	-	-
WRF04PSD	RS485 Modbus AO2V	2	2	-	-
WRF04	RS485 Modbus DO2R	2	-	2	-
WRF04P	RS485 Modbus DO2R	2	-	2	-
WRF04PTD	RS485 Modbus DO2R	2	-	2	-
WRF04PSD	RS485 Modbus DO2R	2	-	2	-
WRF04	RS485 Modbus DO2T	2	-	-	2
WRF04P	RS485 Modbus DO2T	2	-	-	2
WRF04PTD	RS485 Modbus DO2T	2	-	-	2
WRF04PSD	RS485 Modbus DO2T	2	-	-	2
WRF04	RS485 Modbus OVR	2	1	1	-
WRF04P	RS485 Modbus OVR	2	1	1	-
WRF04PTD	RS485 Modbus OVR	2	1	1	-
WRF04PSD	RS485 Modbus OVR	2	1	1	-
WRF04	RS485 Modbus OVT	2	1	-	1
WRF04P	RS485 Modbus OVT	2	1	-	1
WRF04PTD	RS485 Modbus OVT	2	1	-	1
WRF04PSD	RS485 Modbus OVT	2	1	-	1

Option: LCD

Notice: All types DO2R, DO2T, OVR and OVT with external I/O extension (included in the price)

OPTIONS	
WRF04	
PG1	
Description	
Potentiometer 0-10V	
Ball stroke protection (for types without operating elements and display)	
Rawlplugs and screws (2 pcs. each)	

» Design Examples – Room Operating Panels



WRF04PST3D
custom-made version



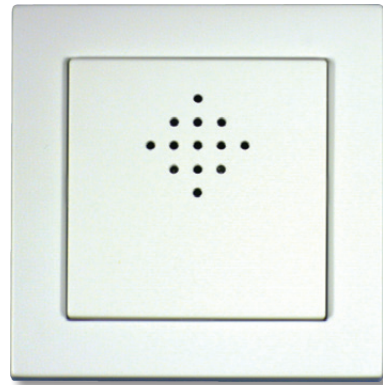
WRF04
special painting



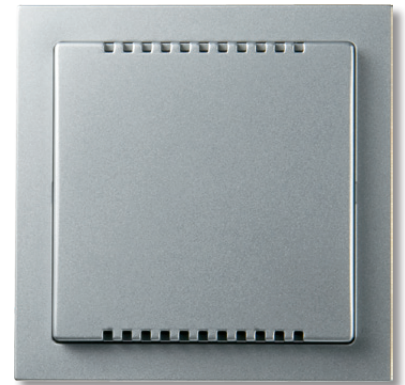
WRF04P4T4D
special legend



WRF06
Busch-Jaeger Impulse champagner



WRF06
Gira E20 pure white, rhomb bore



WRF06
Busch-Jaeger Future stone



WRF07PTD
Gira E2 alu, special legend



WRF07PTD Busch-Jaeger Future
studio white, special legend

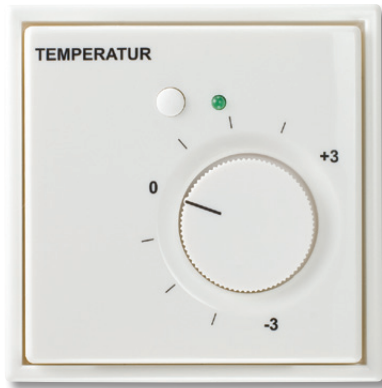


WRF07PSTD
Jung LS stainless steel, special legend

Design Examples – Room Operating Panels «



WRF063T3D
Gira Esprit alu, special legend



WRF07PTD Jung LS990
alpine white, special legend



WRF07PSD
Merten Artec, special legend



WRF06INC 7D LON
Berker S.1, special version



WRF07PT
Jung LS stainless steel, special legend



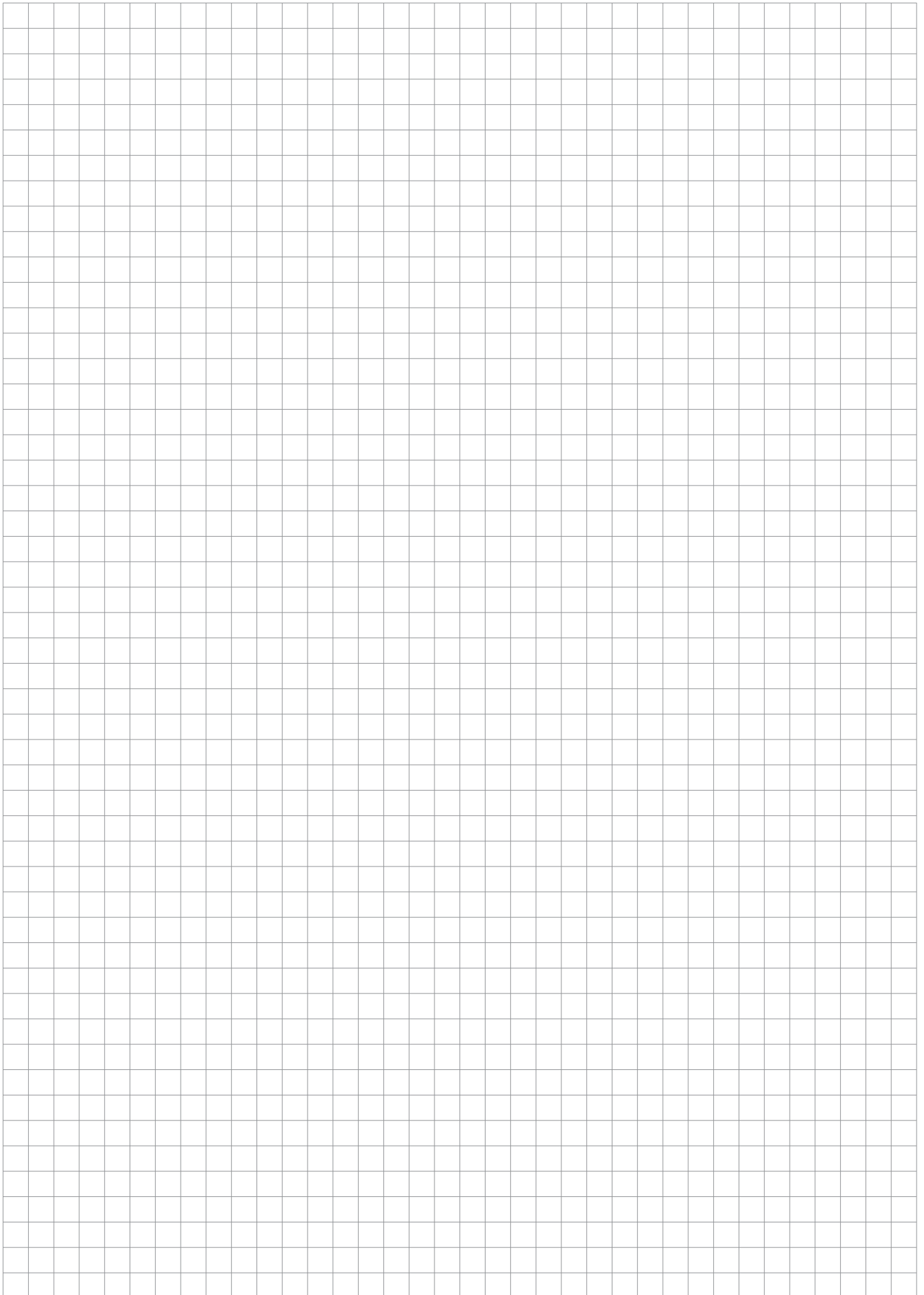
WRF07PTD
Feller EDIZIOdue black



WRF07P-WRF062T2D
Jung LS990 white, special legend



WRF07P
Gewiss Chorus One



Temperature

High-quality materials, modern production procedures, years of experience: We are producing temperature sensors for the most different applications in the building control, heating, cooling and air-conditioning technology.

	Sensor protection by SI-Protection	P. 66			
TF14	Cable temperature sensor pocketØ 4mm	P. 67	RG03	Duct high-temperature sensor	P. 115
OF14	Surface temperature sensor	P. 73	MWF	Average temperature sensor	P. 117
TF25	Cable temperature sensor pocketØ 6mm	P. 75	SFK01	Screw-in temperature sensor	P. 119
AGS43	Outdoor temperature sensor	P. 83	SFK02	Screw-in temperature sensor	P. 122
AGS54	Outdoor temperature sensor	P. 84	SFK03	Screw-in temperature sensor	P. 127
AGS54ext	Outdoor temperature sensor	P. 85	SFKH01	Screw-in temperature sensor/neck tube	P. 131
VFG54	Pipe contact temperature sensor	P. 88	SFKH02	Screw-in temperature sensor/neck tube	P. 134
AF25	Pipe contact temperature sensor	P. 91	SFKH03	Screw-in temperature sensor/neck tube	P. 139
PR25	Pipe contact temperature sensor	P. 92	RGS03	Screw-in high-temperature sensor	P. 143
AKF10 4mm	Duct temperature sensor pocketØ 4mm	P. 95	TFR	Frost protection thermostat	P. 145
AKF10 7mm	Duct temperature sensor pocketØ 7mm	P. 99	WRF04	Room temperature sensor	P. 146
KFK01 4mm	Duct temperature sensor pocketØ 4mm	P. 105	RDF18	Ceiling temperature sensor	P. 150
KFK01 7mm	Duct temperature sensor pocketØ 7mm	P. 108	RPF40	Room pendulum temperature sensor	P. 151
KFK03	Duct temperature sensor	P. 112	RPF100	Room pendulum temperature sensor	P. 153
			MU-S	Transmitter	P. 155
				Accessory	P. 156

SI-Protection for Protection of Sensors

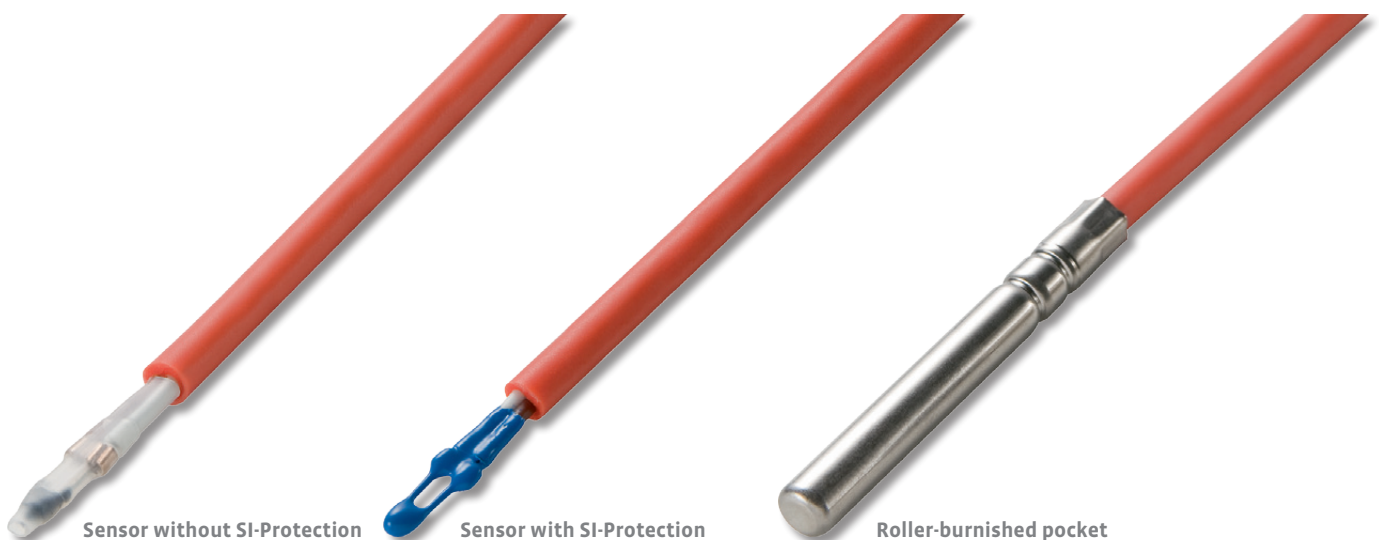
Changes in temperature are causing formation of humidity. Thus, there is a risk that the humidity can permeate in the contact point of the sensor. As a result, the sensor would corrode and oxygenate. Thus, the contact point would become unreliable.

The SI-Protection procedure provides the contact point with epoxy gum and a fluidized bed coating which unites with the insulation material of the wire.

Thus, a complete unit is built protecting the sensor against vibrations and humidity.

By means of this protective coating our temperature sensors can be used in cold water or outdoor applications without any problems, for example.

In addition the roller-burnishing protects the pocket of the sensor against the permeation of humidity.



Application

For temperature measurement in gaseous media of heating, cooling or air conditioning systems. Designed for locking in control and display systems.

TECHNICAL DATA – PASSIVE OUTPUT	
Mounting lengths	50mm, 100mm, 150mm, 200mm, 300mm
Connection wire	PVC (Standard), Silicone, PTFE Cross section 0,14mm ² / L=1m, other standard lengths 2m, 4m, 6m
Ambient temperature	PVC: -35°C...+100°C Silicone: -50°C...+180°C PTFE: -80°C...+260°C
Connection	2-wire (standard), 3-wire, 4-wire (optional) (3- and 4-wire not feasible with silicone)
Sensor pocket	Stainless steel 1.4571, Ø=4mm
Protection	Hexagonal pressed (standard): IP54 Roller-burnished: IP67 including SI-Protection (not feasible with PTFE)
Notice	Other sensors and mounting lengths on request

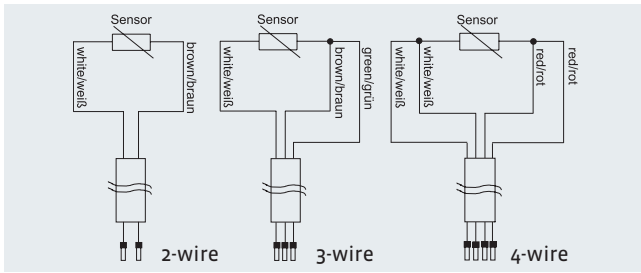
TECHNICAL DATA – ACTIVE OUTPUT	
Mounting lengths	50mm, 100mm, 150mm, 200mm, 400mm
Measuring ranges	TRA: 4-20mA / TRV: 0-10V TRA 1 / TRV 1: -50°C...+50°C TRA 2 / TRV 2: -10°C...+120°C TRA 3 / TRV 3: 0°C...+50°C TRA 4 / TRV 4: 0°C...+160°C TRA 5 / TRV 5: 0°C...+250°C
Accuracy	±1% of measuring range (with max. 2m connection wire)
Connection wire	Silicone, PTFE (depending on measuring range) Cross section 0,14mm ² / L=1m, other standard lengths 2m, 4m, 6m
Ambient temperature	-35°C...+70°C (enclosure)
Power supply	TRA: 15-24V= (±10%) TRV: 15-24V= (±10%) or 24V~ (±10%)
Power consumption	TRA: max. 20mA/24V= TRV: max. 12mA/24V= typ. 0,42W/0,84VA
Enclosure	Material PA6, colour pure white, similar to RAL9010
Cable entry	M20
Sensor pocket	Stainless steel 1.4571, Ø=4mm
Protection	Hexagonal pressed (standard): IP54 Roller-burnished: IP67 including SI-Protection (not feasible for TRA5 / TRV5 resp. PTFE wire)
Notice	Other mounting lengths on request



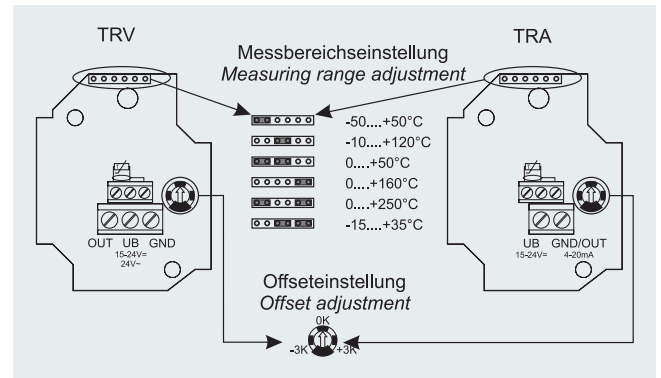
Protection against mechanical overstress
SI-Protection
 humidity and vibration

» TF14 – Cable Temperature Sensor passive / active

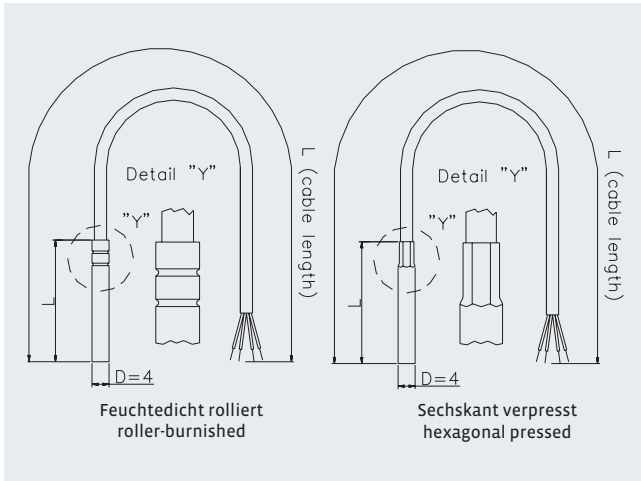
Connection passive



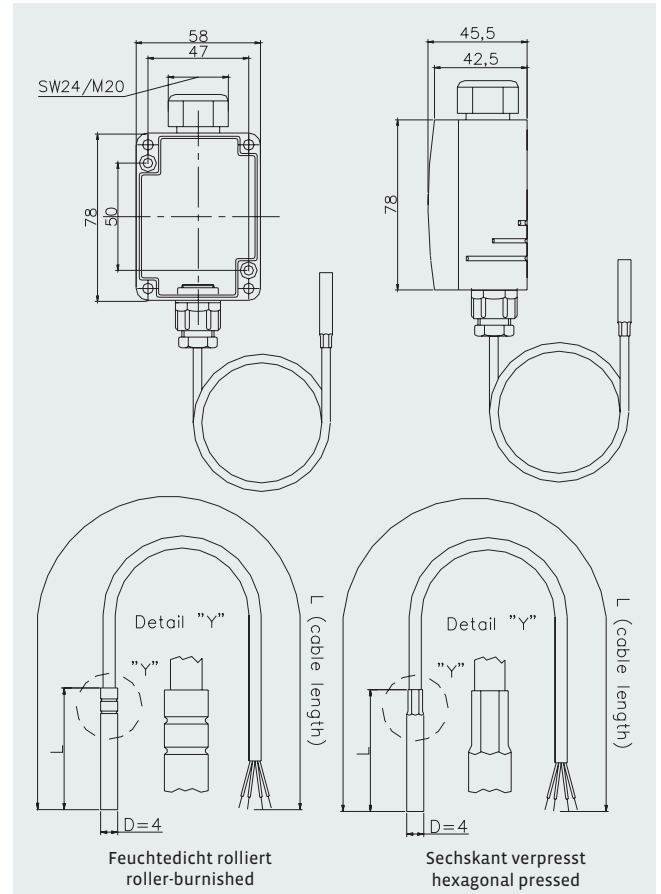
Connection active



Dimensional Drawing passive (mm)



Dimensional Drawing active (mm)



PT100			100°C
TF14 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF14.100.04 4x50 PT100	50mm	64347	
TF14.100.04 4x100 PT100	100mm	57554	
TF14.100.04 4x150 PT100	150mm	57561	

PT1000			100°C
TF14 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF14.100.04 4x50 PT1000	50mm	69267	
TF14.100.04 4x100 PT1000	100mm	69274	
TF14.100.04 4x150 PT1000	150mm	69281	

Ni1000			100°C
TF14 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF14.100.04 4x50 Ni1000	50mm	73080	
TF14.100.04 4x100 Ni1000	100mm	73097	
TF14.100.04 4x150 Ni1000	150mm	73103	

NTC1,8k			100°C
TF14 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF14.100.04 4x50 NTC1,8k	50mm	270687	
TF14.100.04 4x100 NTC1,8k	100mm	355797	
TF14.100.04 4x150 NTC1,8k	150mm	233293	

NTC10k			100°C
TF14 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF14.100.04 4x50 NTC10k	50mm	73844	
TF14.100.04 4x100 NTC10k	100mm	73851	
TF14.100.04 4x150 NTC10k	150mm	73868	

NTC20k			100°C
TF14 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF14.100.04 4x50 NTC20k	50mm	73899	
TF14.100.04 4x100 NTC20k	100mm	73905	
TF14.100.04 4x150 NTC20k	150mm	73912	

PT100 1/3 DIN			100°C
TF14 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF14.100.04 4x50 PT100 1/3 DIN	50mm	69106	
TF14.100.04 4x100 PT100 1/3 DIN	100mm	69113	
TF14.100.04 4x150 PT100 1/3 DIN	150mm	69120	

PT1000 1/3 DIN			100°C
TF14 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF14.100.04 4x50 PT1000 1/3 DIN	50mm	69427	
TF14.100.04 4x100 PT1000 1/3 DIN	100mm	69434	
TF14.100.04 4x150 PT1000 1/3 DIN	150mm	69441	

Ni1000TK5000			100°C
TF14 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF14.100.04 4x50 Ni1000TK5000	50mm	73240	
TF14.100.04 4x100 Ni1000TK5000	100mm	73257	
TF14.100.04 4x150 Ni1000TK5000	150mm	73264	

NTC5k			100°C
TF14 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF14.100.04 4x50 NTC5k	50mm	73806	
TF14.100.04 4x100 NTC5k	100mm	73813	
TF14.100.04 4x150 NTC5k	150mm	73820	

NTC10k Precon			100°C
TF14 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF14.100.04 4x50 NTC10k Precon	50mm	77002	
TF14.100.04 4x100 NTC10k Precon	100mm	77019	
TF14.100.04 4x150 NTC10k Precon	150mm	77026	

OPTIONS	
TF14 100°C	PG1
Description	
Cable length per additional meter 100°C	
Protection IP67 (roller-burnished)	

PT100			180°C
TF14 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF14.100.04 4x50 PT100	50mm	64354	
TF14.100.04 4x100 PT100	100mm	78009	
TF14.100.04 4x150 PT100	150mm	78016	

PT100 1/3 DIN			180°C
TF14 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF14.100.04 4x50 PT100 1/3 DIN	50mm	78207	
TF14.100.04 4x100 PT100 1/3 DIN	100mm	78214	
TF14.100.04 4x150 PT100 1/3 DIN	150mm	78221	

PT1000			180°C
TF14 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF14.100.04 4x50 PT1000	50mm	78405	
TF14.100.04 4x100 PT1000	100mm	78443	
TF14.100.04 4x150 PT1000	150mm	78481	

PT1000 1/3 DIN			180°C
TF14 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF14.100.04 4x50 PT1000 1/3 DIN	50mm	78603	
TF14.100.04 4x100 PT1000 1/3 DIN	100mm	78641	
TF14.100.04 4x150 PT1000 1/3 DIN	150mm	78689	

Ni1000			180°C
TF14 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF14.100.04 4x50 Ni1000	50mm	78795	
TF14.100.04 4x100 Ni1000	100mm	78832	
TF14.100.04 4x150 Ni1000	150mm	78870	

Ni1000TK5000			180°C
TF14 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF14.100.04 4x50 Ni1000TK5000	50mm	78993	
TF14.100.04 4x100 Ni1000TK5000	100mm	79037	
TF14.100.04 4x150 Ni1000TK5000	150mm	79075	

NTC1,8k			150°C
TF14 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF14.100.04 4x50 NTC1,8k	50mm	256131	
TF14.100.04 4x100 NTC1,8k	100mm	352307	
TF14.100.04 4x150 NTC1,8k	150mm	352291	

NTC5k			150°C
TF14 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF14.100.04 4x50 NTC5k	50mm	80200	
TF14.100.04 4x100 NTC5k	100mm	80248	
TF14.100.04 4x150 NTC5k	150mm	76975	

NTC10k			150°C
TF14 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF14.100.04 4x50 NTC10k	50mm	80408	
TF14.100.04 4x100 NTC10k	100mm	81443	
TF14.100.04 4x150 NTC10k	150mm	80484	

NTC10k Precon			150°C
TF14 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF14.100.04 4x50 NTC10k Precon	50mm	76807	
TF14.100.04 4x100 NTC10k Precon	100mm	76845	
TF14.100.04 4x150 NTC10k Precon	150mm	76883	

NTC20k			150°C
TF14 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF14.100.04 4x50 NTC20k	50mm	80606	
TF14.100.04 4x100 NTC20k	100mm	80644	
TF14.100.04 4x150 NTC20k	150mm	80682	

OPTIONS		
TF14 180°C		
PG1		
Description		
Cable length per additional meter 180°C		
Protection IP67		

PT100			260°C
TF14 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF14.100.04 4x50 PT100	50mm	95563	
TF14.100.04 4x100 PT100	100mm	96126	
TF14.100.04 4x150 PT100	150mm	96195	

PT1000			260°C
TF14 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF14.100.04 4x50 PT1000	50mm	97185	
TF14.100.04 4x100 PT1000	100mm	97239	
TF14.100.04 4x150 PT1000	150mm	91510	

Ni1000			260°C
TF14 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF14.100.04 4x50 Ni1000	50mm	91831	
TF14.100.04 4x100 Ni1000	100mm	91879	
TF14.100.04 4x150 Ni1000	150mm	91916	

OPTIONS

TF14 260°C	PG1
Description	
Cable length per additional meter 260°C 2-wire	
3-wire connection 260°C	
Cable length per additional meter 260°C 3-wire	
4-wire connection 260°C	
Cable length per additional meter 260°C 4-wire	

PT100 1/3 DIN			260°C
TF14 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF14.100.04 4x50 PT100 1/3 DIN	50mm	96775	
TF14.100.04 4x100 PT100 1/3 DIN	100mm	96805	
TF14.100.04 4x150 PT100 1/3 DIN	150mm	96843	

PT1000 1/3 DIN			260°C
TF14 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF14.100.04 4x50 PT1000 1/3 DIN	50mm	91633	
TF14.100.04 4x100 PT1000 1/3 DIN	100mm	91671	
TF14.100.04 4x150 PT1000 1/3 DIN	150mm	91718	

Ni1000TK5000			260°C
TF14 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF14.100.04 4x50 Ni1000TK5000	50mm	97338	
TF14.100.04 4x100 Ni1000TK5000	100mm	97376	
TF14.100.04 4x150 Ni1000TK5000	150mm	97413	

» TF14 – Cable Temperature Sensor active

TRA 1 / TRV 1				-50°C...+50°C
TF14 – CONNECTION WIRE 1M				PG1
Type	Out	Pocket L	Art. No.	
TF14.100.04 4x50 TRA 1	4-20mA	50mm	341783	
TF14.100.04 4x100 TRA 1	4-20mA	100mm	295239	
TF14.100.04 4x150 TRA 1	4-20mA	150mm	355919	
TF14.100.04 4x50 TRV 1	0-10V	50mm	173520	
TF14.100.04 4x100 TRV 1	0-10V	100mm	173377	
TF14.100.04 4x150 TRV 1	0-10V	150mm	173537	

TRA 3 / TRV 3				0°C...+50°C
TF14 – CONNECTION WIRE 1M				PG1
Type	Out	Pocket L	Art. No.	
TF14.100.04 4x50 TRA 3	4-20mA	50mm	181884	
TF14.100.04 4x100 TRA 3	4-20mA	100mm	355827	
TF14.100.04 4x150 TRA 3	4-20mA	150mm	355933	
TF14.100.04 4x50 TRV 3	0-10V	50mm	173605	
TF14.100.04 4x100 TRV 3	0-10V	100mm	173612	
TF14.100.04 4x150 TRV 3	0-10V	150mm	173629	

TRA 5 / TRV 5				0°C...+250°C
TF14 – CONNECTION WIRE 1M				PG1
Type	Out	Pocket L	Art. No.	
TF14.100.04 4x50 TRA 5	4-20mA	50mm	355810	
TF14.100.04 4x100 TRA 5	4-20mA	100mm	355902	
TF14.100.04 4x150 TRA 5	4-20mA	150mm	362467	
TF14.100.04 4x50 TRV 5	0-10V	50mm	114127	
TF14.100.04 4x100 TRV 5	0-10V	100mm	121903	
TF14.100.04 4x150 TRV 5	0-10V	150mm	173704	

TRA 2 / TRV 2				-10°C...+120°C
TF14 – CONNECTION WIRE 1M				PG1
Type	Out	Pocket L	Art. No.	
TF14.100.04 4x50 TRA 2	4-20mA	50mm	236362	
TF14.100.04 4x100 TRA 2	4-20mA	100mm	168151	
TF14.100.04 4x150 TRA 2	4-20mA	150mm	355926	
TF14.100.04 4x50 TRV 2	0-10V	50mm	150262	
TF14.100.04 4x100 TRV 2	0-10V	100mm	173568	
TF14.100.04 4x150 TRV 2	0-10V	150mm	173575	

TRA 4 / TRV 4				0°C...+160°C
TF14 – CONNECTION WIRE 1M				PG1
Type	Out	Pocket L	Art. No.	
TF14.100.04 4x50 TRA 4	4-20mA	50mm	186988	
TF14.100.04 4x100 TRA 4	4-20mA	100mm	355834	
TF14.100.04 4x150 TRA 4	4-20mA	150mm	355940	
TF14.100.04 4x50 TRV 4	0-10V	50mm	173650	
TF14.100.04 4x100 TRV 4	0-10V	100mm	173667	
TF14.100.04 4x150 TRV 4	0-10V	150mm	173674	

OPTIONS

TF14 TRA / TRV	PG1
Description	
LCD	
Cable length per additional meter TRA/TRV 1-4	
Cable length per additional meter TRA/TRV 5	

ACCESSORIES

TF14	PG1
Description	Art. No.
Mounting flange MF4 (brass)	102438
Mounting flange MF7 flexible (incl. seal inserts for D=4mm / 6mm)	399098



MF4



MF7 flexible

Ordering example 1: TF14.400.04 Ni1000 260°C, 4x100, 4L
 TF14=type / 400=connection wire 4m / 04=diameter of pocket 4mm
 Ni1000=sensor Ni1000 / 260°C=temperature up to 260°C
 4x100=mounting length 100mm / 4L=4-wire connection

Ordering example 2: TF14.200.04 TRV 1, 4x150, IP67
 TF14=type / 200=connection wire 2m / 04=diameter of pocket 4mm
 TRV 1=transducer 0-10V, -50°C...+50°C
 4x150=mounting length 150mm / IP67=protection class IP67

Surface Temperature Sensor passive / active – OF14 «

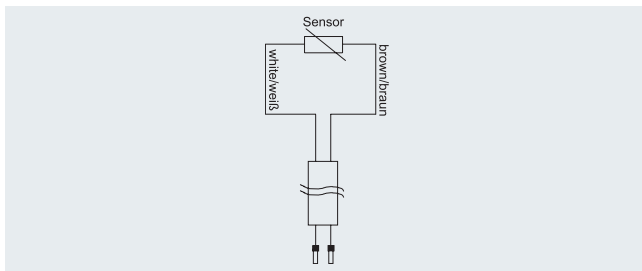
Application

For temperature measuring on glass facades or the like.
Designed for locking on control and display systems.

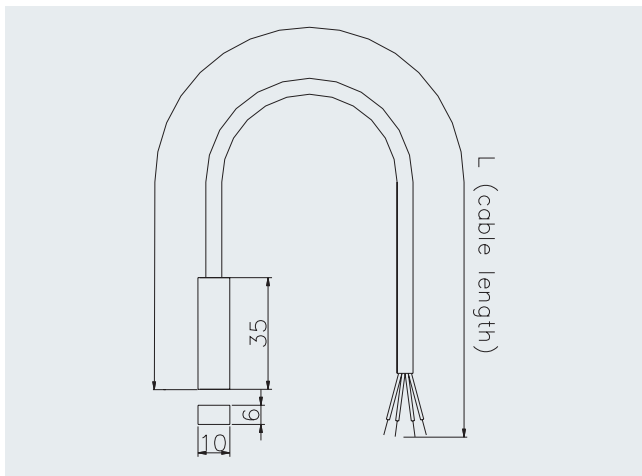
TECHNICAL DATA – PASSIVE OUTPUT	
Measuring range	-20°C...+70°C
Connection wire	PVC, cross section 0,25mm ² / L=1m, other standard lengths 2m, 4m, 6m
Sensor pocket	Aluminium, L=35mm, B=10mm, H=6mm, mounting at the surface by means of supplied adhesive tape
Protection	SI-Protection
Notice	Other sensors on request



Connection passive

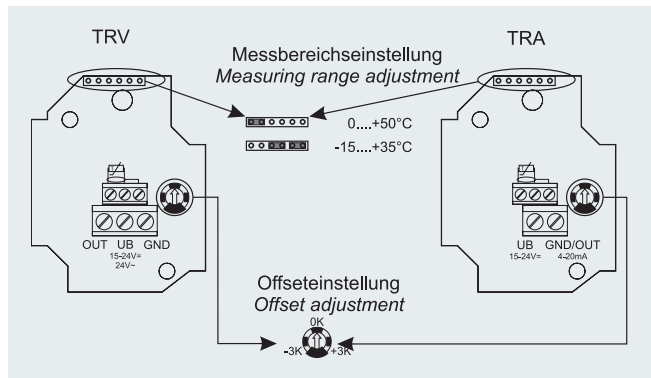


Dimensional Drawing passive (mm)

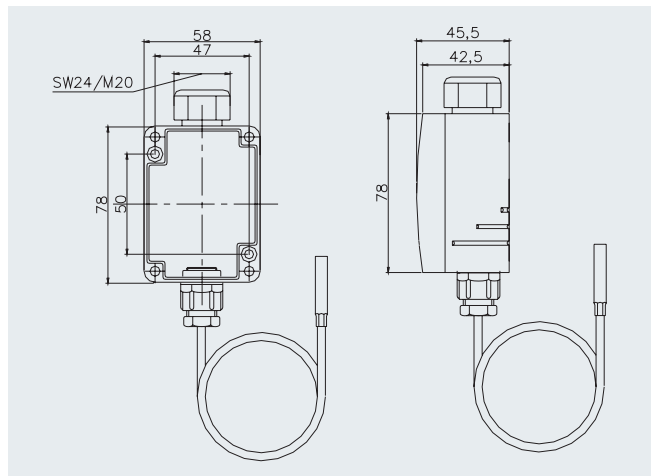


TECHNICAL DATA – ACTIVE OUTPUT	
Measuring range	TRA: 4-20mA / TRV: 0-10V TRA 3 / TRV 3: 0°C...+50°C
Accuracy	±1% of measuring range (with max. 2m connection wire)
Connection wire	PVC, cross section 0,25mm ² / L=1m, other standard lengths 2m, 4m, 6m
Ambient temperature	-20°C...+70°C
Power supply	TRA: 15-24V= (±10%) TRV: 15-24V= (±10%) or 24V~ (±10%)
Power consumption	TRA: max. 20mA/24V= TRV: max. 12mA/24V= typ. 0,42W/0,84VA
Enclosure	Material PA6, colour pure white, similar to RAL9010
Cable entry	M20
Sensor pocket	Aluminium, L=35mm, B=10mm, H=6mm, mounting at the surface by means of supplied adhesive tapes
Protection	IP65

Connection active



Dimensional Drawing active (mm)



» OF14 – Surface Temperature Sensor passive / active

PASSIVE	
OF14 – CONNECTION WIRE 1M	
Type	Art. No.
OF14.100.06 PT100	132596
OF14.100.06 PT100 1/3 DIN	167307
OF14.100.06 PT1000	114851
OF14.100.06 PT1000 1/3 DIN	219303
OF14.100.06 Ni1000	113922
OF14.100.06 Ni1000TK5000	141864
OF14.100.06 NTC1,8k	356541
OF14.100.06 NTC5k	351263
OF14.100.06 NTC10k	190367
OF14.100.06 NTC10k Precon	165006
OF14.100.06 NTC20k	147736
OF14.100.06 LM235Z	216760

ACTIVE – TRA 3 / TRV 3		0°C...+50°C
OF14 – CONNECTION WIRE 1M		PG1
Type	Out	Art. No.
OF14.100.06 TRA 3	4-20mA	204965
OF14.100.06 TRV 3	0-10V	192767

OPTIONS	
OF14	
Description	
Cable length per additional meter	

Ordering example 1: OF14.100.06 NTC20k
 OF14=type / 100=connection wire 1m / 06=diameter of pocket 6mm
 NTC20k=sensor NTC20k

Ordering example 2: OF14.200.06 TRV 3
 OF14=type / 200=connection wire 2m / 06=diameter of pocket 6mm
 TRV 3=transducer 0-10V, 0°C...+50°C

Cable Temperature Sensor passive / active / LON – TF25 «

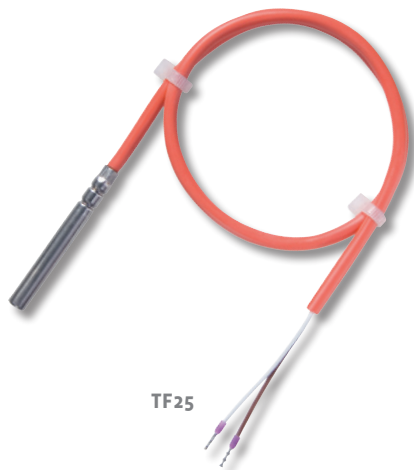
Application

For temperature measurement in gaseous media of heating, cooling or air conditioning systems. In conjunction with an immersion pocket, also suitable for temperature measurement in liquid fluids (e.g. pipeline systems). Designed for locking on control and display systems.

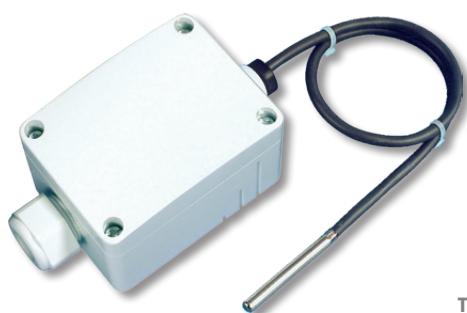


TECHNICAL DATA- PASSIVE OUTPUT	
Mounting lengths	50mm, 100mm, 150mm, 200mm, 250mm
Connection wire	Cross section 0,25mm ² / L=1m, other standard lengths 2m, 4m, 6m TF25 400°C PT100: Standard 3-wire 2m TF25 400°C PT1000: Standard 2-wire 2m
Ambient temperature	PVC: -35°C...+100°C Silicone: -50°C...+180°C Special silicone: -60°C...+250°C GI/GI-V2A: -50°C...+400°C
Connection	2-wire (standard), 3-wire, 4-wire (optional) (3- and 4- wire not feasible with special silicone)
Sensor pocket	Stainless steel 1.4571, Ø=6mm
Protection	Hexagonal pressed (standard): IP54 Roller-burnished: IP67 with SI-Protection
Notice	Double sensor feasible (e.g. 2xPT100) Other Sensors and mounting lengths on request

TECHNICAL DATA – AKTIVE OUTPUT / LON	
Mounting lengths	50mm, 100mm, 150mm, 200mm, 250mm
Measuring ranges	TRA: 4-20mA / TRV: 0-10V TRA 1/TRV 1: -50°C...+50°C TRA 2/TRV 2: -10°C...+120°C TRA 3/TRV 3: 0°C...+50°C TRA 4/TRV 4: 0°C...+160°C TRA 5/TRV 5: 0°C...+250°C LON: -45°C...+130°C
Accuracy	TRA/TRV: ±1% of measuring range LON: Typ. ±0,5K
Connection wire	Silicone, special silicone (depending on measuring range) Cross section 0,25mm ² / L=1m, Other standard lengths 2m, 4m, 6m
Ambient temperature	-35°C...+70°C (enclosure)
Power supply	TRA: 15-24V= (±10%) TRV: 15-24V= (±10%) or 24V~ (±10%) LON: 15-24V= (±10%) or 24V~ (±10%)
Power consumption	TRA: max. 20mA/24V= TRV: typ. 0,42W/0,84VA LON: typ. 0,5W/1,7VA
Enclosure	Material PA6, colour pure white, similar to RAL9010
Cable entry	M20 (TRA/TRV) M20 single or double (LON)
Sensor pocket	Stainless steel 1.4571, Ø=6mm, Ø=6,5mm (LON)
Protection	Hexagonal pressed (standard): IP54 Roller-burnished: IP67 including SI-Protection Enclosure: IP65
Notice	Use of an immersion pocket not feasible with LON sensors Other lengths on request



TF25

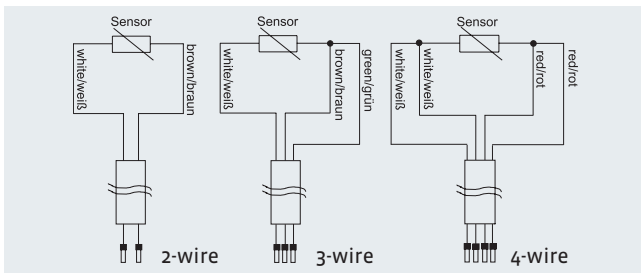


TF25 TRA / TRV / LON

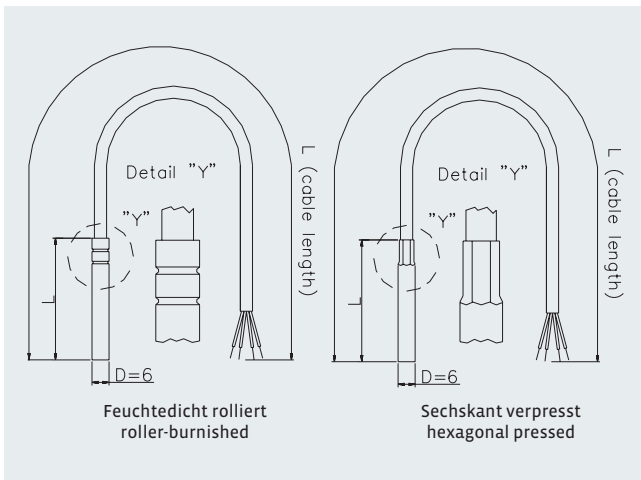
Protection against mechanical overstress
SI-Protection
 humidity and vibration

» TF25 – Cable Temperature Sensor passive / active / LON

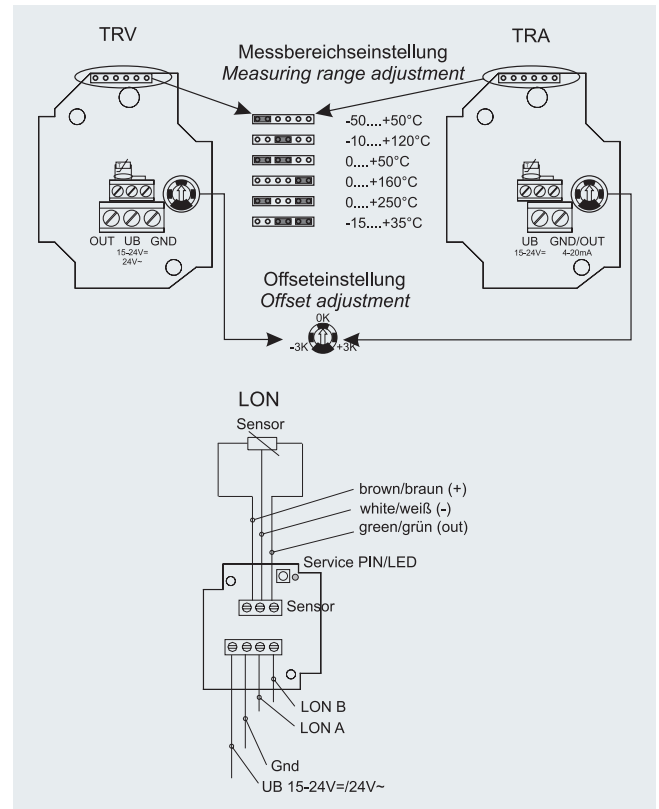
Connection passive



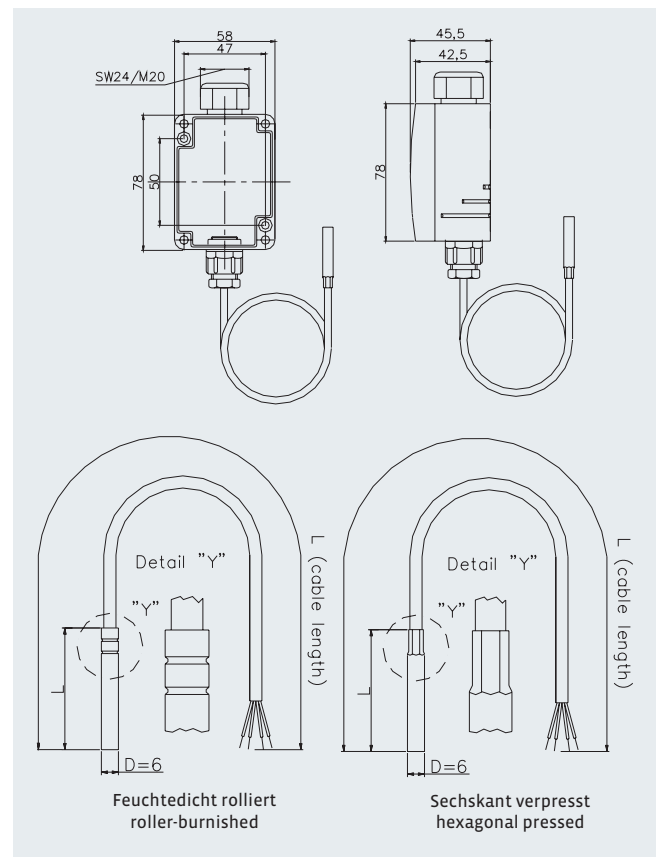
Dimensional Drawing passive (mm)



Connection active / LON



Dimensional Drawing active / LON (mm)



PT100			100°C
TF25 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF25.100.06 6x50 PT100	50mm	35019	
TF25.100.06 6x100 PT100	100mm	35026	
TF25.100.06 6x150 PT100	150mm	35033	

PT1000			100°C
TF25 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF25.100.06 6x50 PT1000	50mm	35484	
TF25.100.06 6x100 PT1000	100mm	35491	
TF25.100.06 6x150 PT1000	150mm	35507	

Ni1000			100°C
TF25 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF25.100.06 6x50 Ni1000	50mm	26116	
TF25.100.06 6x100 Ni1000	100mm	26154	
TF25.100.06 6x150 Ni1000	150mm	388221	

NTC1,8k			100°C
TF25 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF25.100.06 6x50 NTC1,8k	50mm	233309	
TF25.100.06 6x100 NTC1,8k	100mm	258272	
TF25.100.06 6x150 NTC1,8k	150mm	26192	

NTC10k			100°C
TF25 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF25.100.06 6x50 NTC10k	50mm	41539	
TF25.100.06 6x100 NTC10k	100mm	41812	
TF25.100.06 6x150 NTC10k	150mm	40723	

NTC20k			100°C
TF25 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF25.100.06 6x50 NTC20k	50mm	41546	
TF25.100.06 6x100 NTC20k	100mm	41829	
TF25.100.06 6x150 NTC20k	150mm	40730	

PT100 1/3 DIN			100°C
TF25 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF25.100.06 6x50 PT100 1/3 DIN	50mm	25799	
TF25.100.06 6x100 PT100 1/3 DIN	100mm	35255	
TF25.100.06 6x150 PT100 1/3 DIN	150mm	35262	

PT1000 1/3 DIN			100°C
TF25 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF25.100.06 6x50 PT1000 1/3 DIN	50mm	35729	
TF25.100.06 6x100 PT1000 1/3 DIN	100mm	35736	
TF25.100.06 6x150 PT1000 1/3 DIN	150mm	35743	

Ni1000TK5000			100°C
TF25 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF25.100.06 6x50 Ni1000TK5000	50mm	26352	
TF25.100.06 6x100 Ni1000TK5000	100mm	26390	
TF25.100.06 6x150 Ni1000TK5000	150mm	388238	

NTC5k			100°C
TF25 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF25.100.06 6x50 NTC5k	50mm	41522	
TF25.100.06 6x100 NTC5k	100mm	41805	
TF25.100.06 6x150 NTC5k	150mm	40716	

NTC10k Precon			100°C
TF25 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF25.100.06 6x50 NTC10k Precon	50mm	41300	
TF25.100.06 6x100 NTC10k Precon	100mm	41348	
TF25.100.06 6x150 NTC10k Precon	150mm	41386	

KTY81-110			100°C
TF25 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF25.100.06 6x50 KTY81-110	50mm	42819	
TF25.100.06 6x100 KTY81-110	100mm	42857	
TF25.100.06 6x150 KTY81-110	150mm	42895	

KTY81-121			100°C
TF25 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF25.100.06 6x50 KTY81-121	50mm	42826	
TF25.100.06 6x100 KTY81-121	100mm	42864	
TF25.100.06 6x150 KTY81-121	150mm	42901	

KTY81-122			100°C
TF25 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF25.100.06 6x50 KTY81-122	50mm	42833	
TF25.100.06 6x100 KTY81-122	100mm	42871	
TF25.100.06 6x150 KTY81-122	150mm	42918	

KTY81-210			100°C
TF25 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF25.100.06 6x50 KTY81-210	50mm	42840	
TF25.100.06 6x100 KTY81-210	100mm	42888	
TF25.100.06 6x150 KTY81-210	150mm	42925	

LM235Z			100°C
TF25 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF25.100.06 6x50 LM235Z	50mm	43786	
TF25.100.06 6x100 LM235Z	100mm	43823	
TF25.100.06 6x150 LM235Z	150mm	43861	

OPTIONS

TF25 100°C	PG1
Description	
Cable length per additional meter 2-wire 100°C	
3-wire connection 100°C	
Cable length per additional meter 3-wire 100°C	
4-wire connection 100°C	
Cable length per additional meter 4-wire 100°C	
Protection class IP67	
Connection box with 2 cable entries	
Tension spring	

PT100			180°C
TF25 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF25.100.06 6x50 PT100	50mm	52771	
TF25.100.06 6x100 PT100	100mm	52788	
TF25.100.06 6x150 PT100	150mm	52795	

PT100 1/3 DIN			180°C
TF25 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF25.100.06 6x50 PT100 1/3 DIN	50mm	57493	
TF25.100.06 6x100 PT100 1/3 DIN	100mm	57509	
TF25.100.06 6x150 PT100 1/3 DIN	150mm	57516	

PT1000			180°C
TF25 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF25.100.06 6x50 PT1000	50mm	58247	
TF25.100.06 6x100 PT1000	100mm	58254	
TF25.100.06 6x150 PT1000	150mm	58261	

PT1000 1/3 DIN			180°C
TF25 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF25.100.06 6x50 PT1000 1/3 DIN	50mm	58483	
TF25.100.06 6x100 PT1000 1/3 DIN	100mm	58490	
TF25.100.06 6x150 PT1000 1/3 DIN	150mm	58506	

Ni1000			180°C
TF25 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF25.100.06 6x50 Ni1000	50mm	58728	
TF25.100.06 6x100 Ni1000	100mm	58735	
TF25.100.06 6x150 Ni1000	150mm	58742	

Ni1000TK5000			180°C
TF25 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF25.100.06 6x50 Ni1000TK5000	50mm	58964	
TF25.100.06 6x100 Ni1000TK5000	100mm	58971	
TF25.100.06 6x150 Ni1000TK5000	150mm	58988	

NTC1,8k			150°C
TF25 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF25.100.06 6x50 NTC1,8k	50mm	259484	
TF25.100.06 6x100 NTC1,8k	100mm	282611	
TF25.100.06 6x150 NTC1,8k	150mm	388252	

NTC10k			150°C
TF25 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF25.100.06 6x50 NTC10k	50mm	59466	
TF25.100.06 6x100 NTC10k	100mm	59473	
TF25.100.06 6x150 NTC10k	150mm	59480	

NTC20k			150°C
TF25 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF25.100.06 6x50 NTC20k	50mm	59527	
TF25.100.06 6x100 NTC20k	100mm	59534	
TF25.100.06 6x150 NTC20k	150mm	59541	

KTY81-121			150°C
TF25 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF25.100.06 6x50 KTY81-121	50mm	68093	
TF25.100.06 6x100 KTY81-121	100mm	68109	
TF25.100.06 6x150 KTY81-121	150mm	68166	

KTY81-210			150°C
TF25 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF25.100.06 6x50 KTY81-210	50mm	68215	
TF25.100.06 6x100 KTY81-210	100mm	68222	
TF25.100.06 6x150 KTY81-210	150mm	68239	

OPTIONS

TF25 180°C	PG1
Description	
Cable length per additional meter 2-wire	
3-wire connection 180°C	
Cable length per additional meter 3-wire 180°C	
4-wire connection 180°C	
Cable length per additional meter 4-wire 180°C	
Protection class IP67	
Connection box with 2 cable entries	
Tension spring	

NTC5k			150°C
TF25 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF25.100.06 6x50 NTC5k	50mm	59404	
TF25.100.06 6x100 NTC5k	100mm	59411	
TF25.100.06 6x150 NTC5k	150mm	59428	

NTC10k Precon			150°C
TF25 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF25.100.06 6x50 NTC10k Precon	50mm	59718	
TF25.100.06 6x100 NTC10k Precon	100mm	59725	
TF25.100.06 6x150 NTC10k Precon	150mm	59732	

KTY81-110			150°C
TF25 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF25.100.06 6x50 KTY81-110	50mm	68031	
TF25.100.06 6x100 KTY81-110	100mm	68048	
TF25.100.06 6x150 KTY81-110	150mm	68055	

KTY81-122			150°C
TF25 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF25.100.06 6x50 KTY81-122	50mm	68154	
TF25.100.06 6x100 KTY81-122	100mm	68161	
TF25.100.06 6x150 KTY81-122	150mm	68178	

LM235Z			120°C
TF25 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
TF25.100.06 6x50 LM235Z	50mm	143042	
TF25.100.06 6x100 LM235Z	100mm	141024	
TF25.100.06 6x150 LM235Z	150mm	387521	

PT100		250°C	
TF25 – CONNECTION WIRE 1M		PG1	
Type	Pocket L	Art. No.	
TF25.100.06 6x50 PT100	50mm	167406	
TF25.100.06 6x100 PT100	100mm	209731	
TF25.100.06 6x150 PT100	150mm	205658	

PT100 1/3 DIN		250°C	
TF25 – CONNECTION WIRE 1M		PG1	
Type	Pocket L	Art. No.	
TF25.100.06 6x50 PT100 1/3 DIN	50mm	195478	
TF25.100.06 6x100 PT100 1/3 DIN	100mm	345835	
TF25.100.06 6x150 PT100 1/3 DIN	150mm	388276	

PT1000		250°C	
TF25 – CONNECTION WIRE 1M		PG1	
Type	Pocket L	Art. No.	
TF25.100.06 6x50 PT1000	50mm	168717	
TF25.100.06 6x100 PT1000	100mm	209724	
TF25.100.06 6x150 PT1000	150mm	388283	

PT1000 1/3 DIN		250°C	
TF25 – CONNECTION WIRE 1M		PG1	
Type	Pocket L	Art. No.	
TF25.100.06 6x50 PT1000 1/3 DIN	50mm	356749	
TF25.100.06 6x100 PT1000 1/3 DIN	100mm	356756	
TF25.100.06 6x150 PT1000 1/3 DIN	150mm	388290	

Ni1000		250°C	
TF25 – CONNECTION WIRE 1M		PG1	
Type	Pocket L	Art. No.	
TF25.100.06 6x50 Ni1000	50mm	151863	
TF25.100.06 6x100 Ni1000	100mm	182430	
TF25.100.06 6x150 Ni1000	150mm	388306	

Ni1000TK5000		250°C	
TF25 – CONNECTION WIRE 1M		PG1	
Type	Pocket L	Art. No.	
TF25.100.06 6x50 Ni1000TK5000	50mm	150781	
TF25.100.06 6x100 Ni1000TK5000	100mm	157018	
TF25.100.06 6x150 Ni1000TK5000	150mm	388313	

OPTIONS	
TF25 250°C	
PG1	
Description	
Cable length per additional meter 2-wire 250°C	
Protection class IP67	
Connection box with 2 cable entries	
Tension spring	

PT100		400°C	
TF25 – CONNECTION WIRE 2m		PG1	
Type	Pocket L	Art. No.	
TF25.200.06 6x50 PT100 3-wire	50mm	166195	

PT1000		400°C	
TF25 – CONNECTION WIRE 2m		PG1	
Type	Pocket L	Art. No.	
TF25.200.06 6x50 PT1000	50mm	166201	

OPTIONS	
TF25 400°C	
PG1	
Description	
Cable length per additional meter 2-wire 400°C	

Cable Temperature Sensor active / LON – TF25 «

TRA 1 / TRV 1				-50°C...+50°C	
TF25 – CONNECTION WIRE 1M				PG1	
Type	Out	Pocket L	Art. No.		
TF25.100.06 6x50 TRA 1	4-20mA	50mm	132923		
TF25.100.06 6x100 TRA 1	4-20mA	100mm	204828		
TF25.100.06 6x150 TRA 1	4-20mA	150mm	356787		
TF25.100.06 6x200 TRA 1	4-20mA	200mm	356879		
TF25.100.06 6x250 TRA 1	4-20mA	250mm	356954		
TF25.100.06 6x50 TRV 1	0-10V	50mm	121279		
TF25.100.06 6x100 TRV 1	0-10V	100mm	290685		
TF25.100.06 6x150 TRV 1	0-10V	150mm	237277		
TF25.100.06 6x200 TRV 1	0-10V	200mm	164641		
TF25.100.06 6x250 TRV 1	0-10V	250mm	357012		

TRA 2 / TRV 2				-10°C...+120°C	
TF25 – CONNECTION WIRE 1M				PG1	
Type	Out	Pocket L	Art. No.		
TF25.100.06 6x50 TRA 2	4-20mA	50mm	134224		
TF25.100.06 6x100 TRA 2	4-20mA	100mm	179676		
TF25.100.06 6x150 TRA 2	4-20mA	150mm	356800		
TF25.100.06 6x200 TRA 2	4-20mA	200mm	356886		
TF25.100.06 6x250 TRA 2	4-20mA	250mm	356961		
TF25.100.06 6x50 TRV 2	0-10V	50mm	134545		
TF25.100.06 6x100 TRV 2	0-10V	100mm	147415		
TF25.100.06 6x150 TRV 2	0-10V	150mm	259231		
TF25.100.06 6x200 TRV 2	0-10V	200mm	356923		
TF25.100.06 6x250 TRV 2	0-10V	250mm	146791		

TRA 3 / TRV 3				0°C...+50°C	
TF25 – CONNECTION WIRE 1M				PG1	
Type	Out	Pocket L	Art. No.		
TF25.100.06 6x50 TRA 3	4-20mA	50mm	120715		
TF25.100.06 6x100 TRA 3	4-20mA	100mm	141963		
TF25.100.06 6x150 TRA 3	4-20mA	150mm	356831		
TF25.100.06 6x200 TRA 3	4-20mA	200mm	356893		
TF25.100.06 6x250 TRA 3	4-20mA	250mm	206860		
TF25.100.06 6x50 TRV 3	0-10V	50mm	141697		
TF25.100.06 6x100 TRV 3	0-10V	100mm	270984		
TF25.100.06 6x150 TRV 3	0-10V	150mm	214087		
TF25.100.06 6x200 TRV 3	0-10V	200mm	356930		
TF25.100.06 6x250 TRV 3	0-10V	250mm	240079		

TRA 4 / TRV 4				0°C...+160°C	
TF25 – CONNECTION WIRE 1M				PG1	
Type	Out	Pocket L	Art. No.		
TF25.100.06 6x50 TRA 4	4-20mA	50mm	133111		
TF25.100.06 6x100 TRA 4	4-20mA	100mm	151245		
TF25.100.06 6x150 TRA 4	4-20mA	150mm	242363		
TF25.100.06 6x200 TRA 4	4-20mA	200mm	356909		
TF25.100.06 6x250 TRA 4	4-20mA	250mm	221306		
TF25.100.06 6x50 TRV 4	0-10V	50mm	175005		
TF25.100.06 6x100 TRV 4	0-10V	100mm	234733		
TF25.100.06 6x150 TRV 4	0-10V	150mm	356855		
TF25.100.06 6x200 TRV 4	0-10V	200mm	195201		
TF25.100.06 6x250 TRV 4	0-10V	250mm	357029		

TRA 5 / TRV 5				0°C...+250°C	
TF25 – CONNECTION WIRE 1M				PG1	
Type	Out	Pocket L	Art. No.		
TF25.100.06 6x50 TRA 5	4-20mA	50mm	198882		
TF25.100.06 6x100 TRA 5	4-20mA	100mm	361668		
TF25.100.06 6x150 TRA 5	4-20mA	150mm	356848		
TF25.100.06 6x200 TRA 5	4-20mA	200mm	357630		
TF25.100.06 6x250 TRA 5	4-20mA	250mm	356992		
TF25.100.06 6x50 TRV 5	0-10V	50mm	199629		
TF25.100.06 6x100 TRV 5	0-10V	100mm	356770		
TF25.100.06 6x150 TRV 5	0-10V	150mm	356862		
TF25.100.06 6x200 TRV 5	0-10V	200mm	356947		
TF25.100.06 6x250 TRV 5	0-10V	250mm	357036		

LON				
TF25 – CONNECTION WIRE 1M				PG1
Type	Out	Pocket L	Art. No.	
TF25.100.06 6,5x50 LON	FTT	50mm	95440	

OPTIONS		PG1
TF25 TRA / TRV / LON		
Description		
LCD (only TRA / TRV)		
Cable length per additional meter TRA/TRV 1-4		
Cable length per additional meter TRA/TRV 5		
Protection class IP67		
Tension spring		

ACCESSORIES

TF25		PG1
Description	Art. No.	
Immersion pockets brass nickel-plated with pressure screw		
Type	Mounting length	
THMSDS50	50mm	247368
THMSDS100	100mm	247399
THMSDS200	200mm	247405
Immersion pockets stainless steel with pressure screw		
THVADS50	50mm	247313
THVADS100	100mm	247337
THVADS200	200mm	247344
Mounting flanges		
MF6 (brass)		3407
MF7 flexible (incl. seal inserts for D=4mm / 6mm)		399098



THVADS



MF6



MF7 flexible

Ordering example 1: TF25.100.06 Ni1000TK5000 250°C, 6x100
 TF25=type / 100=connection wire 1m / 06=diameter of pocket 6mm
 Ni1000TK5000=sensor Ni1000TK5000 / 250°C=temperature up to 250°C
 6x100=mounting length 100mm

Ordering example 2: TF25.400.06 TRA 2, 6x100, 4L, Spf, IP67
 TF25=type / 400=connection wire 4m / 06=diameter of pocket 6mm
 TRA 2=transducer 4-20mA, -10°C...+120°C
 6x100=mounting length 100mm / 4L=4-wire connection
 Spf=tension spring / IP67=protection class IP67

Outdoor Temperature Sensor passive – AGS43 «

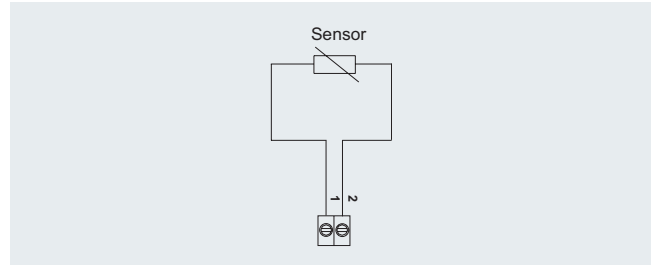
Application

For temperature measuring in outdoor areas, cold stores and greenhouses, production plants and warehouses. Designed for locking on control and display systems.

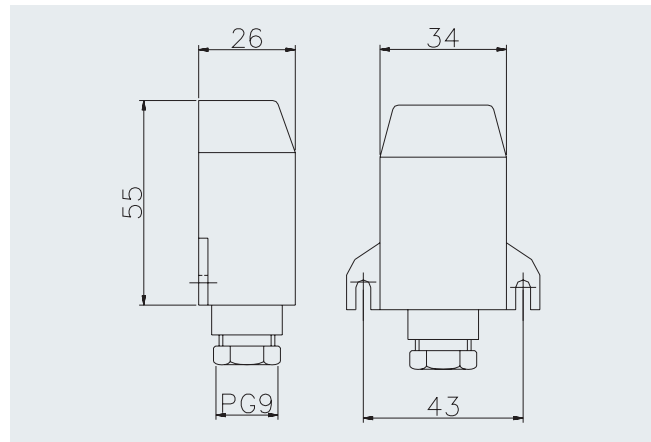
TECHNICAL DATA	
Ambient temperature	-35°C...+90°C (enclosure)
Terminal clamp	Screwing terminal, max. 1,5mm ²
Enclosure	Material PA6, colour pure white, similar to RAL9010
Cable entry	PG9
Protection	IP43
Notice	Other sensors on request



Connection

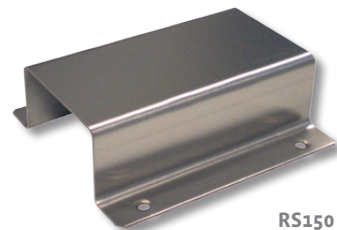


Dimensional Drawing (mm)



PASSIVE	
AGS43	PG1
Type	Art. No.
AGS43 without sensor	133128
AGS43 PT100	116749
AGS43 PT100 1/3DIN	25027
AGS43 PT1000	25034
AGS43 PT1000 1/3 DIN	25041
AGS43 Ni1000	25058
AGS43 Ni1000TK5000	25065
AGS43 FeT	25089
AGS43 NTC1,8k	132855
AGS43 NTC5k	25119
AGS43 NTC10k	25126
AGS43 NTC10k Precon	25164
AGS43 NTC20k	25133
AGS43 KTY81-110	25188
AGS43 KTY81-121	25195
AGS43 KTY81-122	25201
AGS43 KTY81-210	25218
AGS43 LM235Z	25232

ACCESSORIES	
AGS43	PG1
Description	Art. No.
Rawlplugs and screws (2 pcs. each)	102209
Sun-/rain protection RS150	103329



» AGS54 – Outdoor Temperature Sensor passive

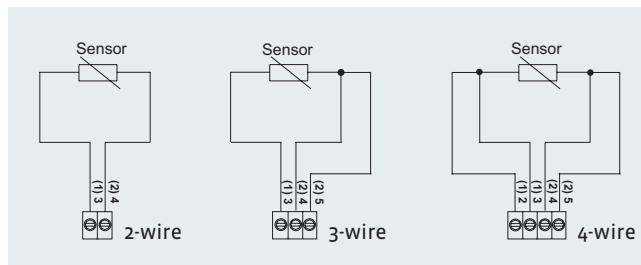
Application

For temperature measuring in outdoor areas, in cold stores and greenhouses, production plants and warehouses. Designed for locking on control and display systems.

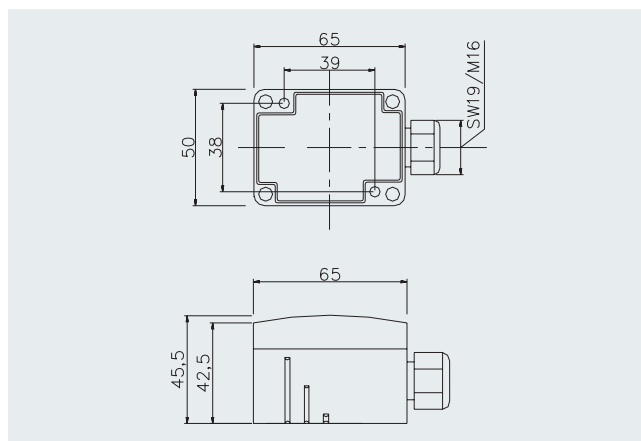
TECHNICAL DATA	
Ambient temperature	-35°C...+90°C (enclosure)
Terminal clamp	Screwing terminal, max. 1,5mm ²
Enclosure	Material PA6, colour pure white (similar to RAL9010), with quick release fastener screws
Cable entry	M16
Protection	IP65
Notice	Other sensors on request



Connection passive



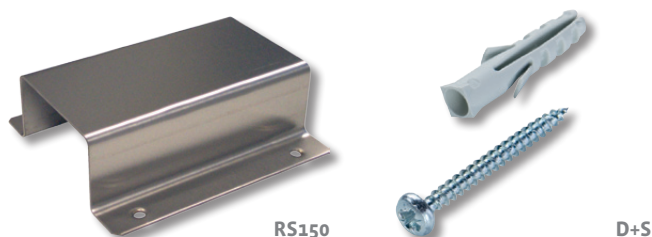
Dimensional Drawing (mm)



PASSIVE	
AGS54	PG1
Type	Art. No.
AGS54 without sensor	199902
AGS54 PT100	25263
AGS54 PT100 1/3DIN	25270
AGS54 PT1000	25287
AGS54 PT1000 1/3 DIN	25294
AGS54 Ni1000	25300
AGS54 Ni1000TK5000	25317
AGS54 FeT	25331
AGS54 NTC1,8k	132534
AGS54 NTC5k	25362
AGS54 NTC10k	25379
AGS54 NTC10k Precon	25416
AGS54 NTC20k	25386
AGS54 KTY81-110	25430
AGS54 KTY81-121	25447
AGS54 KTY81-122	25454
AGS54 KTY81-210	25461
AGS54 LM235Z	25485

OPTIONS	
AGS54	PG1
Description	
Aluminium enclosure	

ACCESSORIES	
AGS54	PG1
Description	Art. No.
Rawplugs and screws (2 pcs. each)	102209
Sun-/rain protection RS150	103329



Outdoor Temperature Sensor passive / active / LON – AGS54ext «

Application

For temperature measuring in outdoor areas, cold stores and greenhouses, production plants and warehouses. The sensor is sealed in an external pocket to enable a faster response to temperature changes. Designed for locking on control and display systems.



TECHNICAL DATA – PASSIVE OUTPUT	
Ambient temperature	-35°C...+90°C (enclosure)
Terminal clamp	Screwing terminal, max. 1,5mm ²
Enclosure	Material PA6, colour pure white (similar to RAL9010), with quick release fastener screws
Cable entry	M16
Sensor pocket	Stainless steel 1.4571, Ø=6mm/ L=25mm
Protection	IP65
Notice	Other sensors on request

TECHNICAL DATA – ACTIVE OUTPUT / LON	
Measuring ranges	TRA: 4-20mA / TRV: 0-10V TRA 1/TRV 1: -50°C...+50°C TRA 3/TRV 3: 0°C...+50°C LON: -45°C...+130°C
Accuracy	TRA/TRV: ±1% of measuring range LON: Typ. ±0,5K
Ambient temperature	-35°C...+70°C (enclosure)
Power supply	TRA: 15-24V= (±10%) TRV: 15-24V= (±10%) or 24V~ (±10%) LON: 15-24V= (±10%) or 24V~ (±10%)
Power consumption	TRA: max. 20mA/24V= TRV: typ. 0,42W/0,84VA LON: typ. 0,5W/1,7VA
Terminal clamp	Screwing terminal, max. 1,5mm ²
Enclosure	Material PA6, colour pure white (similar to RAL9010), with quick release fastener screws
Cable entry	M20 (TRA/TRV) M20 single or double (LON)
Sensor pocket	Stainless steel 1.4571, Ø=6mm/ L=25mm
Protection class	IP65 with SI-Protection
Notice	Also available with display (on request) Enclosure -50°C available (on request)



AGS54ext

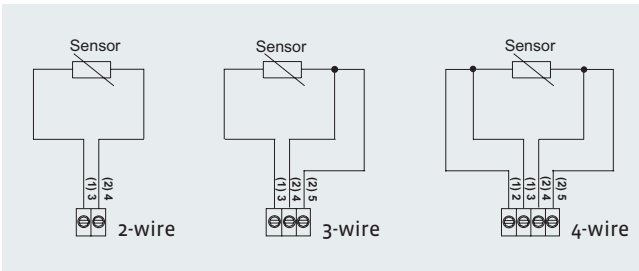


AGS54ext LCD

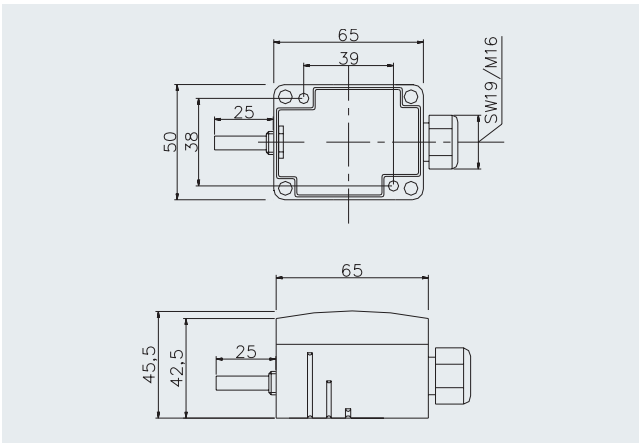
Protection against mechanical overstress
SI-Protection
 humidity and vibration

» AGS54ext – Outdoor Temperature Sensor passive / active / LON

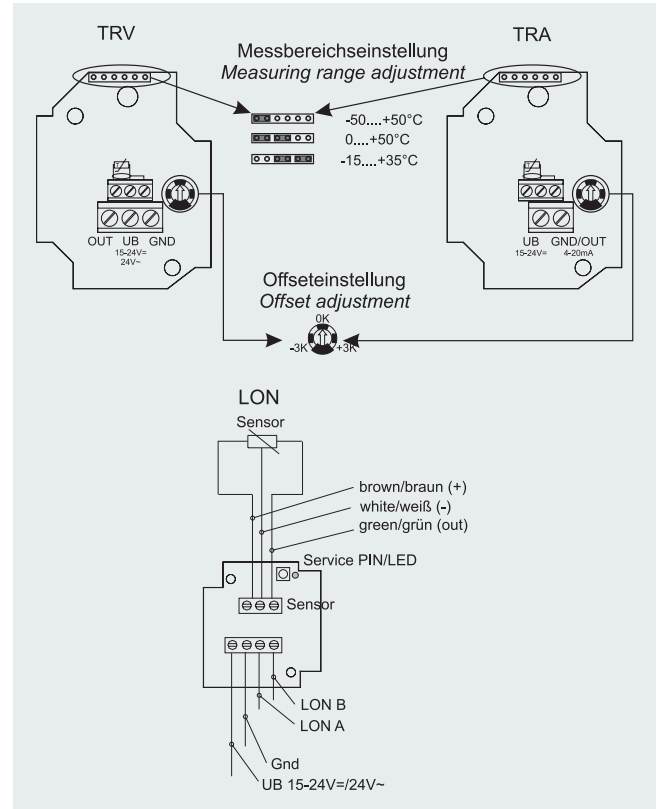
Connection passive



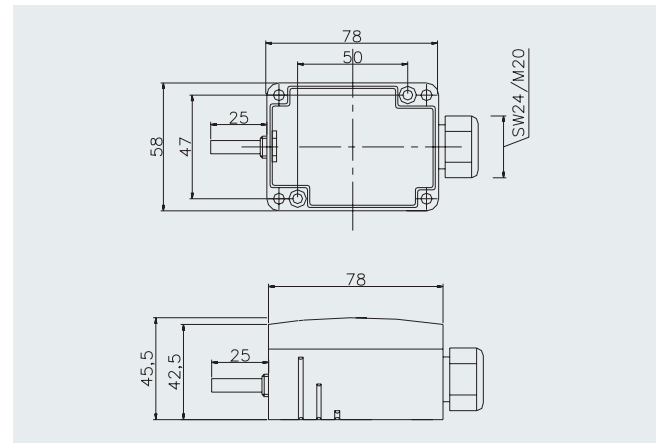
Dimensional Drawing passive (mm)



Connection active / LON



Dimensional Drawing active / LON (mm)



Outdoor Temperature Sensor passive / active / LON – AGS54ext «

PASSIVE

AGS54ext		PG1
Type	Art. No.	
AGS54ext PT100	25539	
AGS54ext PT100 1/3DIN	25546	
AGS54ext PT1000	25553	
AGS54ext PT1000 1/3 DIN	25560	
AGS54ext Ni1000	25577	
AGS54ext Ni1000TK5000	25584	
AGS54ext FeT	25607	
AGS54ext NTC1,8k	247665	
AGS54ext NTC5k	25638	
AGS54ext NTC10k	25645	
AGS54ext NTC10k Precon	25683	
AGS54ext NTC20k	25652	
AGS54ext KTY81-110	25706	
AGS54ext KTY81-121	25713	
AGS54ext KTY81-122	25720	
AGS54ext KTY81-210	25737	
AGS54ext LM235Z	25751	

ACTIVE – TRA 1 / TRV 1

-50°C...+50°C

AGS54ext		PG1
Type	Out	Art. No.
AGS54ext TRA 1	4-20mA	111034
AGS54ext TRV 1	0-10V	108997

AKTIV – TRA 3 / TRV 3

0°C...+50°C

AGS54ext		PG1
Type	Out	Art. No.
AGS54ext TRA 3	4-20mA	111041
AGS54ext TRV 3	0-10V	111027

LON

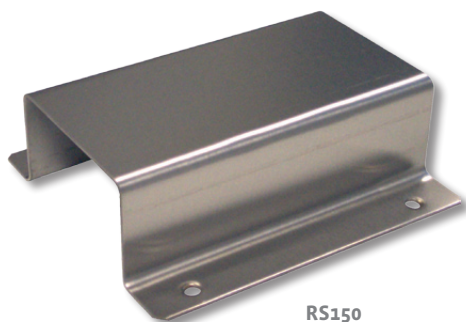
AGS54ext		PG1
Type	Out	Art. No.
AGS54ext LON	FTT	25775

OPTION

AGS54ext TRA / TRV		PG1
Description		
LCD		

ACCESSORIES

AGS54ext		PG1
Description	Art. No.	
Rawlplugs and screws (2 pcs. each)	102209	
Sun/rain protection RS150	103329	



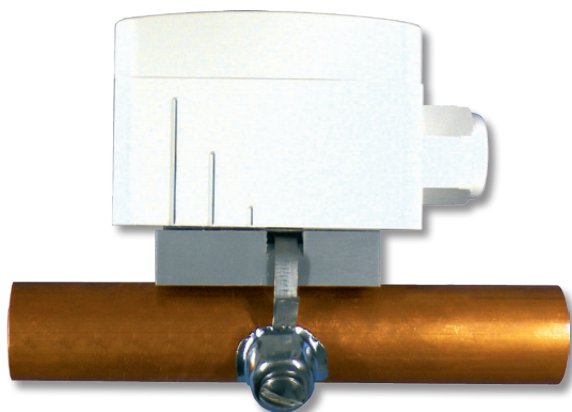
» VFG54 – Pipe Contact Temperature Sensor passive / active / LON

Application

For temperature detection on pipes and arched surfaces.
Designed for locking on control and display systems.



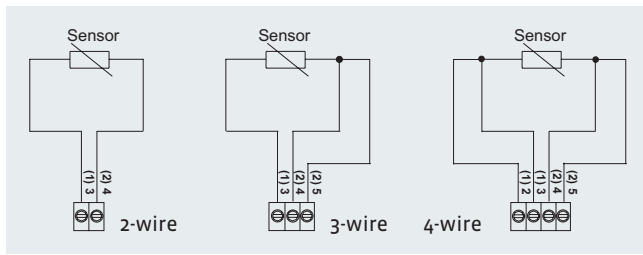
TECHNICAL DATA – PASSIVE OUTPUT	
Ambient temperature	-35°C...+90°C (enclosure)
Terminal clamp	Screwing terminal, max. 1,5mm ²
Enclosure	Material PA6, colour pure white (similar to RAL9010), with quick release fastener screws
Cable entry	M16
Sensor pocket	Brass, spring mounted sensor contact
Protection	IP65
Notice	Other sensors on request



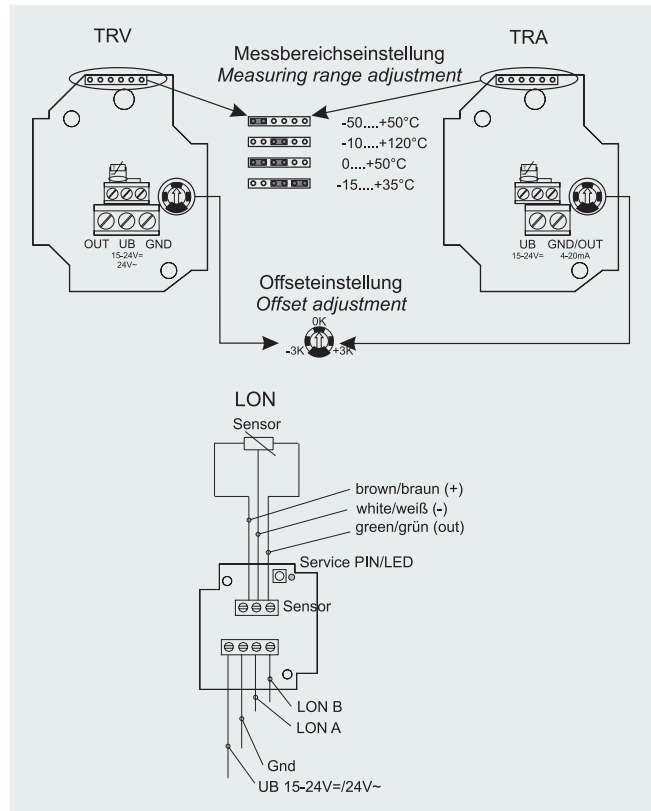
TECHNICAL DATA – ACTIVE OUTPUT / LON	
Measuring range	TRA: 4-20mA / TRV: 0-10V TRA 1/TRV 1: -50°C...+50°C TRA 2/TRV 2: -10°C...+120°C TRA 3/TRV 3: 0°C...+50°C LON: -45°C...+130°C
Accuracy	TRA/TRV: ±1% of measuring range LON: Typ. ±0,5K
Ambient temperature	-25°C...+70°C (enclosure)
Power supply	TRA: 15-24V= (±10%) TRV: 15-24V= (±10%) or 24V~ (±10%) LON: 15-24V= (±10%) or 24V~ (±10%)
Power consumption	TRA: max. 20mA/24V= TRV: max. 12mA/24V= typ. 0,42W/0,84VA LON: max. 20mA/24V= typ. 0,5W/1,7VA
Terminal clamp	Screwing terminal, max. 1,5mm ²
Enclosure	Material PA6, colour pure white (similar to RAL9010), with quick release fastener screws
Cable entry	M16 (TRA/TRV) M20 single and double (LON/LCD)
Sensor pocket	Brass, spring mounted sensor contact
Protection	IP65

Pipe Contact Temperature Sensor passive / active / LON – VFG54 «

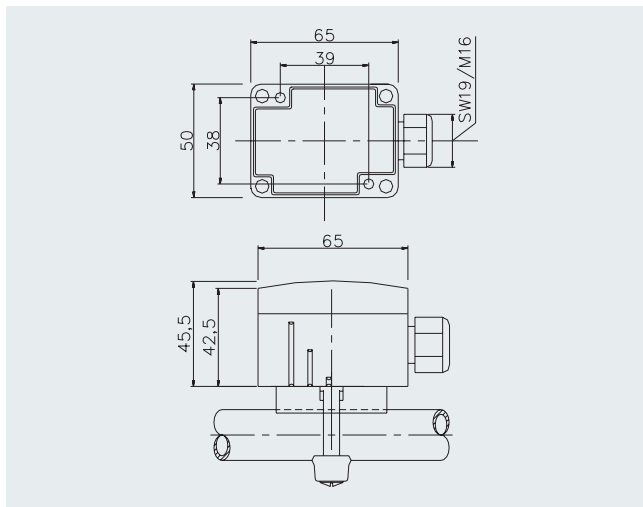
Connection passive



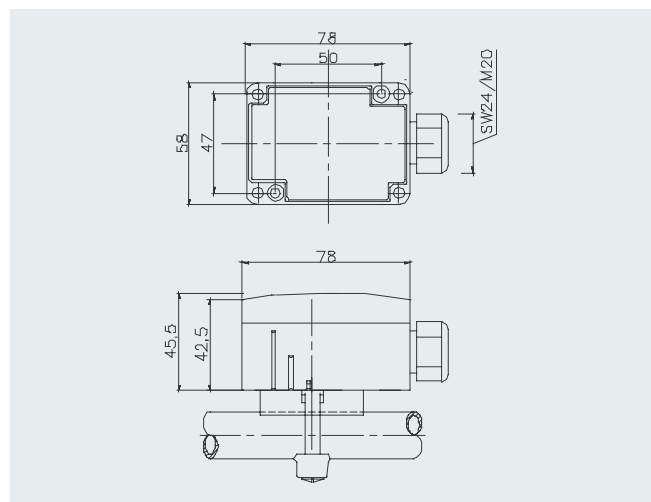
Connection active / LON



Dimensional Drawing passive / active (mm)



Dimensional Drawing LON / LCD (mm)



» VFG54 – Pipe Contact Temperature Sensor passive / active / LON

PASSIVE		
VFG54	PG1	
Type	Art. No.	
VFG54 PT100	30236	
VFG54 PT100 1/3DIN	30243	
VFG54 PT1000	30250	
VFG54 PT1000 1/3 DIN	30267	
VFG54 Ni1000	30274	
VFG54 Ni1000TK5000	30281	
VFG54 FeT	30304	
VFG54 NTC1,8k	132558	
VFG54 NTC5k	30335	
VFG54 NTC10k	30342	
VFG54 NTC10k Precon	30380	
VFG54 NTC20k	30359	
VFG54 KTY81-110	30403	
VFG54 KTY81-121	30410	
VFG54 KTY81-122	30427	
VFG54 KTY81-210	30434	
VFG54 LM235Z	30458	

ACTIVE – TRA 1 / TRV 1			-50°C...+50°C
VFG54	PG1		
Type	Out	Art. No.	
VFG54 TRA 1	4-20mA	111096	
VFG54 TRV 1	0-10V	111058	

ACTIVE – TRA 2 / TRV 2			-10°C...+120°C
VFG54	PG1		
Type	Out	Art. No.	
VFG54 TRA 2	4-20mA	111102	
VFG54 TRV 2	0-10V	111065	

ACTIVE – TRA 3 / TRV 3			0°C...+50°C
VFG54	PG1		
Type	Out	Art. No.	
VFG54 TRA 3	4-20mA	111119	
VFG54 TRV 3	0-10V	111089	

LON			
VFG54	PG1		
Type	Out	Art. No.	
VFG54 LON	FTT	98144	

OPTION		
VFG54 TRA / TRV	PG1	
Description		
LCD		

ACCESSORIES		
VFG54	PG1	
Description	Art. No.	
Tightening strap 2" with contact fluid	102254	
Tightening strap 900mm with contact fluid	102315	



Tightening strap / Syringe with contact fluid

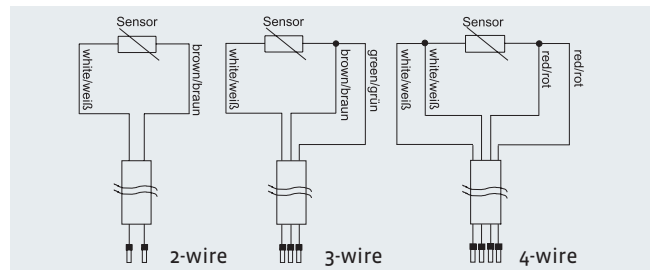
Pipe Contact Temperature Sensor passive – AF25 «

Application

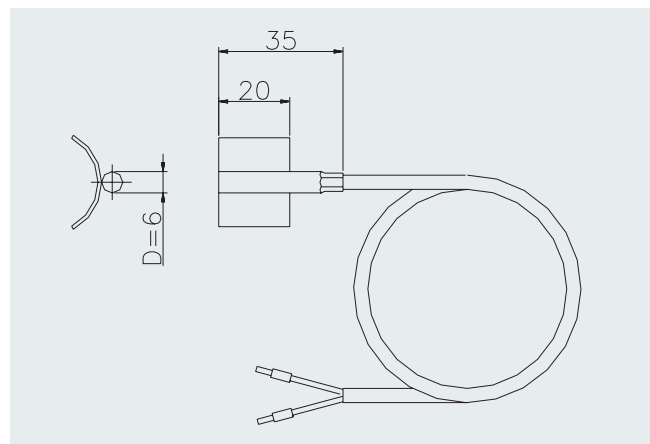
For temperature detection on pipes and arched surfaces.
Designed for locking on control and display systems.

TECHNICAL DATA	
Ambient temperature	-35°C...+100°C
Connection wire	PVC, cross section 0,25mm ² / L=1m, Other standard lengths 2m, 4m, 6m
Sensor pocket	Brass, ø=6mm / L=35mm, with soldered pre-bent brass plate
Protection	SI-Protection
Notice	Other sensors on request

Connection passive



Dimensional Drawing (mm)



ACCESSORIES	
AF25	PG1
Description	Art. No.
Tightening strap 2" with contact fluid	102254
Tightening strap 900mm with contact fluid	102315



Tightening strap / Syringe with contact fluid

Protection against mechanical overstress
SI-Protection
 humidity and vibration

PASSIVE	
AF25 – CONNECTION WIRE 1M	PG1
Type	Art. No.
AF25.100.06 PT100	81610
AF25.100.06 PT100 1/3 DIN	46411
AF25.100.06 PT1000	54263
AF25.100.06 PT1000 1/3 DIN	54300
AF25.100.06 Ni1000	54348
AF25.100.06 Ni1000TK5000	54386
AF25.100.06 NTC1,8k	241687
AF25.100.06 NTC5k	54461
AF25.100.06 NTC10k	92005
AF25.100.06 NTC10k Precon	92043
AF25.100.06 NTC20k	141994

OPTION	
AF25	PG1
Description	
Cable length per additional meter	

» PR25 – Pipe Contact Temperature Sensor passive / active

Application

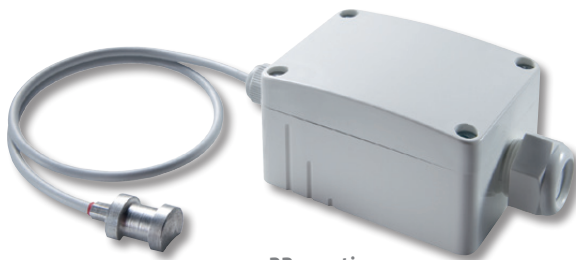
For temperature detection on pipes and arched surfaces.
Designed for locking on control and display systems.

TECHNICAL DATA – PASSIVE OUTPUT

Ambient temperature	-35°C...+100°C, with silicone wire up to 180°C
Connection wire	PVC (standard) or silicone, Cross section 0,25mm ² / L=1m, other standard lengths 2m, 4m, 6m
Sensor pocket	Aluminium, $\varnothing=11\text{mm}$ / L=28mm
Protection	SI-Protection
Notice	Other sensors on request



PR25 passive



PR25 active

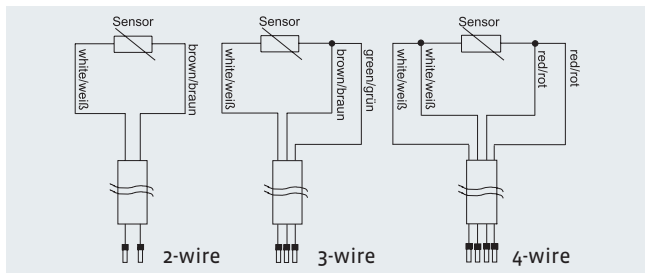
TECHNICAL DATA – ACTIVE OUTPUT

Measuring range	TRA: 4-20mA / TRV: 0-10V TRA 1/TRV 1: -50°C...+50°C TRA 2/TRV 2: -10°C...+120°C TRA 3/TRV 3: 0°C...+50°C TRA 4/TRV 4: 0°C...+160°C
Accuracy	±1% of measuring range (at max. 2m connection wire)
Connection wire	Silicone, cross section 0,25mm ² / L=1m, other standard lengths 2m, 4m, 6m
Ambient temperature	-35°C...+70°C (enclosure)
Power supply	TRA: 15-24V= (±10%) TRV: 15-24V= (±10%) 0 24V~ (±10%)
Power consumption	TRA: max. 20mA/24V= TRV: max. 12mA/24V= typ. 0,42W/0,84VA
Terminal clamp	Screwing terminal, max. 1,5mm ²
Enclosure	Material PA6, colour pure white (similar to RAL9010), with quick release fastener screws
Cable entry	M16
Sensor pocket	Aluminium, $\varnothing=11\text{mm}$ / L=28mm
Protection	SI-Protection

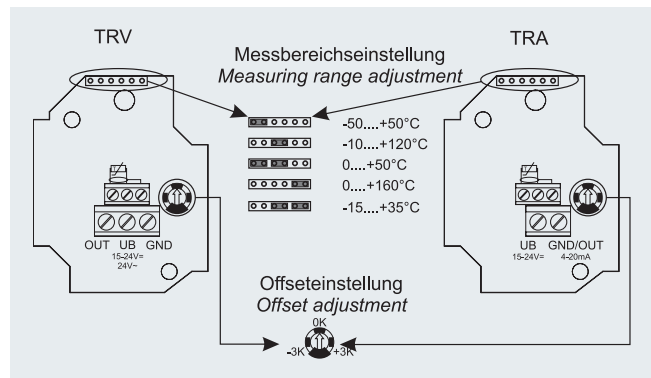
Protection against mechanical overstress
SI-Protection
 humidity and vibration

Pipe Contact Temperature Sensor passive / active – PR25 «

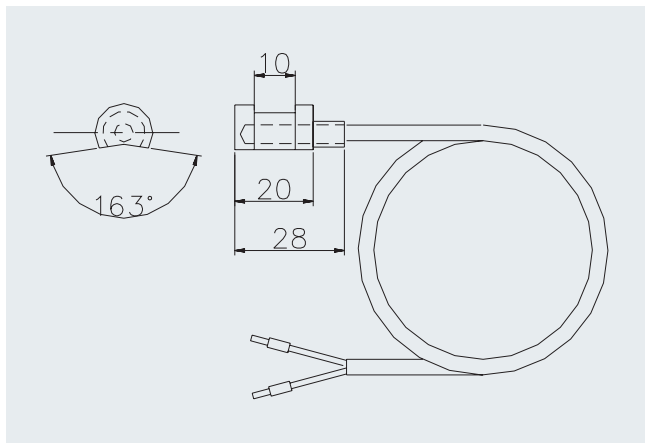
Connection passive



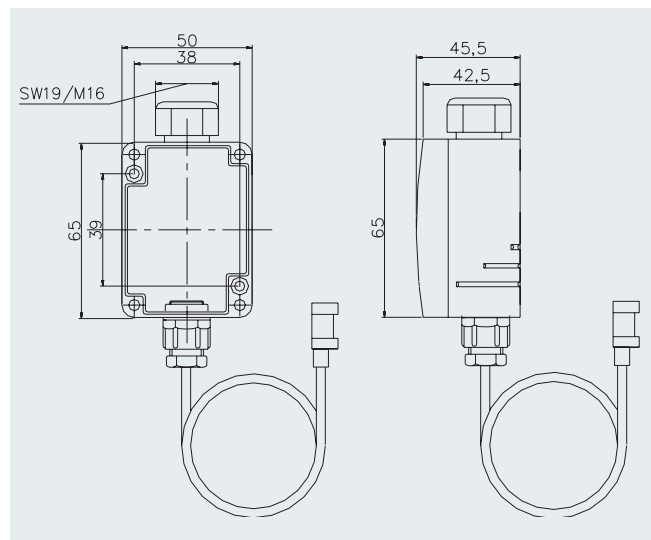
Connection active



Dimensional Drawing passive (mm)



Dimensional Drawing active (mm)



» PR25 – Pipe Contact Temperature Sensor passive / active

PASSIVE			100°C
PR25 – CONNECTION WIRE 1M			PG1
Type	Pocket L	Art. No.	
PR25.100.11 PT100	28mm	81696	
PR25.100.11 PT100 1/3 DIN	28mm	94771	
PR25.100.11 PT1000	28mm	94894	
PR25.100.11 PT1000 1/3 DIN	28mm	94931	
PR25.100.11 Ni1000	28mm	94979	
PR25.100.11 Ni1000TK5000	28mm	95686	
PR25.100.11 NTC1,8k	28mm	287128	
PR25.100.11 NTC5k	28mm	95761	
PR25.100.11 NTC10k	28mm	95808	
PR25.100.11 NTC10k Precon	28mm	95846	
PR25.100.11 NTC20k	28mm	362641	
PR25.100.11 KTY81-110	28mm	95884	
PR25.100.11 KTY81-121	28mm	95921	
PR25.100.11 KTY81-210	28mm	96003	
PR25.100.11 LM235Z	28mm	96089	

AKTIV – TRA 1 / TRV 1				-50°C...+50°C
PR25 – CONNECTION WIRE 1M				PG1
Type	Out	Pocket L	Art. No.	
PR25.100.11 TRA 1	4-20mA	28mm	209434	
PR25.100.11 TRV 1	0-10V	28mm	348348	

AKTIV – TRA3 / TRV 3				0°C...+50°C
PR25 – CONNECTION WIRE 1M				PG1
Type	Out	Pocket L	Art. No.	
PR25.100.11 TRA 3	4-20mA	28mm	348331	
PR25.100.11 TRV 3	0-10V	28mm	275194	

OPTIONS	
PR25 TRA / TRV	PG1
Description	
LCD	
Cable length per additional meter 180°C	

ACCESSORIES	
PR25	PG1
Description	Art. No.
Tightening strap 2" with contact fluid	102254
Tightening strap 900mm with contact fluid	102315

Ordering example 1: **PR25.400.11 Ni1000 180°C**
 PR25=type / 400=connection wire 4m / 11=diameter of pocket 11mm
 Ni1000=sensor Ni1000 / 180°C=temperature up to 180°C

OPTIONS	
PR25 100°C	PG1
Description	
Cable length per additional meter 100°C	
Temperature up to 180°C	
Cable length per additional meter 180°C	

AKTIV – TRA 2 / TRV 2				-10°C...+120°C
PR25 – CONNECTION WIRE 1M				PG1
Type	Out	Pocket L	Art. No.	
PR25.100.11 TRA 2	4-20mA	28mm	195348	
PR25.100.11 TRV 2	0-10V	28mm	263115	

AKTIV – TRA 4 / TRV 4				0°C...+160°C
PR25 – CONNECTION WIRE 1M				PG1
Type	Out	Pocket L	Art. No.	
PR25.100.11 TRA 4	4-20mA	28mm	161220	
PR25.100.11 TRV 4	0-10V	28mm	188432	



Tightening strap 900mm with contact fluid

Ordering example 2: **PR25.100.11 TRA 4**
 PR25=type / 100=connection wire 1m / 11=diameter of pocket 11mm
 TRA 4=transducer 4-20mA, 0°C...+160°C

Duct Temperature Sensor Ø4mm passive / active – AKF10 «

Application

For temperature measuring in gaseous mediums of heating, ventilation and air-conditioning systems (e.g. in supply/ exhaust air ducts). Designed for locking on control and display systems.

TECHNICAL DATA – PASSIVE OUTPUT	
Mounting lengths	40mm, 90mm, 140mm, 190mm
Ambient temperature	-35°C...+90°C (connection head)
T max. sensor top	160°C (standard), 260°C
Connection	2-wire (standard), 3-wire, 4-wire (optional)
Terminal clamp	Screwing terminal, max. 1,5mm ²
Connection head	Material PA6, colour pure white (similar to RAL9010), with quick release fastener screws
Cable entry	M16
Sensor pocket	Stainless steel 1.4571, Ø=4mm
Protection	IP65, SI-Protection
Notice	Other sensors on request

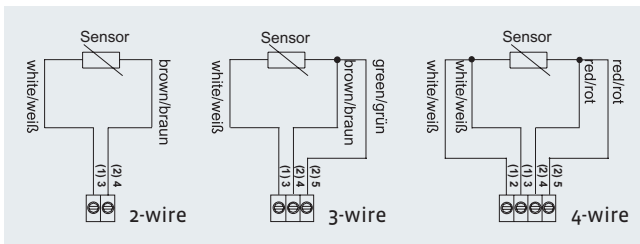
TECHNICAL DATA – ACTIVE OUTPUT	
Mounting lengths	40mm, 90mm, 140mm, 190mm
Measuring ranges	TRA: 4-20mA / TRV: 0-10V TRA 1 / TRV 1: -50°C...+50°C TRA 2 / TRV 2: -10°C...+120°C TRA 3 / TRV 3: 0°C...+50°C TRA 4 / TRV 4: 0°C...+160°C TRA 5 / TRV 5: 0°C...+250°C
Accuracy	±1% of measuring range
Ambient temperature	-35°C...+70°C (connection head)
T max. sensor top	160°C (standard), 260°C
Power supply	TRA: 15-24V= (±10%) TRV: 15-24V= (±10%) or 24V~ (±10%)
Power consumption	TRA: max. 20mA/24V= TRV: max. 12mA/24V= typ. 0,42W/0,84VA
Terminal clamp	Screwing terminal, max. 1,5mm ²
Connection head	Material PA6, colour pure white (similar to RAL9010), with quick release fastener screws
Cable entry	M16, M20 (LCD)
Sensor pocket	Stainless steel 1.4571, Ø=4mm
Protection	IP65



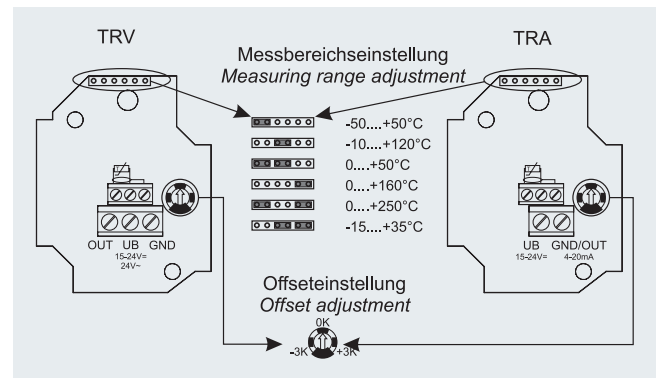
Protection against mechanical overstress
SI-Protection
humidity and vibration

» AKF10 – Duct Temperature Sensor Ø4mm passive / active

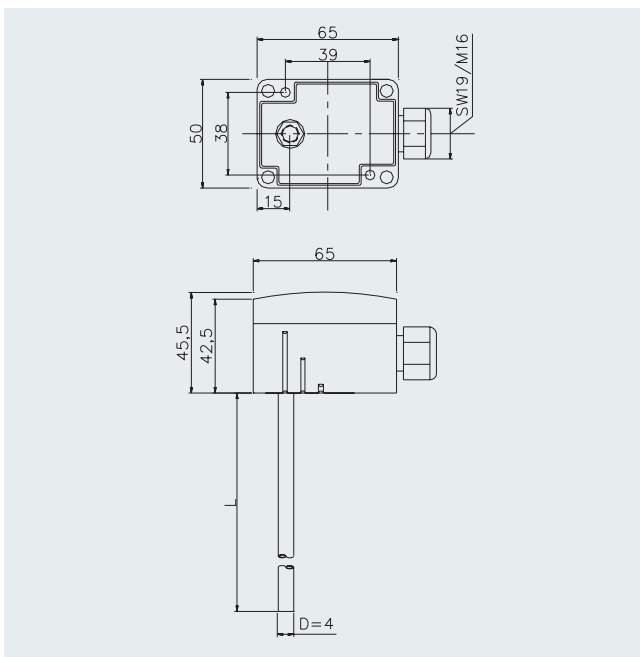
Connection passive



Connection active



Dimensional Drawing passive / active without LCD



PT100	160°C	
AKF10	PG1	
Type	Pocket L	Art. No.
AKF10.040.04 PT100	40mm	18593
AKF10.090.04 PT100	90mm	18609
AKF10.140.04 PT100	140mm	18616
AKF10.190.04 PT100	190mm	18623

PT100 1/3 DIN	160°C	
AKF10	PG1	
Type	Pocket L	Art. No.
AKF10.040.04 PT100 1/3 DIN	40mm	18630
AKF10.090.04 PT100 1/3 DIN	90mm	18647
AKF10.140.04 PT100 1/3 DIN	140mm	18654
AKF10.190.04 PT100 1/3 DIN	190mm	18661

PT1000	160°C	
AKF10	PG1	
Type	Pocket L	Art. No.
AKF10.040.04 PT1000	40mm	18678
AKF10.090.04 PT1000	90mm	18685
AKF10.140.04 PT1000	140mm	18692
AKF10.190.04 PT1000	190mm	18708

PT1000 1/3 DIN	160°C	
AKF10	PG1	
Type	Pocket L	Art. No.
AKF10.040.04 PT1000 1/3 DIN	40mm	18715
AKF10.090.04 PT1000 1/3 DIN	90mm	18722
AKF10.140.04 PT1000 1/3 DIN	140mm	18739
AKF10.190.04 PT1000 1/3 DIN	190mm	18746

Duct Temperature Sensor Ø4mm passive – AKF10 «

Ni1000			160°C
AKF10			PG1
Type	Pocket L	Art. No.	
AKF10.040.04 Ni1000	40mm	18753	
AKF10.090.04 Ni1000	90mm	18760	
AKF10.140.04 Ni1000	140mm	18777	
AKF10.190.04 Ni1000	190mm	18784	

Ni1000TK5000			160°C
AKF10			PG1
Type	Pocket L	Art. No.	
AKF10.040.04 Ni1000TK5000	40mm	18791	
AKF10.090.04 Ni1000TK5000	90mm	18807	
AKF10.140.04 Ni1000TK5000	140mm	18814	
AKF10.190.04 Ni1000TK5000	190mm	18821	

FeT			160°C
AKF10			PG1
Type	Pocket L	Art. No.	
AKF10.040.04 FeT	40mm	348355	
AKF10.090.04 FeT	90mm	348379	
AKF10.140.04 FeT	140mm	134071	
AKF10.190.04 FeT	190mm	348409	

NTC1,8k			150°C
AKF10			PG1
Type	Pocket L	Art. No.	
AKF10.040.04 NTC1,8k	40mm	348362	
AKF10.090.04 NTC1,8k	90mm	348386	
AKF10.140.04 NTC1,8k	140mm	348393	
AKF10.190.04 NTC1,8k	190mm	256995	

NTC5k			150°C
AKF10			PG1
Type	Pocket L	Art. No.	
AKF10.040.04 NTC5k	40mm	18838	
AKF10.090.04 NTC5k	90mm	18845	
AKF10.140.04 NTC5k	140mm	18852	
AKF10.190.04 NTC5k	190mm	18869	

NTC10k			150°C
AKF10			PG1
Type	Pocket L	Art. No.	
AKF10.040.04 NTC10k	40mm	18876	
AKF10.090.04 NTC10k	90mm	18883	
AKF10.140.04 NTC10k	140mm	18890	
AKF10.190.04 NTC10k	190mm	18906	

NTC10k Precon			150°C
AKF10			PG1
Type	Pocket L	Art. No.	
AKF10.040.04 NTC10k Precon	40mm	18999	
AKF10.090.04 NTC10k Precon	90mm	19002	
AKF10.140.04 NTC10k Precon	140mm	19019	
AKF10.190.04 NTC10k Precon	190mm	19026	

NTC20k			150°C
AKF10			PG1
Type	Pocket L	Art. No.	
AKF10.040.04 NTC20k	40mm	18913	
AKF10.090.04 NTC20k	90mm	18920	
AKF10.140.04 NTC20k	140mm	18937	
AKF10.190.04 NTC20k	190mm	18944	

OPTIONS

AKF10 160°C **PG1**

Description

Temperature up to 260°C

3-wire connection

4-wire connection

» AKF10 – Duct Temperature Sensor Ø4mm active

TRA 1 / TRV 1				-50°C...+50°C
AKF10				PG1
Type	Out	Pocket L	Art. No.	
AKF10.040.04 TRA 1	4-20mA	40mm	22675	
AKF10.090.04 TRA 1	4-20mA	90mm	22682	
AKF10.140.04 TRA 1	4-20mA	140mm	22699	
AKF10.190.04 TRA 1	4-20mA	190mm	22705	
AKF10.040.04 TRV 1	0-10V	40mm	22873	
AKF10.090.04 TRV 1	0-10V	90mm	22880	
AKF10.140.04 TRV 1	0-10V	140mm	22897	
AKF10.190.04 TRV 1	0-10V	190mm	22903	

TRA 2 / TRV 2				-10°C...+120°C
AKF10				PG1
Type	Out	Pocket L	Art. No.	
AKF10.040.04 TRA 2	4-20mA	40mm	22712	
AKF10.090.04 TRA 2	4-20mA	90mm	22729	
AKF10.140.04 TRA 2	4-20mA	140mm	22736	
AKF10.190.04 TRA 2	4-20mA	190mm	22743	
AKF10.040.04 TRV 2	0-10V	40mm	22910	
AKF10.090.04 TRV 2	0-10V	90mm	22927	
AKF10.140.04 TRV 2	0-10V	140mm	22934	
AKF10.190.04 TRV 2	0-10V	190mm	22941	

TRA 3 / TRV 3				0°C...+50°C
AKF10				PG1
Type	Out	Pocket L	Art. No.	
AKF10.040.04 TRA 3	4-20mA	40mm	22750	
AKF10.090.04 TRA 3	4-20mA	90mm	22767	
AKF10.140.04 TRA 3	4-20mA	140mm	22774	
AKF10.190.04 TRA 3	4-20mA	190mm	22781	
AKF10.040.04 TRV 3	0-10V	40mm	22958	
AKF10.090.04 TRV 3	0-10V	90mm	22965	
AKF10.140.04 TRV 3	0-10V	140mm	22972	
AKF10.190.04 TRV 3	0-10V	190mm	22989	

TRA 4 / TRV 4				0°C...+160°C
AKF10				PG1
Type	Out	Pocket L	Art. No.	
AKF10.040.04 TRA 4	4-20mA	40mm	22798	
AKF10.090.04 TRA 4	4-20mA	90mm	22804	
AKF10.140.04 TRA 4	4-20mA	140mm	22811	
AKF10.190.04 TRA 4	4-20mA	190mm	22828	
AKF10.040.04 TRV 4	0-10V	40mm	22996	
AKF10.090.04 TRV 4	0-10V	90mm	23009	
AKF10.140.04 TRV 4	0-10V	140mm	23016	
AKF10.190.04 TRV 4	0-10V	190mm	23023	

TRA 5 / TRV 5				0°C...+250°C
AKF10				PG1
Type	Out	Pocket L	Art. No.	
AKF10.040.04 TRA 5	4-20mA	40mm	22835	
AKF10.090.04 TRA 5	4-20mA	90mm	22842	
AKF10.140.04 TRA 5	4-20mA	140mm	22859	
AKF10.190.04 TRA 5	4-20mA	190mm	22866	
AKF10.040.04 TRV 5	0-10V	40mm	23030	
AKF10.090.04 TRV 5	0-10V	90mm	23047	
AKF10.140.04 TRV 5	0-10V	140mm	23054	
AKF10.190.04 TRV 5	0-10V	190mm	23061	

OPTIONS	
AKF10 TRA / TRV	PG1
Description	
LCD	

ACCESSORIES

AKF10		PG1
Description	Art. No.	
Mounting flange MF4 (brass)	102438	
Mounting flange MF7 flexible (incl. seal inserts for D=4mm / 6mm)	399098	



MF4



MF7 flexible

Ordering example 1: AKF10.040.04 PT100 260°C 3L
 AKF10=type / 040=mounting length 40mm
 04=diameter of pocket 4mm / PT100=sensor PT100
 260°C=temperature up to 260°C / 3L=3-wire connection

Ordering example 2: AKF10.190.04 TRV 3
 AKF10=type / 190=mounting length 190mm
 04=diameter of pocket 4mm / TRV 3=transducer 0-10V, 0°C...+50°C

Duct Temperature Sensor Ø7mm passive / active / LON – AKF10 «

Application

For temperature measuring in gaseous mediums of heating, ventilation and air-conditioning systems (e.g. in supply/ exhaust air ducts). Designed for locking on control and display systems. In combination with an immersion pocket also suitable for temperature measuring in liquid mediums (e.g. pipeline systems).



TECHNICAL DATA – PASSIVE OUTPUT	
Mounting lengths	62mm, 135mm, 192mm, 240mm, 320m, 392mm, 465mm
Ambient temperature	-35°C...+90°C (connection head)
T max. sensor top	160°C (standard), 260°C
Connection	2-wire (standard), 3-wire, 4-wire (optional)
Terminal clamp	Screwing terminal, max. 1,5mm ²
Connection head	Material PA6, colour pure white (similar to RAL9010), with quick release fastener screws
Cable entry	M16
Sensor pocket	Stainless steel 1.4571, Ø=7mm
Protection	IP65, with SI-Protection
Notice	Other sensors on request

TECHNICAL DATA – ACTIVE OUTPUT / LON	
Mounting lengths	62mm, 135mm, 192mm, 240mm, 320m, 392mm, 465mm
Measuring ranges	TRA: 4-20mA / TRV: 0-10V TRA 1 / TRV 1: -50°C...+50°C TRA 2 / TRV 2: -10°C...+120°C TRA 3 / TRV 3: 0°C...+50°C TRA 4 / TRV 4: 0°C...+160°C TRA 5 / TRV 5: 0°C...+250°C LON: -45°C...+130°C
Accuracy	TRA/TRV: ±1% of measuring range LON: Typ. ±0,5K
Ambient temperature	-35°C...+70°C (connection head)
T max. sensor top	160°C (standard), 260°C
Power supply	TRA: 15-24V= (±10%) TRV: 15-24V= (±10%) or 24V~ (±10%) LON: 15-24V= (±10%) or 24V~ (±10%)
Power consumption	TRA: max. 20mA/24V= TRV: typ. 0,42W/0,84VA LON: typ. 0,5W/1,7VA
Terminal clamp	Screwing terminal, max. 1,5mm ²
Connection head	Material PA6, colour pure white (similar to RAL9010), with quick release fastener screws
Cable entry	M16 M20 single and double (LON)
Sensor pocket	Stainless steel 1.4571, Ø=7mm
Protection	IP65, AKF10 LON additionally with SI-Protection



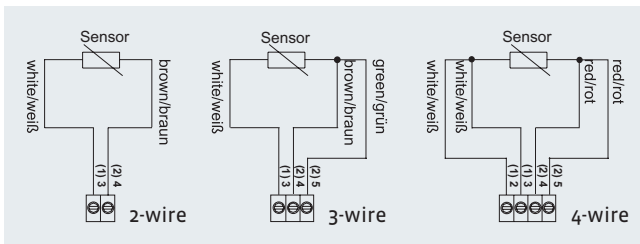
AKF10



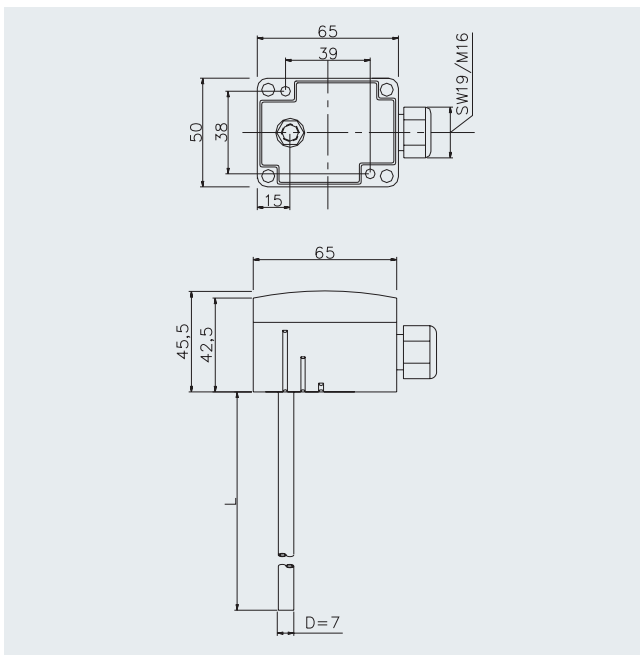
AKF10 Display

» AKF10 – Kanaltemperaturfühler Ø7mm passiv / aktiv / LON

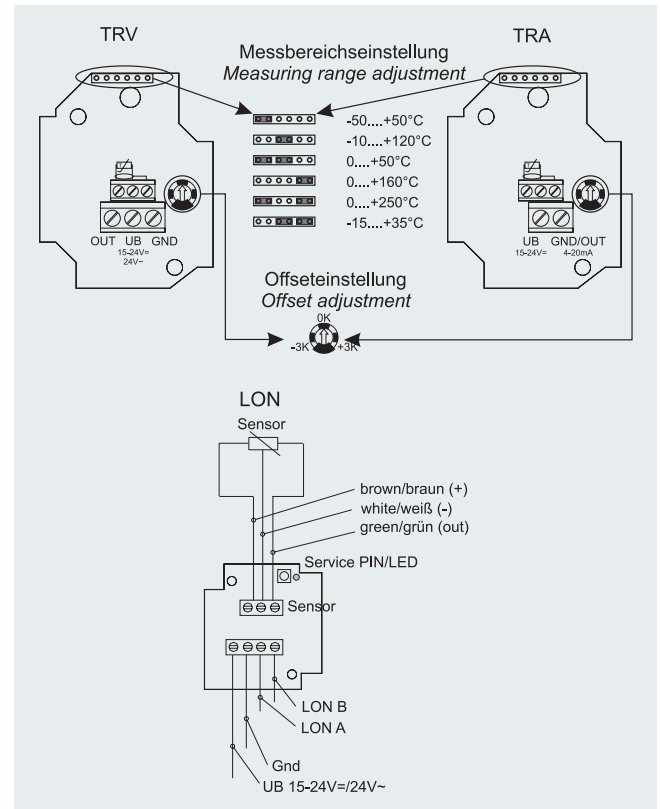
Connection passive



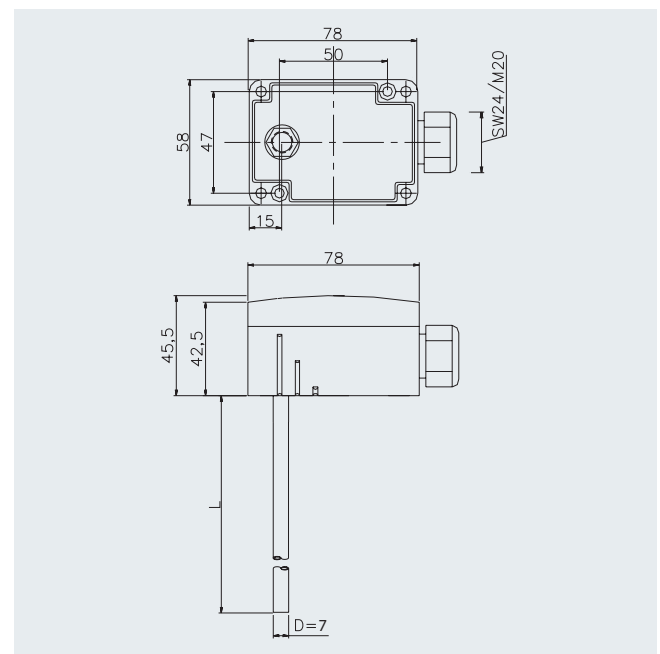
Dimensional Drawing passive / active (mm)



Connection active / LON



Dimensional Drawing LON / LCD (mm)



Duct Temperature Sensor Ø7mm passive – AKF10 «

PT100			160°C
AKF10			PG1
Type	Pocket L	Art. No.	
AKF10.062.07 PT100	62mm	9133	
AKF10.135.07 PT100	135mm	9140	
AKF10.192.07 PT100	192mm	9157	
AKF10.240.07 PT100	240mm	9164	
AKF10.320.07 PT100	320mm	9171	
AKF10.392.07 PT100	392mm	9188	
AKF10.465.07 PT100	465mm	9195	

PT100 1/3 DIN			160°C
AKF10			PG1
Type	Pocket L	Art. No.	
AKF10.062.07 PT100 1/3 DIN	62mm	9201	
AKF10.135.07 PT100 1/3 DIN	135mm	9218	
AKF10.192.07 PT100 1/3 DIN	192mm	9225	
AKF10.240.07 PT100 1/3 DIN	240mm	9232	
AKF10.320.07 PT100 1/3 DIN	320mm	9249	
AKF10.392.07 PT100 1/3 DIN	392mm	9805	
AKF10.465.07 PT100 1/3 DIN	465mm	9812	

PT1000			160°C
AKF10			PG1
Type	Pocket L	Art. No.	
AKF10.062.07 PT1000	62mm	9829	
AKF10.135.07 PT1000	135mm	9836	
AKF10.192.07 PT1000	192mm	9843	
AKF10.240.07 PT1000	240mm	9850	
AKF10.320.07 PT1000	320mm	9867	
AKF10.392.07 PT1000	392mm	9874	
AKF10.465.07 PT1000	465mm	9881	

PT1000 1/3 DIN			160°C
AKF10			PG1
Type	Pocket L	Art. No.	
AKF10.062.07 PT1000 1/3 DIN	62mm	9898	
AKF10.135.07 PT1000 1/3 DIN	135mm	9904	
AKF10.192.07 PT1000 1/3 DIN	192mm	9911	
AKF10.240.07 PT1000 1/3 DIN	240mm	9928	
AKF10.320.07 PT1000 1/3 DIN	320mm	9935	
AKF10.392.07 PT1000 1/3 DIN	392mm	9942	
AKF10.465.07 PT1000 1/3 DIN	465mm	9959	

Ni1000			160°C
AKF10			PG1
Type	Pocket L	Art. No.	
AKF10.062.07 Ni1000	62mm	9966	
AKF10.135.07 Ni1000	135mm	9973	
AKF10.192.07 Ni1000	192mm	9980	
AKF10.240.07 Ni1000	240mm	9997	
AKF10.320.07 Ni1000	320mm	10009	
AKF10.392.07 Ni1000	392mm	10016	
AKF10.465.07 Ni1000	465mm	10023	

Ni1000TK5000			160°C
AKF10			PG1
Type	Pocket L	Art. No.	
AKF10.062.07 Ni1000TK5000	62mm	10030	
AKF10.135.07 Ni1000TK5000	135mm	10047	
AKF10.192.07 Ni1000TK5000	192mm	10054	
AKF10.240.07 Ni1000TK5000	240mm	10061	
AKF10.320.07 Ni1000TK5000	320mm	10078	
AKF10.392.07 Ni1000TK5000	392mm	10085	
AKF10.465.07 Ni1000TK5000	465mm	10092	

FeT			160°C
AKF10			PG1
Type	Pocket L	Art. No.	
AKF10.062.07 FeT	62mm	133579	
AKF10.135.07 FeT	135mm	141567	
AKF10.192.07 FeT	192mm	110747	
AKF10.240.07 FeT	240mm	113700	
AKF10.320.07 FeT	320mm	132718	
AKF10.392.07 FeT	392mm	142199	
AKF10.465.07 FeT	465mm	132404	

NTC1,8k			150°C
AKF10			PG1
Type	Pocket L	Art. No.	
AKF10.062.07 NTC1,8k	62mm	242554	
AKF10.135.07 NTC1,8k	135mm	132541	
AKF10.192.07 NTC1,8k	192mm	230117	
AKF10.240.07 NTC1,8k	240mm	190251	
AKF10.320.07 NTC1,8k	320mm	237147	
AKF10.392.07 NTC1,8k	392mm	246989	
AKF10.465.07 NTC1,8k	465mm	256339	

» AKF10 – Duct Temperature Sensor Ø7mm passive

NTC5k			150°C
AKF10			PG1
Type	Pocket L	Art. No.	
AKF10.062.07 NTC5k	62mm	10108	
AKF10.135.07 NTC5k	135mm	10115	
AKF10.192.07 NTC5k	192mm	10122	
AKF10.240.07 NTC5k	240mm	10139	
AKF10.320.07 NTC5k	320mm	10146	
AKF10.392.07 NTC5k	392mm	10153	
AKF10.465.07 NTC5k	465mm	10160	

NTC10k			150°C
AKF10			PG1
Type	Pocket L	Art. No.	
AKF10.062.07 NTC10k	62mm	10177	
AKF10.135.07 NTC10k	135mm	10184	
AKF10.192.07 NTC10k	192mm	10191	
AKF10.240.07 NTC10k	240mm	10207	
AKF10.320.07 NTC10k	320mm	10214	
AKF10.392.07 NTC10k	392mm	10221	
AKF10.465.07 NTC10k	465mm	10238	

NTC10k Precon			150°C
AKF10			PG1
Type	Pocket L	Art. No.	
AKF10.062.07 NTC10k Precon	62mm	10382	
AKF10.135.07 NTC10k Precon	135mm	10399	
AKF10.192.07 NTC10k Precon	192mm	10405	
AKF10.240.07 NTC10k Precon	240mm	10412	
AKF10.320.07 NTC10k Precon	320mm	10429	
AKF10.392.07 NTC10k Precon	392mm	10436	
AKF10.465.07 NTC10k Precon	465mm	10443	

NTC20k			150°C
AKF10			PG1
Type	Pocket L	Art. No.	
AKF10.062.07 NTC20k	62mm	10245	
AKF10.135.07 NTC20k	135mm	10252	
AKF10.192.07 NTC20k	192mm	10269	
AKF10.240.07 NTC20k	240mm	10276	
AKF10.320.07 NTC20k	320mm	10283	
AKF10.392.07 NTC20k	392mm	10290	
AKF10.465.07 NTC20k	465mm	10306	

LM235Z			120°C
AKF10			PG1
Type	Pocket L	Art. No.	
AKF10.062.07 LM235Z	62mm	10528	
AKF10.135.07 LM235Z	135mm	10535	
AKF10.192.07 LM235Z	192mm	10542	
AKF10.240.07 LM235Z	240mm	10559	
AKF10.320.07 LM235Z	320mm	10566	
AKF10.392.07 LM235Z	392mm	10573	
AKF10.465.07 LM235Z	465mm	10580	

OPTIONS

AKF10 160°C

PG1

Description

Temperature up to 260°C

3-wire connection

4-wire connection

Duct Temperature Sensor Ø7mm active – AKF10 «

TRA 1 / TRV 1				-50°C...+50°C
AKF10			PG1	
Type	Out	Pocket L	Art. No.	
AKF10.062.07 TRA 1	4-20mA	62mm	21579	
AKF10.135.07 TRA 1	4-20mA	135mm	21586	
AKF10.192.07 TRA 1	4-20mA	192mm	21593	
AKF10.240.07 TRA 1	4-20mA	240mm	21609	
AKF10.320.07 TRA 1	4-20mA	320mm	21616	
AKF10.392.07 TRA 1	4-20mA	392mm	21623	
AKF10.465.07 TRA 1	4-20mA	465mm	21630	
AKF10.062.07 TRV 1	0-10V	62mm	21920	
AKF10.135.07 TRV 1	0-10V	135mm	21937	
AKF10.192.07 TRV 1	0-10V	192mm	21944	
AKF10.240.07 TRV 1	0-10V	240mm	21951	
AKF10.320.07 TRV 1	0-10V	320mm	21968	
AKF10.392.07 TRV 1	0-10V	392mm	21975	
AKF10.465.07 TRV 1	0-10V	465mm	21982	

TRA 2 / TRV 2				-10°C...+120°C
AKF10			PG1	
Type	Out	Pocket L	Art. No.	
AKF10.062.07 TRA 2	4-20mA	62mm	21647	
AKF10.135.07 TRA 2	4-20mA	135mm	21654	
AKF10.192.07 TRA 2	4-20mA	192mm	21661	
AKF10.240.07 TRA 2	4-20mA	240mm	21678	
AKF10.320.07 TRA 2	4-20mA	320mm	21685	
AKF10.392.07 TRA 2	4-20mA	392mm	21692	
AKF10.465.07 TRA 2	4-20mA	465mm	21708	
AKF10.062.07 TRV 2	0-10V	62mm	21999	
AKF10.135.07 TRV 2	0-10V	135mm	22002	
AKF10.192.07 TRV 2	0-10V	192mm	22019	
AKF10.240.07 TRV 2	0-10V	240mm	22026	
AKF10.320.07 TRV 2	0-10V	320mm	103534	
AKF10.392.07 TRV 2	0-10V	392mm	22040	
AKF10.465.07 TRV 2	0-10V	465mm	22057	

TRA 3 / TRV 3				0°C...+50°C
AKF10			PG1	
Type	Out	Pocket L	Art. No.	
AKF10.062.07 TRA 3	4-20mA	62mm	21715	
AKF10.135.07 TRA 3	4-20mA	135mm	21722	
AKF10.192.07 TRA 3	4-20mA	192mm	21739	
AKF10.240.07 TRA 3	4-20mA	240mm	21746	
AKF10.320.07 TRA 3	4-20mA	320mm	21753	
AKF10.392.07 TRA 3	4-20mA	392mm	21760	
AKF10.465.07 TRA 3	4-20mA	465mm	21777	
AKF10.062.07 TRV 3	0-10V	62mm	22064	
AKF10.135.07 TRV 3	0-10V	135mm	22071	
AKF10.192.07 TRV 3	0-10V	192mm	22088	
AKF10.240.07 TRV 3	0-10V	240mm	22095	
AKF10.320.07 TRV 3	0-10V	320mm	22101	
AKF10.392.07 TRV 3	0-10V	392mm	22118	
AKF10.465.07 TRV 3	0-10V	465mm	22125	

TRA 4 / TRV 4				0°C...+160°C
AKF10			PG1	
Type	Out	Pocket L	Art. No.	
AKF10.062.07 TRA 4	4-20mA	62mm	21784	
AKF10.135.07 TRA 4	4-20mA	135mm	21791	
AKF10.192.07 TRA 4	4-20mA	192mm	21807	
AKF10.240.07 TRA 4	4-20mA	240mm	21814	
AKF10.320.07 TRA 4	4-20mA	320mm	103299	
AKF10.392.07 TRA 4	4-20mA	392mm	21838	
AKF10.465.07 TRA 4	4-20mA	465mm	21845	
AKF10.062.07 TRV 4	0-10V	62mm	22132	
AKF10.135.07 TRV 4	0-10V	135mm	22149	
AKF10.192.07 TRV 4	0-10V	192mm	22156	
AKF10.240.07 TRV 4	0-10V	240mm	22163	
AKF10.320.07 TRV 4	0-10V	320mm	22170	
AKF10.392.07 TRV 4	0-10V	392mm	22187	
AKF10.465.07 TRV 4	0-10V	465mm	22194	

» AKF10 – Duct Temperature Sensor Ø7mm active / LON

TRA 5 / TRV 5		0°C...+250°C	
AKF10		PG1	
Type	Out	Pocket L	Art. No.
AKF10.062.07 TRA 5	4-20mA	62mm	21852
AKF10.135.07 TRA 5	4-20mA	135mm	21869
AKF10.192.07 TRA 5	4-20mA	192mm	21876
AKF10.240.07 TRA 5	4-20mA	240mm	21883
AKF10.320.07 TRA 5	4-20mA	320mm	21890
AKF10.392.07 TRA 5	4-20mA	392mm	21906
AKF10.465.07 TRA 5	4-20mA	465mm	21913
AKF10.062.07 TRV 5	0-10V	62mm	22200
AKF10.135.07 TRV 5	0-10V	135mm	22217
AKF10.192.07 TRV 5	0-10V	192mm	22224
AKF10.240.07 TRV 5	0-10V	240mm	22231
AKF10.320.07 TRV 5	0-10V	320mm	22248
AKF10.392.07 TRV 5	0-10V	392mm	22255
AKF10.465.07 TRV 5	0-10V	465mm	22262

LON			
AKF10		PG1	
Type	Out	Pocket L	Art. No.
AKF10.062.07 LON	FTX	62mm	79419
AKF10.135.07 LON	FTX	135mm	95006
AKF10.192.07 LON	FTX	192mm	95013
AKF10.240.07 LON	FTX	240mm	95020
AKF10.320.07 LON	FTX	320mm	95037
AKF10.392.07 LON	FTX	392mm	95044
AKF10.465.07 LON	FTX	465mm	95051

OPTIONS

AKF10 TRA / TRV / LON	PG1
Description	
LCD	

ACCESSORIES

AKF10		PG1	
Description	Art. No.		
Immersion pockets nickel-plated			
Type	Length	for mounting length	
THMS50	50mm	62mm	1793
THMS120	120mm	135mm	1809
THMS185	185mm	192mm	1823
THMS225	225mm	240mm	1816
THMS300	300mm	320mm	1830
THMS375	375mm	392mm	1847
THMS450	450mm	465mm	102179
Immersion pockets stainless steel			
THVA50	50mm	62mm	1885
THVA120	120mm	135mm	1854
THVA185	185mm	192mm	1915
THVA225	225mm	240mm	1861
THVA300	300mm	320mm	1892
THVA375	375mm	392mm	1908
THVA450	450mm	465mm	1878

Mounting flanges

MF7 (brass)	102360
MF7 flexible (incl. seal inserts for D=4mm / 6mm)	399098



THMS



MF7 MS



MF7 flexible

Ordering example 1: AKF10.392.07 PT100 260°C 4L
 AKF10=type / 392=mounting length 392mm
 07=diameter of pocket 7mm PT100=sensor PT100
 260°C=temperature up to 260°C / 4L=4-wire connection

Ordering example 2: AKF10.465.07 TRA 5
 AKF10=type / 465=mounting length 465mm
 07=diameter of pocket 7mm
 TRA 5=transducer 4-20mA, 0°C...+250°C

Duct Temperature Sensor $\varnothing 4\text{mm}$ passive – KFK01 «

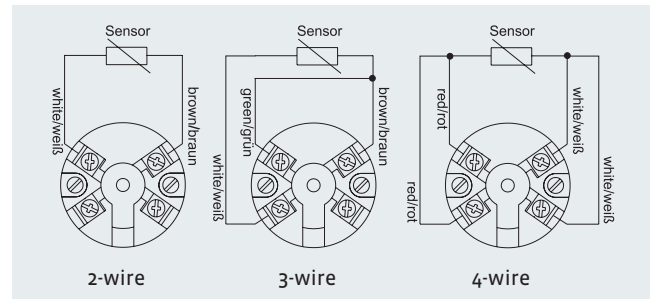
Application

For temperature measuring in gaseous mediums of heating, ventilation and air-conditioning systems (e.g. in supply/ exhaust air ducts). Designed for locking on control and display systems.

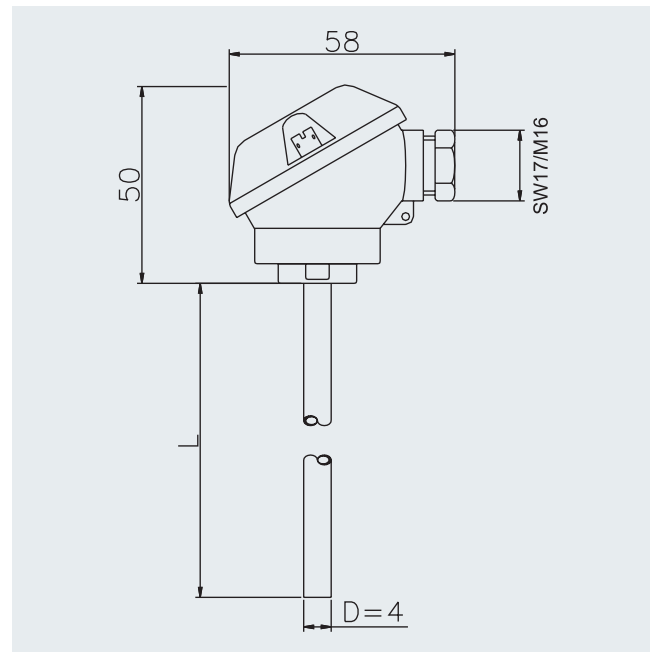
TECHNICAL DATA

Mounting lengths	40mm, 90mm, 140mm, 190mm
Ambient temperature	-25°C...+90°C (connection head)
T max. sensor top	160°C (standard), 260°C
Connection	2-wire (standard), 3-wire, 4-wire (optional)
Terminal clamp	Screwing terminal, max. 1,5mm ²
Connection head	Form J, Material alu diecasting
Cable entry	M16
Sensor pocket	Stainless steel 1.4571, $\varnothing=4\text{mm}$
Protection	IP65, SI-Protection
Notice	Other sensors on request

Connection



Dimensional Drawing (mm)



Protection against mechanical overstress
SI-Protection
 humidity and vibration

» KFK01 – Duct Temperature Sensor Ø4mm passive

PT100			160°C
KFK01			PG1
Type	Pocket L	Art. No.	
KFK01.040.04 PT100	40mm	31868	
KFK01.090.04 PT100	90mm	32605	
KFK01.140.04 PT100	140mm	32612	
KFK01.190.04 PT100	190mm	32629	

PT100 1/3 DIN			160°C
KFK01			PG1
Type	Pocket L	Art. No.	
KFK01.040.04 PT100 1/3 DIN	40mm	32636	
KFK01.090.04 PT100 1/3 DIN	90mm	32643	
KFK01.140.04 PT100 1/3 DIN	140mm	32650	
KFK01.190.04 PT100 1/3 DIN	190mm	32667	

PT1000			160°C
KFK01			PG1
Type	Pocket L	Art. No.	
KFK01.040.04 PT1000	40mm	32674	
KFK01.090.04 PT1000	90mm	32681	
KFK01.140.04 PT1000	140mm	32698	
KFK01.190.04 PT1000	190mm	32704	

PT1000 1/3 DIN			160°C
KFK01			PG1
Type	Pocket L	Art. No.	
KFK01.040.04 PT1000 1/3 DIN	40mm	32711	
KFK01.090.04 PT1000 1/3 DIN	90mm	32728	
KFK01.140.04 PT1000 1/3 DIN	140mm	32735	
KFK01.190.04 PT1000 1/3 DIN	190mm	32742	

Ni1000			160°C
KFK01			PG1
Type	Pocket L	Art. No.	
KFK01.040.04 Ni1000	40mm	32759	
KFK01.090.04 Ni1000	90mm	32766	
KFK01.140.04 Ni1000	140mm	32773	
KFK01.190.04 Ni1000	190mm	32780	

Ni1000TK5000			160°C
KFK01			PG1
Type	Pocket L	Art. No.	
KFK01.040.04 Ni1000TK5000	40mm	32797	
KFK01.090.04 Ni1000TK5000	90mm	32803	
KFK01.140.04 Ni1000TK5000	140mm	32810	
KFK01.190.04 Ni1000TK5000	190mm	32827	

FeT			160°C
KFK01			PG1
Type	Pocket L	Art. No.	
KFK01.040.04 FeT	40mm	348959	
KFK01.090.04 FeT	90mm	348973	
KFK01.140.04 FeT	140mm	250641	
KFK01.190.04 FeT	190mm	349000	

NTC1,8k			150°C
KFK01			PG1
Type	Pocket L	Art. No.	
KFK01.040.04 NTC1,8k	40mm	348966	
KFK01.090.04 NTC1,8k	90mm	348980	
KFK01.140.04 NTC1,8k	140mm	348997	
KFK01.190.04 NTC1,8k	190mm	349017	

NTC5k			150°C
KFK01			PG1
Type	Pocket L	Art. No.	
KFK01.040.04 NTC5k	40mm	32834	
KFK01.090.04 NTC5k	90mm	32841	
KFK01.140.04 NTC5k	140mm	32858	
KFK01.190.04 NTC5k	190mm	32865	

NTC10k			150°C
KFK01			PG1
Type	Pocket L	Art. No.	
KFK01.040.04 NTC10k	40mm	32872	
KFK01.090.04 NTC10k	90mm	32889	
KFK01.140.04 NTC10k	140mm	32896	
KFK01.190.04 NTC10k	190mm	32902	

Duct Temperature Sensor Ø4mm passive – KFK01 «

NTC10k Precon			150°C
KFK01			PG1
Type	Pocket L	Art. No.	
KFK01.040.04 NTC10k Precon	40mm	32995	
KFK01.090.04 NTC10k Precon	90mm	34005	
KFK01.140.04 NTC10k Precon	140mm	34012	
KFK01.190.04 NTC10k Precon	190mm	34029	

NTC20k			150°C
KFK01			PG1
Type	Pocket L	Art. No.	
KFK01.040.04 NTC20k	40mm	32919	
KFK01.090.04 NTC20k	90mm	32926	
KFK01.140.04 NTC20k	140mm	32933	
KFK01.190.04 NTC20k	190mm	32940	

OPTIONS

KFK01 160°C

PG1

Description

Temperature up to 260°C

3-wire connection

4-wire connection

ACCESSORIES

KFK01

PG1

Description

Art. No.

Mounting flange MF4 (brass)

102438

Mounting flange MF7 flexible (incl. seal inserts for D=4mm / 6mm)

399098



MF4



MF7 flexible

Ordering example: KFK01.140.04 Ni1000 260°C 3L

KFK01=type / 140=mounting length 140mm / 04=diameter of pocket 4mm

Ni1000=sensor Ni1000 / 260°C=temperature up to 260°C

3L=3-wire connection

» KFK01 – Duct Temperature Sensor Ø7mm passive

Application

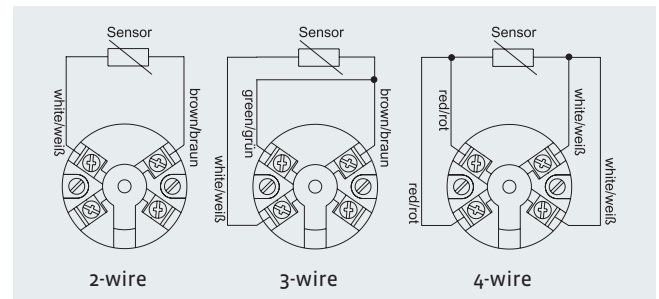
For temperature measuring in gaseous mediums of heating, ventilation and air-conditioning systems (e.g. in supply/ exhaust air ducts). Designed for locking on control and display systems. In combination with an immersion pocket also suitable for temperature measuring in liquid mediums (e.g. pipeline systems).

TECHNICAL DATA

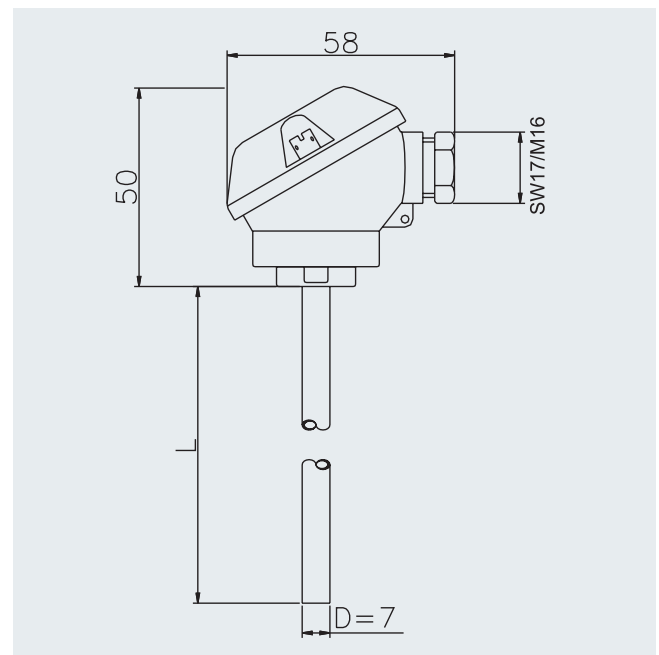
Mounting lengths	62mm, 135mm, 192mm, 240mm, 320m, 392mm, 465mm
Ambient temperature	-25°C...+90°C (connection head)
T max. sensor top	160°C (standard), 260°C
Connection	2-wire (standard), 3-wire, 4-wire (optional)
Terminal clamp	Screwing terminal, max. 1,59mm ²
Connection head	Form J, Material alu diecasting
Cable entry	M16
Sensor pocket	Stainless steel 1.4571, Ø=7mm
Protection	IP65, SI-Protection
Notice	Other sensors on request



Connection



Dimensional Drawing (mm)



Protection against mechanical overstress
SI-Protection
 humidity and vibration

Duct Temperature Sensor Ø7mm passive – KFK01 «

PT100			160°C
KFK01		PG1	
Type	Pocket L	Art. No.	
KFK01.062.07 PT100	62mm	30472	
KFK01.135.07 PT100	135mm	27274	
KFK01.192.07 PT100	192mm	27281	
KFK01.240.07 PT100	240mm	27298	
KFK01.320.07 PT100	320mm	27304	
KFK01.392.07 PT100	392mm	27311	
KFK01.465.07 PT100	465mm	27328	

PT100 1/3 DIN			160°C
KFK01		PG1	
Type	Pocket L	Art. No.	
KFK01.062.07 PT100 1/3 DIN	62mm	27335	
KFK01.135.07 PT100 1/3 DIN	135mm	27342	
KFK01.192.07 PT100 1/3 DIN	192mm	27359	
KFK01.240.07 PT100 1/3 DIN	240mm	27366	
KFK01.320.07 PT100 1/3 DIN	320mm	27373	
KFK01.392.07 PT100 1/3 DIN	392mm	27380	
KFK01.465.07 PT100 1/3 DIN	465mm	27397	

PT1000			160°C
KFK01		PG1	
Type	Pocket L	Art. No.	
KFK01.062.07 PT1000	62mm	27403	
KFK01.135.07 PT1000	135mm	27410	
KFK01.192.07 PT1000	192mm	27427	
KFK01.240.07 PT1000	240mm	27434	
KFK01.320.07 PT1000	320mm	27441	
KFK01.392.07 PT1000	392mm	27458	
KFK01.465.07 PT1000	465mm	27465	

PT1000 1/3 DIN			160°C
KFK01		PG1	
Type	Pocket L	Art. No.	
KFK01.062.07 PT1000 1/3 DIN	62mm	27472	
KFK01.135.07 PT1000 1/3 DIN	135mm	27489	
KFK01.192.07 PT1000 1/3 DIN	192mm	27496	
KFK01.240.07 PT1000 1/3 DIN	240mm	27502	
KFK01.320.07 PT1000 1/3 DIN	320mm	27519	
KFK01.392.07 PT1000 1/3 DIN	392mm	27526	
KFK01.465.07 PT1000 1/3 DIN	465mm	27533	

Ni1000			160°C
KFK01		PG1	
Type	Pocket L	Art. No.	
KFK01.062.07 Ni1000	62mm	27540	
KFK01.135.07 Ni1000	135mm	27557	
KFK01.192.07 Ni1000	192mm	27564	
KFK01.240.07 Ni1000	240mm	27571	
KFK01.320.07 Ni1000	320mm	27588	
KFK01.392.07 Ni1000	392mm	27595	
KFK01.465.07 Ni1000	465mm	27601	

Ni1000TK5000			160°C
KFK01		PG1	
Type	Pocket L	Art. No.	
KFK01.062.07 Ni1000TK5000	62mm	27618	
KFK01.135.07 Ni1000TK5000	135mm	27625	
KFK01.192.07 Ni1000TK5000	192mm	27632	
KFK01.240.07 Ni1000TK5000	240mm	27649	
KFK01.320.07 Ni1000TK5000	320mm	27656	
KFK01.392.07 Ni1000TK5000	392mm	27663	
KFK01.465.07 Ni1000TK5000	465mm	27908	

FeT			160°C
KFK01		PG1	
Type	Pocket L	Art. No.	
KFK01.062.07 FeT	62mm	145480	
KFK01.135.07 FeT	135mm	142502	
KFK01.192.07 FeT	192mm	188333	
KFK01.240.07 FeT	240mm	200103	
KFK01.320.07 FeT	320mm	171533	
KFK01.392.07 FeT	392mm	349109	
KFK01.465.07 FeT	465mm	196857	

NTC1,8k			150°C
KFK01		PG1	
Type	Pocket L	Art. No.	
KFK01.062.07 NTC1,8k	62mm	243537	
KFK01.135.07 NTC1,8k	135mm	247672	
KFK01.192.07 NTC1,8k	192mm	314466	
KFK01.240.07 NTC1,8k	240mm	349093	
KFK01.320.07 NTC1,8k	320mm	250757	
KFK01.392.07 NTC1,8k	392mm	349116	
KFK01.465.07 NTC1,8k	465mm	349123	

» KFK01 – Duct Temperature Sensor Ø7mm passive

NTC5k			150°C
KFK01			PG1
Type	Pocket L	Art. No.	
KFK01.062.07 NTC5k	62mm	27915	
KFK01.135.07 NTC5k	135mm	27922	
KFK01.192.07 NTC5k	192mm	27939	
KFK01.240.07 NTC5k	240mm	27946	
KFK01.320.07 NTC5k	320mm	27953	
KFK01.392.07 NTC5k	392mm	27960	
KFK01.465.07 NTC5k	465mm	27977	

NTC10k			150°C
KFK01			PG1
Type	Pocket L	Art. No.	
KFK01.062.07 NTC10k	62mm	27984	
KFK01.135.07 NTC10k	135mm	27991	
KFK01.192.07 NTC10k	192mm	28004	
KFK01.240.07 NTC10k	240mm	28011	
KFK01.320.07 NTC10k	320mm	28028	
KFK01.392.07 NTC10k	392mm	28035	
KFK01.465.07 NTC10k	465mm	28042	

NTC10k Precon			150°C
KFK01			PG1
Type	Pocket L	Art. No.	
KFK01.062.07 NTC10k Precon	62mm	28196	
KFK01.135.07 NTC10k Precon	135mm	28202	
KFK01.192.07 NTC10k Precon	192mm	28219	
KFK01.240.07 NTC10k Precon	240mm	28226	
KFK01.320.07 NTC10k Precon	320mm	28233	
KFK01.392.07 NTC10k Precon	392mm	28240	
KFK01.465.07 NTC10k Precon	465mm	28257	

NTC20k			150°C
KFK01			PG1
Type	Pocket L	Art. No.	
KFK01.062.07 NTC20k	62mm	28059	
KFK01.135.07 NTC20k	135mm	28066	
KFK01.192.07 NTC20k	192mm	28073	
KFK01.240.07 NTC20k	240mm	28080	
KFK01.320.07 NTC20k	320mm	28097	
KFK01.392.07 NTC20k	392mm	28103	
KFK01.465.07 NTC20k	465mm	28110	

LM235Z			120°C
KFK01			PG1
Type	Pocket L	Art. No.	
KFK01.062.07 LM235Z	62mm	28332	
KFK01.135.07 LM235Z	135mm	28349	
KFK01.192.07 LM235Z	192mm	28356	
KFK01.240.07 LM235Z	240mm	28363	
KFK01.320.07 LM235Z	320mm	28370	
KFK01.392.07 LM235Z	392mm	28387	
KFK01.465.07 LM235Z	465mm	28394	

OPTIONS

KFK01 160°C

PG1

Description

Temperature up to 260°C

3-wire connection

4-wire connection

ACCESSORIES

KFK01 PG1

Description Art. No.

Immersion pock. brass nickel-plated

Type	Length	for mounting length	
THMS50	50mm	62mm	1793
THMS120	120mm	135mm	1809
THMS185	185mm	192mm	1823
THMS225	225mm	240mm	1816
THMS300	300mm	320mm	1830
THMS375	375mm	392mm	1847
THMS450	450mm	465mm	102179

Immersion pockets stainless steel

THVA50	50mm	62mm	1885
THVA120	120mm	135mm	1854
THVA185	185mm	192mm	1915
THVA225	225mm	240mm	1861
THVA300	300mm	320mm	1892
THVA375	375mm	392mm	1908
THVA450	450mm	465mm	1878

Mounting flanges

MF7 (brass)	102360
MF7 flexible (incl. seal inserts for D=4mm / 6mm)	399098



THMS



MF7 MS



MF7 flexible

Ordering example: KFK01.392.07 PT1000 260°C 4L
 KFK01=type / 392=mounting length 392mm / 07=diameter of pocket 7mm
 PT1000=sensor PT1000 / 260°C=temperature up to 260°C
 4L=4-wire connection

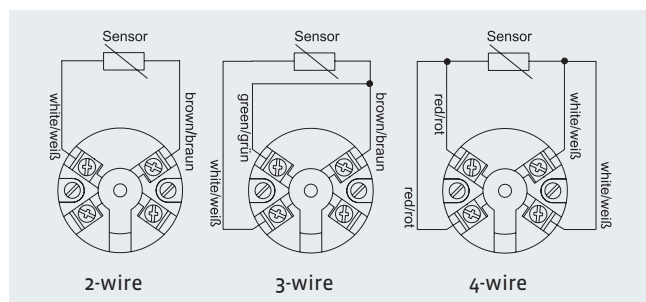
» KFK03 – Duct Temperature Sensor passive / active

Application

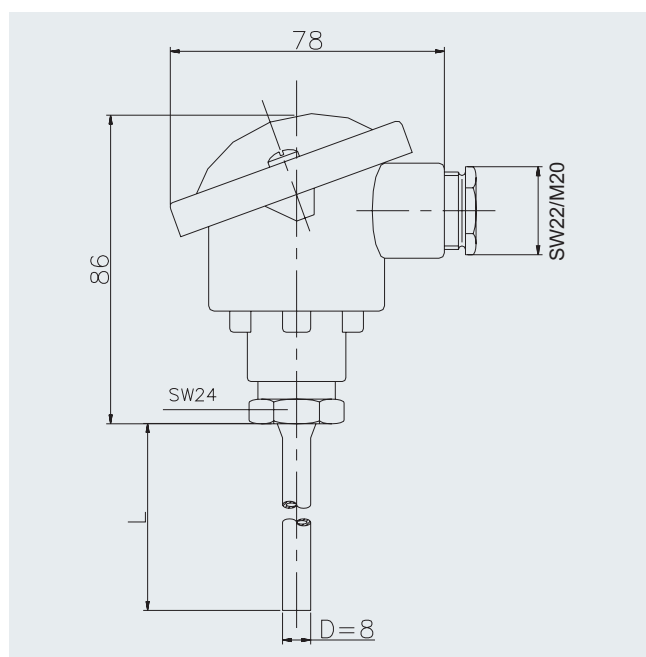
For temperature measuring in gaseous mediums of heating, ventilation and air-conditioning systems (e.g. in supply/ exhaust air ducts). Designed for locking on control and display systems.

TECHNICAL DATA- PASSIVE OUTPUT	
Mounting lengths	100mm, 150mm, 200mm, 250mm
Ambient temperature	-25°C...+90°C (connection head)
T max. sensor top	160°C (standard), 260°C
Connection	2-wire (Standard), 3-wire, 4-wire (optional)
Terminal clamp	Screwing terminal, max. 1,5mm ²
Connection head	Form B, Material aluminium
Cable entry	M20
Sensor pocket	Stainless steel 1.4571, Ø=8mm
Protection	IP66, SI-Protection
Notice	Other sensors on request

Connection passive



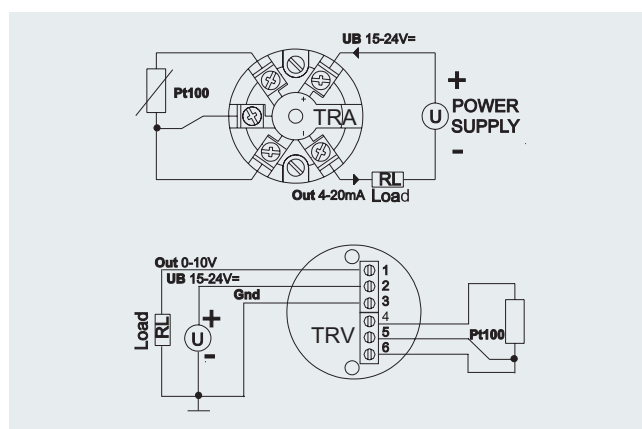
Dimensional Drawing passive / active (mm)



TECHNICAL DATA - ACTIVE OUTPUT	
Mounting lengths	100mm, 150mm, 200mm, 250mm
Measuring ranges	TRA: 4-20mA / TRV: 0-10V TRA 1 / TRV 1: -50°C...+50°C TRA 2 / TRV 2: -10°C...+120°C TRA 3 / TRV 3: 0°C...+50°C TRA 4 / TRV 4: 0°C...+160°C TRA 5 / TRV 5: 0°C...+250°C
Accuracy	TRA: ±0,2°C / ±0,1% of measuring range TRV: ±0,1% of measuring range
Ambient temperature	-25°C...+70°C (connection head)
T max. sensor top	160°C (standard), 260°C
Power supply	15-24V=
Power consumption	TRA: max. 20mA/24V= TRV: max. 40mA/24V=
Terminal clamp	Screwing terminal, max. 1,5mm ²
Connection head	Form B, Material aluminium
Cable entry	M20
Sensor pocket	Stainless steel 1.4571, Ø=8mm
Protection	IP66, SI-Protection



Connection active



Protection against mechanical overstress
SI-Protection
 humidity and vibration

Duct Temperature Sensor passive – KFK03 «

PT100			160°C
KFK03			PG1
Type	Pocket L	Art. No.	
KFK03.100.08 PT100	100mm	37877	
KFK03.150.08 PT100	150mm	37884	
KFK03.200.08 PT100	200mm	37891	
KFK03.250.08 PT100	250mm	37907	

PT100 1/3 DIN			160°C
KFK03			PG1
Type	Pocket L	Art. No.	
KFK03.100.08 PT100 1/3 DIN	100mm	37914	
KFK03.150.08 PT100 1/3 DIN	150mm	37921	
KFK03.200.08 PT100 1/3 DIN	200mm	37938	
KFK03.250.08 PT100 1/3 DIN	250mm	37945	

PT1000			160°C
KFK03			PG1
Type	Pocket L	Art. No.	
KFK03.100.08 PT1000	100mm	37952	
KFK03.150.08 PT1000	150mm	37969	
KFK03.200.08 PT1000	200mm	37976	
KFK03.250.08 PT1000	250mm	37983	

PT1000 1/3 DIN			160°C
KFK03			PG1
Type	Pocket L	Art. No.	
KFK03.100.08 PT1000 1/3 DIN	100mm	37990	
KFK03.150.08 PT1000 1/3 DIN	150mm	37965	
KFK03.200.08 PT1000 1/3 DIN	200mm	37972	
KFK03.250.08 PT1000 1/3 DIN	250mm	37989	

Ni1000			160°C
KFK03			PG1
Type	Pocket L	Art. No.	
KFK03.100.08 Ni1000	100mm	39796	
KFK03.150.08 Ni1000	150mm	39802	
KFK03.200.08 Ni1000	200mm	39819	
KFK03.250.08 Ni1000	250mm	39826	

Ni1000TK5000			160°C
KFK03			PG1
Type	Pocket L	Art. No.	
KFK03.100.08 Ni1000TK5000	100mm	39833	
KFK03.150.08 Ni1000TK5000	150mm	39840	
KFK03.200.08 Ni1000TK5000	200mm	39857	
KFK03.250.08 Ni1000TK5000	250mm	39864	

FeT			160°C
KFK03			PG1
Type	Pocket L	Art. No.	
KFK03.100.08 FeT	100mm	39871	
KFK03.150.08 FeT	150mm	39888	
KFK03.200.08 FeT	200mm	39895	
KFK03.250.08 FeT	250mm	39901	

NTC1,8k			150°C
KFK03			PG1
Type	Pocket L	Art. No.	
KFK03.100.08 NTC1,8k	100mm	325912	
KFK03.150.08 NTC1,8k	150mm	349031	
KFK03.200.08 NTC1,8k	200mm	298803	
KFK03.250.08 NTC1,8k	250mm	314329	

NTC5k			150°C
KFK03			PG1
Type	Pocket L	Art. No.	
KFK03.100.08 NTC5k	100mm	349130	
KFK03.150.08 NTC5k	150mm	349147	
KFK03.200.08 NTC5k	200mm	349154	
KFK03.250.08 NTC5k	250mm	349161	

NTC10k			150°C
KFK03			PG1
Type	Pocket L	Art. No.	
KFK03.100.08 NTC10k	100mm	39918	
KFK03.150.08 NTC10k	150mm	39925	
KFK03.200.08 NTC10k	200mm	39932	
KFK03.250.08 NTC10k	250mm	39949	

NTC10k Precon			150°C
KFK03			PG1
Type	Pocket L	Art. No.	
KFK03.100.08 NTC10k Precon	100mm	39994	
KFK03.150.08 NTC10k Precon	150mm	40006	
KFK03.200.08 NTC10k Precon	200mm	40013	
KFK03.250.08 NTC10k Precon	250mm	40020	

NTC20k			150°C
KFK03			PG1
Type	Pocket L	Art. No.	
KFK03.100.08 NTC20k	100mm	39956	
KFK03.150.08 NTC20k	150mm	39963	
KFK03.200.08 NTC20k	200mm	39970	
KFK03.250.08 NTC20k	250mm	39987	

» KFK03 – Duct Temperature Sensor passive / active

LM235Z			120°C
KFK03			PG1
Type	Pocket L	Art. No.	
KFK03.100.08 LM235Z	100mm	40037	
KFK03.150.08 LM235Z	150mm	40044	
KFK03.200.08 LM235Z	200mm	40051	
KFK03.250.08 LM235Z	250mm	40068	

TRA 1 / TRV 1				-50°C...+50°C
KFK03				PG1
Type	Out	Pocket L	Art. No.	
KFK03.100.08 TRA 1	4-20mA	100mm	152464	
KFK03.150.08 TRA 1	4-20mA	150mm	165334	
KFK03.200.08 TRA 1	4-20mA	200mm	232166	
KFK03.250.08 TRA 1	4-20mA	250mm	204668	
KFK03.100.08 TRV 1	0-10V	100mm	350983	
KFK03.150.08 TRV 1	0-10V	150mm	351010	
KFK03.200.08 TRV 1	0-10V	200mm	277860	
KFK03.250.08 TRV 1	0-10V	250mm	286879	

TRA 3 / TRV 3				0°C...+50°C
KFK03				PG1
Type	Out	Pocket L	Art. No.	
KFK03.100.08 TRA 3	4-20mA	100mm	338585	
KFK03.150.08 TRA 3	4-20mA	150mm	170239	
KFK03.200.08 TRA 3	4-20mA	200mm	161909	
KFK03.250.08 TRA 3	4-20mA	250mm	134804	
KFK03.100.08 TRV 3	0-10V	100mm	272315	
KFK03.150.08 TRV 3	0-10V	150mm	351027	
KFK03.200.08 TRV 3	0-10V	200mm	284905	
KFK03.250.08 TRV 3	0-10V	250mm	285094	

TRA 5 / TRV 5				0°C...+250°C
KFK03				PG1
Type	Out	Pocket L	Art. No.	
KFK03.100.08 TRA 5	4-20mA	100mm	239080	
KFK03.150.08 TRA 5	4-20mA	150mm	320948	
KFK03.200.08 TRA 5	4-20mA	200mm	240116	
KFK03.250.08 TRA 5	4-20mA	250mm	281577	
KFK03.100.08 TRV 5	0-10V	100mm	350990	
KFK03.150.08 TRV 5	0-10V	150mm	309127	
KFK03.200.08 TRV 5	0-10V	200mm	351119	
KFK03.250.08 TRV 5	0-10V	250mm	276214	

OPTIONS	
KFK03 160°C	
PG1	
Description	
Temperature up to 260°C	
3-wire connection	
4-wire connection	

TRA 2 / TRV 2				-10°C...+120°C
KFK03				PG1
Type	Out	Pocket L	Art. No.	
KFK03.100.08 TRA 2	4-20mA	100mm	242639	
KFK03.150.08 TRA 2	4-20mA	150mm	351034	
KFK03.200.08 TRA 2	4-20mA	200mm	351041	
KFK03.250.08 TRA 2	4-20mA	250mm	351133	
KFK03.100.08 TRV 2	0-10V	100mm	332453	
KFK03.150.08 TRV 2	0-10V	150mm	326711	
KFK03.200.08 TRV 2	0-10V	200mm	351096	
KFK03.250.08 TRV 2	0-10V	250mm	347242	

TRA 4 / TRV 4				0°C...+160°C
KFK03				PG1
Type	Out	Pocket L	Art. No.	
KFK03.100.08 TRA 4	4-20mA	100mm	315920	
KFK03.150.08 TRA 4	4-20mA	150mm	338981	
KFK03.200.08 TRA 4	4-20mA	200mm	337380	
KFK03.250.08 TRA 4	4-20mA	250mm	303057	
KFK03.100.08 TRV 4	0-10V	100mm	351003	
KFK03.150.08 TRV 4	0-10V	150mm	261418	
KFK03.200.08 TRV 4	0-10V	200mm	351102	
KFK03.250.08 TRV 4	0-10V	250mm	347969	

ACCESSORY	
KFK03	
PG1	
Description	Art. No.
Mounting flange MF8 (VA)	103305



Ordering example 1: KFK03.200.08 PT100 260°C 4L
 KFK03=type / 200=mounting length 200mm
 08=diameter of pocket 8mm / PT100=sensor PT100
 260°C=temperature up to 260°C / 4L=4-wire connection

Ordering example 2: KFK03.250.08 TRA 5
 KFK03=type / 250=mounting length 250mm
 08=diameter of pocket 8mm
 TRA 5=transducer 4-20mA, 0°C...+250°C

Duct High Temperature Sensor passive / active – RGo3 «

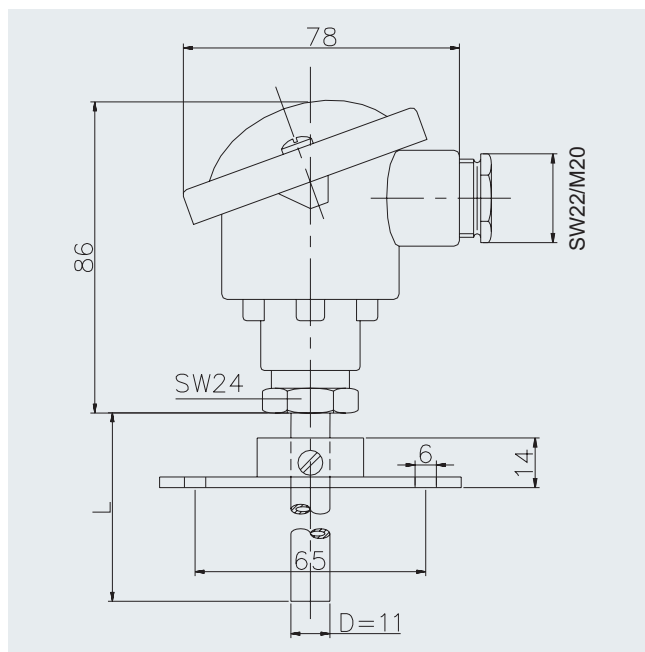
Application

For temperature measuring in gaseous mediums of heating, ventilation and air-conditioning systems (e.g. in supply/ exhaust air ducts). Designed for locking on control and display systems.

TECHNICAL DATA – PASSIVE OUTPUT	
Mounting lengths	250mm, 500mm
Measuring range	max. +600°C
Ambient temperature	-25°C...+90°C (connection head)
Connection	PT100: 3-wire
Terminal clamp	Screwing terminal, max. 1,5mm ²
Connection head	Form B, Material aluminium
Cable entry	M20
Sensor pocket	Stainless steel 1.4571, Ø=11mm
Protection	IP66
Notice	Incl. mounting flange Other sensors on request

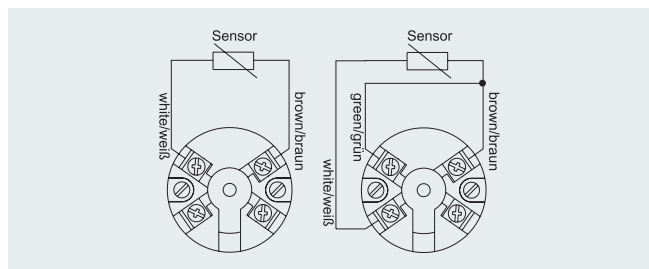


Dimensional Drawing passive / active (mm)

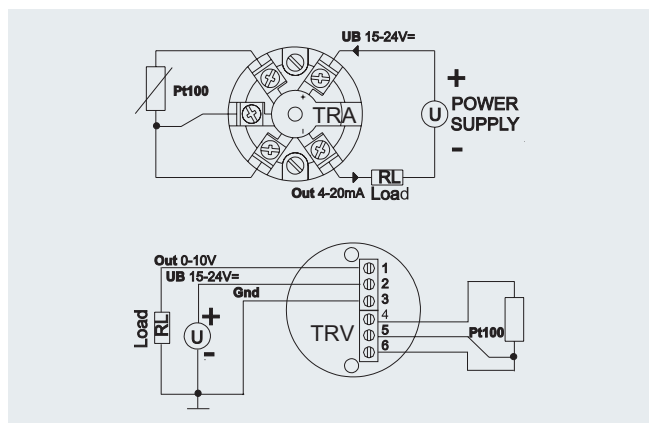


TECHNICAL DATA – ACTIVE OUTPUT	
Mounting lengths	250mm, 500mm
Measuring ranges	TRA: 4-20mA / TRV: 0-10V TRA 5/TRV 5: 0°C...+250°C TRA 6/TRV 6: 0°C...+400°C TRA 7/TRV 7: 0°C...+600°C
Accuracy	TRA: ±0,2°C / ±0,1% of measuring range TRV: ±0,1% of measuring range
Ambient temperature	-25°C...+70°C (connection head)
T max. sensor top	+600°C
Power supply	15-24V=
Power consumption	TRA: max. 20mA/24V= TRV: max. 40mA/24V=
Terminal clamp	Screwing terminal max. 1,5mm ²
Connection head	Form B, Material aluminium
Cable entry	M20
Sensor pocket	Stainless steel 1.4571, Ø=11mm
Protection	IP66
Notice	Incl. mounting flange

Connection passive



Connection active



» RG03 – Duct High Temperature Sensor passive / active

PT100			600°C
RG03			PG1
Type	Pocket L	Art. No.	
RG03.250.011 PT100 3-wire	250mm	64361	
RG03.500.011 PT100 3-wire	500mm	64378	

TRA 6 / TRV 6				0...+400°C
RG03				PG1
Type	Out	Pocket L	Art. No.	
RG03.250.11 TRA 6	4-20mA	250mm	177405	
RG03.500.11 TRA 6	4-20mA	500mm	143936	
RG03.250.11 TRV 6	0-10V	250mm	261982	
RG03.500.11 TRV 6	0-10V	500mm	240789	

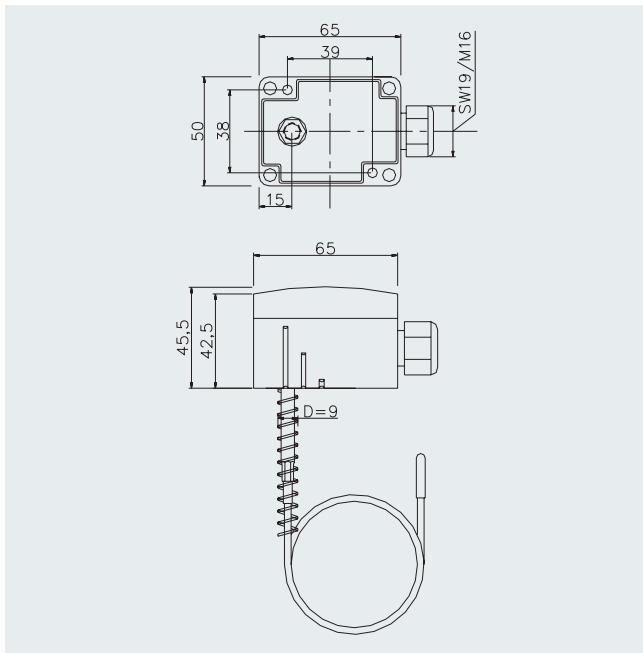
TRA 7 / TRV 7				0...+600°C
RG03				PG1
Typ	Out	Pocket L	Art. No.	
RG03.250.11 TRA 7	4-20mA	250mm	64422	
RG03.500.11 TRA 7	4-20mA	500mm	78283	
RG03.250.11 TRV 7	0-10V	250mm	64408	
RG03.500.11 TRV 7	0-10V	500mm	242127	

Application

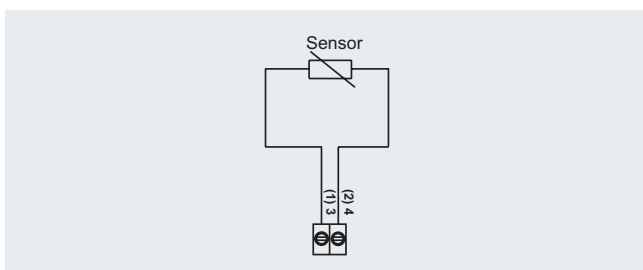
For detection of average temperature with temperature laminations in ducts (averaging).

TECHNICAL DATA – PASSIVE OUTPUT	
Mounting lengths	Sensor Ni1000 / PT1000: 3.000mm, 6.000mm
	Sensor Ni1000TK5000: 2.500mm, 5.000mm
Measuring range	-50°C...+80°C
Accuracy	±3% of measuring range
Ambient temperature	-35°C...+90°C (connection head)
Tmax. sensor top	+80°C
Terminal clamp	Screwing terminal, max. 1,5mm ²
Connection head	Material PA6, colour pure white (similar to RAL9010), with quick release fastener screws
Cable entry	M16
Sensor rod	PE
Protection	IP65
Notice	Incl. mounting angle set

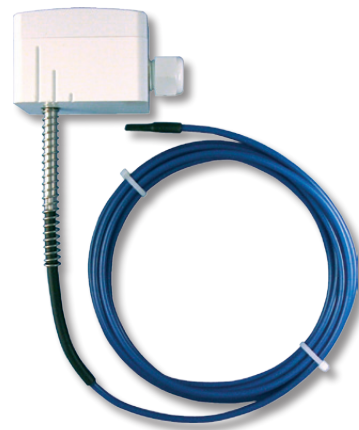
Dimensional Drawing passive / active (mm)



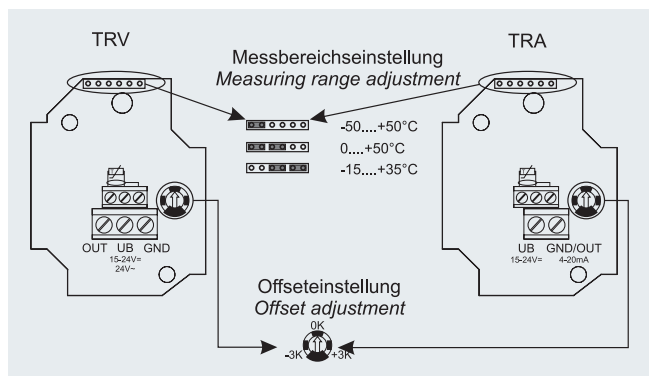
Connection passive



TECHNICAL DATA – ACTIVE OUTPUT	
Mounting lengths	3.000mm, 6.000mm
Measuring range	TRA: 4-20mA / TRV: 0-10V
	TRA 1/TRV 1: -50°C...+50°C TRA 3/TRV 3: 0°C...+50°C
Accuracy	±3% of measuring range
Ambient temperature	-35°C...+70°C (connection head)
Tmax. sensor top	+80°C
Power supply	TRA: 15-24V= (±10%) TRV: 15-24V= (±10%) or 24V~ (±10%)
Power consumption	TRA: max. 20mA/24V= TRV: typ. 0,42W/0,84VA
Terminal clamp	Screwing terminal, max. 1,5mm ²
Connection head	Material PA6, colour pure white (similar to RAL9010), with quick release fastener screws
Cable entry	M16
Sensor rod	PE
Protection	IP65
Notice	Delivery incl. mounting angle set



Connection active



» MWF – Average Temperature Sensor passive / active

Ni1000			
MWF			PG1
Type	Rod L	Art. No.	
MWF3000 Ni1000	3000mm	136198	
MWF6000 Ni1000	6000mm	136204	

Ni1000TK5000			
MWF			PG1
Type	Rod L	Art. No.	
MWF2500 Ni1000TK5000	2500mm	282697	
MWF5000 Ni1000TK5000	5000mm	282680	

PT1000			
MWF			PG1
Type	Rod L	Art. No.	
MWF3000 PT1000	3000mm	398053	
MWF6000 PT1000	6000mm	398060	

TRA 1 / TRV 1				-50°C...+50°C	
MWF					PG1
Type	Out	Rod L	Art. No.		
MWF3000 TRA 1	4-20mA	3000mm	80286		
MWF6000 TRA 1	4-20mA	6000mm	80446		
MWF3000 TRV 1	0-10V	3000mm	79372		
MWF6000 TRV 1	0-10V	6000mm	80323		

TRA 3 / TRV 3				0°C...+50°C	
MWF					PG1
Type	Out	Rod L	Art. No.		
MWF3000 TRA 3	4-20mA	3000mm	80316		
MWF6000 TRA 3	4-20mA	6000mm	80477		
MWF3000 TRV 3	0-10V	3000mm	79457		
MWF6000 TRV 3	0-10V	6000mm	80330		

ACCESSORY

MWF		PG1
Description	Art. No.	
Mounting flange MF7 (brass)	102360	
Mounting flange MF7 flexible (incl. seal inserts for D=4mm / 6mm)	399098	



MF7 MS



MF7 flexible

Screwing-In Temperature Sensor passive – SFK01 «

Application

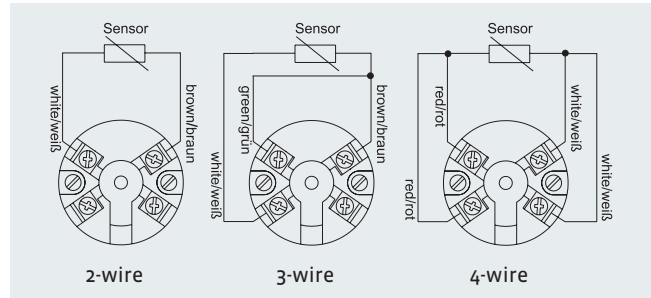
For temperature measuring in gaseous mediums of heating, ventilation and air-conditioning systems (e.g. supply/exhaust air ducts). Designed for locking on control and display systems.

TECHNICAL DATA

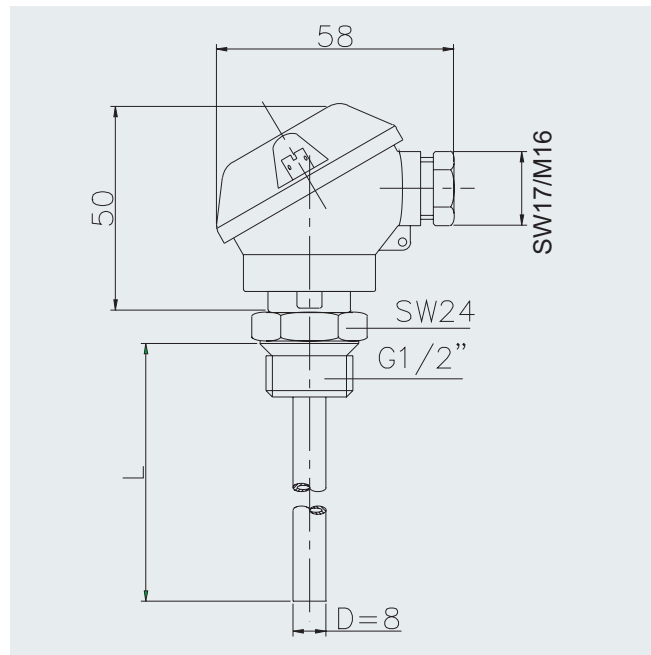
Mounting lengths	50mm, 100mm, 150mm, 200mm, 250mm, 450mm
Ambient temperature	-25°C...+90°C (connection head)
T max. sensor top	160°C (standard), 260°C
Connection	2-wire (standard), 3-wire, 4-wire (optional)
Terminal clamp	Screwing terminal, max. 1,5mm ²
Connection head	Form J, Material aluminium diecasting
Cable entry	M16
Sensor pocket	Stainless steel 1.4571, Ø=8mm
Protection	IP65, SI-Protection
Notice	Other sensors on request



Connection



Dimensional Drawing (mm)



Protection against mechanical overstress
SI-Protection
 humidity and vibration

» SFK01 – Screwing-In Temperature Sensor passive

PT100			160°C
SFK01			PG1
Type	Pocket L	Art. No.	
SFK01.050.08 PT100	50mm	37662	
SFK01.100.08 PT100	100mm	27717	
SFK01.150.08 PT100	150mm	27724	
SFK01.200.08 PT100	200mm	27731	
SFK01.250.08 PT100	250mm	27748	
SFK01.450.08 PT100	450mm	27755	

PT1000			160°C
SFK01			PG1
Type	Pocket L	Art. No.	
SFK01.050.08 PT1000	50mm	27823	
SFK01.100.08 PT1000	100mm	27830	
SFK01.150.08 PT1000	150mm	27847	
SFK01.200.08 PT1000	200mm	27854	
SFK01.250.08 PT1000	250mm	27861	
SFK01.450.08 PT1000	450mm	27878	

Ni1000			160°C
SFK01			PG1
Type	Pocket L	Art. No.	
SFK01.050.08 Ni1000	50mm	36788	
SFK01.100.08 Ni1000	100mm	36795	
SFK01.150.08 Ni1000	150mm	36801	
SFK01.200.08 Ni1000	200mm	36818	
SFK01.250.08 Ni1000	250mm	36825	
SFK01.450.08 Ni1000	450mm	45292	

FeT			160°C
SFK01			PG1
Type	Pocket L	Art. No.	
SFK01.050.08 FeT	50mm	45360	
SFK01.100.08 FeT	100mm	45377	
SFK01.150.08 FeT	150mm	45384	
SFK01.200.08 FeT	200mm	45391	
SFK01.250.08 FeT	250mm	45407	
SFK01.450.08 FeT	450mm	45414	

PT100 1/3 DIN			160°C
SFK01			PG1
Type	Pocket L	Art. No.	
SFK01.050.08 PT100 1/3 DIN	50mm	27762	
SFK01.100.08 PT100 1/3 DIN	100mm	27779	
SFK01.150.08 PT100 1/3 DIN	150mm	27786	
SFK01.200.08 PT100 1/3 DIN	200mm	27793	
SFK01.250.08 PT100 1/3 DIN	250mm	27809	
SFK01.450.08 PT100 1/3 DIN	450mm	27816	

PT1000 1/3 DIN			160°C
SFK01			PG1
Type	Pocket L	Art. No.	
SFK01.050.08 PT1000 1/3 DIN	50mm	27885	
SFK01.100.08 PT1000 1/3 DIN	100mm	27892	
SFK01.150.08 PT1000 1/3 DIN	150mm	36740	
SFK01.200.08 PT1000 1/3 DIN	200mm	36757	
SFK01.250.08 PT1000 1/3 DIN	250mm	36764	
SFK01.450.08 PT1000 1/3 DIN	450mm	36771	

Ni1000TK5000			160°C
SFK01			PG1
Type	Pocket L	Art. No.	
SFK01.050.08 Ni1000TK5000	50mm	45308	
SFK01.100.08 Ni1000TK5000	100mm	45315	
SFK01.150.08 Ni1000TK5000	150mm	45322	
SFK01.200.08 Ni1000TK5000	200mm	45339	
SFK01.250.08 Ni1000TK5000	250mm	45346	
SFK01.450.08 Ni1000TK5000	450mm	45353	

NTC1,8k			150°C
SFK01			PG1
Type	Pocket L	Art. No.	
SFK01.050.08 NTC1,8k	50mm	351140	
SFK01.100.08 NTC1,8k	100mm	270311	
SFK01.150.08 NTC1,8k	150mm	270304	
SFK01.200.08 NTC1,8k	200mm	263566	
SFK01.250.08 NTC1,8k	250mm	249362	
SFK01.450.08 NTC1,8k	450mm	293655	

Screwing-In Temperature Sensor passive – SFK01 «

NTC5k			150°C
SFK01			PG1
Type	Pocket L	Art. No.	
SFK01.050.08 NTC5k	50mm	351157	
SFK01.100.08 NTC5k	100mm	258685	
SFK01.150.08 NTC5k	150mm	249867	
SFK01.200.08 NTC5k	200mm	351164	
SFK01.250.08 NTC5k	250mm	351171	
SFK01.450.08 NTC5k	450mm	168601	

NTC10k			150°C
SFK01			PG1
Type	Pocket L	Art. No.	
SFK01.050.08 NTC10k	50mm	45421	
SFK01.100.08 NTC10k	100mm	45438	
SFK01.150.08 NTC10k	150mm	45445	
SFK01.200.08 NTC10k	200mm	45452	
SFK01.250.08 NTC10k	250mm	45469	
SFK01.450.08 NTC10k	450mm	45476	

NTC10k Precon			150°C
SFK01			PG1
Type	Pocket L	Art. No.	
SFK01.050.08 NTC10k Precon	50mm	45544	
SFK01.100.08 NTC10k Precon	100mm	45551	
SFK01.150.08 NTC10k Precon	150mm	45568	
SFK01.200.08 NTC10k Precon	200mm	45575	
SFK01.250.08 NTC10k Precon	250mm	45582	
SFK01.450.08 NTC10k Precon	450mm	45599	

NTC20k			150°C
SFK01			PG1
Type	Pocket L	Art. No.	
SFK01.050.08 NTC20k	50mm	45483	
SFK01.100.08 NTC20k	100mm	45490	
SFK01.150.08 NTC20k	150mm	45506	
SFK01.200.08 NTC20k	200mm	45513	
SFK01.250.08 NTC20k	250mm	45520	
SFK01.450.08 NTC20k	450mm	45537	

LM235Z			120°C
SFK01			PG1
Type	Pocket L	Art. No.	
SFK01.050.08 LM235Z	50mm	45605	
SFK01.100.08 LM235Z	100mm	45612	
SFK01.150.08 LM235Z	150mm	45629	
SFK01.200.08 LM235Z	200mm	45636	
SFK01.250.08 LM235Z	250mm	45643	
SFK01.450.08 LM235Z	450mm	45650	

OPTIONS		PG1
SFK01 160°C		PG1
Description		
Temperature up to 260°C		
3-wire connection		
4-wire connection		

ACCESSORIES

SFK01				PG1
Bonded pockets stainless steel			Art. No.	
Type	Length	for mounting length		
ESH110	110mm	100mm	103459	
ESH160	160mm	150mm	103466	
ESH210	210mm	200mm	103473	
ESH260	260mm	250mm	173247	



Ordering example: SFK01.100.08 PT100 1/3 DIN 260°C 4L
 SFK01=type / 100=mounting length 100mm
 08=diameter of pocket 8mm / PT100 1/3 DIN=sensor PT100 1/3 DIN /
 260°C=temperature up to 260°C / 4L=4-wire connection

» SFK02 – Screw-In Temperature Sensor passive / active / LON

Application

For temperature measuring in gaseous mediums of heating, ventilation and air-conditioning systems (e.g. supply/exhaust air ducts). Designed for locking on control and display systems.



TECHNICAL DATA – PASSIVE OUTPUT	
Mounting lengths	50mm, 100mm, 150mm, 200mm, 250mm, 450mm
Ambient temperature	-35°C...+90°C (connection head)
T max. sensor top	160°C (standard), 260°C
Connection	2-wire (standard), 3-wire, 4-wire (optional)
Terminal clamp	Screwing terminal, max. 1,5mm ²
Connection head	Material PA6, colour pure white (similar to RAL9010), with quick release fastener screws
Cable entry	M16
Sensor pocket	Stainless steel 1.4571, Ø=8mm
Protection	IP65, SI-Protection
Notice	Other sensors on request

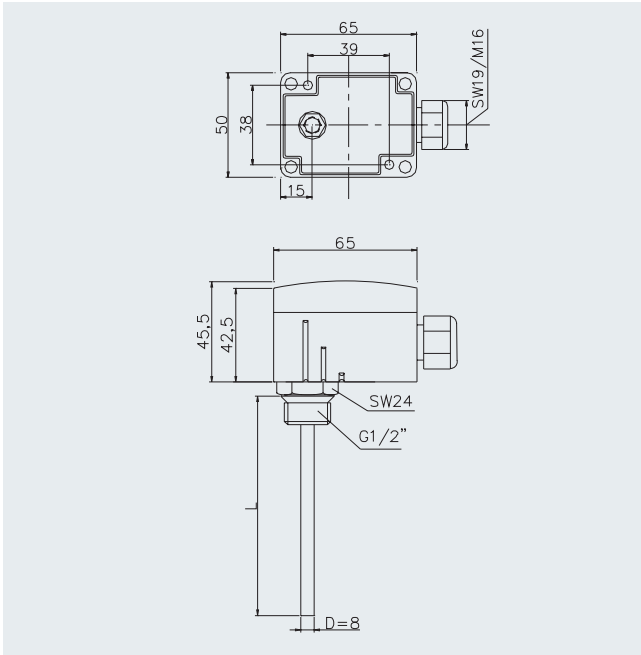
TECHNICAL DATA – ACTIVE OUTPUT / LON	
Mounting lengths	50mm, 100mm, 150mm, 200mm, 250mm, 450mm
Measuring range	TRA: 4-20mA / TRV: 0-10V TRA 1 / TRV 1: -50°C...+50°C TRA 2 / TRV 2: -10°C...+120°C TRA 3 / TRV 3: 0°C...+50°C TRA 4 / TRV 4: 0°C...+160°C TRA 5 / TRV 5: 0°C...+250°C LON: -45°C...+130°C
Accuracy	TRA/TRV: ±1% of measuring range LON: Typ. ±0,5K
Ambient temperature	-35°C...+70°C (connection head)
T max. sensor pocket	160°C (standard), 260°C
Power supply	TRA: 15-24V= (±10%) TRV: 15-24V= (±10%) or 24V~ (±10%) LON: 15-24V= (±10%) or 24V~ (±10%)
Power consumption	TRA: max. 20mA/24V= TRV: typ. 0,42W/0,84VA LON: typ. 0,5W/1,7VA
Terminal clamp	Screwing terminal, max. 1,5mm ²
Connection head	Material PA6, colour pure white(similar to RAL9010), with quick release fastener screws
Cable entry	M16 M20 single and double (LON / LCD)
Sensor pocket	Stainless steel 1.4571, Ø=8mm
Protection	IP65, SI-Protection



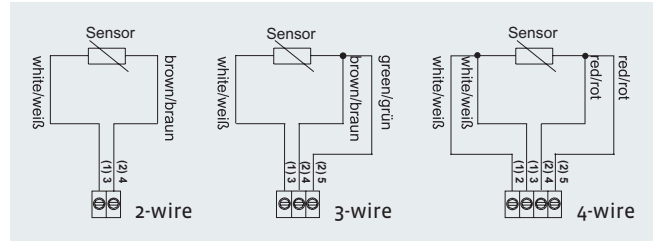
Protection against mechanical overstress
SI-Protection
 humidity and vibration

Screw-In Temperature Sensor passive/ active / LON – SFK02 «

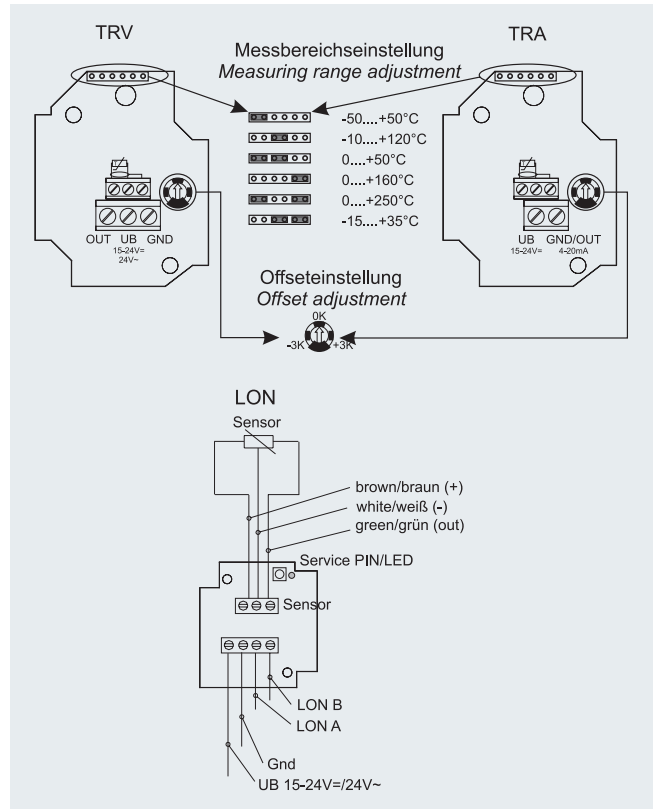
Dimensional Drawing passive / active(mm)



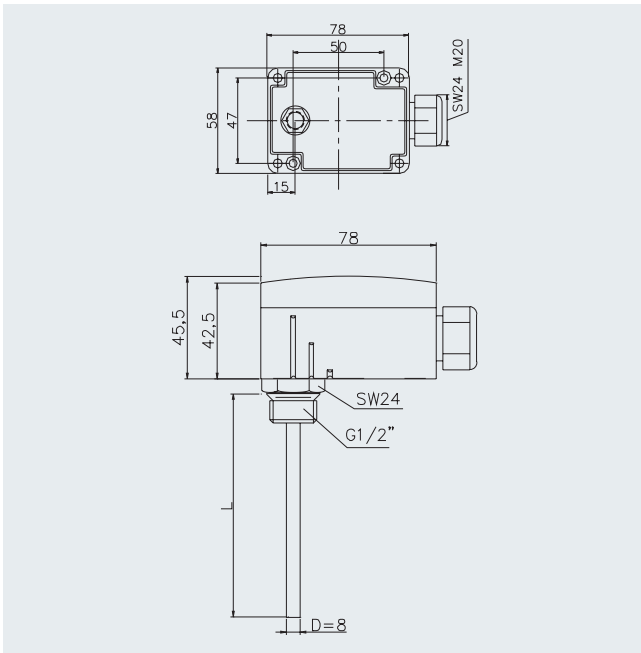
Connection passive



Connection active / LON



Dimensional Drawing LON / LCD (mm)



» SFK02 – Screw-In Temperature Sensor passive

PT100			160°C
SFK02			PG1
Type	Pocket L	Art. No.	
SFK02.050.08 PT100	50mm	37617	
SFK02.100.08 PT100	100mm	49801	
SFK02.150.08 PT100	150mm	49818	
SFK02.200.08 PT100	200mm	49825	
SFK02.250.08 PT100	250mm	49832	
SFK02.450.08 PT100	450mm	49849	

PT1000			160°C
SFK02			PG1
Type	Pocket L	Art. No.	
SFK02.050.08 PT1000	50mm	49917	
SFK02.100.08 PT1000	100mm	49924	
SFK02.150.08 PT1000	150mm	49931	
SFK02.200.08 PT1000	200mm	49948	
SFK02.250.08 PT1000	250mm	49955	
SFK02.450.08 PT1000	450mm	49962	

Ni1000			160°C
SFK02			PG1
Type	Pocket L	Art. No.	
SFK02.050.08 Ni1000	50mm	50036	
SFK02.100.08 Ni1000	100mm	50043	
SFK02.150.08 Ni1000	150mm	50050	
SFK02.200.08 Ni1000	200mm	50067	
SFK02.250.08 Ni1000	250mm	50074	
SFK02.450.08 Ni1000	450mm	50081	

FeT			160°C
SFK02			PG1
Type	Pocket L	Art. No.	
SFK02.050.08 FeT	50mm	50159	
SFK02.100.08 FeT	100mm	50166	
SFK02.150.08 FeT	150mm	50173	
SFK02.200.08 FeT	200mm	50180	
SFK02.250.08 FeT	250mm	50197	
SFK02.450.08 FeT	450mm	50203	

PT100 1/3 DIN			160°C
SFK02			PG1
Type	Pocket L	Art. No.	
SFK02.050.08 PT100 1/3 DIN	50mm	49856	
SFK02.100.08 PT100 1/3 DIN	100mm	49863	
SFK02.150.08 PT100 1/3 DIN	150mm	49870	
SFK02.200.08 PT100 1/3 DIN	200mm	49887	
SFK02.250.08 PT100 1/3 DIN	250mm	49894	
SFK02.450.08 PT100 1/3 DIN	450mm	49900	

PT1000 1/3 DIN			160°C
SFK02			PG1
Type	Pocket L	Art. No.	
SFK02.050.08 PT1000 1/3 DIN	50mm	49979	
SFK02.100.08 PT1000 1/3 DIN	100mm	49986	
SFK02.150.08 PT1000 1/3 DIN	150mm	49993	
SFK02.200.08 PT1000 1/3 DIN	200mm	50005	
SFK02.250.08 PT1000 1/3 DIN	250mm	50012	
SFK02.450.08 PT1000 1/3 DIN	450mm	50029	

Ni1000TK5000			160°C
SFK02			PG1
Type	Pocket L	Art. No.	
SFK02.050.08 Ni1000TK5000	50mm	50098	
SFK02.100.08 Ni1000TK5000	100mm	50104	
SFK02.150.08 Ni1000TK5000	150mm	50111	
SFK02.200.08 Ni1000TK5000	200mm	50128	
SFK02.250.08 Ni1000TK5000	250mm	50135	
SFK02.450.08 Ni1000TK5000	450mm	50142	

NTC1,8k			150°C
SFK02			PG1
Type	Pocket L	Art. No.	
SFK02.050.08 NTC1,8k	50mm	351324	
SFK02.100.08 NTC1,8k	100mm	258135	
SFK02.150.08 NTC1,8k	150mm	240628	
SFK02.200.08 NTC1,8k	200mm	293013	
SFK02.250.08 NTC1,8k	250mm	183864	
SFK02.450.08 NTC1,8k	450mm	351614	

Screw-In Temperature Sensor passive/ active – SFK02 «

NTC5k			150°C
SFK02			PG1
Type	Pocket L	Art. No.	
SFK02.050.08 NTC5k	50mm	351331	
SFK02.100.08 NTC5k	100mm	351348	
SFK02.150.08 NTC5k	150mm	351355	
SFK02.200.08 NTC5k	200mm	351577	
SFK02.250.08 NTC5k	250mm	351584	
SFK02.450.08 NTC5k	450mm	351591	

NTC10k			150°C
SFK02			PG1
Type	Pocket L	Art. No.	
SFK02.050.08 NTC10k	50mm	50210	
SFK02.100.08 NTC10k	100mm	50227	
SFK02.150.08 NTC10k	150mm	50234	
SFK02.200.08 NTC10k	200mm	50241	
SFK02.250.08 NTC10k	250mm	50258	
SFK02.450.08 NTC10k	450mm	50265	

NTC10k Precon			150°C
SFK02			PG1
Type	Pocket L	Art. No.	
SFK02.050.08 NTC10k Precon	50mm	50333	
SFK02.100.08 NTC10k Precon	100mm	50340	
SFK02.150.08 NTC10k Precon	150mm	50357	
SFK02.200.08 NTC10k Precon	200mm	50364	
SFK02.250.08 NTC10k Precon	250mm	50371	
SFK02.450.08 NTC10k Precon	450mm	50388	

NTC20k			150°C
SFK02			PG1
Type	Pocket L	Art. No.	
SFK02.050.08 NTC20k	50mm	50272	
SFK02.100.08 NTC20k	100mm	50289	
SFK02.150.08 NTC20k	150mm	50296	
SFK02.200.08 NTC20k	200mm	50302	
SFK02.250.08 NTC20k	250mm	50319	
SFK02.450.08 NTC20k	450mm	50326	

LM235Z			120°C
SFK02			PG1
Type	Pocket L	Art. No.	
SFK02.050.08 LM235Z	50mm	50395	
SFK02.100.08 LM235Z	100mm	50401	
SFK02.150.08 LM235Z	150mm	50418	
SFK02.200.08 LM235Z	200mm	50425	
SFK02.250.08 LM235Z	250mm	50432	
SFK02.450.08 LM235Z	450mm	50449	

OPTIONS		PG1
SFK02 160°C		PG1
Description		
Temperature up to 260°C		
3-wire connection		
4-wire connection		

TRA 1 / TRV 1			-50°C...+50°C
SFK02			PG1
Type	Out	Pocket L	Art. No.
SFK02.050.08 TRA 1	4-20mA	50mm	104623
SFK02.100.08 TRA 1	4-20mA	100mm	104630
SFK02.150.08 TRA 1	4-20mA	150mm	104647
SFK02.200.08 TRA 1	4-20mA	200mm	104654
SFK02.250.08 TRA 1	4-20mA	250mm	104661
SFK02.450.08 TRA 1	4-20mA	450mm	104678
SFK02.050.08 TRV 1	0-10V	50mm	104920
SFK02.100.08 TRV 1	0-10V	100mm	104937
SFK02.150.08 TRV 1	0-10V	150mm	104944
SFK02.200.08 TRV 1	0-10V	200mm	104951
SFK02.250.08 TRV 1	0-10V	250mm	104968
SFK02.450.08 TRV 1	0-10V	450mm	104975

TRA 2 / TRV 2			-10°C...+120°C
SFK02			PG1
Type	Out	Pocket L	Art. No.
SFK02.050.08 TRA 2	4-20mA	50mm	104685
SFK02.100.08 TRA 2	4-20mA	100mm	104692
SFK02.150.08 TRA 2	4-20mA	150mm	104708
SFK02.200.08 TRA 2	4-20mA	200mm	104715
SFK02.250.08 TRA 2	4-20mA	250mm	104722
SFK02.450.08 TRA 2	4-20mA	450mm	104739
SFK02.050.08 TRV 2	0-10V	50mm	104982
SFK02.100.08 TRV 2	0-10V	100mm	104999
SFK02.150.08 TRV 2	0-10V	150mm	107501
SFK02.200.08 TRV 2	0-10V	200mm	107518
SFK02.250.08 TRV 2	0-10V	250mm	107525
SFK02.450.08 TRV 2	0-10V	450mm	107532

» SFK02 – Screw-In Temperature Sensor active / LON

TRA 3 / TRV 3				0°C...+50°C
SFK02				PG1
Type	Out	Pocket L	Art. No.	
SFK02.050.08 TRA 3	4-20mA	50mm	104746	
SFK02.100.08 TRA 3	4-20mA	100mm	104753	
SFK02.150.08 TRA 3	4-20mA	150mm	104760	
SFK02.200.08 TRA 3	4-20mA	200mm	104777	
SFK02.250.08 TRA 3	4-20mA	250mm	104784	
SFK02.450.08 TRA 3	4-20mA	450mm	104791	
SFK02.050.08 TRV 3	0-10V	50mm	107549	
SFK02.100.08 TRV 3	0-10V	100mm	107556	
SFK02.150.08 TRV 3	0-10V	150mm	107563	
SFK02.200.08 TRV 3	0-10V	200mm	107570	
SFK02.250.08 TRV 3	0-10V	250mm	107587	
SFK02.450.08 TRV 3	0-10V	450mm	107594	

TRA 5 / TRV 5				0°C...+250°C
SFK02				PG1
Type	Out	Pocket L	Art. No.	
SFK02.050.08 TRA 5	4-20mA	50mm	104869	
SFK02.100.08 TRA 5	4-20mA	100mm	104876	
SFK02.150.08 TRA 5	4-20mA	150mm	104883	
SFK02.200.08 TRA 5	4-20mA	200mm	104890	
SFK02.250.08 TRA 5	4-20mA	250mm	104906	
SFK02.450.08 TRA 5	4-20mA	450mm	104913	
SFK02.050.08 TRV 5	0-10V	50mm	107662	
SFK02.100.08 TRV 5	0-10V	100mm	107679	
SFK02.150.08 TRV 5	0-10V	150mm	107686	
SFK02.200.08 TRV 5	0-10V	200mm	107693	
SFK02.250.08 TRV 5	0-10V	250mm	107709	
SFK02.450.08 TRV 5	0-10V	450mm	107716	

TRA 4 / TRV 4				0°C...+160°C
SFK02				PG1
Type	Out	Pocket L	Art. No.	
SFK02.050.08 TRA 4	4-20mA	50mm	104807	
SFK02.100.08 TRA 4	4-20mA	100mm	104814	
SFK02.150.08 TRA 4	4-20mA	150mm	104821	
SFK02.200.08 TRA 4	4-20mA	200mm	104838	
SFK02.250.08 TRA 4	4-20mA	250mm	104845	
SFK02.450.08 TRA 4	4-20mA	450mm	104852	
SFK02.050.08 TRV 4	0-10V	50mm	107600	
SFK02.100.08 TRV 4	0-10V	100mm	107617	
SFK02.150.08 TRV 4	0-10V	150mm	107624	
SFK02.200.08 TRV 4	0-10V	200mm	107631	
SFK02.250.08 TRV 4	0-10V	250mm	107648	
SFK02.450.08 TRV 4	0-10V	450mm	107655	

OPTIONS		PG1
SFK02 TRA / TRV		PG1
Description		
LCD		

LON				
SFK02				PG1
Type	Out	Pocket L	Art. No.	
SFK02.050.08 LON	FTX	50mm	95181	
SFK02.100.08 LON	FTX	100mm	95198	
SFK02.150.08 LON	FTX	150mm	95204	
SFK02.200.08 LON	FTX	200mm	95211	
SFK02.250.08 LON	FTX	250mm	95228	
SFK02.450.08 LON	FTX	450mm	95235	

ACCESSORIES

SFK02				PG1
Bonded Pocket Stainless Steel				Art. No.
Type	Length	For mounting length		
ESH110	110mm	100mm		103459
ESH160	160mm	150mm		103466
ESH210	210mm	200mm		103473
ESH260	260mm	250mm		173247



Ordering example 1: SFK02.250.08 PT1000 260°C 3L
 SFK02=type / 250=mounting length 250mm
 08=diameter of pocket 8mm / PT1000=sensor PT1000
 260°C=temperature up to 260°C / 3L=3-wire connection

Ordering example 2: SFK02.100.08 TRA 1
 SFK02=type / 100=mounting length 100mm
 08=diameter of pocket 8mm
 TRA 1=transducer 4-20mA, -50°C...+50°C

Application

For temperature measuring in gaseous mediums of heating, ventilation and air-conditioning systems (e.g. supply/exhaust air ducts). Designed for locking on control and display systems.

TECHNICAL DATA – PASSIVE OUTPUT	
Mounting lengths	100mm, 150mm, 200mm, 250mm
Ambient temperature	-25°C...+90°C (connection head)
T max. sensor top	160°C (standard), 260°C
Connection	2-wire (standard), 3-wire, 4-wire (optional)
Terminal clamp	Screwing terminal, max. 1,5mm ²
Connection head	Form B, Material aluminium
Cable entry	M20
Sensor pocket	Stainless steel 1.4571, Ø=8mm
Protection	IP66, SI-Protection
Notice	Other sensors on request

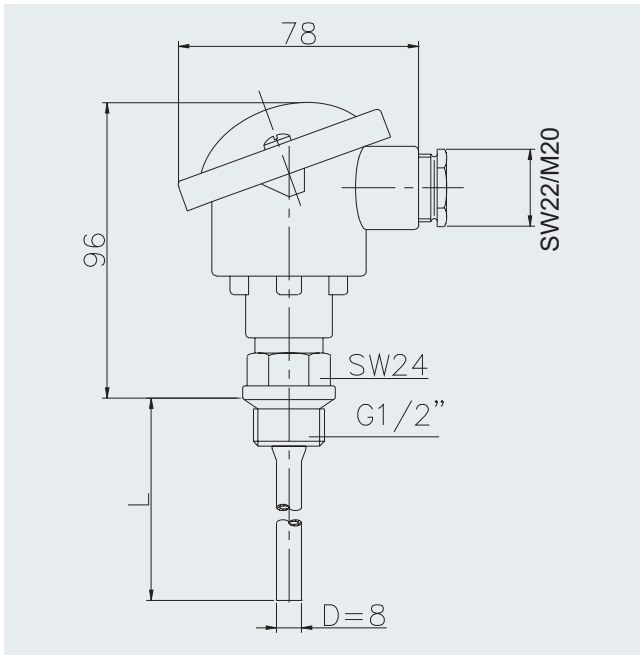
TECHNICAL DATA – ACTIVE OUTPUT	
Mounting lengths	100mm, 150mm, 200mm, 250mm
Measuring range	TRA: 4-20mA / TRV: 0-10V TRA 1/TRV 1: -50°C...+50°C TRA 2/TRV 2: -10°C...+120°C TRA 3/TRV 3: 0°C...+50°C TRA 4/TRV 4: 0...+160°C TRA 5/TRV 5: 0...+250°C
Accuracy	TRA: ±0,2°C / ±0,1% of measuring range TRV: ±0,1% of measuring range
Ambient temperature	-25°C...+70°C (connection head)
T max. sensor top	160°C (standard), 260°C
Power supply	15-24V=
Power consumption	TRA: max. 20mA/24V= TRV: max. 40mA/24V=
Terminal clamp	Screwing terminal, max. 1,5mm ²
Connection head	Form B, Material aluminium
Cable entry	M20
Sensor pocket	Stainless steel 1.4571, Ø=8mm
Protection	IP66, SI-Protection



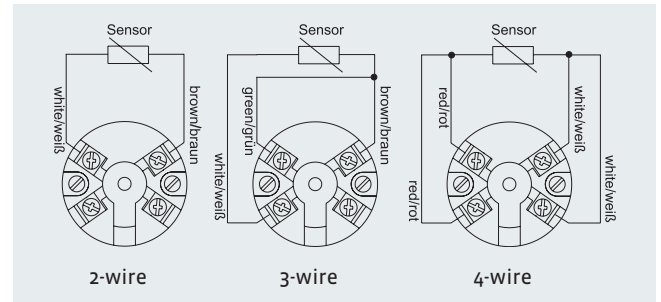
Protection against mechanical overstress
SI-Protection
 humidity and vibration

» SFK03 – Screw-In Temperature Sensor passive / active

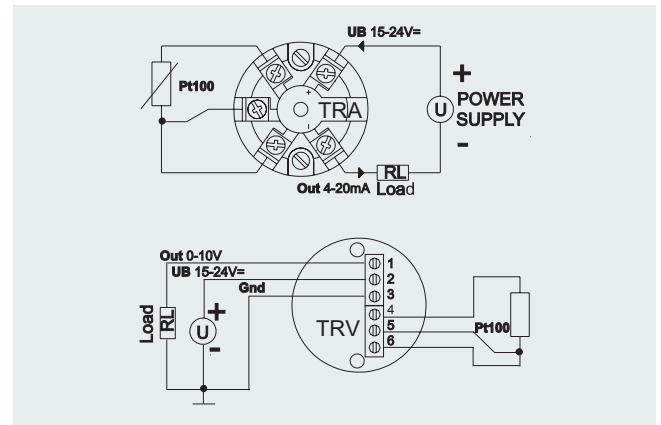
Dimensional Drawing passive / active (mm)



Connection passive



Connection active



PT100			160°C
SFK03			PG1
Type	Pocket L	Art. No.	
SFK03.100.08 PT100	100mm	64309	
SFK03.150.08 PT100	150mm	71079	
SFK03.200.08 PT100	200mm	71086	
SFK03.250.08 PT100	250mm	71093	

PT100 1/3 DIN			160°C
SFK03			PG1
Type	Pocket L	Art. No.	
SFK03.100.08 PT100 1/3 DIN	100mm	71109	
SFK03.150.08 PT100 1/3 DIN	150mm	71116	
SFK03.200.08 PT100 1/3 DIN	200mm	71123	
SFK03.250.08 PT100 1/3 DIN	250mm	71130	

PT1000			160°C
SFK03			PG1
Type	Pocket L	Art. No.	
SFK03.100.08 PT1000	100mm	71147	
SFK03.150.08 PT1000	150mm	71154	
SFK03.200.08 PT1000	200mm	71161	
SFK03.250.08 PT1000	250mm	71178	

PT1000 1/3 DIN			160°C
SFK03			PG1
Type	Pocket L	Art. No.	
SFK03.100.08 PT1000 1/3 DIN	100mm	71185	
SFK03.150.08 PT1000 1/3 DIN	150mm	71192	
SFK03.200.08 PT1000 1/3 DIN	200mm	71208	
SFK03.250.08 PT1000 1/3 DIN	250mm	71215	

Ni1000			160°C
SFK03			PG1
Type	Pocket L	Art. No.	
SFK03.100.08 Ni1000	100mm	71222	
SFK03.150.08 Ni1000	150mm	71239	
SFK03.200.08 Ni1000	200mm	71246	
SFK03.250.08 Ni1000	250mm	71253	

Ni1000TK5000			160°C
SFK03			PG1
Type	Pocket L	Art. No.	
SFK03.100.08 Ni1000TK5000	100mm	71260	
SFK03.150.08 Ni1000TK5000	150mm	71277	
SFK03.200.08 Ni1000TK5000	200mm	71284	
SFK03.250.08 Ni1000TK5000	250mm	71291	

Screw-In Temperature Sensor passive / active – SFK03 «

FeT			160°C
SFK03			PG1
Type	Pocket L	Art. No.	
SFK03.100.08 FeT	100mm	71307	
SFK03.150.08 FeT	150mm	71314	
SFK03.200.08 FeT	200mm	71321	
SFK03.250.08 FeT	250mm	71338	

NTC1,8k			150°C
SFK03			PG1
Type	Pocket L	Art. No.	
SFK03.100.08 NTC1,8k	100mm	351652	
SFK03.150.08 NTC1,8k	150mm	351676	
SFK03.200.08 NTC1,8k	200mm	351683	
SFK03.250.08 NTC1,8k	250mm	351706	

NTC5k			150°C
SFK03			PG1
Type	Pocket L	Art. No.	
SFK03.100.08 NTC5k	100mm	351713	
SFK03.150.08 NTC5k	150mm	351720	
SFK03.200.08 NTC5k	200mm	351751	
SFK03.250.08 NTC5k	250mm	351775	

NTC10k			150°C
SFK03			PG1
Type	Pocket L	Art. No.	
SFK03.100.08 NTC10k	100mm	71345	
SFK03.150.08 NTC10k	150mm	71352	
SFK03.200.08 NTC10k	200mm	71369	
SFK03.250.08 NTC10k	250mm	71376	

NTC10k Precon			150°C
SFK03			PG1
Type	Pocket L	Art. No.	
SFK03.100.08 NTC10k Precon	100mm	71420	
SFK03.150.08 NTC10k Precon	150mm	71437	
SFK03.200.08 NTC10k Precon	200mm	71444	
SFK03.250.08 NTC10k Precon	250mm	71451	

NTC20k			150°C
SFK03			PG1
Type	Pocket L	Art. No.	
SFK03.100.08 NTC20k	100mm	71383	
SFK03.150.08 NTC20k	150mm	71390	
SFK03.200.08 NTC20k	200mm	71406	
SFK03.250.08 NTC20k	250mm	71413	

LM235Z			120°C
SFK03			PG1
Type	Pocket L	Art. No.	
SFK03.100.08 LM235Z	100mm	71468	
SFK03.150.08 LM235Z	150mm	71475	
SFK03.200.08 LM235Z	200mm	71482	
SFK03.250.08 LM235Z	250mm	71499	

OPTIONS	
SFK03 160°C	
PG1	
Description	
Temperature up to 260°C	
3-wire connection	
4-wire connection	

TRA 1 / TRV 1			-50°C...+50°C
SFK03			PG1
Type	Out	Pocket L	Art. No.
SFK03.100.08 TRA 1	4-20mA	100mm	194440
SFK03.150.08 TRA 1	4-20mA	150mm	200899
SFK03.200.08 TRA 1	4-20mA	200mm	352055
SFK03.250.08 TRA 1	4-20mA	250mm	254908
SFK03.100.08 TRV 1	0-10V	100mm	318853
SFK03.150.08 TRV 1	0-10V	150mm	352024
SFK03.200.08 TRV 1	0-10V	200mm	352062
SFK03.250.08 TRV 1	0-10V	250mm	352109

TRA 2 / TRV 2			-10°C...+120°C
SFK03			PG1
Type	Out	Pocket L	Art. No.
SFK03.100.08 TRA 2	4-20mA	100mm	189316
SFK03.150.08 TRA 2	4-20mA	150mm	344166
SFK03.200.08 TRA 2	4-20mA	200mm	315746
SFK03.250.08 TRA 2	4-20mA	250mm	352086
SFK03.100.08 TRV 2	0-10V	100mm	335744
SFK03.150.08 TRV 2	0-10V	150mm	352031
SFK03.200.08 TRV 2	0-10V	200mm	246958
SFK03.250.08 TRV 2	0-10V	250mm	352253

» SFK03 – Screw-In Temperature Sensor active

TRA 3 / TRV 3				0°C...+50°C
SFK03				PG1
Type	Out	Pocket L	Art. No.	
SFK03.100.08 TRA 3	4-20mA	100mm	132220	
SFK03.150.08 TRA 3	4-20mA	150mm	165044	
SFK03.200.08 TRA 3	4-20mA	200mm	165280	
SFK03.250.08 TRA 3	4-20mA	250mm	303835	
SFK03.100.08 TRV 3	0-10V	100mm	281775	
SFK03.150.08 TRV 3	0-10V	150mm	352048	
SFK03.200.08 TRV 3	0-10V	200mm	352079	
SFK03.250.08 TRV 3	0-10V	250mm	352260	

TRA 4 / TRV 4				0°C...+160°C
SFK03				PG1
Type	Out	Pocket L	Art. No.	
SFK03.100.08 TRA 4	4-20mA	100mm	293051	
SFK03.150.08 TRA 4	4-20mA	150mm	295024	
SFK03.200.08 TRA 4	4-20mA	200mm	239226	
SFK03.250.08 TRA 4	4-20mA	250mm	352093	
SFK03.100.08 TRV 4	0-10V	100mm	298414	
SFK03.150.08 TRV 4	0-10V	150mm	292115	
SFK03.200.08 TRV 4	0-10V	200mm	324403	
SFK03.250.08 TRV 4	0-10V	250mm	352277	

TRA 5 / TRV 5				0°C...+250°C
SFK03				PG1
Type	Out	Pocket L	Art. No.	
SFK03.100.08 TRA 5	4-20mA	100mm	131674	
SFK03.150.08 TRA 5	4-20mA	150mm	146821	
SFK03.200.08 TRA 5	4-20mA	200mm	152884	
SFK03.250.08 TRA 5	4-20mA	250mm	157421	
SFK03.100.08 TRV 5	0-10V	100mm	243933	
SFK03.150.08 TRV 5	0-10V	150mm	295314	
SFK03.200.08 TRV 5	0-10V	200mm	297509	
SFK03.250.08 TRV 5	0-10V	250mm	306607	

ACCESSORIES

SFK03				PG1
Bonded pockets stainless steel				Art. No.
Type	Length	for mounting length		
ESH110	110mm	100mm		103459
ESH160	160mm	150mm		103466
ESH210	210mm	200mm		103473
ESH260	260mm	250mm		173247



Ordering example 1: SFK03.200.08 LM235Z 260°C 3L
 SFK03=type / 200=mounting length 200mm
 08=diameter of pocket 8mm / LM235Z=sensor LM235Z
 260°C=temperature up to 260°C / 3L=3-wire connection

Ordering example 2: SFK03.450.08 TRV 4
 SFK03=type / 450=mounting length 450mm
 08=diameter of pocket 8mm
 TRV 4=transducer 0-10V, 0°C...+160°C

Screw-In Temperature Sensor passive – SFKH01 «

Application

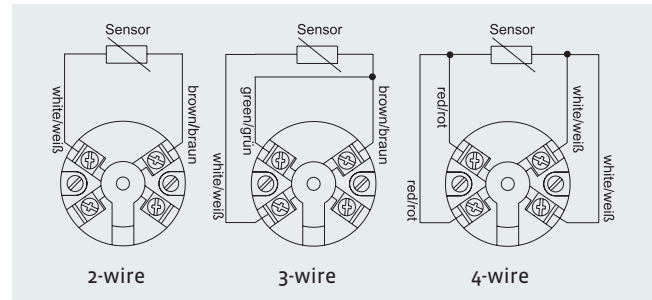
For temperature measuring in gaseous mediums of heating, ventilation and air-conditioning systems (e.g. supply/exhaust air ducts). Designed for locking on control and display systems.

TECHNICAL DATA

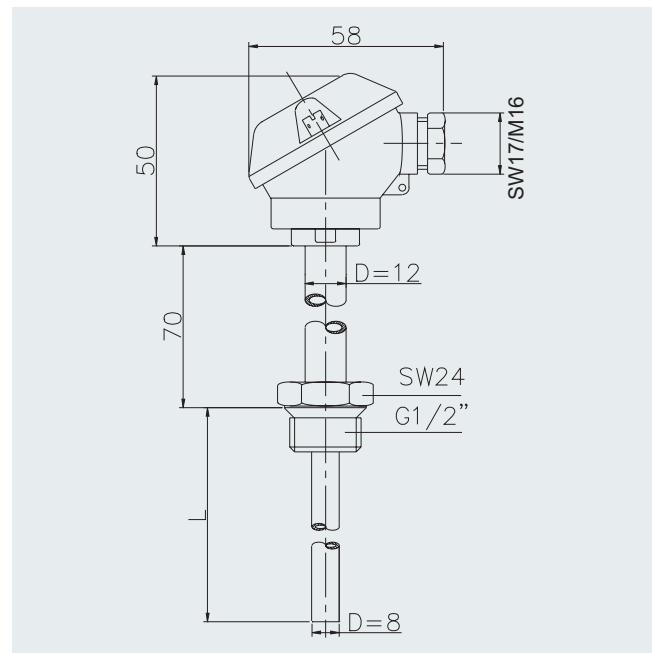
Mounting lengths	50mm, 100mm, 150mm, 200mm, 250mm, 450mm
Ambient temperature	-25°C...+90°C (connection head)
T max. sensor top	160°C (standard), 260°C
Connection	2-wire (standard), 3-wire, 4-wire (optional)
Terminal clamp	Screwing terminal, max. 1,5mm ²
Connection head	Form J, Material aluminium
Cable entry	M16
Sensor pocket	Stainless steel 1.4571, Ø=8mm
Neck tube	Stainless steel 1.4305, Ø=12mm, L=70mm
Protection	IP65, mit SI-Protection
Notice	Other sensors on request



Connection passive



Dimensional Drawing (mm)



Protection against mechanical overstress
SI-Protection
 humidity and vibration

» SFKH01 – Screw-In Temperature Sensor passive

PT100			160°C
SFKH01			PG1
Type	Pocket L	Art. No.	
SFKH01.050.08 PT100	50mm	54652	
SFKH01.100.08 PT100	100mm	55567	
SFKH01.150.08 PT100	150mm	55574	
SFKH01.200.08 PT100	200mm	55581	
SFKH01.250.08 PT100	250mm	55598	
SFKH01.450.08 PT100	450mm	55604	

PT1000			160°C
SFKH01			PG1
Type	Pocket L	Art. No.	
SFKH01.050.08 PT1000	50mm	55673	
SFKH01.100.08 PT1000	100mm	55680	
SFKH01.150.08 PT1000	150mm	55697	
SFKH01.200.08 PT1000	200mm	55703	
SFKH01.250.08 PT1000	250mm	55710	
SFKH01.450.08 PT1000	450mm	55727	

Ni1000			160°C
SFKH01			PG1
Type	Pocket L	Art. No.	
SFKH01.050.08 Ni1000	50mm	55796	
SFKH01.100.08 Ni1000	100mm	55802	
SFKH01.150.08 Ni1000	150mm	55819	
SFKH01.200.08 Ni1000	200mm	55826	
SFKH01.250.08 Ni1000	250mm	55833	
SFKH01.450.08 Ni1000	450mm	55840	

FeT			160°C
SFKH01			PG1
Type	Pocket L	Art. No.	
SFKH01.050.08 FeT	50mm	55918	
SFKH01.100.08 FeT	100mm	55925	
SFKH01.150.08 FeT	150mm	55932	
SFKH01.200.08 FeT	200mm	55949	
SFKH01.250.08 FeT	250mm	55956	
SFKH01.450.08 FeT	450mm	55963	

PT100 1/3 DIN			160°C
SFKH01			PG1
Type	Pocket L	Art. No.	
SFKH01.050.08 PT100 1/3 DIN	50mm	55611	
SFKH01.100.08 PT100 1/3 DIN	100mm	55628	
SFKH01.150.08 PT100 1/3 DIN	150mm	55635	
SFKH01.200.08 PT100 1/3 DIN	200mm	55642	
SFKH01.250.08 PT100 1/3 DIN	250mm	55659	
SFKH01.450.08 PT100 1/3 DIN	450mm	55666	

PT1000 1/3 DIN			160°C
SFKH01			PG1
Type	Pocket L	Art. No.	
SFKH01.050.08 PT1000 1/3 DIN	50mm	55734	
SFKH01.100.08 PT1000 1/3 DIN	100mm	55741	
SFKH01.150.08 PT1000 1/3 DIN	150mm	55758	
SFKH01.200.08 PT1000 1/3 DIN	200mm	55765	
SFKH01.250.08 PT1000 1/3 DIN	250mm	55772	
SFKH01.450.08 PT1000 1/3 DIN	450mm	55789	

Ni1000TK5000			160°C
SFKH01			PG1
Type	Pocket L	Art. No.	
SFKH01.050.08 Ni1000TK5000	50mm	55857	
SFKH01.100.08 Ni1000TK5000	100mm	55864	
SFKH01.150.08 Ni1000TK5000	150mm	55871	
SFKH01.200.08 Ni1000TK5000	200mm	55888	
SFKH01.250.08 Ni1000TK5000	250mm	55895	
SFKH01.450.08 Ni1000TK5000	450mm	55901	

NTC1,8k			150°C
SFKH01			PG1
Type	Pocket L	Art. No.	
SFKH01.050.08 NTC1,8k	50mm	351287	
SFKH01.100.08 NTC1,8k	100mm	258708	
SFKH01.150.08 NTC1,8k	150mm	351317	
SFKH01.200.08 NTC1,8k	200mm	351379	
SFKH01.250.08 NTC1,8k	250mm	351393	
SFKH01.450.08 NTC1,8k	450mm	351416	

Screw-In Temperature Sensor passive – SFKH01 «

NTC5k			160°C
SFKH01			PG1
Type	Pocket L	Art. No.	
SFKH01.050.08 NTC5k	50mm	351294	
SFKH01.100.08 NTC5k	100mm	351300	
SFKH01.150.08 NTC5k	150mm	351362	
SFKH01.200.08 NTC5k	200mm	351386	
SFKH01.250.08 NTC5k	250mm	351409	
SFKH01.450.08 NTC5k	450mm	351423	

NTC10k			160°C
SFKH01			PG1
Type	Pocket L	Art. No.	
SFKH01.050.08 NTC10k	50mm	55970	
SFKH01.100.08 NTC10k	100mm	55987	
SFKH01.150.08 NTC10k	150mm	55994	
SFKH01.200.08 NTC10k	200mm	56007	
SFKH01.250.08 NTC10k	250mm	56014	
SFKH01.450.08 NTC10k	450mm	56021	

NTC10k Precon			160°C
SFKH01			PG1
Type	Pocket L	Art. No.	
SFKH01.050.08 NTC10k Precon	50mm	56090	
SFKH01.100.08 NTC10k Precon	100mm	56106	
SFKH01.150.08 NTC10k Precon	150mm	56113	
SFKH01.200.08 NTC10k Precon	200mm	56120	
SFKH01.250.08 NTC10k Precon	250mm	56137	
SFKH01.450.08 NTC10k Precon	450mm	56144	

NTC20k			160°C
SFKH01			PG1
Type	Pocket L	Art. No.	
SFKH01.050.08 NTC20k	50mm	56038	
SFKH01.100.08 NTC20k	100mm	56045	
SFKH01.150.08 NTC20k	150mm	56052	
SFKH01.200.08 NTC20k	200mm	56069	
SFKH01.250.08 NTC20k	250mm	56076	
SFKH01.450.08 NTC20k	450mm	56083	

LM235Z			120°C
SFKH01			PG1
Type	Pocket L	Art. No.	
SFKH01.050.08 LM235Z	50mm	56151	
SFKH01.100.08 LM235Z	100mm	56168	
SFKH01.150.08 LM235Z	150mm	56175	
SFKH01.200.08 LM235Z	200mm	56182	
SFKH01.250.08 LM235Z	250mm	56199	
SFKH01.450.08 LM235Z	450mm	56205	

OPTIONS		PG1
SFKH01 160°C		PG1
Description		
Temperature up to 260°C		
3-wire connection		
4-wire connection		

ACCESSORIES			
SFKH01			
Bonded pockets stainless steel			Art. No.
Type	Length	For mounting length	
ESH110	110mm	100mm	103459
ESH160	160mm	150mm	103466
ESH210	210mm	200mm	103473
ESH260	260mm	250mm	173247



Ordering example: SFKH01.250.08 NTC5k 260°C 4L
 SFKH01=type / 250=mounting length 250mm / 08=pocket ø 8mm
 NTC5k=sensor NTC5k / 260°C=temperature up to 260°C
 4L=4-wire connection

» SFKH02 – Screw-In Temperature Sensor passive / active / LON

Application

For temperature measuring in gaseous mediums of heating, ventilation and air-conditioning systems (e.g. supply/exhaust air ducts). With neck tube. Designed for locking on control and display systems.



TECHNICAL DATA – PASSIVE OUTPUT	
Mounting lengths	50mm, 100mm, 150mm, 200mm, 250mm, 450mm
Ambient temperature	-35°C...+90°C (connection head)
T max. sensor top	160°C (standard), 260°C
Connection	2-wire (standard), 3-wire, 4-wire (optional)
Terminal clamp	Screwing terminal, max. 1,5mm ²
Connection head	Material PA6, colour pure white (similar to RAL9010), with quick release fastener screws
Cable entry	M16
Sensor pocket	Stainless steel 1.4571, $\varnothing=8$ mm
Neck tube	Stainless steel 1.4305, $\varnothing=12$ mm, L=70mm
Protection	IP65, SI-Protection
Notice	Other sensors on request

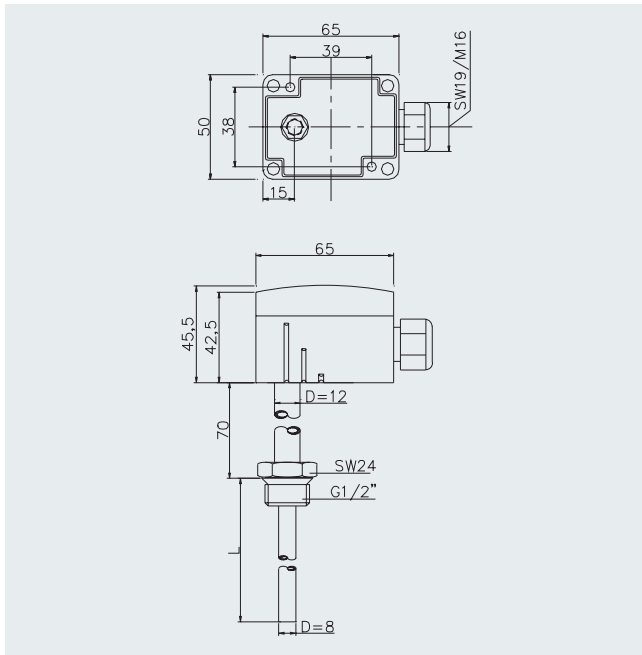
TECHNICAL DATA – ACTIVE OUTPUT/ LON	
Mounting lengths	50mm, 100mm, 150mm, 200mm, 250mm, 450mm
Measuring ranges	TRA: 4-20mA / TRV: 0-10V TRA 1 / TRV 1: -50°C...+50°C TRA 2 / TRV 2: -10°C...+120°C TRA 3 / TRV 3: 0°C...+50°C TRA 4 / TRV 4: 0°C...+160°C TRA 5 / TRV 5: 0°C...+250°C LON: -45°C...+130°C
Accuracy	TRA/TRV: $\pm 1\%$ of measuring range LON: Typ. $\pm 0,5K$
Ambient temperature	-35°C...+70°C (connection head)
T max. sensor top	160°C (standard), 260°C
Power supply	TRA: 15-24V= ($\pm 10\%$) TRV: 15-24V= ($\pm 10\%$) or 24V~ ($\pm 10\%$) LON: 15-24V= ($\pm 10\%$) or 24V~ ($\pm 10\%$)
Power consumption	TRA: max. 20mA/24V= TRV: typ. 0,42W/0,84VA LON: typ. 0,5W/1,7VA
Terminal clamp	Screwing terminal, max. 1,5mm ²
Connection head	Material PA6, colour pure white (similar to RAL9010), with quick release fastener screws
Cable entry	M16 M20 single and double (LON)
Sensor pocket	Stainless steel 1.4571, $\varnothing=8$ mm
Neck tube	1.4305, $\varnothing=12$ mm, L=70mm
Protection	IP65, SI-Protection



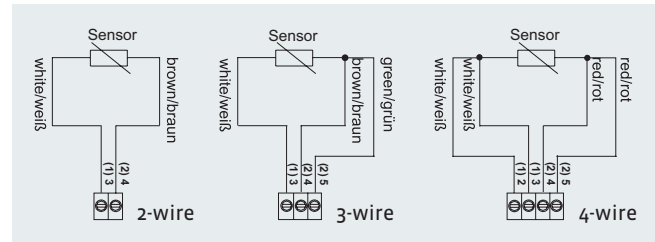
Protection against mechanical overstress
SI-Protection
 humidity and vibration

Srew-In Temperature Sensor passive / active / LON – SFKH02 «

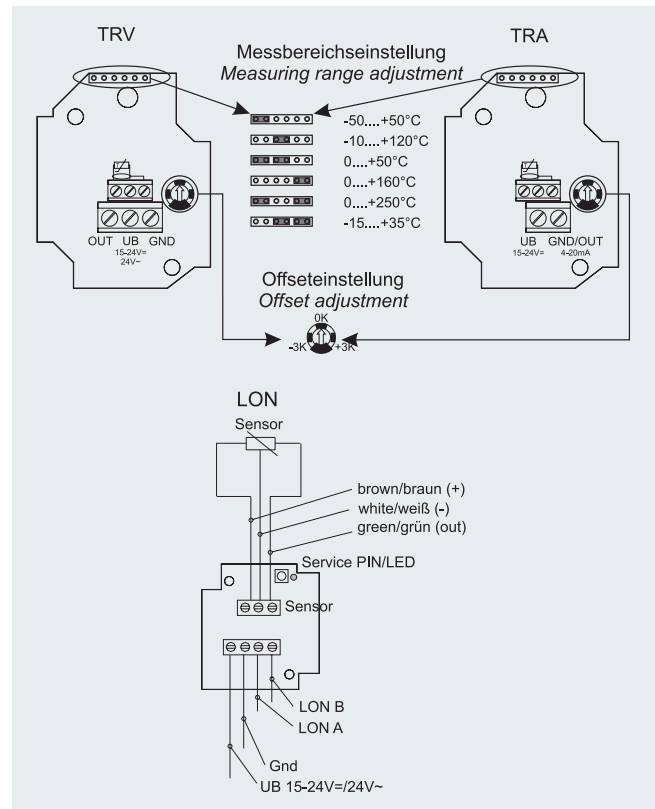
Dimensional Drawing passive / active (mm)



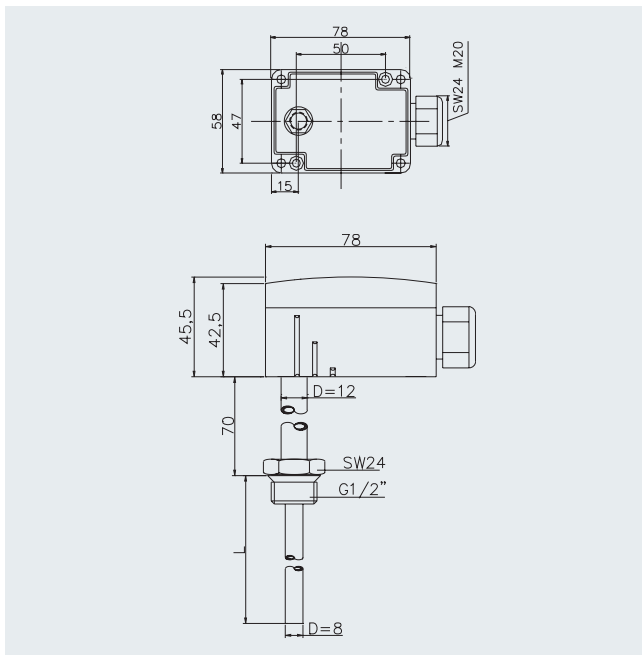
Connection passive



Connection active / LON



Dimensional Drawing LON (mm)



» SFKH02 – Screw-In Temperature Sensor passive

PT100			160°C
SFKH02			PG1
Type	Pocket L	Art. No.	
SFKH02.050.08 PT100	50mm	63630	
SFKH02.100.08 PT100	100mm	63647	
SFKH02.150.08 PT100	150mm	63654	
SFKH02.200.08 PT100	200mm	63661	
SFKH02.250.08 PT100	250mm	63678	
SFKH02.450.08 PT100	450mm	63685	

PT100 1/3 DIN			160°C
SFKH02			PG1
Type	Pocket L	Art. No.	
SFKH02.050.08 PT100 1/3 DIN	50mm	63692	
SFKH02.100.08 PT100 1/3 DIN	100mm	63708	
SFKH02.150.08 PT100 1/3 DIN	150mm	63715	
SFKH02.200.08 PT100 1/3 DIN	200mm	63722	
SFKH02.250.08 PT100 1/3 DIN	250mm	63739	
SFKH02.450.08 PT100 1/3 DIN	450mm	63746	

PT1000			160°C
SFKH02			PG1
Type	Pocket L	Art. No.	
SFKH02.050.08 PT1000	50mm	63753	
SFKH02.100.08 PT1000	100mm	63760	
SFKH02.150.08 PT1000	150mm	63777	
SFKH02.200.08 PT1000	200mm	63784	
SFKH02.250.08 PT1000	250mm	63791	
SFKH02.450.08 PT1000	450mm	63807	

PT1000 1/3 DIN			160°C
SFKH02			PG1
Type	Pocket L	Art. No.	
SFKH02.050.08 PT1000 1/3 DIN	50mm	63814	
SFKH02.100.08 PT1000 1/3 DIN	100mm	63821	
SFKH02.150.08 PT1000 1/3 DIN	150mm	63838	
SFKH02.200.08 PT1000 1/3 DIN	200mm	63845	
SFKH02.250.08 PT1000 1/3 DIN	250mm	63852	
SFKH02.450.08 PT1000 1/3 DIN	450mm	63869	

Ni1000			160°C
SFKH02			PG1
Type	Pocket L	Art. No.	
SFKH02.050.08 Ni1000	50mm	63876	
SFKH02.100.08 Ni1000	100mm	63883	
SFKH02.150.08 Ni1000	150mm	63890	
SFKH02.200.08 Ni1000	200mm	63906	
SFKH02.250.08 Ni1000	250mm	63913	
SFKH02.450.08 Ni1000	450mm	63920	

Ni1000TK5000			160°C
SFKH02			PG1
Type	Pocket L	Art. No.	
SFKH02.050.08 Ni1000TK5000	50mm	63937	
SFKH02.100.08 Ni1000TK5000	100mm	63944	
SFKH02.150.08 Ni1000TK5000	150mm	63951	
SFKH02.200.08 Ni1000TK5000	200mm	63968	
SFKH02.250.08 Ni1000TK5000	250mm	63975	
SFKH02.450.08 Ni1000TK5000	450mm	63982	

FeT			160°C
SFKH02			PG1
Type	Pocket L	Art. No.	
SFKH02.050.08 FeT	50mm	63999	
SFKH02.100.08 FeT	100mm	64439	
SFKH02.150.08 FeT	150mm	64446	
SFKH02.200.08 FeT	200mm	64453	
SFKH02.250.08 FeT	250mm	64460	
SFKH02.450.08 FeT	450mm	64477	

NTC1,8k			150°C
SFKH02			PG1
Type	Pocket L	Art. No.	
SFKH02.050.08 NTC1,8k	50mm	351454	
SFKH02.100.08 NTC1,8k	100mm	204842	
SFKH02.150.08 NTC1,8k	150mm	290531	
SFKH02.200.08 NTC1,8k	200mm	351508	
SFKH02.250.08 NTC1,8k	250mm	290555	
SFKH02.450.08 NTC1,8k	450mm	351539	

Screw-In Temperature Sensor passive / active – SFKH02 «

NTC5k			150°C
SFKH02			PG1
Type	Pocket L	Art. No.	
SFKH02.050.08 NTC5k	50mm	351478	
SFKH02.100.08 NTC5k	100mm	351485	
SFKH02.150.08 NTC5k	150mm	351492	
SFKH02.200.08 NTC5k	200mm	351515	
SFKH02.250.08 NTC5k	250mm	351522	
SFKH02.450.08 NTC5k	450mm	351546	

NTC10k			150°C
SFKH02			PG1
Type	Pocket L	Art. No.	
SFKH02.050.08 NTC10k	50mm	64484	
SFKH02.100.08 NTC10k	100mm	64491	
SFKH02.150.08 NTC10k	150mm	64507	
SFKH02.200.08 NTC10k	200mm	64514	
SFKH02.250.08 NTC10k	250mm	64521	
SFKH02.450.08 NTC10k	450mm	64538	

NTC10k Precon			150°C
SFKH02			PG1
Type	Pocket L	Art. No.	
SFKH02.050.08 NTC10k Precon	50mm	64606	
SFKH02.100.08 NTC10k Precon	100mm	64613	
SFKH02.150.08 NTC10k Precon	150mm	64620	
SFKH02.200.08 NTC10k Precon	200mm	64637	
SFKH02.250.08 NTC10k Precon	250mm	64644	
SFKH02.450.08 NTC10k Precon	450mm	64651	

NTC20k			150°C
SFKH02			PG1
Type	Pocket L	Art. No.	
SFKH02.050.08 NTC20k	50mm	64545	
SFKH02.100.08 NTC20k	100mm	64552	
SFKH02.150.08 NTC20k	150mm	64569	
SFKH02.200.08 NTC20k	200mm	64576	
SFKH02.250.08 NTC20k	250mm	64583	
SFKH02.450.08 NTC20k	450mm	64590	

LM235Z			120°C
SFKH02			PG1
Type	Pocket L	Art. No.	
SFKH02.050.08 LM235Z	50mm	64668	
SFKH02.100.08 LM235Z	100mm	64675	
SFKH02.150.08 LM235Z	150mm	64682	
SFKH02.200.08 LM235Z	200mm	64699	
SFKH02.250.08 LM235Z	250mm	64705	
SFKH02.450.08 LM235Z	450mm	64712	

OPTIONS	
SFKH02 160°C	
PG1	
Description	
Temperature up to 260°C	
3-wire connection	
4-wire connection	

TRA 1 / TRV 1			-50°C...+50°C
SFKH02			PG1
Type	Out	Pocket L	Art. No.
SFKH02.050.08 TRA 1	4-20mA	50mm	108614
SFKH02.100.08 TRA 1	4-20mA	100mm	108621
SFKH02.150.08 TRA 1	4-20mA	150mm	108638
SFKH02.200.08 TRA 1	4-20mA	200mm	108645
SFKH02.250.08 TRA 1	4-20mA	250mm	109000
SFKH02.450.08 TRA 1	4-20mA	450mm	109017
SFKH02.050.08 TRV 1	0-10V	50mm	109277
SFKH02.100.08 TRV 1	0-10V	100mm	109284
SFKH02.150.08 TRV 1	0-10V	150mm	109291
SFKH02.200.08 TRV 1	0-10V	200mm	109307
SFKH02.250.08 TRV 1	0-10V	250mm	109314
SFKH02.450.08 TRV 1	0-10V	450mm	109321

TRA 2 / TRV 2			-10°C...+120°C
SFKH02			PG1
Type	Out	Pocket L	Art. No.
SFKH02.050.08 TRA 2	4-20mA	50mm	109024
SFKH02.100.08 TRA 2	4-20mA	100mm	109031
SFKH02.150.08 TRA 2	4-20mA	150mm	109048
SFKH02.200.08 TRA 2	4-20mA	200mm	109055
SFKH02.250.08 TRA 2	4-20mA	250mm	109062
SFKH02.450.08 TRA 2	4-20mA	450mm	109079
SFKH02.050.08 TRV 2	0-10V	50mm	109338
SFKH02.100.08 TRV 2	0-10V	100mm	109345
SFKH02.150.08 TRV 2	0-10V	150mm	109352
SFKH02.200.08 TRV 2	0-10V	200mm	109369
SFKH02.250.08 TRV 2	0-10V	250mm	109376
SFKH02.450.08 TRV 2	0-10V	450mm	109499

» SFKH02 – Screw-In Temperature Sensor active / LON

TRA 3 / TRV 3				0°C...+50°C
SFKH02				PG1
Type	Out	Pocket L	Art. No.	
SFKH02.050.08 TRA 3	4-20mA	50mm	109086	
SFKH02.100.08 TRA 3	4-20mA	100mm	109093	
SFKH02.150.08 TRA 3	4-20mA	150mm	109109	
SFKH02.200.08 TRA 3	4-20mA	200mm	109116	
SFKH02.250.08 TRA 3	4-20mA	250mm	109123	
SFKH02.450.08 TRA 3	4-20mA	450mm	109130	
SFKH02.050.08 TRV 3	0-10V	50mm	108799	
SFKH02.100.08 TRV 3	0-10V	100mm	108805	
SFKH02.150.08 TRV 3	0-10V	150mm	108812	
SFKH02.200.08 TRV 3	0-10V	200mm	108829	
SFKH02.250.08 TRV 3	0-10V	250mm	108836	
SFKH02.450.08 TRV 3	0-10V	450mm	108843	

TRA 5 / TRV 5				0°C...+250°C
SFKH02				PG1
Type	Out	Pocket L	Art. No.	
SFKH02.050.08 TRA 5	4-20mA	50mm	109215	
SFKH02.100.08 TRA 5	4-20mA	100mm	109222	
SFKH02.150.08 TRA 5	4-20mA	150mm	109239	
SFKH02.200.08 TRA 5	4-20mA	200mm	109246	
SFKH02.250.08 TRA 5	4-20mA	250mm	109253	
SFKH02.450.08 TRA 5	4-20mA	450mm	108904	
SFKH02.050.08 TRV 5	0-10V	50mm	108911	
SFKH02.100.08 TRV 5	0-10V	100mm	108928	
SFKH02.150.08 TRV 5	0-10V	150mm	108935	
SFKH02.200.08 TRV 5	0-10V	200mm	108942	
SFKH02.250.08 TRV 5	0-10V	250mm	108959	
SFKH02.450.08 TRV 5	0-10V	450mm	108966	

TRA 4 / TRV 4				0°C...+160°C
SFKH02				PG1
Type	Out	Pocket L	Art. No.	
SFKH02.050.08 TRA 4	4-20mA	50mm	109147	
SFKH02.100.08 TRA 4	4-20mA	100mm	109154	
SFKH02.150.08 TRA 4	4-20mA	150mm	109161	
SFKH02.200.08 TRA 4	4-20mA	200mm	109185	
SFKH02.250.08 TRA 4	4-20mA	250mm	109192	
SFKH02.450.08 TRA 4	4-20mA	450mm	109208	
SFKH02.050.08 TRV 4	0-10V	50mm	108850	
SFKH02.100.08 TRV 4	0-10V	100mm	108867	
SFKH02.150.08 TRV 4	0-10V	150mm	108874	
SFKH02.200.08 TRV 4	0-10V	200mm	108881	
SFKH02.250.08 TRV 4	0-10V	250mm	108898	
SFKH02.450.08 TRV 4	0-10V	450mm	109260	

OPTIONS	
SFKH02 TRA / TRV	PG1
Description	
LCD	

LON			
SFKH02	PG1		
Type	Out	Pocket L	Art. No.
SFKH02.050.08 LON	FTT	50mm	95365
SFKH02.100.08 LON	FTT	100mm	95372
SFKH02.150.08 LON	FTT	150mm	95389
SFKH02.200.08 LON	FTT	200mm	95396
SFKH02.250.08 LON	FTT	250mm	95402
SFKH02.450.08 LON	FTT	450mm	95419

ACCESSORIES

SFKH02				PG1
Bonded pockets stainless steel			Art. No.	
Type	Length	For mounting length		
ESH110	110mm	100mm		
ESH160	160mm	150mm		
ESH210	210mm	200mm		
ESH260	260mm	250mm		



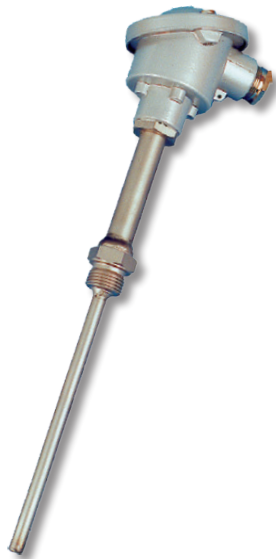
Ordering example 1: SFKH02.450.08 NTC1,8k 260°C 3L
 SFKH02=type / 450=mounting length 450mm / 08=pocket ø 8mm
 NTC1,8k=sensor NTC1,8k / 260°C=temperature up to 260°C
 3L=3-wire connection

Ordering example 2: SFKH02.100.08 TRA 2
 SFKH02=type / 100=mounting length 100mm / 08=pocket ø 8mm
 TRA 2=transducer 4-20mA, -10°C...+120°C

Application

For temperature measuring in gaseous mediums of heating, ventilation and air-conditioning systems (e.g. supply/exhaust air ducts). With neck tube. Designed for locking on control and display systems.

TECHNICAL DATA – PASSIVE OUTPUT	
Mounting lengths	100mm, 150mm, 200mm, 250mm
Ambient temperature	-25°C...+90°C (connection head)
T max. sensor top	160°C (standard), 260°C
Connection	2-wire (standard), 3-wire, 4-wire (optional)
Terminal clamp	Screwing terminal, max. 1,5mm ²
Connection head	Form B, Material aluminium
Cable entry	M20
Sensor pocket	Stainless steel 1.4571, Ø=8mm
Neck tube	Stainless steel 1.4305, Ø=12mm, L=70mm
Protection	IP66, SI-Protection
Notice	Other sensors on request

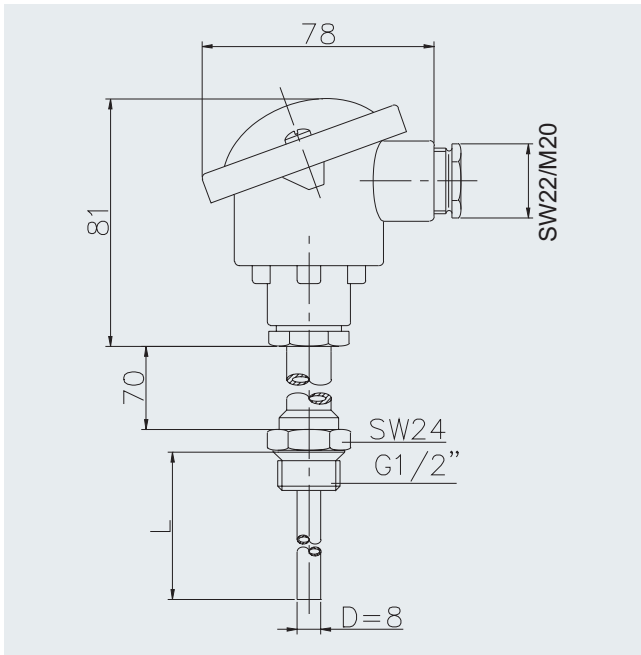


TECHNICAL DATA – ACTIVE OUTPUT	
Mounting lengths	100mm, 150mm, 200mm, 250mm
Measuring range	TRA: 4-20mA / TRV: 0-10V TRA 1/TRV 1: -50°C...+50°C TRA 2/TRV 2: -10°C...+120°C TRA 3/TRV 3: 0°C...+50°C TRA 4/TRV 4: 0...+160°C TRA 5/TRV 5: 0...+250°C
Accuracy	TRA: ±0,2°C / ±0,1% of measuring range TRV: ±0,1% of measuring range
Ambient temperature	-25°C...+70°C (connection head)
T max. sensor top	160°C (standard), 260°C
Power supply	15-24V=
Power consumption	TRA: max. 20mA/24V= TRV: max. 40mA/24V=
Terminal clamp	Screwing terminal, max. 1,5mm ²
Connection head	Form B, Material aluminium
Cable entry	M20
Sensor pocket	Stainless steel 1.4571, Ø=8mm
Neck tube	Stainless steel 1.4305, Ø=12mm, L=70mm
Protection	IP66, SI-Protection

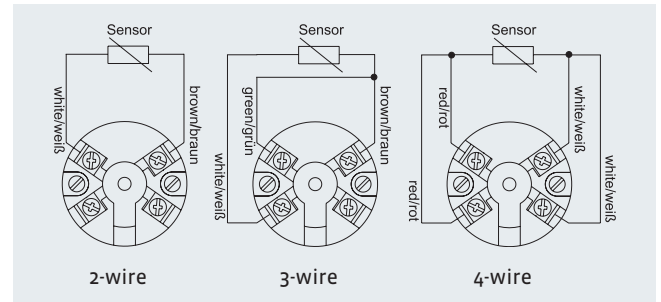
Protection against mechanical overstress
SI-Protection
 humidity and vibration

» SFKH03 – Screw-In Temperature Sensor passive / active

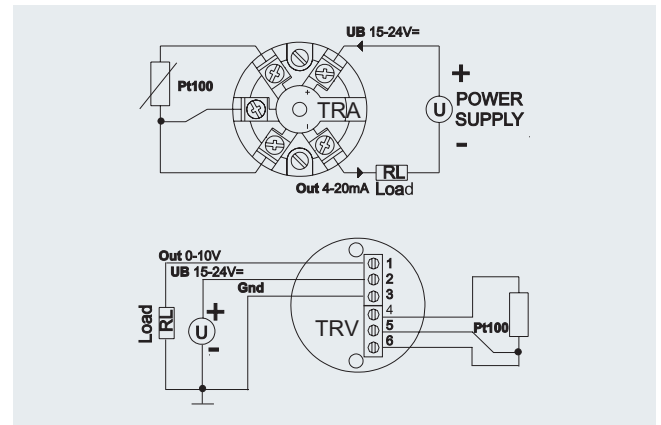
Dimensional Drawing passive / active (mm)



Connection passive



Connection active



PT100		160°C	
SFKH03		PG1	
Type	Pocket L	Art. No.	
SFKH03.100.08 PT100	100mm	64323	
SFKH03.150.08 PT100	150mm	75053	
SFKH03.200.08 PT100	200mm	75077	
SFKH03.250.08 PT100	250mm	75084	

PT100 1/3 DIN		160°C	
SFKH03		PG1	
Type	Pocket L	Art. No.	
SFKH03.100.08 PT100 1/3 DIN	100mm	75091	
SFKH03.150.08 PT100 1/3 DIN	150mm	75107	
SFKH03.200.08 PT100 1/3 DIN	200mm	75114	
SFKH03.250.08 PT100 1/3 DIN	250mm	75121	

PT1000		160°C	
SFKH03		PG1	
Type	Pocket L	Art. No.	
SFKH03.100.08 PT1000	100mm	75138	
SFKH03.150.08 PT1000	150mm	75145	
SFKH03.200.08 PT1000	200mm	75152	
SFKH03.250.08 PT1000	250mm	75169	

PT1000 1/3 DIN		160°C	
SFKH03		PG1	
Type	Pocket L	Art. No.	
SFKH03.100.08 PT1000 1/3 DIN	100mm	75176	
SFKH03.150.08 PT1000 1/3 DIN	150mm	75183	
SFKH03.200.08 PT1000 1/3 DIN	200mm	75190	
SFKH03.250.08 PT1000 1/3 DIN	250mm	75206	

Ni1000		160°C	
SFKH03		PG1	
Type	Pocket L	Art. No.	
SFKH03.100.08 Ni1000	100mm	75213	
SFKH03.150.08 Ni1000	150mm	75220	
SFKH03.200.08 Ni1000	200mm	75237	
SFKH03.250.08 Ni1000	250mm	75244	

Ni1000TK5000		160°C	
SFKH03		PG1	
Type	Pocket L	Art. No.	
SFKH03.100.08 Ni1000TK5000	100mm	75251	
SFKH03.150.08 Ni1000TK5000	150mm	75268	
SFKH03.200.08 Ni1000TK5000	200mm	75275	
SFKH03.250.08 Ni1000TK5000	250mm	75282	

Screw-In Temperature Sensor passive / active – SFKH03 «

FeT			160°C
SFKH03			PG1
Type	Pocket L	Art. No.	
SFKH03.100.08 FeT	100mm	75299	
SFKH03.150.08 FeT	150mm	75305	
SFKH03.200.08 FeT	200mm	75312	
SFKH03.250.08 FeT	250mm	75329	

NTC1,8k			150°C
SFKH03			PG1
Type	Pocket L	Art. No.	
SFKH03.100.08 NTC1,8k	100mm	351553	
SFKH03.150.08 NTC1,8k	150mm	351607	
SFKH03.200.08 NTC1,8k	200mm	351638	
SFKH03.250.08 NTC1,8k	250mm	351669	

NTC5k			150°C
SFKH03			PG1
Type	Pocket L	Art. No.	
SFKH03.100.08 NTC5k	100mm	351560	
SFKH03.150.08 NTC5k	150mm	351621	
SFKH03.200.08 NTC5k	200mm	351645	
SFKH03.250.08 NTC5k	250mm	351690	

NTC10k			150°C
SFKH03			PG1
Type	Pocket L	Art. No.	
SFKH03.100.08 NTC10k	100mm	74568	
SFKH03.150.08 NTC10k	150mm	75343	
SFKH03.200.08 NTC10k	200mm	75350	
SFKH03.250.08 NTC10k	250mm	75367	

NTC10k Precon			150°C
SFKH03			PG1
Type	Pocket L	Art. No.	
SFKH03.100.08 NTC10k Precon	100mm	75411	
SFKH03.150.08 NTC10k Precon	150mm	75428	
SFKH03.200.08 NTC10k Precon	200mm	75435	
SFKH03.250.08 NTC10k Precon	250mm	75442	

NTC20k			150°C
SFKH03			PG1
Type	Pocket L	Art. No.	
SFKH03.100.08 NTC20k	100mm	75374	
SFKH03.150.08 NTC20k	150mm	75381	
SFKH03.200.08 NTC20k	200mm	75398	
SFKH03.250.08 NTC20k	250mm	75404	

LM235Z			120°C
SFKH03			PG1
Type	Pocket L	Art. No.	
SFKH03.100.08 LM235Z	100mm	75459	
SFKH03.150.08 LM235Z	150mm	75466	
SFKH03.200.08 LM235Z	200mm	75473	
SFKH03.250.08 LM235Z	250mm	75480	

OPTIONS			
SFKH03 160°C			PG1
Description			
Temperature up to 260°C			
3-wire connection			
4-wire connection			

TRA 1 / TRV 1				-50°C...+50°C
SFKH03				PG1
Type	Out	Pocket L	Art. No.	
SFKH03.100.08 TRA 1	4-20mA	100mm	180832	
SFKH03.150.08 TRA 1	4-20mA	150mm	256193	
SFKH03.200.08 TRA 1	4-20mA	200mm	215350	
SFKH03.250.08 TRA 1	4-20mA	250mm	351843	
SFKH03.100.08 TRV 1	0-10V	100mm	320986	
SFKH03.150.08 TRV 1	0-10V	150mm	351782	
SFKH03.200.08 TRV 1	0-10V	200mm	351812	
SFKH03.250.08 TRV 1	0-10V	250mm	351904	

TRA 2 / TRV 2				-10°C...+120°C
SFKH03				PG1
Type	Out	Pocket L	Art. No.	
SFKH03.100.08 TRA 2	4-20mA	100mm	307888	
SFKH03.150.08 TRA 2	4-20mA	150mm	227940	
SFKH03.200.08 TRA 2	4-20mA	200mm	338011	
SFKH03.250.08 TRA 2	4-20mA	250mm	274265	
SFKH03.100.08 TRV 2	0-10V	100mm	351737	
SFKH03.150.08 TRV 2	0-10V	150mm	351799	
SFKH03.200.08 TRV 2	0-10V	200mm	351829	
SFKH03.250.08 TRV 2	0-10V	250mm	351911	

» SFKH03 – Screw-In Temperature Sensor active

TRA 3 / TRV 3		0°C...+50°C	
SFKH03		PG1	
Type	Out	Pocket L	Art. No.
SFKH03.100.08 TRA 3	4-20mA	100mm	200622
SFKH03.150.08 TRA 3	4-20mA	150mm	217828
SFKH03.200.08 TRA 3	4-20mA	200mm	200110
SFKH03.250.08 TRA 3	4-20mA	250mm	202909
SFKH03.100.08 TRV 3	0-10V	100mm	351744
SFKH03.150.08 TRV 3	0-10V	150mm	288071
SFKH03.200.08 TRV 3	0-10V	200mm	351836
SFKH03.250.08 TRV 3	0-10V	250mm	351928

TRA 4 / TRV 4		0°C...+160°C	
SFKH03		PG1	
Type	Out	Pocket L	Art. No.
SFKH03.100.08 TRA 4	4-20mA	100mm	284479
SFKH03.150.08 TRA 4	4-20mA	150mm	351768
SFKH03.200.08 TRA 4	4-20mA	200mm	276788
SFKH03.250.08 TRA 4	4-20mA	250mm	336857
SFKH03.100.08 TRV 4	0-10V	100mm	344784
SFKH03.150.08 TRV 4	0-10V	150mm	351805
SFKH03.200.08 TRV 4	0-10V	200mm	258548
SFKH03.250.08 TRV 4	0-10V	250mm	256711

TRA 5 / TRV 5		0°C...+250°C	
SFKH03		PG1	
Type	Out	Pocket L	Art. No.
SFKH03.100.08 TRA 5	4-20mA	100mm	147071
SFKH03.150.08 TRA 5	4-20mA	150mm	291873
SFKH03.200.08 TRA 5	4-20mA	200mm	328425
SFKH03.250.08 TRA 5	4-20mA	250mm	145312
SFKH03.100.08 TRV 5	0-10V	100mm	115001
SFKH03.150.08 TRV 5	0-10V	150mm	261944
SFKH03.200.08 TRV 5	0-10V	200mm	258555
SFKH03.250.08 TRV 5	0-10V	250mm	152716

ACCESSORIES

SFKH03		PG1	
Bonded pockets stainless steel			Art. No.
Type	Length	For mounting length	
ESH110	110mm	100mm	103459
ESH160	160mm	150mm	103466
ESH210	210mm	200mm	103473
ESH260	260mm	250mm	173247



Ordering example 1: SFKH03.250.08 NTC10k 260°C 3L
 SFKH03=type / 250=mounting length 250mm / 08=pocket ø 8mm
 NTC10k=sensor NTC10k / 260°C=temperature up to 260°C
 3L=3-wire connection

Ordering example 2: SFKH03.450.08 TRV 5
 SFKH03=type / 450=mounting length 450mm
 08=pocket ø 8mm / TRV 5=transducer 0-10V, 0°C...+250°C

Screw-In High-Temperature Sensor passive / active – RGS03 «

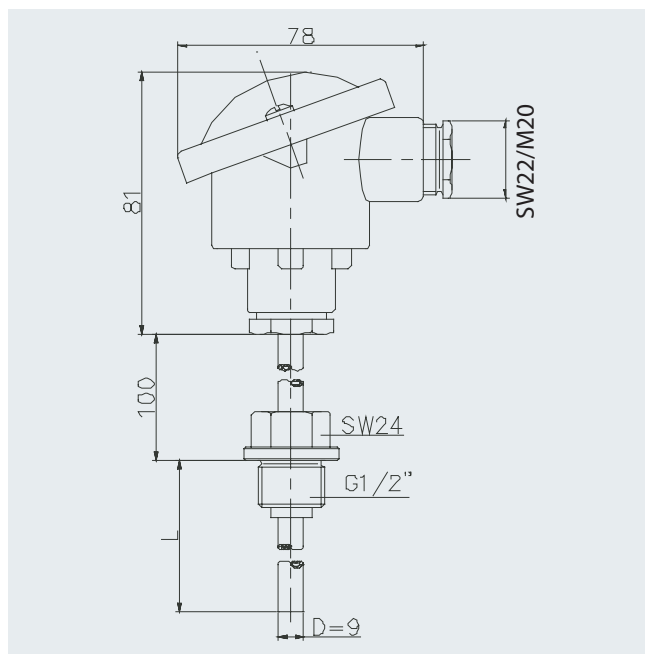
Application

For special measuring of higher temperatures in gaseous mediums of heating, ventilation and air-conditioning systems (e.g. in supply/exhaust air ducts). With neck tube. Designed for locking on control and display systems.

TECHNICAL DATA – PASSIVE OUTPUT	
Mounting lengths	250mm, 500mm
Measuring range	max. +600°C
Ambient temperature	-25°C...+90°C (connection head)
Connection	PT100: 3-wire
Terminal clamp	Terminal screwing, max. 1,5mm ²
Connection head	Form B, Material aluminium
Cable entry	M20
Sensor pocket	Stainless steel 1.4571, Ø=9mm
Neck tube	Stainless steel 1.4305, Ø=9mm, L=100mm
Protection	IP66

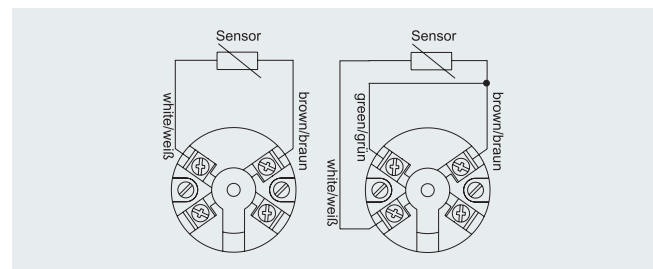


Dimensional Drawing passive / active (mm)

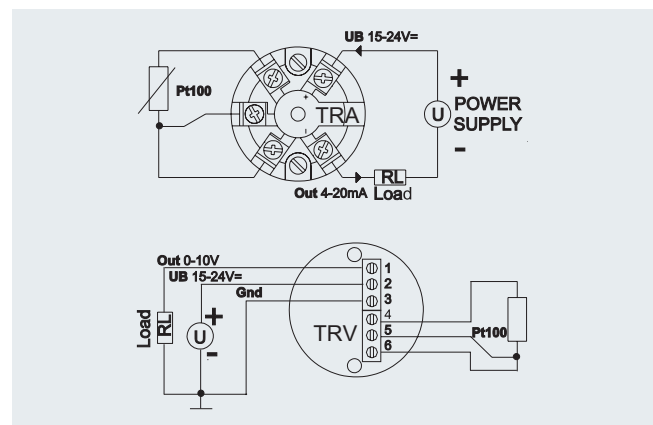


TECHNICAL DATA – ACTIVE OUTPUT	
Mounting lengths	250mm, 500mm
Measuring ranges	TRA: 4-20mA / TRV: 0-10V TRA 5/TRV 5: 0°C...+300°C TRA 6/TRV 6: 0°C...+400°C TRA 7/TRV 7: 0°C...+600°C
Accuracy	TRA: ±0,2°C / ±0,1% of measuring range TRV: ±0,1% of measuring range
Ambient temperature	-25°C...+70°C (connection head)
T max. sensor top	+500°C (short-term +600°C)
Power supply	15-24V=
Power consumption	TRA: max. 20mA/24V= TRV: max. 40mA/24V=
Terminal clamp	Terminal screwing, max. 1,5mm ²
Connection head	Form B, Material aluminium
Cable entry	M20
Sensor pocket	Stainless steel 1.4571, Ø=9mm
Neck tube	Stainless steel 1.4305, Ø=9mm, L=100mm
Protection	IP66

Connection passive



Connection active



» RGS03 – Screw-In High-Temperature Sensor passive / active

PT100			600°C
RGS03			PG1
Type	Pocket L	Art. No.	
RGS03.250.09 PT100 3-wire	250mm	79297	
RGS03.500.09 PT100 3-wire	500mm	385190	

TRA 6 / TRV 6			0...+400°C
RGS03			PG1
Type	Out	Pocket L	Art. No.
RGS03.250.09 TRA 6	4-20mA	250mm	164115
RGS03.500.09 TRA 6	4-20mA	500mm	155281
RGS03.250.09 TRV 6	0-10V	250mm	223942
RGS03.500.09 TRV 6	0-10V	500mm	351959

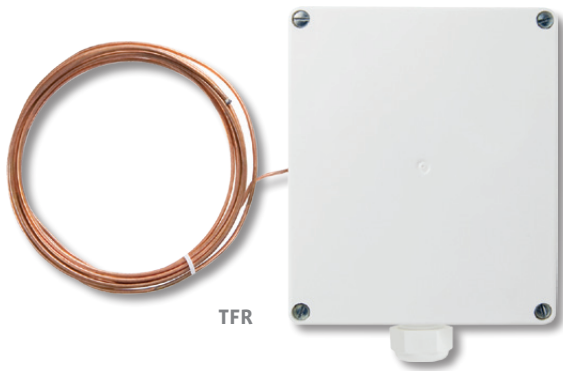
TRA 7 / TRV 7			0...+600°C
RGS03			PG1
Type	Out	Pocket L	Art. No.
RGS03.250.09 TRA 7	4-20mA	250mm	79334
RGS03.500.09 TRA 7	4-20mA	500mm	79341
RGS03.250.09 TRV 7	0-10V	250mm	351935
RGS03.500.09 TRV 7	0-10V	500mm	244824

Application

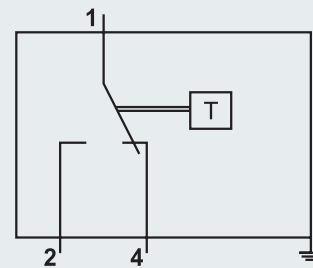
For downstream temperature monitoring of water air heaters in ventilation and air-conditioning systems to prevent frost damages.

The frost protection thermostat can be used to enable the following frost protection functions:

- Stop fan
- Close outside air dampers
- Open heating coil valve 100%
- Switch-off chiller (condenser) and humidifier
- Triggering by visual and/or audible frost alarm



Connection



1 - 2 Normalbetrieb / Normal Operation
1 - 4 Frostgefahr / Frost Danger

TYPES AVAILABLE

Type	Capillary tube l	Reset
TFR 1,8	1,8m	automatically
TFR 3	3,0m	automatically
TFR 6	6,0m	automatically
TFR 1,8-R	1,8m	manually
TFR 3-R	3,0m	manually
TFR 6-R	6,0m	manually

TECHNICAL DATA

Set p. adjustment range	-10°C...+15°C (factory setting 5°C)
Differential gap	2 ±1°C
Repeatability	±0,5°C
Sensor operating length	60cm
Switch output	change-over contact, max. 250V AC, max. 10A
Admissbile medium	air
Enclosure	Material PC
Capillary tube	Material copper
Clamp	Screwing terminal, max. 2,5mm ²
Cable entry	M20
Ambient temperature	adjusted set point + min. 2K...70°C
Protection	IP65
Schutzart	IP65
Notice	Delivery incl. 6 mounting brackets

FROST PROTECTION THERMOSTAT

TFR / TFR-R				PG1
Type	Capill. tube	Reset	Art. No.	
TFR 1,8	1,8m	automatically	508728	
TFR 3	3,0m	automatically	508735	
TFR 6	6,0m	automatically	508742	
TFR 1,8-R	1,8m	manually	509473	
TFR 3-R	3,0m	manually	509480	
TFR 6-R	6,0m	manually	509497	

Delivery incl. 6 mounting brackets

ZUBEHÖR

Mounting flange		PG1
Type	Art. No.	
Mounting flange MF2/TPO	435642	

» WRF04 – Room Temp. Sensor passive / active / LON / RS485 Modbus

Application

For temperature measuring in room and office spaces etc.
Designed for locking on control and display systems.



TYPES AVAILABLE		
Type	Version	Output
WRF04	no sensor	-
	PTC/NTC	passive, resistor
	TRA	active, 4-20mA
	TRV	active, 0-10V
	LON RS485 Modbus	active, FTX active, RS485 Modbus
WRF04LCD	TRA	active, 4-20mA
	TRV	active, 0-10V
	LON	active, FTX
	RS485 Modbus	active, RS485 Modbus



WRF04



WRF04LCD

TECHNICAL DATA – PASSIVE OUTPUT

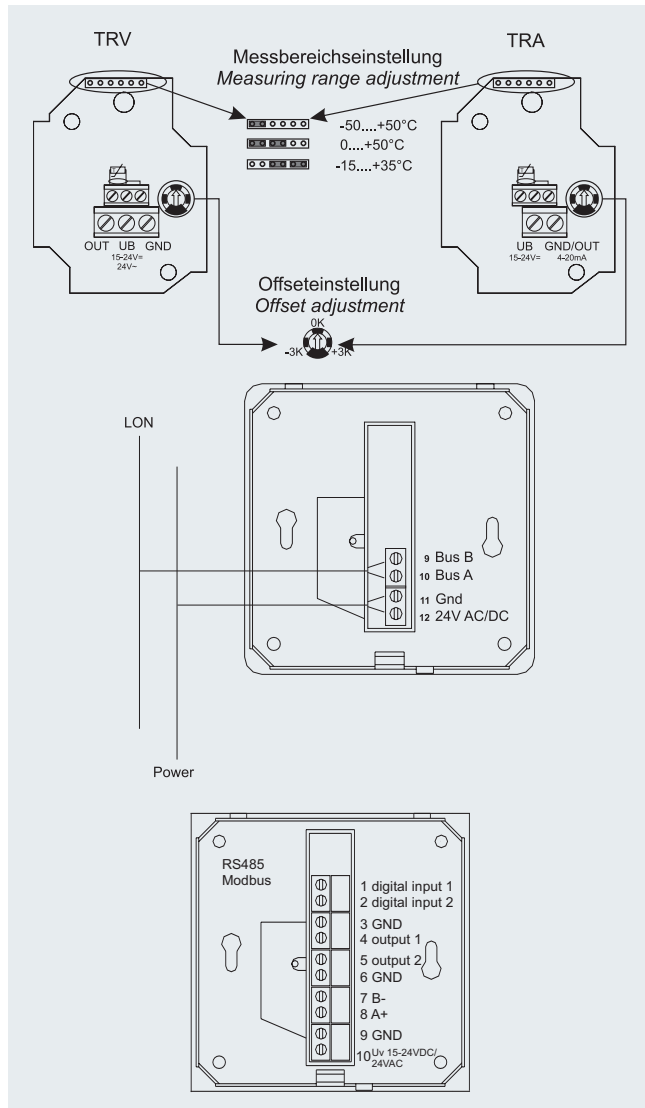
Ambient temperature	-35°C...+70°C
Enclosure	Material ASA, colour pure white similar to RAL9010, protection IP20, mountable on standard installation box, housing bottom can be pre-mounted and pre-wired separately from housing cover.
Connection	2-wire (standard), 3-wire, 4-wire
Terminal clamp	Screwing clamp, max. 1,5mm ²
Cable entry	From behind or sidewise top/bottom
Protection	IP30
Notice	Special painting possible (see p. 225) Stainless steel housing possible Other sensors on request

TECHNICAL DATA – ACTIVE OUTPUT / LON / RS485 MODBUS

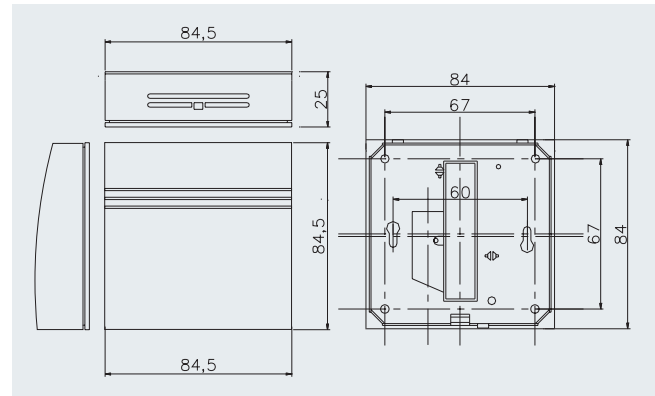
Measuring ranges	TRA: 4-20mA / TRV: 0-10V TRA 1 / TRV 1: -50°C...+50°C TRA 3 / TRV 3: 0°C...+50°C (Measuring range adjustable on the transducer) LON / RS485 Modbus: 0°C...+50°C
Accuracy	±1% of measuring range
Ambient temperature	-35°C...+70°C
Power supply	TRA: 15-24V= (±10%) TRV/ LON/RS485Modbus: 15-24V= (±10%) or 24V~ (±10%)
Power consumption	TRA: max. 20mA/24V= TRV: max. 12mA/24V= LCD TRV: typ. 0,6W/1,0VA LON: typ. 0,6W/1,7VA LCD LON: typ. 0,8W/2,0VA RS485: typ. 0,4W/0,6VA LCD RS485: typ. 0,4W/0,6VA
Display	Room temperature
LCD	29mm x 12mm, black/white
Enclosure	Material ASA, colour pure white similar to RAL9010, mountable on standard installation box, housing bottom can be pre-mounted and pre-wired separately from housing cover
Cable entry	From behind or sidewise top/bottom
Terminal clamp	Screwing terminal max. 1,5mm ²
Protection	IP30
Notice	Special painting possible (see p. 225) Stainless steel enclosure available (only for devices without display)

Room Temp. Sensor passive / active / LON / RS485 Modbus – WRF04 «

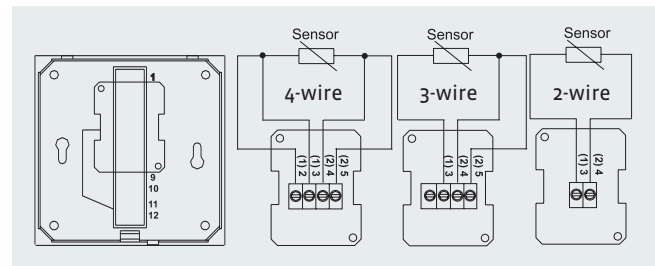
Connection active / LON / RS485 Modbus



Dimensional Drawing (mm)



Connection passive



» WRF04 – Room Temp. Sensor passive / active / LON / RS485 Modbus

PASSIVE	
WRF04	PG1
Type	Art. No.
WRF04 enclosure	212892
WRF04 PT100	193221
WRF04 PT100 1/3DIN	197731
WRF04 PT1000	191623
WRF04 PT1000 1/3 DIN	207980
WRF04 Ni1000	191616
WRF04 NTC1,8k	236775
WRF04 NTC5k	208017
WRF04 Ni1000TK5000	193214
WRF04 FeT	218887
WRF04 NTC10k	207584
WRF04 NTC10k Precon	197618
WRF04 NTC20k	193177
WRF04 LM235Z	193191

OPTIONS	
WRF04	PG1
Description	
3-wire connection	
4-wire connection	
Stainless steel enclosure	

TRA 1 / TRV 1		-50°C...+50°C	
WRF04			PG1
Type	Out	Art. No.	
WRF04 TRA 1	4-20mA	210522	
WRF04 TRV 1	0-10V	212274	

TRA 3 / TRV 3		0°C...+50°C	
WRF04			PG1
Type	Out	Art. No.	
WRF04 TRA 3	4-20mA	198660	
WRF04 TRV 3	0-10V	194389	

LON		
WRF04	PG1	
Type	Out	Art. No.
WRF04 LON	FTX	193689

RS485 Modbus Ao2V		
WRF04	PG1	
Type	Out	Art. No.
WRF04 RS485 Modbus AO2V	RS485 Modbus	419970

LCD			
TRV 1		-50°C...+50°C	
WRF04LCD			PG1
Type	Out	Art. No.	
WRF04LCD TRV 1	0-10V	398077	

TRV 3		0°C...+50°C	
WRF04LCD			PG1
Type	Out	Art. No.	
WRF04LCD TRV 3	0-10V	377904	

LON		
WRF04LCD	PG1	
Type	Out	Art. No.
WRF04LCD LON	FTX	398084

RS485 Modbus		
WRF04LCD	PG1	
Type	Out	Art. No.
WRF04LCD RS485 Modbus	RS485 Modbus	398091

SPECIAL PAINTING

WRF04 / WRF04LCD PG1

Description

Set-up costs for tools (one-time)

Minimum order quantity 1-9 pcs.

Minimum order quantity 10-49 pcs.

Minimum order quantity 50-100 pcs.

ACCESSORIES

WRF04 / WRF04LCD PG1

Description

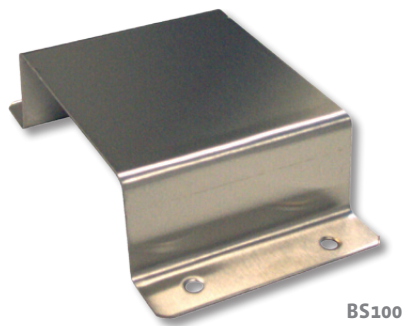
Art. No.

Rawplugs and screws (2 pcs. each)

102209

Ball stroke protection BS100 (only for WRF04)

103312



» RDF18 – Ceiling Temperature Sensor passive

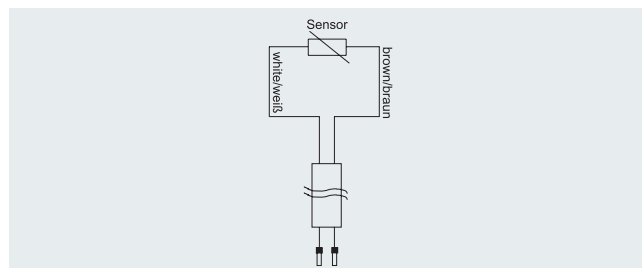
Application

For temperature measuring in ceilings of room and office spaces etc. Designed for locking on control and display systems.

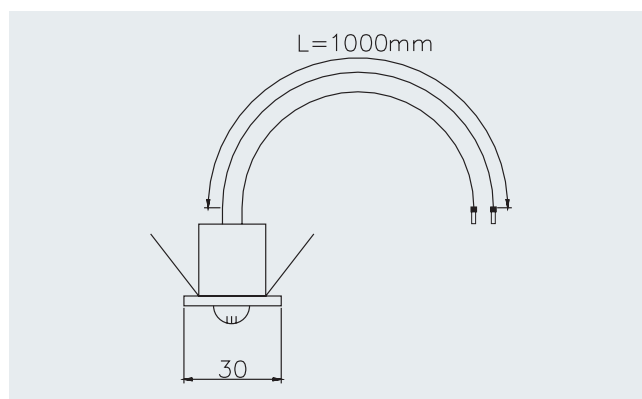
TECHNICAL DATA	
Ambient temperature	-35°C...+70°C
Enclosure	Facet mounting sensor Material ABS, colour signal white, D=35mm
Connection wire	PVC, cross-section 0,25mm ² / L=1m, Other standard lengths 2m, 4m, 6m
Connection	2-wire
Protection	IP30



Connection



Dimensional Drawing (mm)



PASSIVE	
RDF18 – CONNECTION WIRE 1M	PG1
Type	Art. No.
RDF18.100 PT100	271158
RDF18.100 PT100 1/3 DIN	352314
RDF18.100 PT1000	145893
RDF18.100 PT1000 1/3 DIN	200493
RDF18.100 Ni1000	224833
RDF18.100 Ni1000TK5000	269810
RDF18.100 FeT	352321
RDF18.100 NTC1,8k	352338
RDF18.100 NTC5k	352345
RDF18.100 NTC10k	347433
RDF18.100 NTC10k Precon	352352
RDF18.100 NTC20k	271462
RDF18.100 LM235Z	352369

OPTIONS	
RDF18	PG1
Description	
Cable length per additional meter	

Ordering example: **RDF18.200 PT100**
 RDF18=Type / 200=connection wire 2m / PT100=Sensor PT100

Room Pendulum Temperature Sensor passive / active – RPF40 «

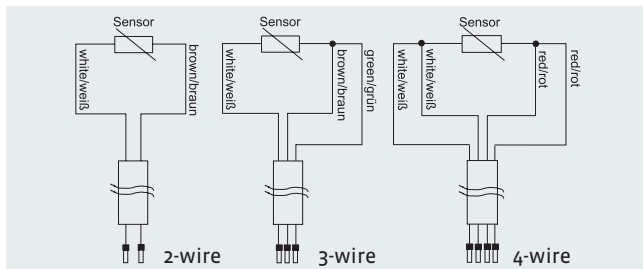
Application

For sectional temperature measuring in large rooms (e.g. open-plan offices, galleries, production plants etc.). Alternatively with black ball as radiation sensor with long time constant for radiators or similar applications. Designed for locking on control and display systems.

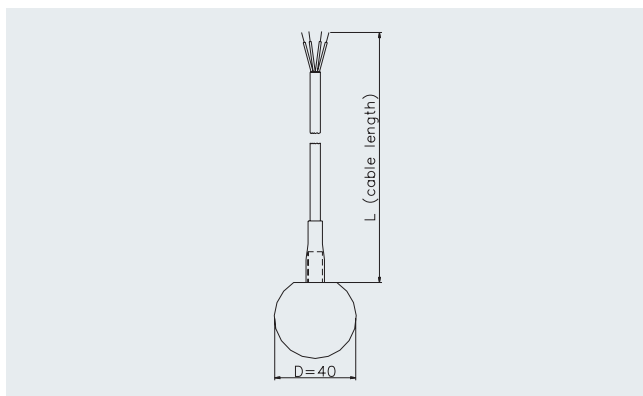
TECHNICAL DATA – PASSIVE OUTPUT	
Ambient temperature	-35°C...+70°C
Sensor head	Material PVC, colour white, D=40mm
Connection wire	PVC, cross-section 0,25mm ² / L=1m, Other standard lengths 2m, 4m, 6m
Connection	2-wire (standard), 3-wire, 4-wire (optional)
Protection	IP65
Notice	Also available with black ball Multi-wire conductor connection on request Other sensors on request



Connection passive

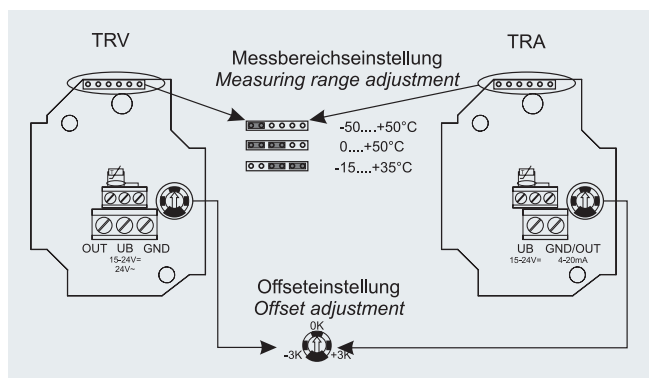


Dimensional Drawing passive (mm)

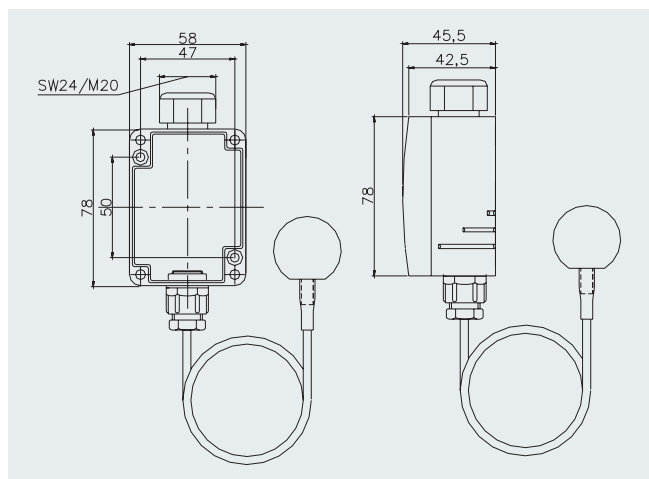


TECHNICAL DATA – ACTIVE OUTPUT	
Measuring range	TRA: 4-20mA / TRV: 0-10V TRA 1 / TRV 1: -50°C...+50°C TRA 3 / TRV 3: 0°C...+50°C
Accuracy	±1% of measuring range
Ambient temperature	-35°C...+70°C
Sensor head	Material PVC, colour white, D=40mm
Enclosure	Material PA6, pure white (similar to RAL9010), with quick release fastener screws
Connection wire	PVC, cross-section 0,25mm ² / L=1m, Other standard lengths 2m, 4m, 6m
Power supply	TRA: 15-24V= (±10%) TRV: 15-24V= (±10%) or 24V~ (±10%)
Power consumption	TRA: max. 20mA/24V= TRV: max. 12mA/24V= typ. 0,42W/0,84VA
Terminal clamp	Screwing terminal, max. 1,5mm ²
Protection	IP65
Notice	Also available with black ball

Connection active



Dimensional Drawing active (mm)



» RPF40 – Room Pendulum Temperature Sensor passive / active

PASSIVE

RPF40 – CONNECTION WIRE 1M		PG1
Type	Art. No.	
RPF40.100.40 PT100	350006	
RPF40.100.40 PT100 1/3 DIN	265621	
RPF40.100.40 PT1000	321068	
RPF40.100.40 PT1000 1/3 DIN	329569	
RPF40.100.40 Ni1000	329279	
RPF40.100.40 Ni1000TK5000	144193	
RPF40.100.40 FeT	359344	
RPF40.100.40 NTC1,8k	334549	
RPF40.100.40 NTC5k	351973	
RPF40.100.40 NTC10k	351980	
RPF40.100.40 NTC10k Precon	164573	
RPF40.100.40 NTC20k	334792	
RPF40.100.40 LM235Z	339476	

OPTIONS

RPF40	PG1
Description	
Cable length per additional meter	
Connection box AGS54	

ACTIVE – TRA 1 / TRV 1 -50°C...+50°C

RPF40 – CONNECTION WIRE 1M		PG1
Type	Out	Art. No.
RPF40.100.40 TRA 1	4-20mA	351997
RPF40.100.40 TRV 1	0-10V	352000

ACTIVE – TRA 3 / TRV 3 0°C...+50°C

RPF40 – CONNECTION WIRE 1M		PG1
Type	Out	Art. No.
RPF40.100.40 TRA 3	4-20mA	132015
RPF40.100.40 TRV 3	0-10V	170178

OPTIONS

RPF40 TRA / TRV	PG1
Description	
Cable length per additional meter	

Ordering example 1: **RPF40.200.40 Ni1000**
 RPF40=type / 200=connection wire 2m
 40=∅ sensor head 40mm / Ni1000=sensor Ni1000

Ordering example 2: **RPF40.100.40 TRV 1**
 RPF40=type / 100=connection wire 1m
 40=∅ sensor head 40mm / TRV 1=transducer 0-10V, -50°C...+50°C

Room Pendulum Temperature Sensor passive / active – RPF100 «

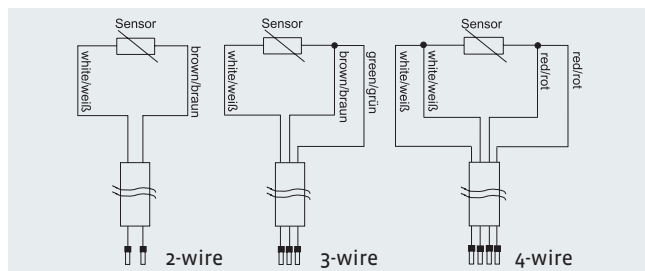
Application

For sectional temperature measuring in large rooms (e.g. open-plan offices, production plants etc.). Designed for locking on control and display systems.

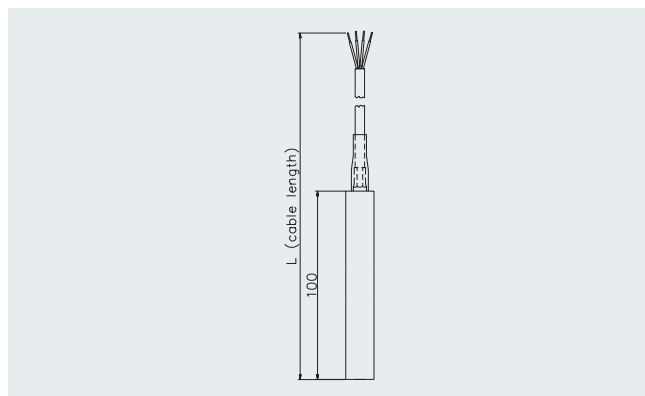
TECHNICAL DATA – PASSIVE OUTPUT	
Ambient temperature	-35°C...+70°C
Sensor pocket	Stainless steel 1.4571, $\varnothing=15\text{mm}$, L=100mm
Connection wire	PVC, cross-section 0,25mm ² / L=1m, Other standard lengths 2m, 4m, 6m
Connection	2-wire (standard), 3-wire, 4-wire (optional)
Protection	IP65
Notice	Other sensors on request



Connection passive

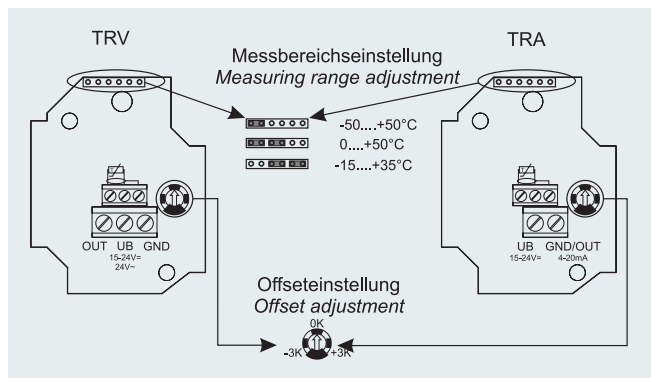


Dimensional Drawing passive (mm)

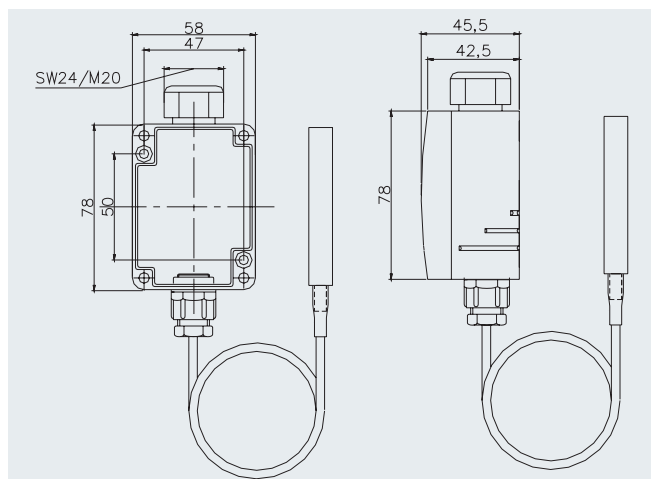


TECHNICAL DATA – ACTIVE OUTPUT	
Measuring range	TRA: 4-20mA / TRV: 0-10V TRA 1 / TRV 1: -50°C...+50°C TRA 3 / TRV 3: 0°C...+50°C
Accuracy	±1% of measuring range
Ambient temperature	-35°C...+70°C
Sensor pocket	Stainless steel 1.4571, $\varnothing=15\text{mm}$, L=100mm
Enclosure	Material PA6, pure white (similar to RAL9010), with quick release and fastener screws
Connection wire	PVC, cross-section 0,25mm ² / L=1m, Other standard lengths 2m, 4m, 6m
Power supply	TRA: 15-24V= (±10%) TRV: 15-24V= (±10%) or 24V~ (±10%)
Power consumption	TRA: max. 20mA/24V= TRV: typ. 0,42W/0,84VA
Terminal clamp	Screwing terminal, max. 1,5mm ²
Protection	IP65

Connection active



Dimensional Drawing active (mm)



» RPF100 – Room Pendulum Temperature Sensor passive / active

PASSIVE

RPF100 – CONNECTION WIRE 1M		PG1
Type	Art. No.	
RPF100.100.15 PT100	81566	
RPF100.100.15 PT100 1/3 DIN	90780	
RPF100.100.15 PT1000	90827	
RPF100.100.15 PT1000 1/3 DIN	90865	
RPF100.100.15 Ni1000	90902	
RPF100.100.15 Ni1000TK5000	160612	
RPF100.100.15 FeT	90988	
RPF100.100.15 NTC1,8k	278331	
RPF100.100.15 NTC5k	91022	
RPF100.100.15 NTC10k	91060	
RPF100.100.15 NTC10k Precon	91107	
RPF100.100.15 NTC20k	219952	
RPF100.100.15 LM235Z	91145	

OPTIONS

RPF100		PG1
Description		
Cable length per additional meter		
Connection box AGS54		

ACTIVE – TRA 1 / TRV 1 -50°C...+50°C

RPF100 – CONNECTION WIRE 1M		PG1
Type	Out	Art. No.
RPF100.100.15 TRA 1	4-20mA	352017
RPF100.100.15 TRV1	0-10V	238601

ACTIVE – TRA 3 / TRV 3 0°C...+50°C

RPF100 – CONNECTION WIRE 1M		PG1
Type	Out	Art. No.
RPF100.100.15 TRA 3	4-20mA	185769
RPF100.100.15 TRV3	0-10V	120760

OPTIONS

RPF100 TRA / TRV		PG1
Description		
Cable length per additional meter		

Ordering example 1: RPF100.100.15 PT1000
 RPF100=type / 100=connection wire 1m / 15=pocket ø 15mm
 PT1000=sensor PT1000

Ordering example 2: RPF100.200.15 TRA 3
 RPF100=type / 200=connection wire 2m / 15=pocket ø 15mm
 TRA 3=transducer 4-20mA, 0...50°C

Application

Transmitter for conversion of PT100/PT1000 temperature sensors to 0-10V or 4-20mA.



TYPES AVAILABLE

Type	Model	Output
MU-S1 PT100	TRA/TRV	active, 4-20mA and 0-10V
MU-S1 PT1000	TRA/TRV	active, 4-20mA and 0-10V
MU-S2 PT100	TRV	active, 0-10V
MU-S2 PT1000	TRV	active, 0-10V

TECHNICAL DATA

Measuring range	TRA: 4-20mA / TRV: 0-10V TRA 1 / TRV 1: -50°C...+50°C TRA 2 / TRV 2: -10°C...+120°C TRA 3 / TRV 3: 0°C...+50°C TRA 4 / TRV 4: 0°C...+160°C TRA 5 / TRV 5: 0°C...+300°C
Accuracy	MU-S1: ±0,3% of measuring range MU-S2: ±0,5% of measuring range
Ambient temperature	0°C...+50°C
Enclosure	Polyamide, snap mounting on DIN-rail according to DIN EN 50022
Power supply	24V= or 24V~
Power consumption	MU-S1: typ. 50mA/24V= MU-S2: typ. 40mA/24V=

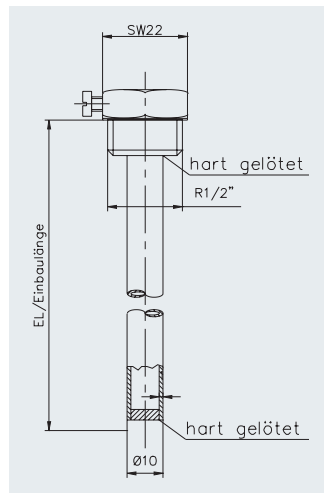
TRANSMITTERS

MU-S

Type	Out
MU-S1	4-20mA/0-10V
MU-S2	0-10V

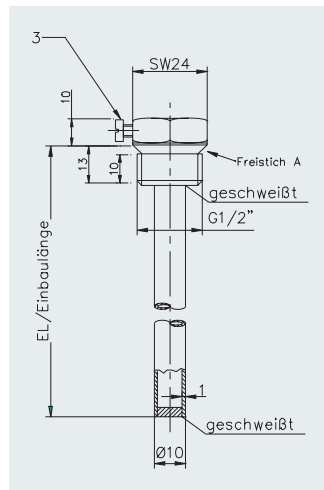
When ordering, please indicate sensor and measuring range

» Accessory – Immersion Pockets for AKF10 / KFK01 Ø7mm



Immersion pocket brass nickel-plated (THMS)
for duct temperature sensors AKF10 and KFK01
with pocket diameter 7mm

- > Hard soldered
- > Pressure-proved up to 16 bar
- > Thread G1/2" DIN 2999
- > Width across flat SW22
- > Operating temperature up to +130°C



Immersion pocket stainless steel (THVA)
for duct temperature sensors AKF10 and KFK01
with pocket diameter 7mm

- > Welded
- > Pressure-proved up to 40 bar
- > Material 1.4571
- > Thread G1/2" DIN ISO 228T1, undercut B, flat sealing
- > Width across flat SW24
- > Operating temperature up to +260°C

IMMERSION POCKETS

FOR AKF10, KFK01

PG1

Description

Art. No.

Immersion pocket brass nickel-plated

Type	Length	For mounting length	
THMS50	50mm	62mm	1793
THMS120	120mm	135mm	1809
THMS185	185mm	192mm	1823
THMS225	225mm	240mm	1816
THMS300	300mm	320mm	1830
THMS375	375mm	392mm	1847
THMS450	450mm	465mm	102179

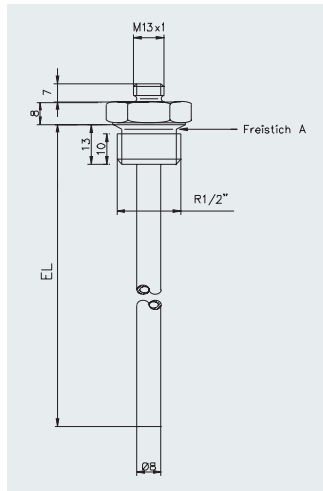
Immersion pocket stainless steel

THVA50	50mm	62mm	1885
THVA120	120mm	135mm	1854
THVA185	185mm	192mm	1915
THVA225	225mm	240mm	1861
THVA300	300mm	320mm	1892
THVA375	375mm	392mm	1908
THVA450	450mm	465mm	1878

Accessory – Immersion Pockets / Welded Pockets «



THMSDS THVADS



Immersion pocket brass nickel-plated with pressure screw (THMSDS)
for cable temperature sensors TF25

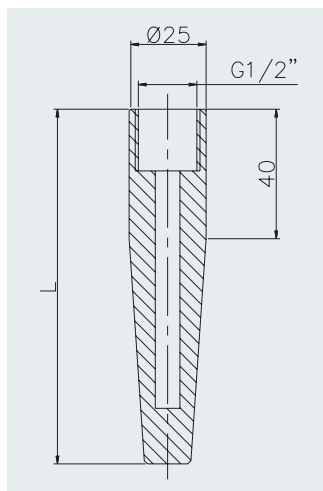
- > Hard soldered
- > Pressure-proved up to 16 bar
- > Thread G1/2" DIN 2999
- > Width across flat SW22
- > Operating temperature +130°C

Immersion pocket stainless steel with pressure screw (THVADS)
for cable temperature sensors TF25

- > Welded
- > Pressure-proved up to 40 bar
- > Material 1.4571
- > Thread G1/2" DIN ISO 228T1, undercut B, flat sealing
- > Width across flat SW24
- > Operating temperature up to +160°C

IMMERSION POCKETS WITH PRESSURE SCREW

FOR TF25		PG1
Description		Art. No.
Immersion pocket brass nickel-plated with pressure screw		
Type	Mounting length	
THMSDS50	50mm	247368
THMSDS100	100mm	247399
THMSDS200	200mm	247405
Immersion pocket stainless steel with pressure screw		
THVADS50	50mm	247313
THVADS100	100mm	247337
THVADS200	200mm	247344



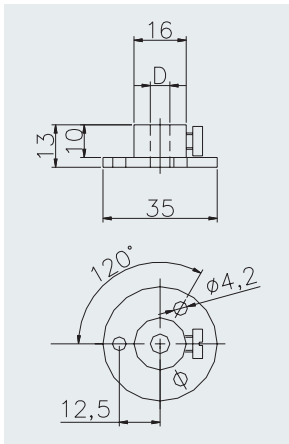
Welded Pocket (ESH)
for SFK(H)01/SFK(H)02/SFK(H)03

- > Pressure-proved up to 100 bar
- > Material ST52.3
- > Inner thread G1/2"

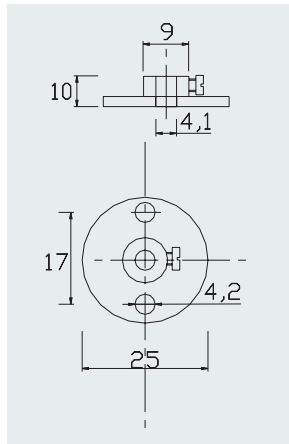
WELDED POCKETS

FOR SFK(H)01, SFK(H)02, SFK(H)03		PG1	
Type	Length	For mounting length	Art. No.
ESH110	110mm	100mm	103459
ESH160	160mm	150mm	103466
ESH210	210mm	200mm	103473
ESH260	260mm	250mm	173247

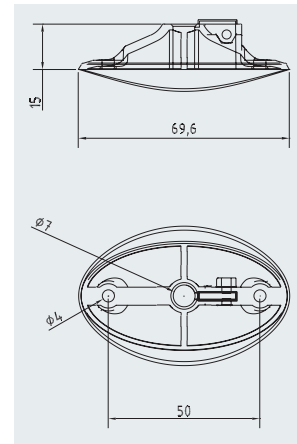
» Accessory – Mounting Flanges / Clamp Screws



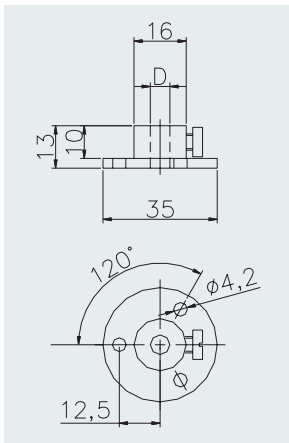
Mounting Flange MF4
for duct temperature sensors AF10 and KFK01
with pocket diameter 4mm
 > Material brass, blue galvanized
 > Operating temperature up to +130°C



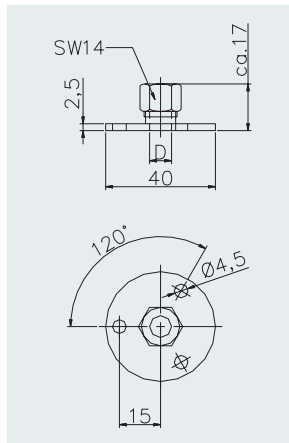
Mounting Flange MF6
for cable temperature sensor TF25
 > Material brass, blue galvanized
 > Operating temperature up to +130°C



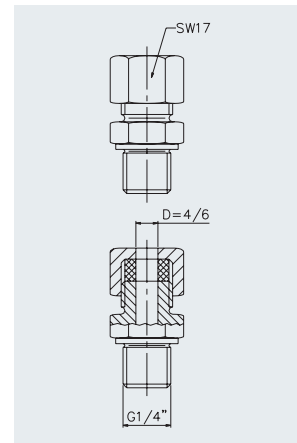
Mounting Flange MF7 flexible
for cable temperature sensors TF14 and TF25,
duct temperature sensors AKF10 and KFK01,
average temperature sensor MWF
 > for pocket diameter 4mm, 6mm and 7mm
 > delivery incl. seal inserts for d=4mm / 6mm
 > Operating temperature up to +130°C



Mounting Flange MF7
for duct temperature sensors AKF10 and
KFK01 with pocket diameter 7mm
 > Material brass, blue galvanized
 > Operating temperature up to +130°C



Mounting Flange with Clamp Screw MF8
for duct temperature sensors KFK03
 > Material stainless steel 1.4541
 > Clamp screw with teflon ring
 > Operating temperature up to +200°C



Clamp Screws
KL4VA / KL6VA
for sealing of protective sleeves
with diameter 4mm / 6mm
 > Pressure-proved up to 16 bar
 > Material stainless steel 1.4305
 > Thread G1/4"
 > Width across flat SW17
 > VA die ring of VA, operating temperature
up to 400°C



MF7 flex



MF7



MF8



KL

MOUNTING FLANGES

FOR AKF10, KFK01, KFK03, TF14, TF25, MWF

PG1

Type	Art. No.
MF4	102438
MF6	3407
MF7	102360
MF7 flexibel	399098
MF8	103305

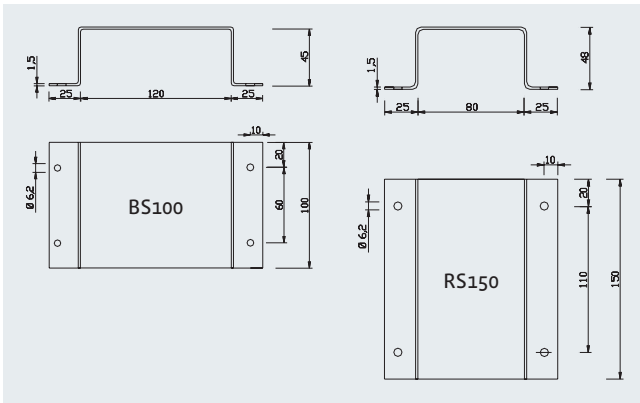
CLAMPS SCREWS

FOR PROTECTIVE SLEEVES Ø4MM / 6MM

PG1

Type	Art. No.
KL4VA	103206
KL6VA	103213

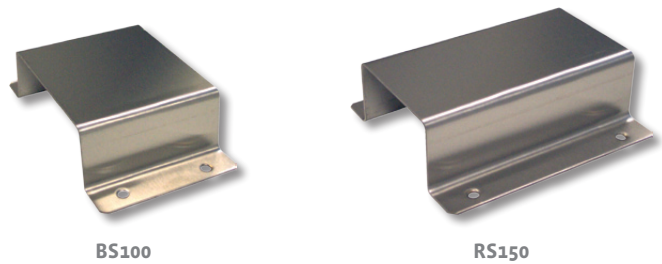
Accessory – Protective Coverings / Tightening Strap / Mounting Set «



Ball Stroke Protection BS100 Sun-/Rain Protection RS150

BS100: Protection against mechanical influence
for wall mounting room temperature sensor WRF04
RS150: Protection against sun and rain influence
for outdoor temperature sensors AGS43, AGS54 and AGS54ext

> Material stainless steel 1.4301



BS100

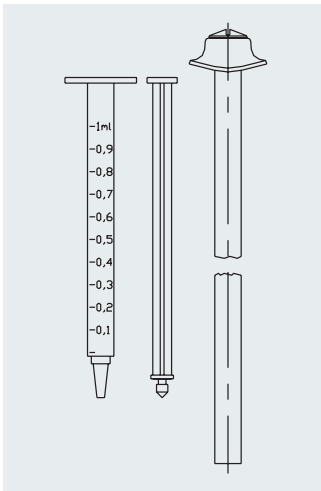
RS150

BALL STROKE PROTECTION / SUN-/RAIN PROTECTION

FOR WRF04, AGS43, AGS54, AGS54ext

PG1

Type	Art. No.
BS100 and rain influence	103312
RS150	103329



Tightening strap with syringe thermal contact fluid SPB2[®] / SPB900

for pipe contact temperature sensors, VFG54, AF25 and PR25

- > SPB2[®]: Tightening strap for 2"-tube and syringe with thermal contact fluid approx. 0,5cm³
- > SPB900: Tightening strap L=900mm and syringe with thermal contact fluid approx. 0,5cm³

TIGHTENING STRAP / THERMAL CONTACT FLUID

FOR AGS54, AF25, PR25

PG1

Type	Art. No.
SPB2 [®] and thermal contact fluid	102254
SPB900 and thermal contact fluid	102315

Mounting Set D+S

for outdoor temperature sensor AGS43, AGS54 and AGS54ext
as well as room temperature sensor WRF04

- > Screws (2 pcs.): SPAX, 3,5x35mm, blue galvanized
- > Rawl plugs (2 pcs.): 6mm

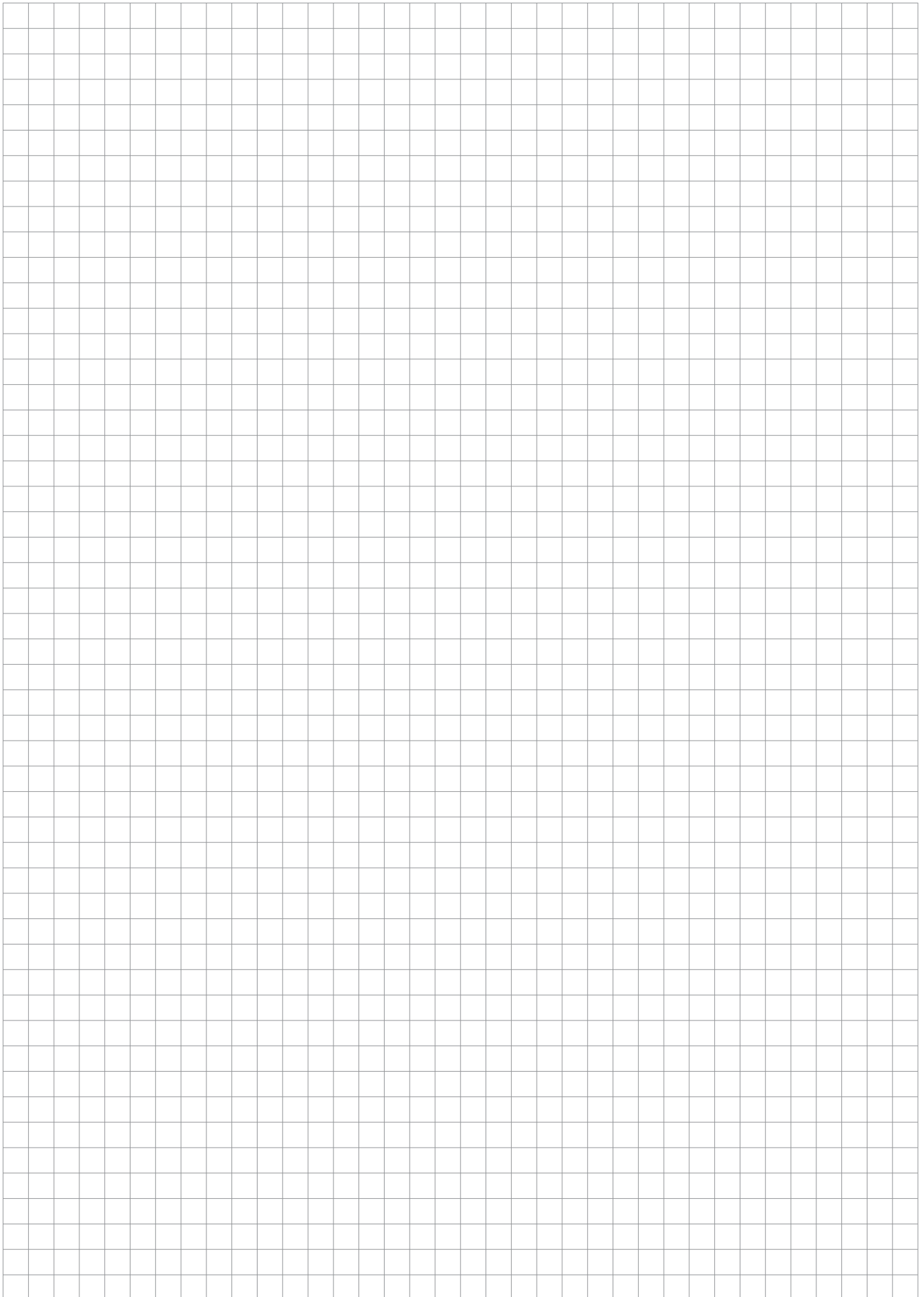


MOUNTING SET

FOR AGS43, AGS54, AGS54ext, WRF04

PG1

Type	Art. No.
Rawlplugs and screws (2 pcs. each)	102209



Light & Motion

Our intelligent sensors enable a significant increase of physical and emotional well-being of people living and working in a room. For an individual, comfortable and energy-saving use of your rooms, a precise and reliable detection of occupancy and brightness is granted.

MDS	Ceiling multi sensor	P. 162	WRF04I	Surface-mounting motion sensor	P. 168
Li04	Room light sensor	P. 164	WRF06I	Flush-mounting motion sensor	P. 169
Li65	Room light sensor	P. 165	RDI	Ceiling motion sensor	P. 170
LDF	Ceiling light sensor	P. 166			

» MDS – Ceiling Multi Sensor



Application

The ceiling multi sensor MDS is designed for motion and light detection in room and office spaces. The measured quantity can be used for a fixed light control by means of downstream dimming resistances.

Due to the flat construction, the device is specially suitable for an inconspicuous installation in ceilings. Depending on the type, the MDS offers different output interfaces for coupling to a building control system.

TYPES AVAILABLE

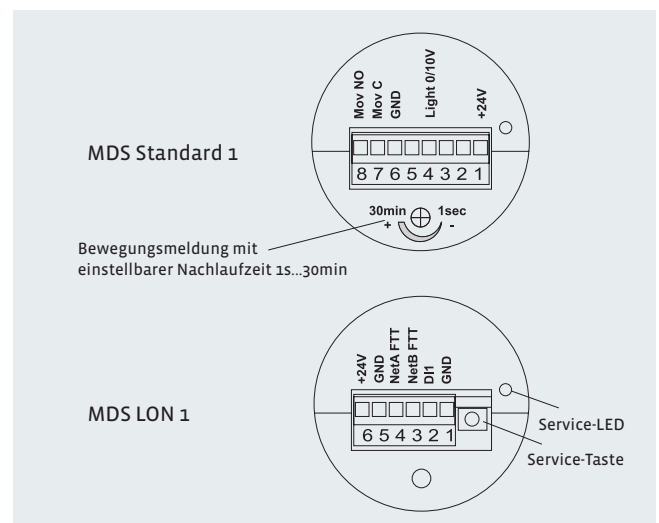
Type	Model	Output
MDS	Standard 1	Motion: PIR-motion sensor 360° with relay output Light: Active light sensor 0-10V
MDS	LON 1	Motion: PIR-motion sensor 360° via LON Light: Light sensor and constant light controller via LON, temperature controller



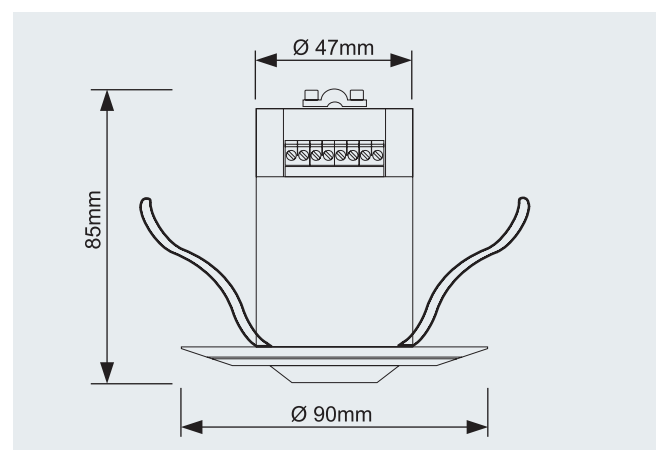
TECHNICAL DATA

LON interface	FT5000
Analogue output	0-10V, load max. 10mA
Relay output	Make contact, max. 24V/1A
Motion sensor	4-element PIR (passive infrared), With status LED for motiondetection
Light sensor	0...1kLux, photo diode incl. green filter Accuracy typ. ±50Lux
Ambient temperature	0°C...50°C
Enclosure	Basic enclosure: Material ABS, colour orange Housing cover: Material ABS, colour pure white
Power supply	15-24V= (±10%) or 24V~ (±10%)
Power consumption	Standard: Typ. 1,2W / 4VA LON: Typ. 1,5W / 4,2VA
Terminal clamp	Pluggable screwing terminal max. 1,5mm ²
Protection	IP20
Notice	Optional enclosure for surface-mounting

Connection



Dimensional Drawing (mm)



Standard

MDS		PG1
Type	Art. No.	
MDS Standard 1	271318	

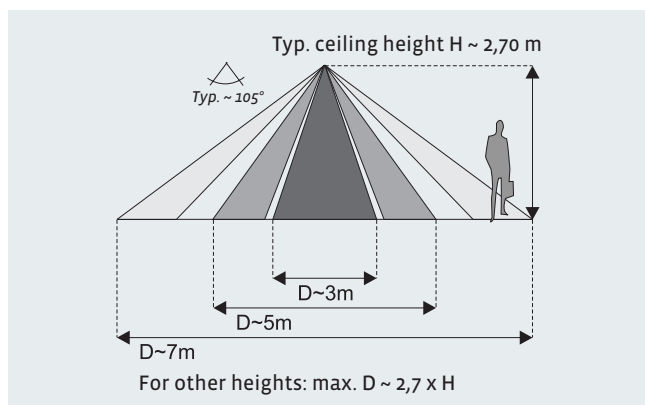
LON

MDS		PG1
Type	Art. No.	
MDS LON 1	279000	

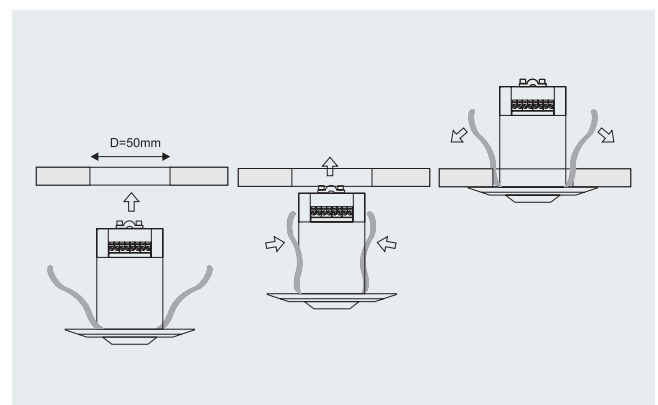
OPTIONS

MDS		PG1
Description	Art. No.	
Surface-mounting box pure white	448512	

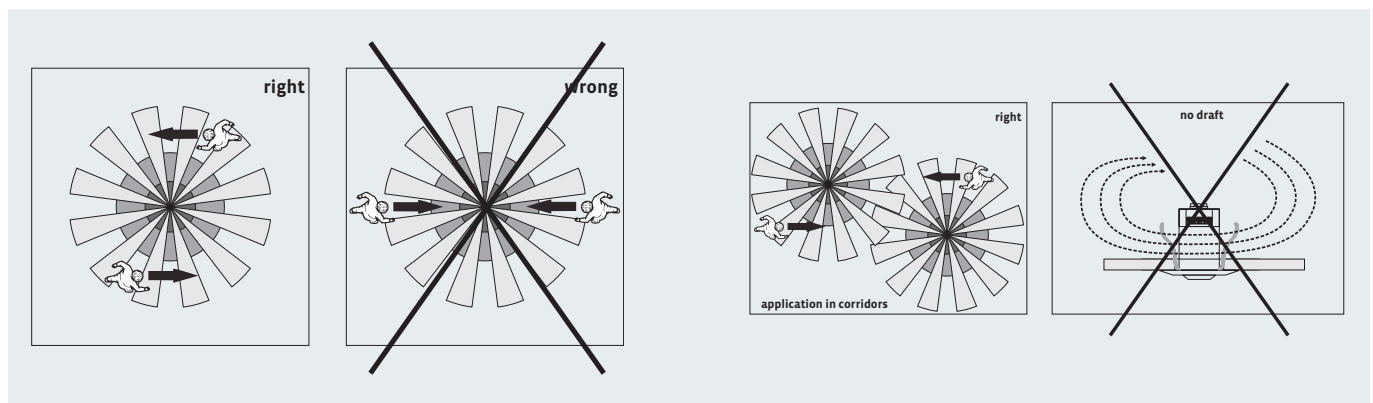
Detection Range



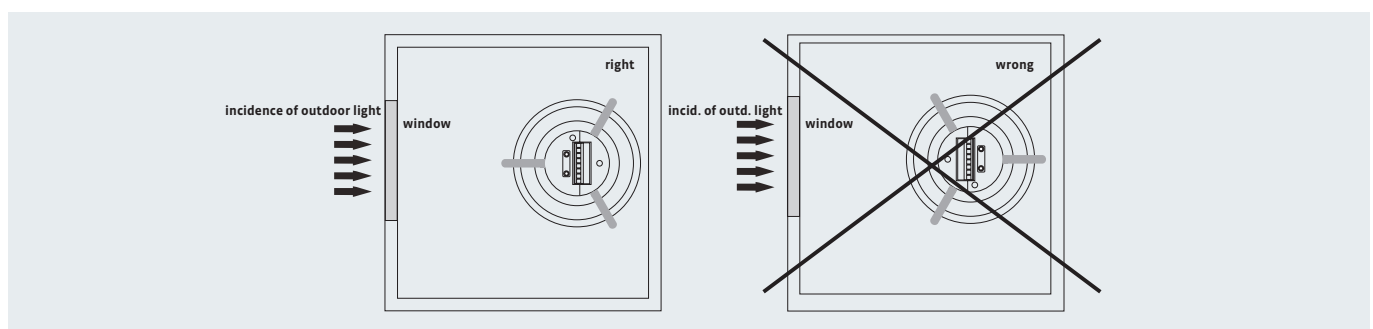
Installation



Mounting Notice



Direction of Internal Light Sensor



» Li04 – Room Light Sensor active / LON

Application

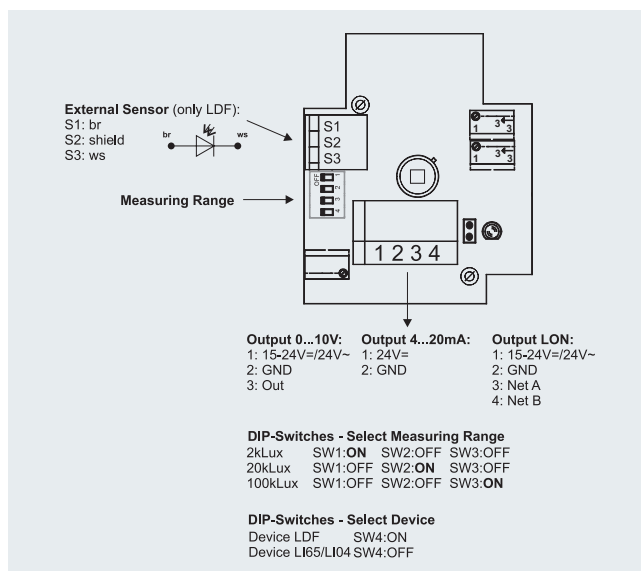
For light detection in room and office spaces etc. Designed for locking on control and display systems. The sensors have an integrated colour filter (green filter) which is adapted to the sensitivity of human eyes.

TYPES AVAILABLE		
Type	Model	Output
Li04	A	active, 4-20mA
Li04	V	active, 0-10V
Li04	LON	active, FTX

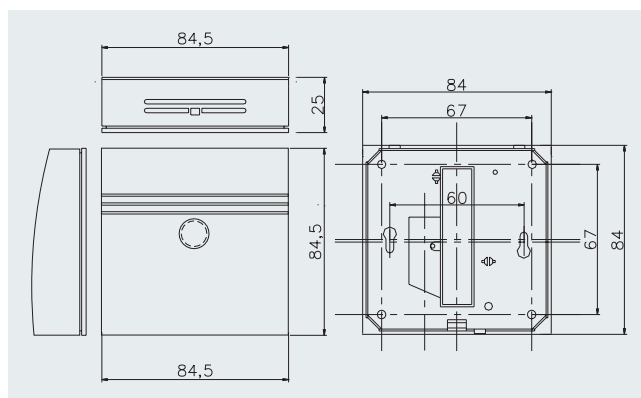
TECHNICAL DATA	
Sensor	BPW21
Measuring range	2kLux, 20kLux, 100kLux (adjustable via internal DIP-switch)
Accuracy	Typ. $\pm 5\%$ of measuring range
Ambient temperature	$-20^{\circ}\text{C} \dots +70^{\circ}\text{C}$
Power supply	A: 15-24V (= $\pm 10\%$) V/LON: 15-24V (= $\pm 10\%$) or 24V~ (= $\pm 10\%$)
Power consumption	A: max. 20mA/24V= V: max. 15mA/24V= LON: max. 30mA/24V=
Terminal clamp	Terminal strip, max. 1,5mm ²
Enclosure	Material ASA, colour pure white similar to RAL9010, mountable on standard deep flush-mounting box, housing bottom can be premounted and prewired separately from housing cover.
Cable entry	From behind or sidewise top/bottom
Protection	IP30



Connection



Dimensional Drawing (mm)



A / V / LON			
Li04			
Type	Out	Art. No.	PG1
Li04 A	4-20mA	207911	
Li04 V	0-10V	207904	
Li04 LON	FTX	207898	

ACCESSORY	
Li04	
Description	Art. No.
Rawlplugs and screws (2 pcs. each)	102209

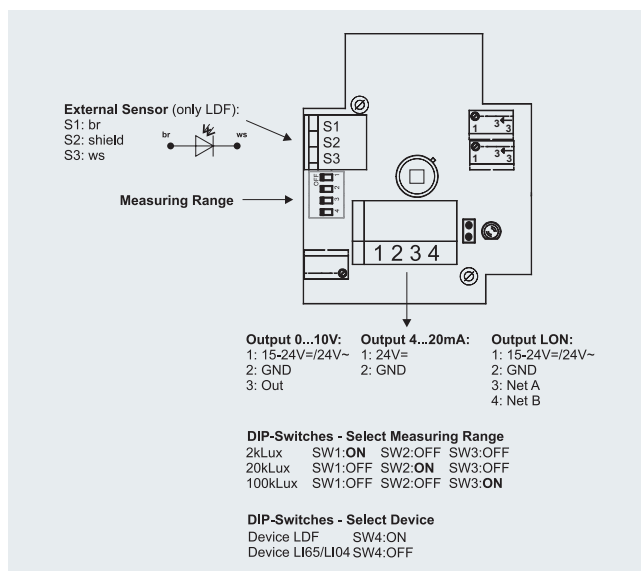
Outdoor Light Sensor active / LON – Li65 «

Application

For light detection in room and office spaces etc. Designed for locking on control and display systems. The sensors have an integrated colour filter (green filter) which is adapted to the sensitivity of human eyes.



Connection

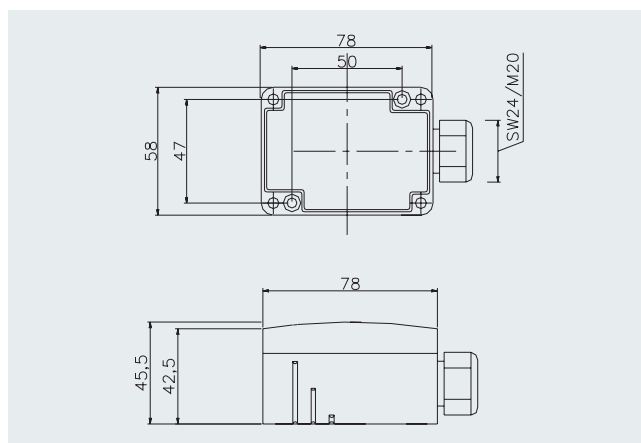


TYPES AVAILABLE	
Type	Model
Li65	A
Li65	V
Li65	LON

TECHNICAL DATA	
Sensor	BPW21
Measuring range	2kLux, 20kLux, 100kLux (adjustable via internal DIP-switch)
Accuracy	Typ. ±5% of measuring range
Ambient temperature	-20°C...+70°C
Power supply	A: 15-24V= (±10%) V/LON: 15-24V= (±10%) or 24V~ (±10%)
Power consumption	A: max. 20mA/24V= V: max. 15mA/24V= LON: max. 30mA/24V=
Terminal clamp	Terminal strip, max. 1,5mm ²
Enclosure	Bottom: Material PA6, colour pure white (similar to RAL9010) Cover: Material PC, transparent, with quick release and fastener screws
Cable entry	M20
Protection	IP65
Notice	Other measuring ranges on request



Dimensional Drawing (mm)



A / V / LON			
Type	Out	Art. No.	PG1
Li65 A	4-20mA	185783	
Li65 V	0-10V	185776	
Li65 LON	FTX	185745	

ACCESSORY	
Description	Art. No.
Rawlplugs and screws (2 pcs. each)	102209

» LDF – Ceiling Light Sensor active / LON

Application

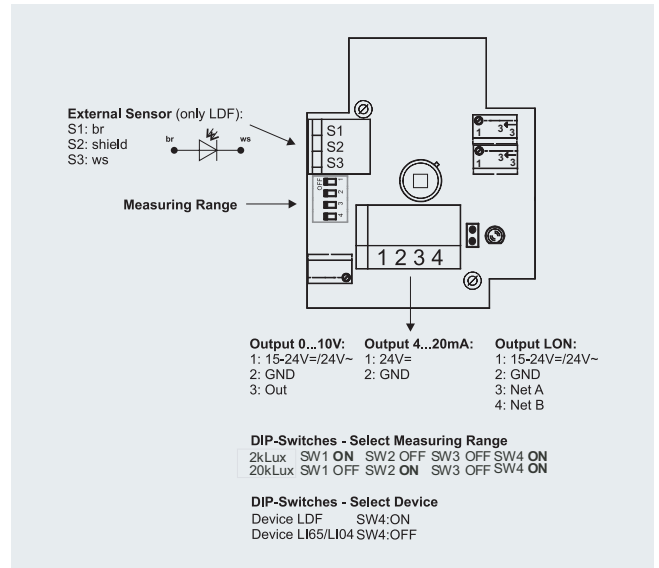
Light sensor for ceiling installation. With straight and diagonal prism for light control. Designed for connection to control and display systems. The sensors have an integrated colour filter (green filter) which is adapted to the sensitivity of human eyes.

TYPES AVAILABLE		
Type	Model	Output
LDF	A	aktiv, 4-20mA
LDF	V	aktiv, 0-10V
LDF	LON	aktiv, FTX

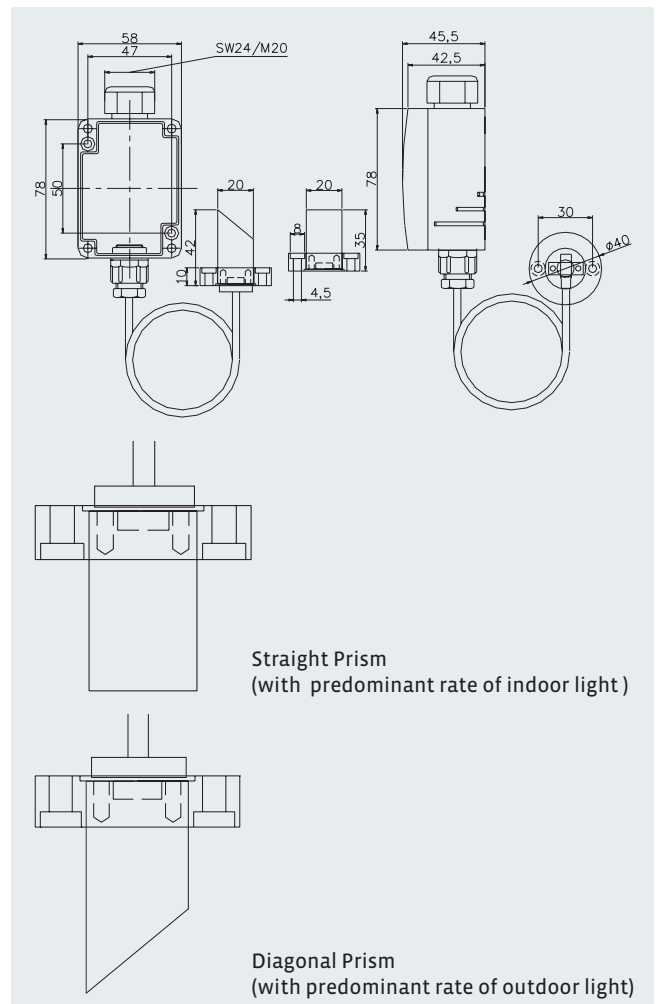
TECHNICAL DATA	
Sensor	BPW21
Measuring ranges	2kLux, 20kLux (adjustable via internal DIP-switch)
Accuracy	Typ. ±5% of measuring range
Connection wire	PVC, shielded, cross-section 0,25mm ² , L=1m, other standard length 2m
Terminal clamp	Terminal strip, max. 1,5mm ²
Ambient temperature	-25°C...+65°C
Power supply	A: 15-24V= (±10%) V/LON: 15-24V= (±10%) or 24V~ (±10%)
Power consumption	A: max. 20mA/24V= V: max. 15mA/24V= LON: max. 30mA/24V=
Prism	Straight or diagonal, Material clear acrylic glass
Enclosure	Material PA6, colour pure white, similar to RAL9010
Cable entry	M20
Notice	Please specify kind of prism when ordering



Connection



Dimensional Drawing



A / V / LON

LDF – CONNECTION WIRE 1m

PG1

Type	Out	Art. No.
LDF1000 A straight prism	4-20mA	185721
LDF1000 V straight prism	0-10V	185714
LDF1000 LON straight prism	FTX	185707
LDF1000 LON straight prism	4-20mA	201575
LDF1000V diagonal prism	0-10V	201568
LDF1000 LON diagonal prism	FTX	201582

OPTION

LDF

PG1

Description

Cable length per additional meter

» WRF04I – Surface-Mounting Motion Sensor passive / LON

Application

For presence detection in room and office spaces, for surface-mounting. Designed for connection to control and display systems.



TYPES AVAILABLE

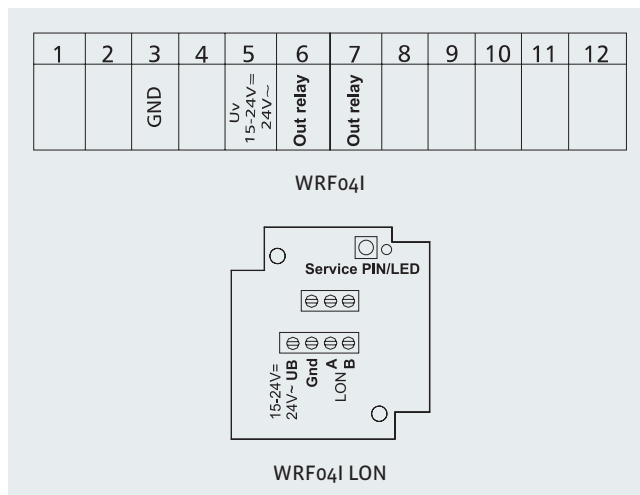
Type	Output
WRF04I	passive, dry relay contact
WRF04I LON	active, FTT10

TECHNICAL DATA

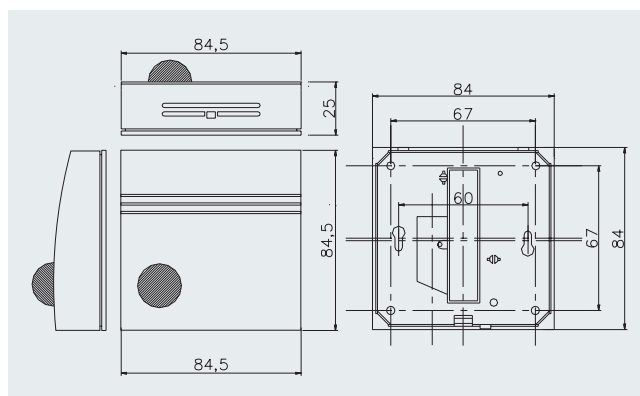
Measuring element	PIR (passive infrared)
Detection range	Conical, aperture angle 100°, range 10m, 80 zones. Circular with radius of approx. 3,2m for a mounting height of 2,8 m, partitioned in 80 zones.
Ambient temperature	-5°C...+50°C
Power supply	15-24V= (±10%) or 24V~ (±10%)
Power consumption	WRF04I: max. 20mA/24V= WRF04I LON: max. 40mA/24V=
Terminal clamp	Screwing terminal, max. 1,5mm ²
Enclosure	Material ASA, colour pure white similar to RAL9010, mountable on standard flush-mounting box
Cable entry	From back or sidewise top/bottom
Protection	IP30



Connection



Dimensional Drawing (mm)



PASSIVE / LON

WRF04I		PG1
Type	Art. No.	
WRF04I	195812	
WRF04I LON	199476	

ACCESSORY

WRF04I		PG1
Description	Art. No.	
Rawlplugs and screws (2 pcs. each)	102209	

Application

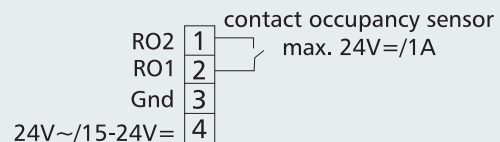
For presence detection in room and office spaces, specially for flush-mounting. Designed for connection to control and display systems.

TYPES AVAILABLE	
Type	Output
WRFo6I	passive, dry relay contact

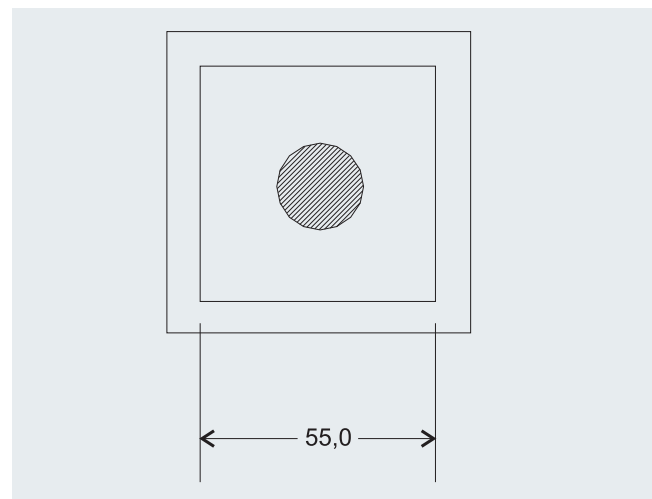
TECHNICAL DATA	
Measuring element	PIR (passive infrared)
Detection range	Conical, aperture angle 100°, range 10m, 80 zones. Circular with radius of approx. 3,2m for a mounting height of 2,8 m, partitioned in 80 zones.
Ambient temperature	-5°C...+50°C
Power supply	15-24V= (±10%) or 24V~ (±10%)
Power consumption	WRFo6I: max. 20mA/24V=
Terminal clamp	Pluggable terminal, max. 1,5mm ²
Enclosure	Switch programmes of Jung, Gira, Merten (stainless steel not feasible)
Protection	IP20
Notice	Please specify switch programme when ordering



Connection



Dimensional Drawing (mm)



PASSIVE

WRFo6I		PG1
Type	Art. No.	
WRFo6I Gira E2 pure white	187183	
Same price for switch programmes Gira, Jung and Merten		

OPTIONS

WRFo6I		PG1
Description		
Switch programme Gira Esprit		

» RDI / RDI Spot – Ceiling Motion Sensor passive

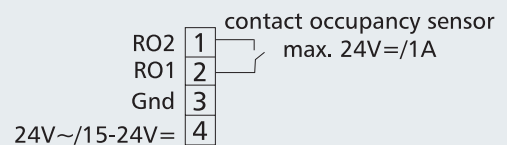
Application

For presence detection in room and offices spaces. Especially for ceiling installation. Designed for connection to control and display systems. Type RDI Spot with smaller detection range in order to prevent undesired presence detection with certain room layouts.

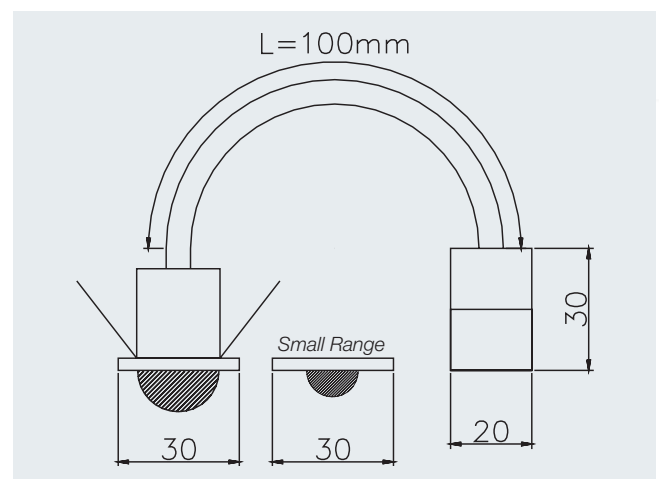
TYPES AVAILABLE	
Type	Output
RDI	passive, floating relay contact
RDI Spot	passive, floating relay contact, with smaller range of detection

TECHNICAL DATA	
Measuring element	PIR (passive infrared)
Range of detection RDI	Conical, aperture angle 100°, range 10m, 80 zones. Circular with radius of approx. 3,2 m for a mounting height of 2,8 m, partitioned in 80 zones. Formula: Diameter (D) = Mounting height (H) x 2,3
Range of detection RDI Spot	Conical, aperture angle 82°, range 5m, 64 zones. Circular with radius of approx. 2,4 m for a mounting height of 2,8 m, partitioned in 64 zones. Formula: Diameter (D) = Mounting height (H) x 1,7
Ambient temperature	-20°C...+50°C
Power supply	15-24V= (±10%) or 24V~ (±10%)
Power consumption	0,5W/1,1VA
Connecting wire	PVC, cross-section 0,25mm ² , L=0,1m
Terminal clamp	Pluggable terminal, max. 1,5mm ²
Enclosure	Ceiling installation ring, material ABS, colour white
Protection	IP20

Connection



Dimensional Drawing (mm)



RDI

PASSIVE

RDI / RDI SPOT

PG1

Type	Art. No.
RDI	187060
RDI Spot	426503



Humidity

Our product line is perfectly completed by humidity sensors for measuring relative humidity and temperature in room and office spaces as well as in outdoor areas or gaseous mediums of the heating, ventilation and air-conditioning technology.

FTK	Duct humidity sensor	P. 172	FTP	Room pendulum humidity sensor	P. 183
FTW04	Room humidity sensor	P. 175	FSK01	Duct hygrostat	P. 185
FTW06	Room humidity sensor	P. 177	FSR01	Room hygrostat	P. 186
FTA54	Outdoor humidity sensor	P. 178	WK01	Condensation detector	P. 187
LCN-FTK	Duct humidity sensor	P. 180	LS02	Leakage sensor	P. 188
LCN-FTW04	Room humidity sensor	P. 181		Accessory	P. 189
LC-FTA54	Outdoor humidity sensor	P. 182			

» F(T)K – Duct Humidity Sensor passive / active / LON / RS485 Modbus (2%)



TYPES AVAILABLE		
Type	Model	Output
FK	A	active, 4-20mA
FK	V	active, 0-10V
FTK	AA	active, 2x 4-20mA
FTK	VV	active, 2x 0-10V
FTK	AS	rel. humidity: active, 4-20mA Temperature: passive, resistor
FTK	VS	rel. humidity: active, 0-10V Temperature: passive, resistor
FTK	LON	active, FTX
FTK	RS485 Modbus	active, RS485 Modbus

TECHNICAL DATA	
Mounting lengths	passive/active/RS485: 140, 270, 400mm LON: 130, 260, 390mm
Measuring ranges	Humidity: 0...100%rF Temperature: -20°C...+80°C (active), depending on sensor used (passive)
Accuracy	Humidity: Typ. ±2% between 10...90%rH AA/VV/LON Temperature: ±0,3% of measuring range RS485 Modbus: ±1°C at 25°C AS/VS Temp: depending on sensor used
Ambient temperature	-20°C...+70°C
Power supply	A/AA/AS: 15-24V= (±10%) V/VV/VS/LON/RS485 Modbus: 15-24V= (±10%) oder 24V~ (±10%)
Power consumption	A/AS: Typ. 0,48W AA: Typ. 0,96W V/VV/VS: Typ. 0,4W/0,7VA LON: Typ. 0,7W/1,9VA
Terminal clamp	Screwing terminal, max. 1,5mm ²
Connection head	Material PA6, colour pure white similar to RAL9010
Cable entry	M16 (A/V/AA/VV/AS/VS/RS485 Modbus) M20 single and double (LON)
Sensor tube	Material PVC, Farbe schwarz, Ø19mm
Filter element	Passive/active: Material stainless steel, aperture width 80µm LON: Material PVDF
Protection	IP65
Notice	Other sensors on request

Application

Duct humidity sensor for measuring relative humidity (type FK) or relative humidity and temperature (type FTK) in gaseous mediums of heating, ventilation and air-conditioning systems (e.g. in exhaust/fresh air ducts). Designed for connection to control and display systems.



Connection

1	2	3	4	5	6	1	2	3	4	5	6
+24V DC rH	Out rH 4...20mA					Out rH 0...10V	UV 24V AC/DC	GND			

FKxxx A

FKxxx V

1	2	3	4	5	6	1	2	3	4	5	6
+24V DC rH	Out rH 4...20mA			Sensor A-	Sensor B+	Out rH 0...10V	UV 24V AC/DC	GND	Sensor A-	Sensor B+	

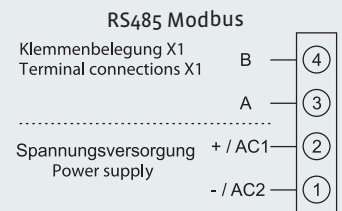
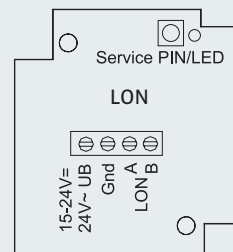
FTKxxx AS

FTKxxx VS

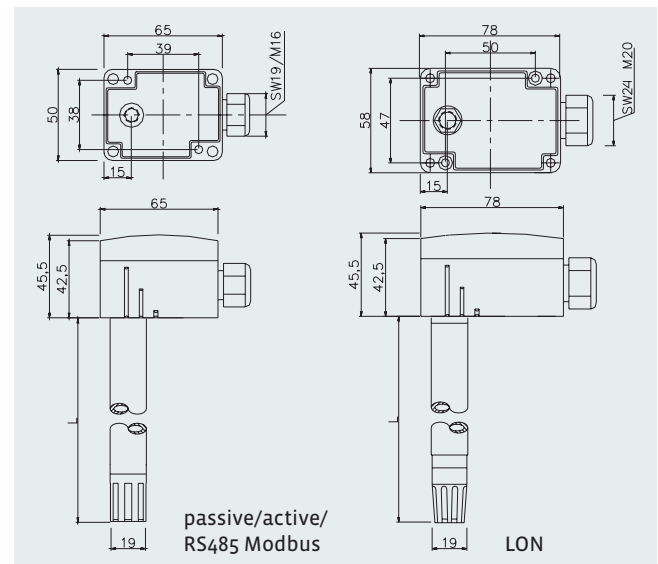
1	2	3	4	5	6	1	2	3	4	5	6
+24V DC Temp	Out Temp 4...20mA	+24V DC rH	Out rH 4...20mA			Out Temp 0...10V	Out rH 0...10V	UV 24V AC/DC	GND		

FTKxxx AA

FTKxxx VV



Dimensional Drawing (mm)



Duct Humidity Sensor passive / active / LON / RS485 Modbus – F(T)K «

A / V			
FK			PG1
Type	Out	Tube L	Art. No.
FK140A	4-20mA	140mm	95570
FK270A	4-20mA	270mm	99486
FK400A	4-20mA	400mm	99493
FK140V	0-10V	140mm	95587
FK270V	0-10V	270mm	99462
FK400V	0-10V	400mm	99479

AA / VV			
FTK			PG1
Type	Out	Tube L	Art. No.
FTK140AA	2x 4-20mA	140mm	95631
FTK270AA	2x 4-20mA	270mm	99448
FTK400AA	2x 4-20mA	400mm	99455
FTK140VV	2x 0-10V	140mm	95617
FTK270VV	2x 0-10V	270mm	99424
FTK400VV	2x 0-10V	400mm	99431

AS / VS – PT100			
FTK			PG1
Typ	Out rH	Tube L	Art. No.
FTK140AS PT100	4-20mA	140mm	95600
FTK270AS PT100	4-20mA	270mm	98137
FTK400AS PT100	4-20mA	400mm	98281
FTK140VS PT100	0-10V	140mm	95594
FTK270VS PT100	0-10V	270mm	98557
FTK400VS PT100	0-10V	400mm	98687

AS / VS – PT100 1/3 DIN			
FTK			PG1
Type	Out rH	Tube L	Art. No.
FTK140AS PT100 1/3 DIN	4-20mA	140mm	97192
FTK270AS PT100 1/3 DIN	4-20mA	270mm	98151
FTK400AS PT100 1/3 DIN	4-20mA	400mm	98298
FTK140VS PT100 1/3 DIN	0-10V	140mm	98427
FTK270VS PT100 1/3 DIN	0-10V	270mm	98564
FTK400VS PT100 1/3 DIN	0-10V	400mm	98694

AS / VS – PT1000 1/3 DIN			
FTK			PG1
Type	Tube L	Rohr L	Art. No.
FTK140AS PT1000 1/3DIN	4-20mA	140mm	98007
FTK270AS PT1000 1/3DIN	4-20mA	270mm	98182
FTK400AS PT1000 1/3DIN	4-20mA	400mm	98328
FTK140VS PT1000 1/3DIN	0-10V	140mm	98458
FTK270VS PT1000 1/3DIN	0-10V	270mm	98588
FTK400VS PT1000 1/3DIN	0-10V	400mm	98717

LON			
FTK			PG1
Type	Out	Tube L	Art. No.
FTK130 LON	FTX	130mm	120609
FTK260 LON	FTX	260mm	120296
FTK390 LON	FTX	390mm	174855

RS485 Modbus			
FTK			PG1
Type	Out	Tube L	Art. No.
FTK140 RS485 Modbus	RS485	140mm	463560
FTK270 RS485 Modbus	RS485	270mm	463645
FTK400 RS485 Modbus	RS485	400mm	463652

AS / VS – PT1000			
FTK			PG1
Type	Out rH	Tube L	Art. No.
FTK140AS PT1000	4-20mA	140mm	97284
FTK270AS PT1000	4-20mA	270mm	98175
FTK400AS PT1000	4-20mA	400mm	98311
FTK140VS PT1000	0-10V	140mm	98441
FTK270VS PT1000	0-10V	270mm	98571
FTK400VS PT1000	0-10V	400mm	98700

AS / VS – Ni1000			
FTK			PG1
Type	Out rH	Tube L	Art. No.
FTK140AS Ni1000	4-20mA	140mm	98014
FTK270AS Ni1000	4-20mA	270mm	98199
FTK400AS Ni1000	4-20mA	400mm	98335
FTK140VS Ni1000	0-10V	140mm	98465
FTK270VS Ni1000	0-10V	270mm	98595
FTK400VS Ni1000	0-10V	400mm	98724

» F(T)K – Duct Humidity Sensor passive / active / LON / RS485 Modbus

AS / VS – Ni1000TK5000

FTK				PG1
Type	Out rH	Tube L	Art. No.	
FTK140AS Ni1000TK5000	4-20mA	140mm	98021	
FTK270AS Ni1000TK5000	4-20mA	270mm	98205	
FTK400AS Ni1000TK5000	4-20mA	400mm	98342	
FTK140VS Ni1000TK5000	0-10V	140mm	98472	
FTK270VS Ni1000TK5000	0-10V	270mm	98601	
FTK400VS Ni1000TK5000	0-10V	400mm	98731	

AS / VS – NTC1,8k

FTK				PG1
Type	Out rH	Tube L	Art. No.	
FTK140AS NTC1,8k	4-20mA	140mm	355988	
FTK270AS NTC1,8k	4-20mA	270mm	355995	
FTK400AS NTC1,8k	4-20mA	400mm	356008	
FTK140VS NTC1,8k	0-10V	140mm	236850	
FTK270VS NTC1,8k	0-10V	270mm	232210	
FTK400VS NTC1,8k	0-10V	400mm	258524	

AS / VS – NTC10k

FTK				PG1
Type	Out rH	Tube L	Art. No.	
FTK140AS NTC10k	4-20mA	140mm	98069	
FTK270AS NTC10k	4-20mA	270mm	98243	
FTK400AS NTC10k	4-20mA	400mm	98380	
FTK140VS NTC10k	0-10V	140mm	98519	
FTK270VS NTC10k	0-10V	270mm	98649	
FTK400VS NTC10k	0-10V	400mm	98779	

AS / VS – NTC20k

FTK				PG1
Type	Out rH	Tube L	Art. No.	
FTK140AS NTC20k	4-20mA	140mm	98083	
FTK270AS NTC20k	4-20mA	270mm	98267	
FTK400AS NTC20k	4-20mA	400mm	98403	
FTK140VS NTC20k	0-10V	140mm	98533	
FTK270VS NTC20k	0-10V	270mm	98663	
FTK400VS NTC20k	0-10V	400mm	98809	

ACCESSORIES

FK / FTK		PG1
Description	Art. No.	
Rawlplugs and screws (2 pcs. each)	102209	
Mounting flange MF19 (PA6.6)	7375	
Filter stainless steel (spare part)	231169	
Filter PVDF (for LON types)	118583	

AS / VS – FeT

FTK				PG1
Type	Out rH	Tube L	Art. No.	
FTK140AS FeT	4-20mA	140mm	98045	
FTK270AS FeT	4-20mA	270mm	98229	
FTK400AS FeT	4-20mA	400mm	98366	
FTK140VS FeT	0-10V	140mm	98496	
FTK270VS FeT	0-10V	270mm	98625	
FTK400VS FeT	0-10V	400mm	98755	

AS / VS – NTC5k

FTK				PG1
Type	Out rH	Tube L	Art. No.	
FTK140AS NTC5k	4-20mA	140mm	98052	
FTK270AS NTC5k	4-20mA	270mm	98236	
FTK400AS NTC5k	4-20mA	400mm	98373	
FTK140VS NTC5k	0-10V	140mm	98502	
FTK270VS NTC5k	0-10V	270mm	98632	
FTK400VS NTC5k	0-10V	400mm	98762	

AS / VS – NTC10k Precon

FTK				PG1
Type	Out rH	Tube L	Art. No.	
FTK140AS NTC10kPrecon	4-20mA	140mm	98076	
FTK270AS NTC10kPrecon	4-20mA	270mm	98250	
FTK400AS NTC10kPrecon	4-20mA	400mm	98397	
FTK140VS NTC10kPrecon	0-10V	140mm	98526	
FTK270VS NTC10kPrecon	0-10V	270mm	98656	
FTK400VS NTC10kPrecon	0-10V	400mm	98793	

AS / VS – LM235Z

FTK				PG1
Type	Out rH	Tube L	Art. No.	
FTK140AS LM235Z	4-20mA	140mm	98090	
FTK270AS LM235Z	4-20mA	270mm	98274	
FTK400AS LM235Z	4-20mA	400mm	98410	
FTK140VS LM235Z	0-10V	140mm	98540	
FTK270VS LM235Z	0-10V	270mm	98670	
FTK400VS LM235Z	0-10V	400mm	98816	



Room Humidity Sensor passive / active / LON (2%) – F(T)Wo4 «



F(T)Wo4



TYPES AVAILABLE

Type	Model	Output
FWo4	A	active, 4-20mA
FWo4	V	active, 0-10V
FTWo4	AA	active, 2x 4-20mA
FTWo4	VV	active, 2x 0-10V
FTWo4	AS	rel. Humidity: active, 4-20mA Temperature: passive, resistor
FTWo4	VS	rel. Humidity: active, 0-10V Temperature: passive, resistor
FTWo4	LON	active, FTX

TECHNICAL DATA

Measuring range	Humidity: 0...100%rH Temperature: 0°C...+50°C (active/LON), depending on sensor used (passive)
Accuracy	Humidity: Typ. ±2% between 10...90%rH AA/VV/LON Temp: ±1% of meas. range AS/VS Temp: depending on sensor used
Ambient temperature	-20°C...+70°C
Power supply	A/AA/AS: 15-24V= (±10%) V/VV/VS/LON: 15-24V= (±10%) or 24V~ (±10%)
Power consumption	A: max. 20mA AA: max. 40mA AS: max. 20mA/24V= V/VV/VS: max. 0,3W/0,5V LON: typ. 0,6W/1,2VA
Terminal	Screwing terminal, max. 1,5mm ²
Enclosure	Material ASA, colour pure white similar to RAL9010, mountable on standard deep installation box, bottom part can be mounted and wired separately from housing cover
Cable entry	From back or sidewise top/bottom
Protection	IP30
Notice	Set point adjuster on request Further sensors on request Special painting feasible (see page 225)

Application

Room humidity sensor for measuring relative humidity (type FWo4) or humidity and temperature (type FTWo4) in room and office spaces etc. Designed for connection to control and display systems.

Connection

1	2	3	4	5	6	7	8	9	10	11	12
rF+ Uv 15...24V=	rF- 4...20mA										

FWo4 A

1	2	3	4	5	6	7	8	9	10	11	12
				Out rF 0...10V	GND	Uv 15-24V= 24V~					

FWo4 V

1	2	3	4	5	6	7	8	9	10	11	12
Out Temp. 4...20mA	Uv 15...24V= 4...20mA	Out rF 4...20mA									

FTWo4 AA

1	2	3	4	5	6	7	8	9	10	11	12
			Out Temp. 0...10V	Out rF 0...10V	GND	Uv 15-24V= 24V~					

FTWo4 VV

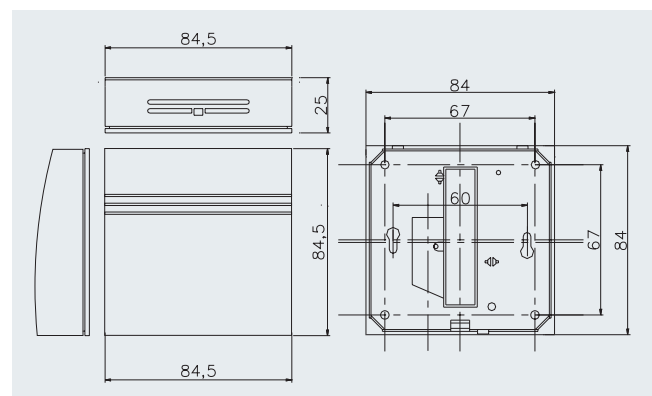
1	2	3	4	5	6	7	8	9	10	11	12
rF+ Uv 15...24V=	rF- 4...20mA				Sensor	Sensor					

FTWo4 AS

1	2	3	4	5	6	7	8	9	10	11	12
	Sensor	Sensor		Out rF 0...10V	GND	24V AC/DC					

FTWo4 VS

Dimensional Drawing (mm)



» F(T)Wo4 – Room Humidity Sensor passive / active / LON

A / V		
FWo4		PG1
Type	Out	Art. No.
FWo4A	4-20mA	191777
FWo4V	0-10V	191784

AS / VS – PT100		
FTWo4		PG1
Type	Out rH	Art. No.
FTWo4AS PT100	4-20mA	439244
FTWo4VS PT100	0-10V	216876

AS / VS – PT1000		
FTWo4		PG1
Type	Out rH	Art. No.
FTWo4AS PT1000	4-20mA	221856
FTWo4VS PT1000	0-10V	216869

AS / VS – Ni1000		
FTWo4		PG1
Type	Out rH	Art. No.
FTWo4AS Ni1000	4-20mA	253543
FTWo4VS Ni1000	0-10V	216845

AS / VS – FeT		
FTWo4		PG1
Type	Out rH	Art. No.
FTWo4AS FeT	4-20mA	356039
FTWo4VS FeT	0-10V	272346

AS / VS – NTC5k		
FTWo4		PG1
Type	Out rH	Art. No.
FTWo4AS NTC5k	4-20mA	356053
FTWo4VS NTC5k	0-10V	471473

AS / VS – NTC10k Precon		
FTWo4		PG1
Type	Out rH	Art. No.
FTWo4AS NTC10kPrecon	4-20mA	256162
FTWo4VS NTC10kPrecon	0-10V	262064

LON		
FTWo4		PG1
Type	Out	Art. No.
FTWo4 LON	FTX	297776

ACCESSORIES	
FWo4 / FTWo4	
Description	Art. No.
Rawlplugs and screws (2 pcs. each)	102209
Ball stroke protection BS100	103312

AA / VV		
FTWo4		PG1
Type	Out	Art. No.
FTWo4AA	2x 4-20mA	429962
FTWo4VV	2x 0-10V	196352

AS / VS – PT100 1/3 DIN		
FTWo4		PG1
Type	Out rH	Art. No.
FTWo4AS PT100 1/3 DIN	4-20mA	296465
FTWo4VS PT100 1/3 DIN	0-10V	308281

AS / VS – PT1000 1/3 DIN		
FTWo4		PG1
Type	Out rH	Art. No.
FTWo4AS PT1000 1/3 DIN	4-20mA	223683
FTWo4VS PT1000 1/3 DIN	0-10V	246262

AS / VS – Ni1000TK5000		
FTWo4		PG1
Type	Out rH	Art. No.
FTWo4AS Ni1000TK5000	4-20mA	239509
FTWo4VS Ni1000TK5000	0-10V	216852

AS / VS – NTC1,8k		
FTWo4		PG1
Type	Out rH	Art. No.
FTWo4AS NTC1,8k	4-20mA	356046
FTWo4VS NTC1,8k	0-10V	258531

AS / VS – NTC10k		
FTWo4		PG1
Type	Out rH	Art. No.
FTWo4AS NTC10k	4-20mA	274357
FTWo4VS NTC10k	0-10V	250238

AS / VS – NTC20k		
FTWo4		PG1
Type	Out rH	Art. No.
FTWo4AS NTC20k	4-20mA	356060
FTWo4VS NTC20k	0-10V	198035

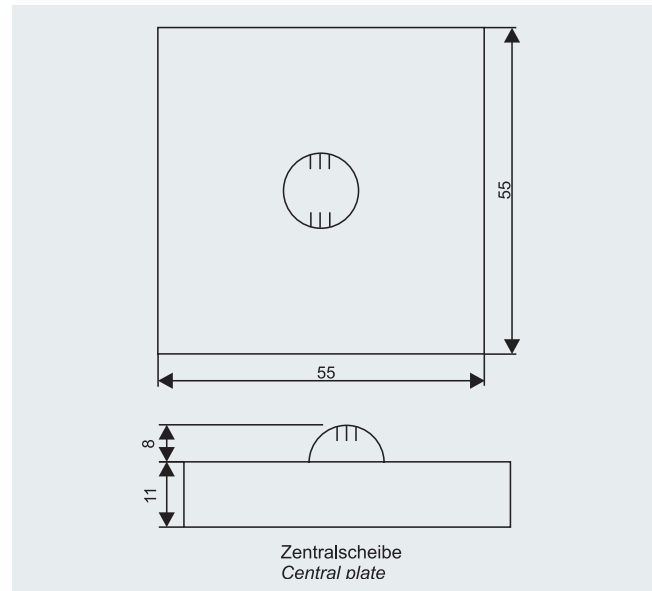
AS / VS – LM235Z		
FTWo4		PG1
Type	Out rH	Art. No.
FTWo4AS LM235Z	4-20mA	356077
FTWo4VS LM235Z	0-10V	216838

Application

For detection of relative humidity and temperature in room and office spaces etc. Designed for connection to control and display systems.



Dimensional Drawing (mm)



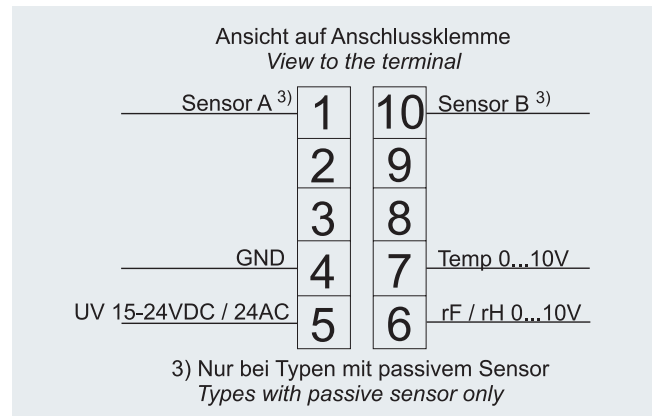
TYPES AVAILABLE

Type	Out rh	Output
FTW06	VV	active, 0-10V

TECHNICAL DATA

Measuring ranges	Humidity: 0...100%rH Temperature: 0°C...+50°C
Accuracy	Humidity: Typ. ±2% zw. 10...90%rH Temperature: ±1% of measuring range
Ambient temperature	-20°C...+70°C
Power supply	15-24V= (±10%) or 24V~ (±10%)
Power consumption	max. 0,3W/0,5VA
Terminal clamp	Screwing terminal, max. 1,5mm ²
Enclosure	Switch programmes of manufacturer Gira, Merten, Berker, Peha
Protection	IP30
Notice	Additional passive temperature sensor at option, (please indicate type when placing an order) Please indicate switch programme when placing an order

Connection



VV

FTW06	Out	Art. No.	PG1
FTW06 Gira E2 reinweiß	2x 0-10V	459167	

Devices in switch programmes Gira, Merten, Berker and Peha are having the same price (except for glass and metal frames)

OPTIONS

FTW06	Description	PG1
	Switch programme Gira Esprit	
	Additional passive temperature sensor	

» F(T)A54 – Outdoor Humidity Sensor passive / active / LON (2%)



TYPES AVAILABLE

Type	Model	Output
FA54	A	active, 4-20mA
FA54	V	active, 0-10V
FTA54	VV	active, 2x 0-10V
FA54/FTA54	LON	active, FTX
FTA54	AS	rel. humidity: active, 4-20mA temperature: passive, resistor
FTA54	VS	rel. humidity: active, 0-10V temperature: passive, resistor

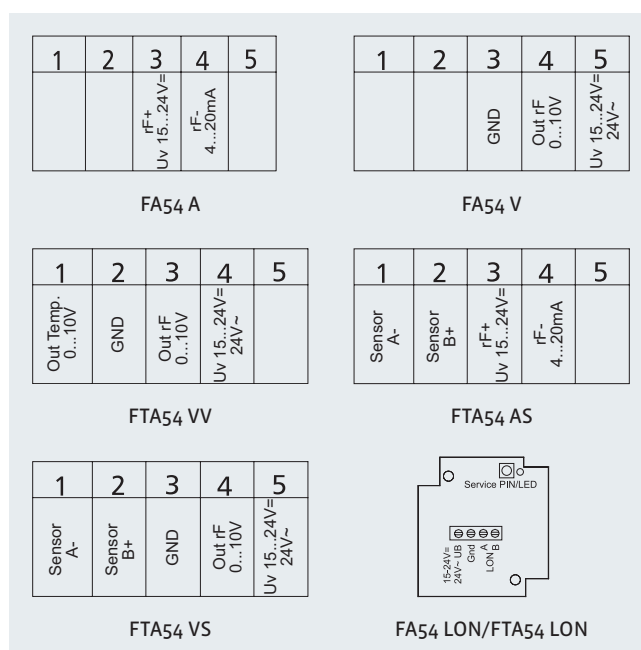
TECHNICAL DATA

Measuring ranges	Humidity: 0...100%rF Temperature: -20°C...+80°C (active), depending on sensor used (passive)
Accuracy	Humidity: Typ. ±2% between 35...75%rH AA/VV/LON temperature: ±0,3% of measuring range AS/VS temperature: depending on sensor used
Ambient temperature	-20°C...+70°C
Power supply	A/AS: 15-24V= (±10%) V/VV/VS/LON: 15-24V= (±10%) or 24V~ (±10%)
Power consumption	A/LON: max. 40mA/24V= V/VV: max. 12mA/24V= AS: max. 20mA/24V= VS: max. 6mA/24V=
Terminal clamp	Screwing terminal, max. 1,5mm ²
Enclosure	Material PA6, colour pure white similar to RAL9010, As for the LON type, the LON module is installed in a second housing (with 1m connecting wire)
Cable entry	M16 (A/V/VV/AS/VS) M20 single and double (LON)
Sensor pocket	Material PVC, colour white
Filter element	Material Stainless Steel
Protection	IP65
Notice	Other sensors on request

Application

Outdoor humidity sensor for measuring relative humidity (type FA54) or relative humidity and temperature (type FTA54) in outdoor areas. Designed for connection to control and display systems.

Connection



Outdoor Humidity Sensor passive / active / LON (2%) – F(T)A54 «

A / V / LON			
FTA54			PG1
Type	Out	Art. No.	
FA54A	4-20mA	98892	
FA54V	0-10V	98915	
FA54LON	FTX	148573	

AS / VS – PT100			
FTA54			PG1
Type	Out rH	Art. No.	
FTA54AS PT100	4-20mA	98908	
FTA54VS PT100	0-10V	98922	

AS / VS – PT1000			
FTA54			PG1
Type	Out rH	Art. No.	
FTA54AS PT1000	4-20mA	98830	
FTA54VS PT1000	0-10V	99042	

AS / VS – Ni1000			
FTA54			PG1
Type	Out rH	Art. No.	
FTA54AS Ni1000	4-20mA	98854	
FTA54VS Ni1000	0-10V	99066	

AS / VS – FeT			
FTA54			PG1
Type	Out rH	Art. No.	
FTA54AS FeT	4-20mA	97956	
FTA54VS FeT	0-10V	99103	

AS / VS – NTC5k			
FTA54			PG1
Type	Out rH	Art. No.	
FTA54AS NTC5k	4-20mA	97963	
FTA54VS NTC5k	0-10V	99110	

AS / VS – NTC10k Precon			
FTA54			PG1
Type	Out rH	Art. No.	
FTA54AS NTC10kPrecon	4-20mA	97987	
FTA54VS NTC10kPrecon	0-10V	99134	

AS / VS – LM235Z			
FTA54			PG1
Type	Out rH	Art. No.	
FTA54AS LM235Z	4-20mA	99028	
FTA54VS LM235Z	0-10V	99158	

VV / LON			
FTA54			PG1
Type	Out	Art. No.	
FTA54VV	2x 0-10V	98939	
FTA54LON	FTX	139564	

AS / VS – PT100 1/3 DIN			
FTA54			PG1
Type	Out rH	Art. No.	
FTA54AS PT100 1/3 DIN	4-20mA	98823	
FTA54VS PT100 1/3 DIN	0-10V	99035	

AS / VS – PT1000 1/3 DIN			
FTA54			PG1
Type	Out rH	Art. No.	
FTA54AS PT1000 1/3 DIN	4-20mA	98847	
FTA54VS PT1000 1/3 DIN	0-10V	99059	

AS / VS – Ni1000TK5000			
FTA54			PG1
Type	Out rH	Art. No.	
FTA54AS Ni1000TK5000	4-20mA	97932	
FTA54VS Ni1000TK5000	0-10V	99073	

AS / VS – NTC1,8k			
FTA54			PG1
Type	Out rH	Art. No.	
FTA54AS NTC1,8k	4-20mA	356343	
FTA54VS NTC1,8k	0-10V	230179	

AS / VS – NTC10k			
FTA54			PG1
Type	Out rH	Art. No.	
FTA54AS NTC10k	4-20mA	97970	
FTA54VS NTC10k	0-10V	99127	

AS / VS – NTC20k			
FTA54			PG1
Type	Out rH	Art. No.	
FTA54AS NTC20k	4-20mA	97994	
FTA54VS NTC20k	0-10V	99141	

ACCESSORIES			
FTA54			PG1
Description	Art. No.		
Rawlplugs and screws (2 pcs. each)	102209		
Sun-/Rain protection RS150	103329		

» LCN-FTK – Duct Humidity Sensor active (3%)



TYPES AVAILABLE

Type	Model	Output
LCN-FTK	VV	aktiv, 2x 0-10V

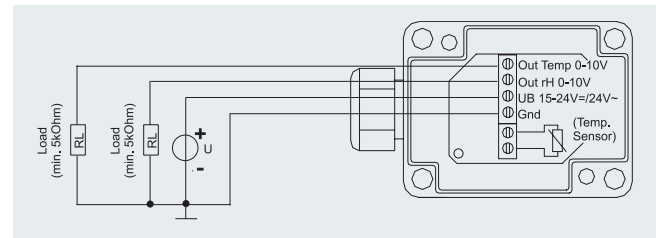
TECHNICAL DATA

Mounting lengths	140mm, 270mm, 400mm
Measuring ranges	Humidity: 0...100%rH Temperature: -20°C...+80°C
Accuracy	Humidity: Typ. ±3% between 20...80%rH Temperature: ±0,5°C at 25°C
Ambient temperature	-20°C...+70°C
Power supply	15-24V= (±10%) or 24V~ (±10%)
Power consumption	Typ. 0,5W/1,7VA
Terminal clamp	Screwing terminal, max. 1,5mm ²
Connection head	Material PA6, colour pur white, similar to RAL9010
Cable entry	M16
Sensor tube	Material PA6, colour black, Ø19mm
Filter element	Material stainless steel, Aperture width 80µm
Protection	IP65
Notice	At option with additional passive temperature sensor (please specify sensor when ordering)

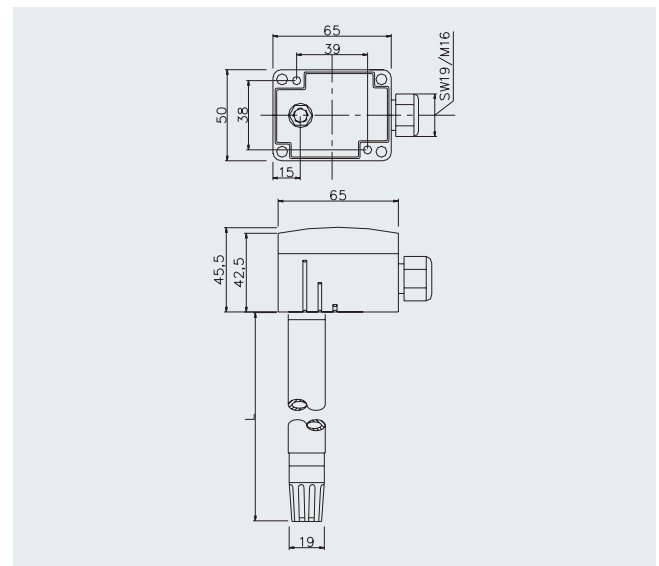
Application

Duct humidity sensor for measuring relative humidity and temperature in gaseous mediums of heating, ventilation and air-conditioning systems (e.g. supply air/ exhaust air ducts). At option, an additional passive temperature sensor is available. Designed for connection to display and control systems.

Connection



Dimensional Drawing (mm)



VV

LCN-FTK	Out	Tube L	Art. No.	PG1
LCN-FTK140VV	2x 0-10V	140mm	269681	
LCN-FTK270VV	2x 0-10V	270mm	277518	
LCN-FTK400VV	2x 0-10V	400mm	277525	

OPTIONS

LCN-FTK	Description	PG1
	Additional passive temperature sensor	

ACCESSORIES

LCN-FTK	Description	Art. No.	PG1
	Mounting flange MF19 (PA6.6)	7375	
	Filter stainless steel (spare part)	231169	

Room Humidity Sensor active / LON / RS485 Modbus (3%) – LCN-FTW04 «



LCN-FTW04



LCN-FTW04LCD

Application

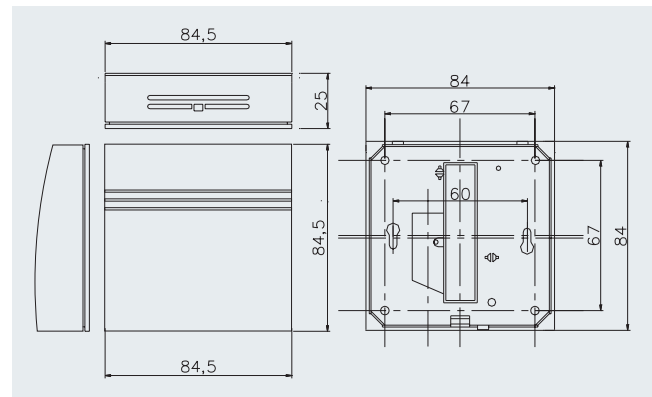
For measuring relative humidity and temperature in room and office spaces etc. Designed for connection to display and control systems.



Connection (Example LCN-FTW04VV)

1	2	3	4	5	6	7	8	9	10	11	12
			Out Temp 0...10V	Out rH 0...10V	GND	Uv 24V AC/DC					

Dimensional Drawing (mm)



TYPES AVAILABLE

Type	Model	Output
LCN-FTW04	VV	active, 2x 0-10V
LCN-FTW04	LON	active, FTX
LCN-FTW04	RS485 Modbus	active, RS485 Modbus

TECHNICAL DATA

Measuring ranges	Humidity: 0...100%rH Temperature: 0°C...+50°C
Accuracy	Humidity: Typ. ±3% betw. 20...80%rH Temperature: ±0,5°C at 25°C
Ambient temperature	-20°C...+70°C
Power supply	15-24V= (±10%) or 24V~ (±10%)
Power consumption	Typ. 0,4W/06VA
Terminal clamp	Screwing terminal, max. 1,5mm ²
Enclosure	Material ASA, colour pure white similar to RAL9010, mountable on standard flush-mounting box, housing bottom can be premounted and prewired separately from housing cover.
Cable entry	From back or sidewise top/bottom
Protection	IP30
Notice	Special painting feasible (see page 225)

VV / LON / RS485 Modbus

LCN-FTW04	Out	Art. No.	PG1
Type			
LCN-FTW04VV	2x 0-10V	287654	
LCN-FTW04LON	FTX	429955	
LCN-FTW04 RS485 Modbus	RS485 Modbus	412537	

OPTION

LCN-FTW04 VV	PG1
Description	
LCD	

ACCESSORIES

LCN-FTW04	Art. No.	PG1
Description		
Rawplugs and screws (2 pcs. each)	102209	
Ball stroke protection BS100	103312	

» LC-F(T)A54 – Outdoor Humidity Sensor active (3%)



Application

For measuring relative humidity and temperature in outdoor areas. Designed for connection to display and control systems.

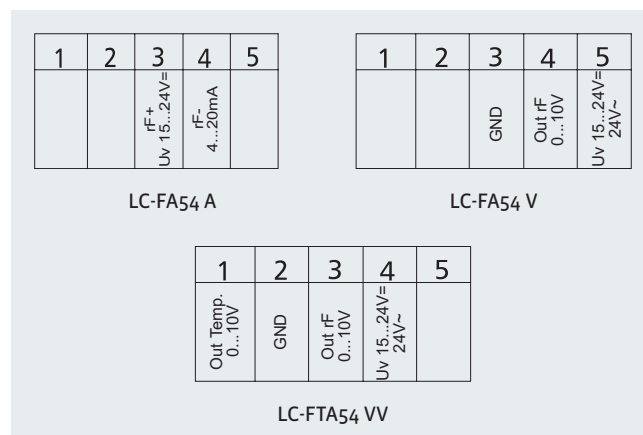
TYPES AVAILABLE

Type	Model	Model
LC-FA54	A	active, 4-20mA
LC-FA54	V	active, 0-10V
LC-FTA54	VV	active, 2x 0-10V

TECHNICAL DATA

Measuring range	Humidity: 0...100%rH Temperature: -20°C...+80°C
Accuracy	Humidity: Typ. ±3% between 35...75%rH VV Temperature: ±0,3% of measuring range
Ambient temperature	-20°C...+70°C
Power supply	A: 15-24V= (±10%) V/VV: 15-24V= (±10%) or 24V~ (±10%)
Power consumption	A: max. 40mA/24V= V/VV: max. 12mA/24V=
Terminal clamp	Screwing terminal, max. 1,5mm ²
Enclosure	Material PA6, colour pure white, similar to RAL9010
Cable entry	M16
Sensor pocket	Material PVC, colour white
Filter element	Material Stainless Steel
Protection	IP65

Connection



A / V / VV

LC-F(T)A54	PG1
Type	Out Art. No.
LC-FA54A	4-20mA 277594
LC-FA54V	0-10V 277587
LC-FTA54VV	2x 0-10V 277549

ACCESSORIES

LC-F(T)A54	PG1
Description	Art. No.
Rawplugs and screws (2 pcs. each)	102209
Sun-/Rain protection RS150	103329

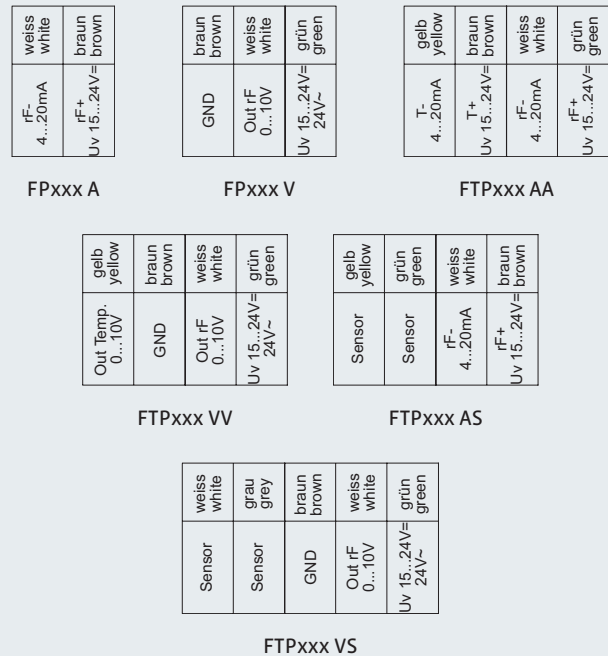
Room Pendulum Humidity Sensor passive / active – F(T)P «



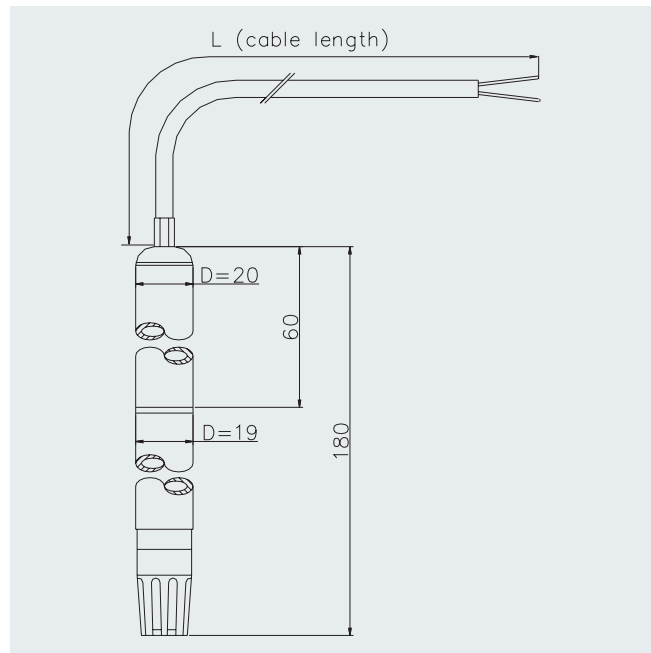
Application

For sectional measuring of relative humidity (type FP) or humidity and temperature (type FTP) in large rooms.

Connection



Dimensional Drawing (mm)



TYPES AVAILABLE

Type	Model	Output
FP	A	active, 4-20mA
FP	V	active, 0-10V
FTP	AA	active, 2x 4-20mA
FTP	VV	active, 2x 0-10V
FTP	AS	rel. humidity: active, 4-20mA temperature: passive, resistor
FTP	VS	rel. humidity: active, 0-10V temperature: passive, resistor

TECHNICAL DATA

Measuring range	Humidity: 0...100%rF Temperature: -20°C...+80°C (active), depending on sensor used (passive)
Accuracy	Humidity: Typ. ±2% between 35...75%rH AA/VV temperature: ±0,3% of measuring range AS/VS temperature: depending on sensor used
Connection wire	PVC, colour white, cross section 0,14mm ² L=1m, other standard lengths 2m, 4m, 6m
Ambient temperature	-20°C...+70°C
Power supply	A/AA/AS: 15-24V= (±10%) V/VV/VS: 15-24V= (±10%) or 24V~ (±10%)
Power consumption	A/LON: max. 40mA/24V= V/VV: max. 12mA/24V= AS: max. 20mA/24V= VS: max. 6mA/24V=
Sensor tube	Material PVC, colour black, with stainless steel weight
Filter element	Material PVDF
Protection	IP20
Notice	Other sensors on request

A / V

FP - CONNECTION WIRE 1m		PG1
Type	Out	Art. No.
FP100A	4-20mA	173407
FP100V	0-10V	144544

AA / VV

FTP - CONNECTION WIRE 1m		PG1
Type	Out	Art. No.
FTP100AA	2x 4-20mA	185653
FTP100VV	2x 0-10V	152273

» F(T)P – Room Pendulum Humidity Sensor passive / active

AS / VS – PT100		
FTP – CONNECTION WIRE 1m		
Type	Out rH	Art. No.
FTP100AS PT100	4-20mA	356350
FTP100VS PT100	0-10V	356480

AS / VS – PT1000		
FTP – CONNECTION WIRE 1m		
Type	Out rH	Art. No.
FTP100AS PT1000	4-20mA	356374
FTP100VS PT1000	0-10V	153140

AS / VS – Ni1000		
FTP – CONNECTION WIRE 1m		
Type	Out rH	Art. No.
FTP100AS Ni1000	4-20mA	297493
FTP100VS Ni1000	0-10V	253109

AS / VS – FeT		
FTP – CONNECTION WIRE 1m		
Type	Out rH	Art. No.
FTP100AS FeT	4-20mA	356411
FTP100VS FeT	0-10V	191371

AS / VS – NTC5k		
FTP – CONNECTION WIRE 1m		
Type	Out rH	Art. No.
FTP100AS NTC5k	4-20mA	356435
FTP100VS NTC5k	0-10V	356510

AS / VS – NTC10k Precon		
FTP – CONNECTION WIRE 1m		
Type	Out rH	Art. No.
FTP100AS NTC10kPrecon	4-20mA	215466
FTP100VS NTC10kPrecon	0-10V	356459

AS / VS – LM235Z		
FTP – CONNECTION WIRE 1m		
Type	Out rH	Art. No.
FTP100AS LM235Z	4-20mA	356473
FTP100VS LM235Z	0-10V	204798

ACCESSORIES	
FP / FTP	
Description	Art. No.
Filter PVDF (spare part)	118583

AS / VS – PT100 1/3 DIN		
FTP – CONNECTION WIRE 1m		
Type	Out rH	Art. No.
FTP100AS PT100 1/3 DIN	4-20mA	356367
FTP100VS PT100 1/3 DIN	0-10V	356497

AS / VS – PT1000 1/3 DIN		
FTP – CONNECTION WIRE 1m		
Type	Out rH	Art. No.
FTP100AS PT1000 1/3DIN	4-20mA	356381
FTP100VS PT1000 1/3DIN	0-10V	281416

AS / VS – Ni1000TK5000		
FTP – CONNECTION WIRE 1m		
Type	Out rH	Art. No.
FTP100AS Ni1000TK5000	4-20mA	356398
FTP100VS Ni1000TK5000	0-10V	332200

AS / VS – NTC1,8k		
FTP – CONNECTION WIRE 1m		
Type	Out rH	Art. No.
FTP100AS NTC1,8k	4-20mA	356428
FTP100VS NTC1,8k	0-10V	356503

AS / VS – NTC10k		
FTP – CONNECTION WIRE 1m		
Type	Out rH	Art. No.
FTP100AS NTC10k	4-20mA	356442
FTP100VS NTC10k	0-10V	356527

AS / VS – NTC20k		
FTP – CONNECTION WIRE 1m		
Type	Out rH	Art. No.
FTP100AS NTC20k	4-20mA	356466
FTP100VS NTC20k	0-10V	356534

OPTIONS	
FP / FTP	
Description	
Cable length per additional meter for FP	
Cable length per additional meter for FP	

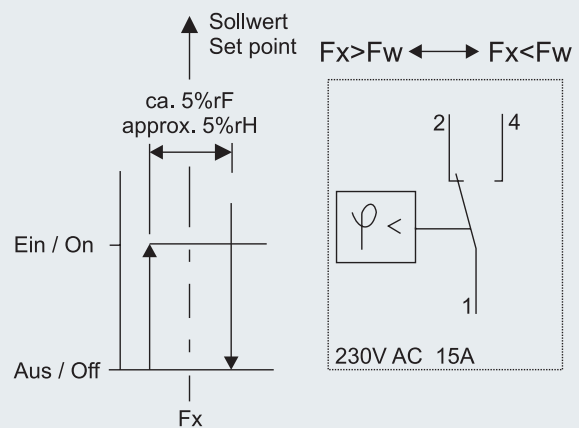
Application

For control (2-point) of relative humidity in ventilation and air-conditioning systems, climate cabinets, air humidifiers and air dehumidifiers etc..



FSK01

Connection



F_x rel. Feuchte der Luft (Istwert)
 F_w am Sollwertsteller eingestellte Feuchte (Sollwert)
 Sinkt die rel. Feuchte F_x unter den eingestellten Sollwert F_w ,
 so öffnet Kontakt 1/4 und schließt Kontakt 1/2.

*F_x rel. hum. of the air (actual value)
 F_w humidity adjusted on the knob (set value).
 If the rel.hum. F_x falls below the setpoint value F_w ,
 the contact 1/4 opens and the contact 1/2 closes.*

TECHNICAL DATA

Mounting length	220mm
Measuring range	35...95%rH
Scale range	30...100%rH
Accuracy	±3,5% (measuring range >50%rH) ±4,0% (measuring range <50%rH)
Ambient temperature	-30°C...+60°C
Max. voltage	250V AC
Switching gap	4%rH (at 50%rH)
Terminal	Screwing terminal, max. 1,5mm ²
Connection head	Material ABS, colour light-grey
Cable entry	M20
Sensor tube	Material stainless steel, Ø16mm, L=220mm
Protection	IP54

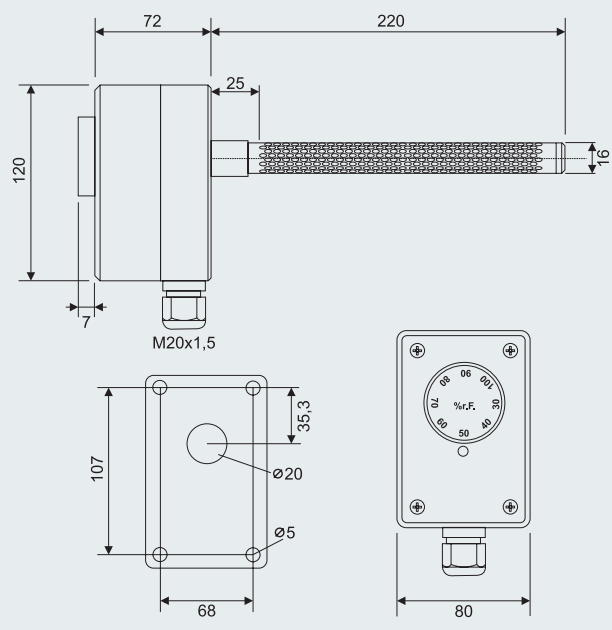
DUCT HYGROSTAT

FSK01	PG1
Type	Art. No.
FSK01	427593

ACCESSORY

FSK01	PG1
Description	Art. No.
Mounting flange MF19 (PA6.6)	7375
Sensor protection (wire mesh) for fan speeds 8...15m/s	429047
PTFE filter	429054
Wall switch	429030

Dimensional Drawing (mm)

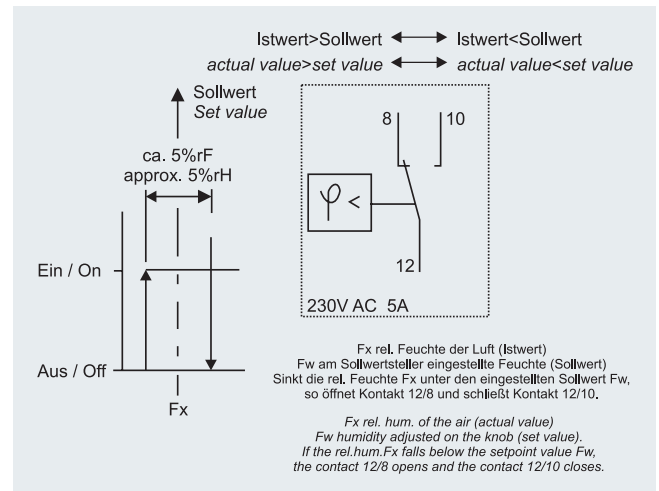


» FSR01 – Room Hygrostat

Application

For control (2-point) of relative humidity in office, computer and business premises and warehouses etc.

Connection



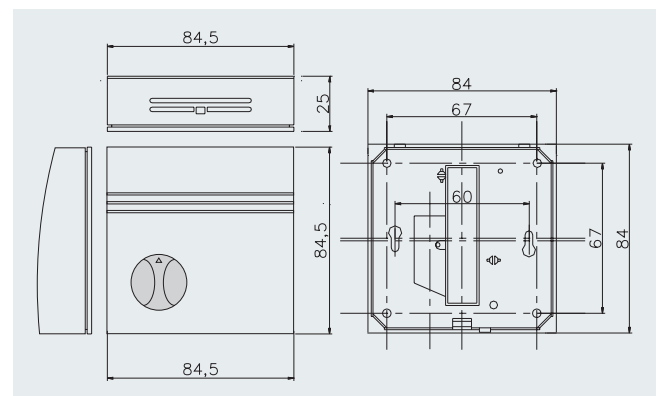
TECHNICAL DATA

Measuring range	35...95%rH
Scale range	30...100%rH
Accuracy	±3,0%rF
Ambient temperature	0°C...+60°C
Max. voltage	250V AC
Switching gap	4%rH (at 50%rH)
Terminal	Screwing terminal, max. 1,5mm ²
Enclosure	Material ASA, colour pure white
Protection	IP20

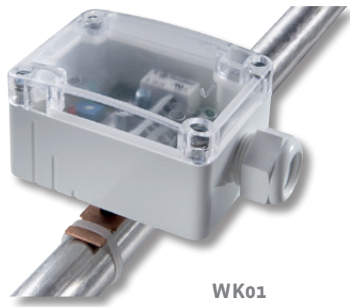
ROOM HYGROSTAT

FSR01	PG1
Type	Art. No.
FSR01	427623

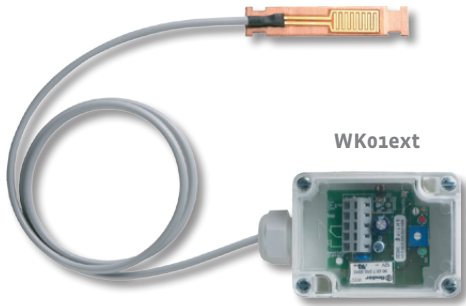
Dimensional Drawing (mm)



Condensation Sensor – WK01 / WK01ext «



WK01

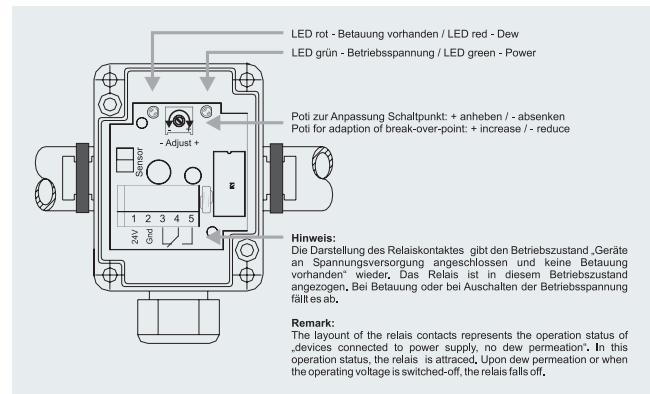


WK01ext

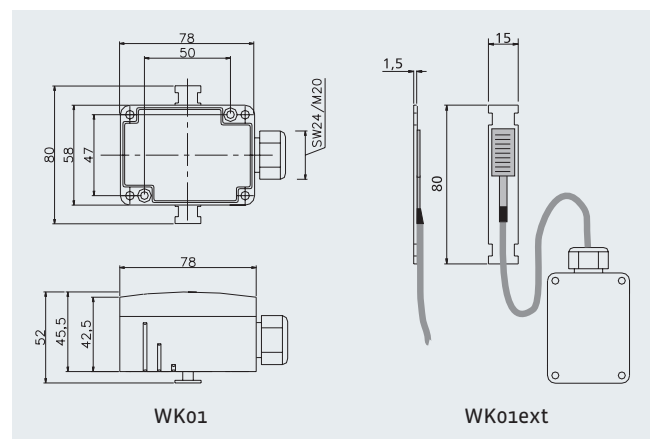
Application

For protection against dew permeation on cooling ceilings. The detector registers dew of the back contact prism. WK01ext with remote sensor 2m. Designed for connection to control and display systems in order to interrupt the cooling water flow for example. The devices include sensor and evaluation electronics. With signal LED and relay contact.

Connection



Dimensional Drawing (mm)



TYPES AVAILABLE

Type	Power Supply
WK01	24V
WK01	230V
WK01ext	24V
WK01ext	230V

TECHNICAL DATA

Output	24V: Relay with change-over contact, floating, max. 24V/1A (ohmic) 230V: Relay with change-over contact, non-floating, max. 230V/120W
Ambient temperature	-20°C...+60°C
Power supply	24V: 15-24V (=±10%) or 24V~ (=±10%) 230V: 230V~ (=±10%)
Power consumption	24V: Typ. 0,8W/1,6VA 230V: Typ. 3,5VA
Terminal clamp	Screwing terminal, max. 1,5mm ²
Sensor base plate	Copper, 80mm x 15mm x 1,5mm
Enclosure	Material PA6, colour pure white, similar to RAL9010
Cable entry	M20
Protection	IP65
Notice	WK01ext with remote sensor (PVC, cross section 0,25mm ² / L=2m)

CONDENSATIONS SENSORS

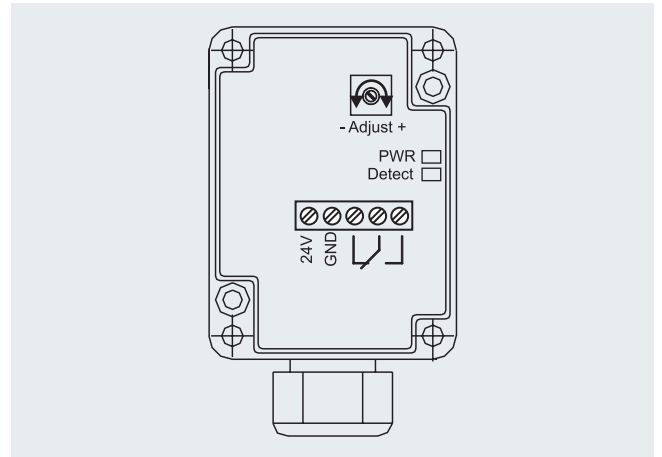
WK01 / WK01ext	PG1
Type	Art. No.
WK01 24V	212816
WK01 230V	363686
WK01ext 24V	230537
WK01ext 230V	408950

» LS02 – Leakage Sensor

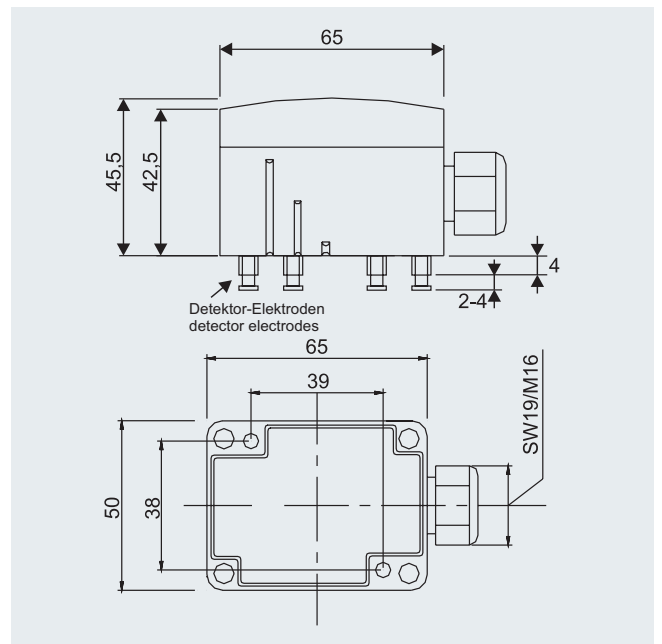
Application

For detection of occurring water leakage (water-mains burst etc.). Designed for connection to display and control systems. With signal LED and relay contact.

Connection



Dimensional Drawing (mm)



TECHNICAL DATA

Output	Relay with change-over contact, floating, max. 12V
Ambient temperature	-35°C...+70°C
Supply voltage	24V: 15-24V= (±10%) or 24V~ (±10%)
Power consumption	Typ. 25mA
Terminal	Pluggable terminal, max. 1,5mm ²
Sensor	4 detector electrodes at the lower side of the enclosure
Contact pin	Material stainless steel
Display	LED green: operating LED red: alarm
Enclosure	Material PA6, colour pure white, similar toRAL9010
Cable entry	M16
Protection	IP65

LEAKAGE SENSOR

LS02

PG1

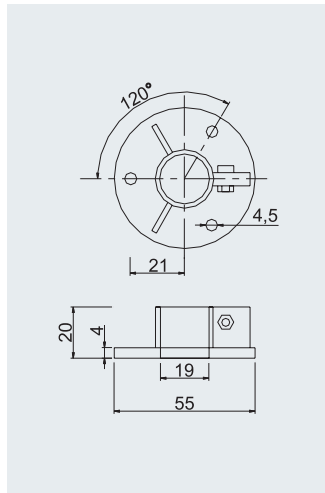
Type

Art. No.

LS02

427807

Accessory – Mounting Flange / Protective Covers «



Mounting flange MF19

for
Duct humidity sensors F(T)K, LCN-F(T)K and
Room pendulum humidity sensors F(T)P

- > Material PA6.6, colour black
- > Operating temperature 130°C

MOUNTING FLANGE

FOR F(T)K, LCN-F(T)K, F(T)P

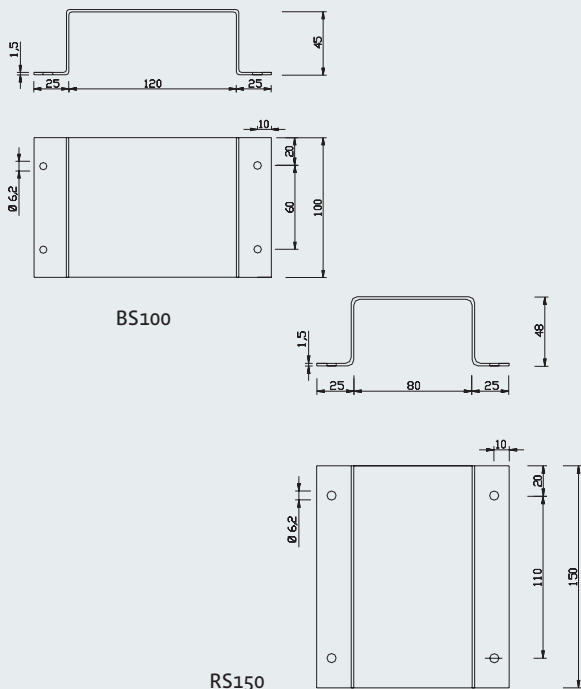
PG1

Description

Art. No.

Mounting flange MF19 (PA6.6)

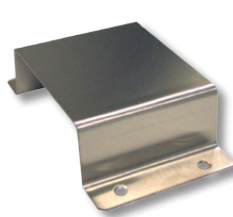
7375



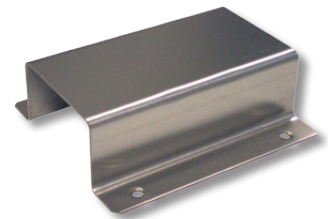
Ball Stroke Protection BS100 Sun-/Rain Protection RS150

BS100: Protection against mechanical influences
for surface-mounting room pendulum humidity sensors
F(T)W04 and LCN-FTW04
RS150: Protection against fierce sun and rain influences
for outdoor humidity sensors F(T)A54, LC-F(T)A54

- > Material stainless steel 1.4301



BS100



RS150

BALL STROKE PROTECTION / SUN-/RAIN PROTECTION

FOR F(T)W04, F(T)A54, LC-F(T)A54, LCN-FTW04

PG1

Description

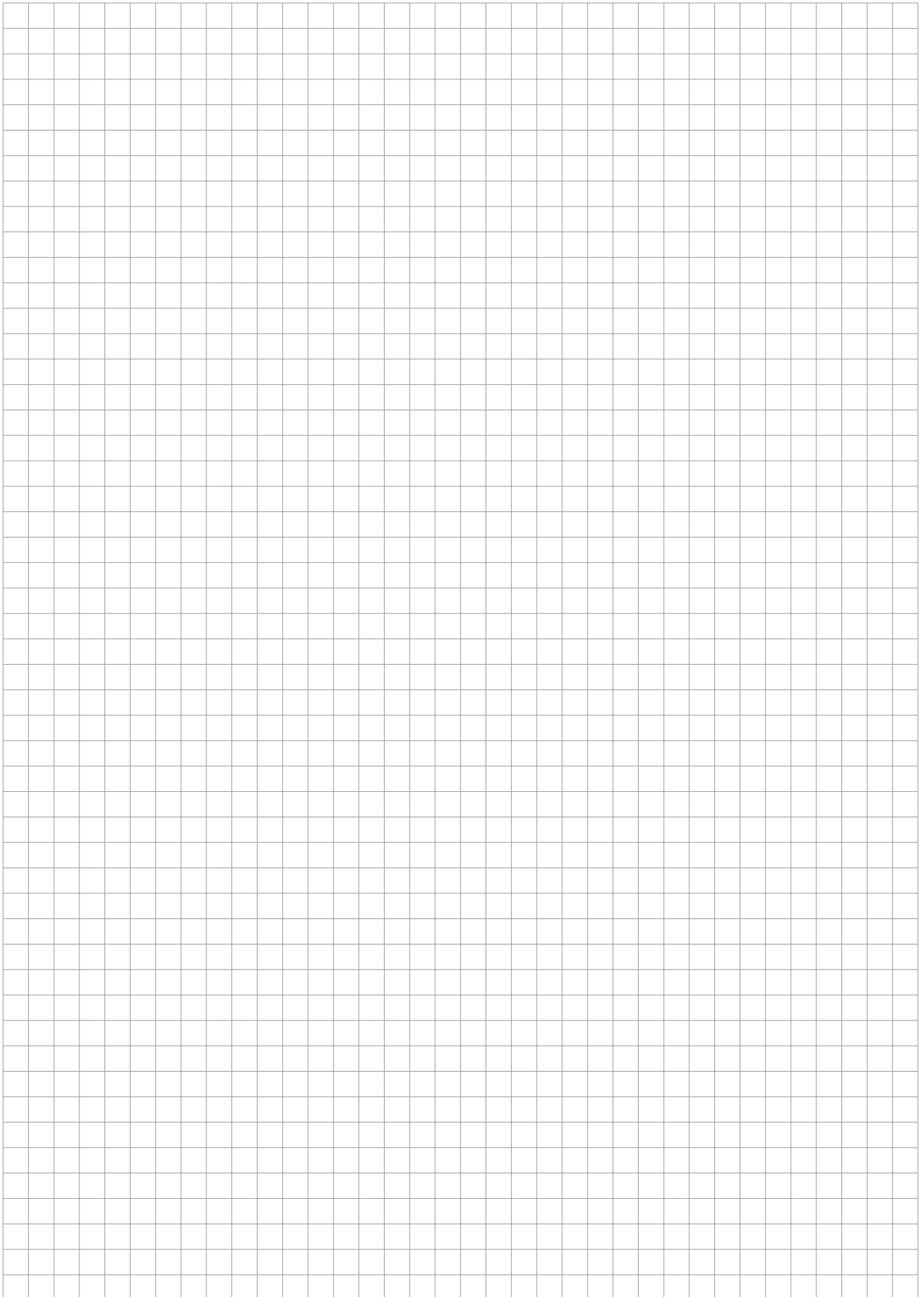
Art. No.

BS100

103312

RS150

103329





Mixed Gas & CO₂

Mixed gas and CO₂ sensors enable an individual and demand-responsive control of outdoor air supply and thus an optimization of the energy consumption. In modern buildings, the use of sensors is almost a matter of course – because energy-saving and well-being of people is of paramount importance.

LK	Duct air quality sensor	P. 192	WRF04 CO₂	Room CO ₂ sensor	P. 196
LW04	Room air quality sensor	P. 193		Accessory	P. 198
LK CO₂	Duct CO ₂ sensor	P. 195		Self calibration with ABCLogic™	P. 198

» LK – Duct Air Quality Sensor active / LON



TYPES AVAILABLE		
Type	Model	Output
LK	V	active, 0-10V
LK	LON	active, FTX

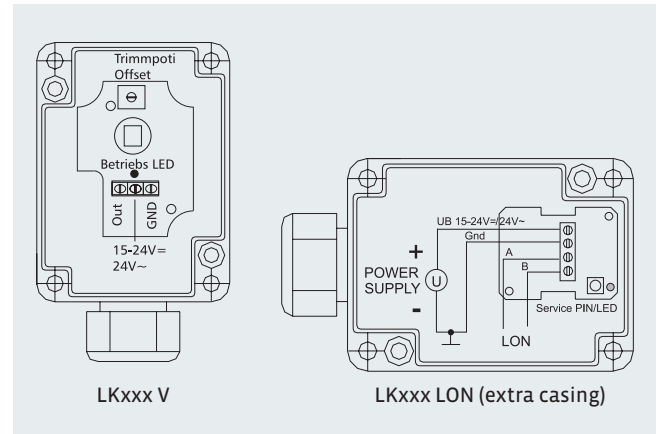
TECHNICAL DATA	
Mounting lengths	130mm, 260mm, 390mm
Sensor	VOC = volatile organic compound (mixed gas)
Ambient humidity	max. 85%rH
Ambient temperature	0°C...+50°C
Power supply	V/LON: 15-24V= (±10%) or 24V~ (±10%)
Power consumption	V: Typ. 50mA/24V=, 150mA/24V~ LON: Typ. 75mA/24V=, 200mA/24V~
Terminal clamp	Screwing terminal, max. 1,5mm ²
Connection head	Material PA6, colour pure white, similar to RAL9010
Cable entry	M20
Sensor tube	Material PVC, colour black, Ø19mm
Protection	IP20
Notice	LON-Module in separate enclosure Wire: PVC, cross section 0,25mm ² L=1m

V / LON			
LK			PG1
Type	Out	Tube L	Art. No.
LK130 V	0-10V	130mm	103442
LK260 V	0-10V	260mm	103572
LK390 V	0-10V	390mm	103589
LK130LON	FTX	130mm	174152
LK260LON	FTX	260mm	155526
LK390LON	FTX	390mm	359351

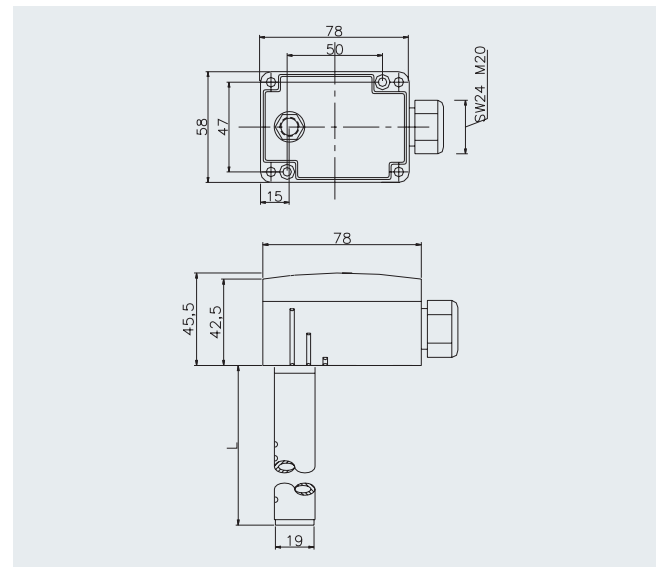
Application

For detection of air quality in air ducts. The sensor consists of a transmitter with VOC sensor, based on a heated tinoxide semiconductor (VOC volatile organic compounds = mixed gas). Designed for connection to control and display systems.

Connection



Dimensional Drawing (mm)



ACCESSORIES

LK			PG1
Description			Art. No.
Rawplugs + screws (2 pcs. each)			102209
Mounting flange MF19 (PA6.6)			7375



MF19

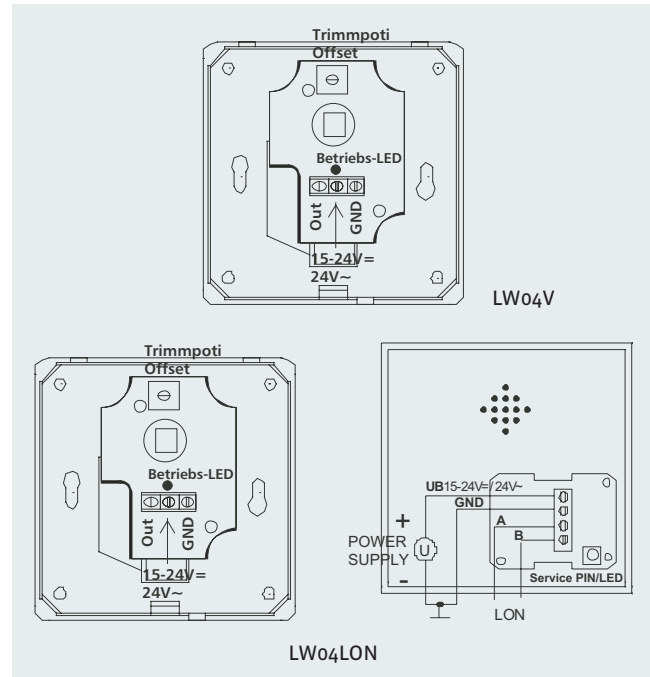
Room Air Quality Sensor active / LON – LW04 «

Application

For detection of air quality in room and office spaces. The sensor consists of a transmitter with VOC sensor, based on a heated tinoxide semiconductor (VOC volatile organic compounds = mixed gas). Designed for connection to control and display systems.



Connection

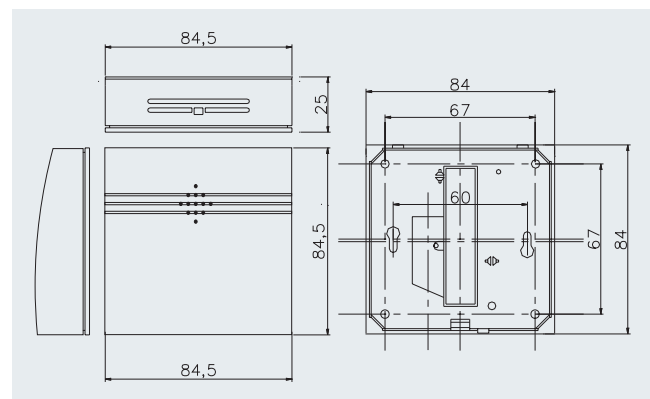


TYPES AVAILABLE		
Type	Model	Output
LW04	V	active, 0-10V
LW04	LON	active, FTX

TECHNICAL DATA	
Sensor	VOC = volatile organic compound = (mixed gas)
Ambient humidity	85%rH
Ambient temperature	0°C...+50°C
Power supply	V/LON: 15-24V= (±10%) or 24V~ (±10%)
Power consumption	V: Typ. 50mA/24V=, 150mA/24V~ LON: Typ. 75mA/24V=, 200mA/24V~
Terminal clamp	Screwing terminal, max. 1,5mm ²
Enclosure	Material ASA, colour pure white similar to RAL9010, mountable on standard flush-mounting box
Cable entry	From back or sidewise top/bottom
Protection	IP30

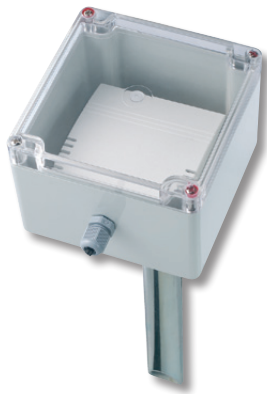
V / LON			
LW04			PG1
Type	Out	Art. No.	
LW04V	0-10V	191746	
LW04LON	FTX	191753	

Dimensional Drawing (mm)



ACCESSORIES	
LW04	PG1
Description	Art. No.
Rawlplugs + screws (2 pcs. each)	102209
Ball stroke protection BS100	103312

» LK CO₂ – Duct CO₂ Sensor active



TYPES AVAILABLE		
Type	Model	Output
LK CO ₂	V	active, 0-10V
LK CO ₂	V-Z	active, 0-10V with 3 LED's for display of air quality
LK CO ₂	V LCD	active, 0-10V

TECHNICAL DATA	
Sensor	NDIR (non dispersive infrared), no calibration necessary, automatic self-calibration ABCLogic™, please see page 198
Measuring range CO ₂	0...2000ppm
Accuracy	±40ppm+3% of meas. range (at 25°C)
Ambient humidity	>85%rH
Ambient temperature	0°C...50°C
Power supply	15-24V= (±10%) or 24V~ (±10%)
Power consumption	Max. 3W/6VA
Terminal clamp	Screwing terminal, max. 1,5mm ²
Connection head	Material PC incl. cover crystal clear
Sensor tube	Galvanised steel
Protection	IP20
Notice	Delivery incl. PE-connecting wire (L=1,5m) and mounting flange For the automatic self-calibration it must be guaranteed that the ambient CO ₂ concentration reaches the level of the natural CO ₂ -concentration once a day.

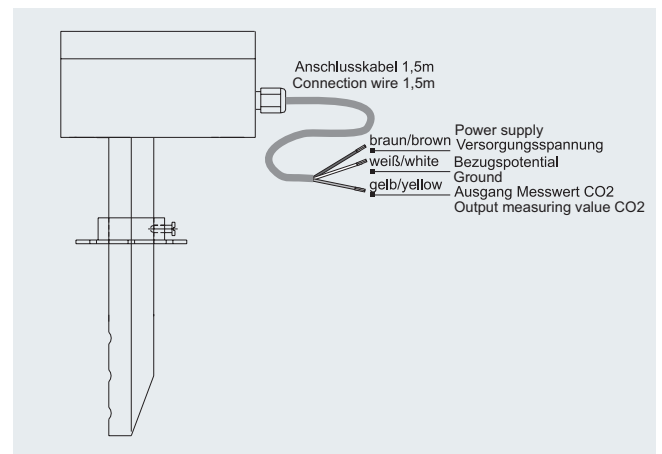
V			
LK CO ₂			PG1
Type	Out	Art. No.	
LK CO ₂ V	0-10V	426084	
LK CO ₂ V-Z	0-10V	426107	
LK CO ₂ V LCD	0-10V	426091	

Application

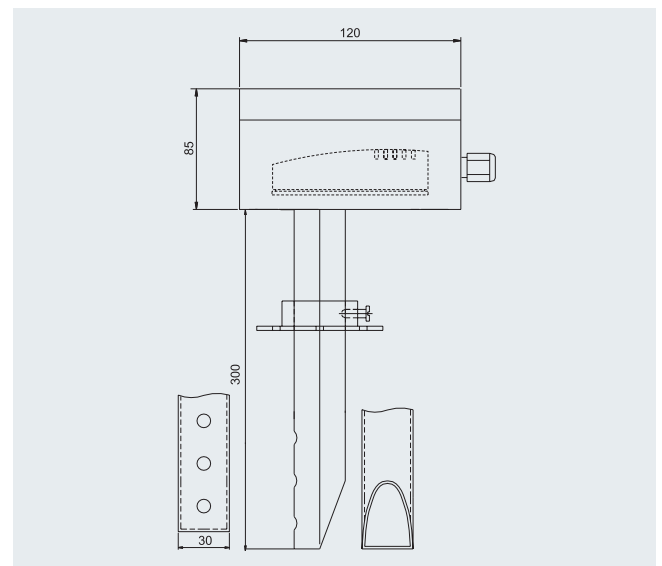
For detection of CO₂ concentration. Especially designed for big air ducts. Optimization of low flow velocities. For direct connection to a DDC or monitoring system an analogue 0-10V output is available for the CO₂ concentration.

Self Calibration ABCLogic™

Connection



Dimensional Drawing (mm)



OPTION

LK CO ₂	PG1
Bezeichnung	
Adjustable CO ₂ threshold value with potential free relay output	

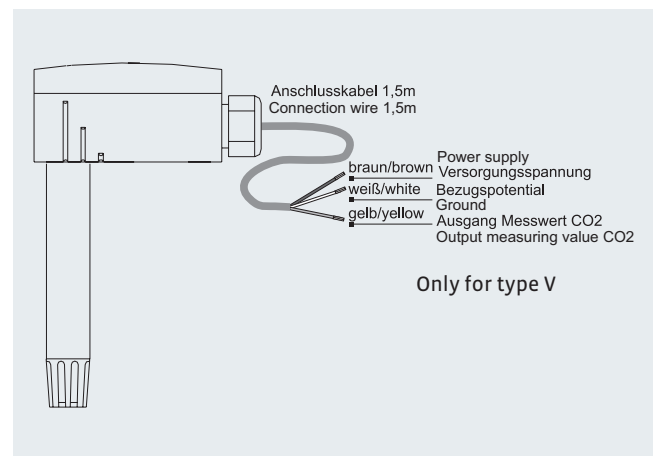


Application

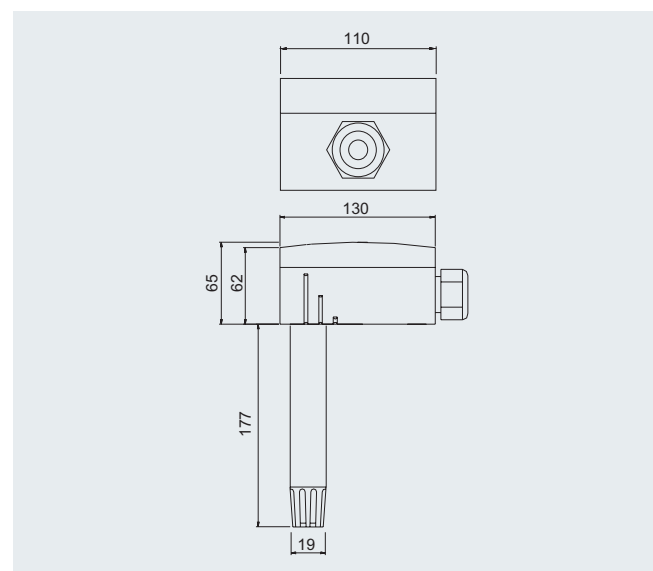
For detection of CO2 concentration, temperature and relative humidity in air ducts. Designed for connection to display and control systems.

Self Calibration ABCLogic™

Connection



Dimensional Drawing (mm)



TYPES AVAILABLE			
Type	Model	For detection of	Output
LK-S CO2	V	CO2	active, 0-10V
LK-S CO2	VV	CO2/Temp	active, 2x 0-10V
LK-S CO2	VVV	CO2/Temp/rH	active, 3x 0-10V
LK-S CO2	LON	CO2/Temp/rH	active, FT5000
LK-S CO2	RS485 Modus	CO2/Temp/rH	active, RS485 Modb.

TECHNICAL DATA	
Sensor	NDIR (non dispersive infrared), no calibration necessary, automatic self-calibration ABCLogic™, please see page 198
Measuring ranges	0...2.000ppm / 0°C...+50°C / 0...100%rH
Accuracy	±40ppm+3% of meas. range (at 25°C)
Ambient humidity	>85%rH
Ambient temperature	0°C...50°C
Power supply	15-24V= (±10%) or 24V~ (±10%)
Power consumption	Max. 3W/6VA
Terminal clamp	Screwing terminal, max. 1,5mm ²
Connection head	Material PA6, colour pur white, similar to RAL9010
Sensor tube	Material PA6, colour black
Protection	IP30
Notice	At option with additional passive temperature sensor (please specify sensor when ordering) For the automatic self-calibration it must be guaranteed that the ambient CO2 concentration reaches the level of the natural CO2-concentration once a day.

V / VV / VVV / LON / RS485 Modbus			
LK-S CO2			PG1
Type	Out	Art. No.	
LK-S CO2 V	0-10V	507493	
LK-S CO2 VV	2x 0-10V	507530	
LK-S CO2 VVV	3x 0-10V	507554	
LK-S CO2 LON	LON FT5000	504966	
LK-S CO2 MODBUS	RS485 Modbus	508797	

OPTION	
LK-S CO2	PG1
Description	
Additional passive temperature sensor	
Adjustable CO2 threshold value with potential free relay output	

» WRF04 CO2 – Room CO2 Sensor active / LON / RS485 Modbus



WRF04 CO2 LCD



WRF04 CO2 -Z

Application

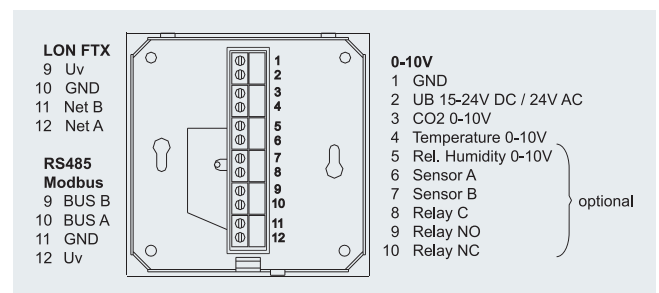
For detection of CO2 concentration, temperature and relative humidity (option) in room and office spaces. For direct connection to a DDC or a monitoring system, there are two analogue 0-10V outputs for CO2 concentration and temperature. Also available with display.



Traffic Light Function

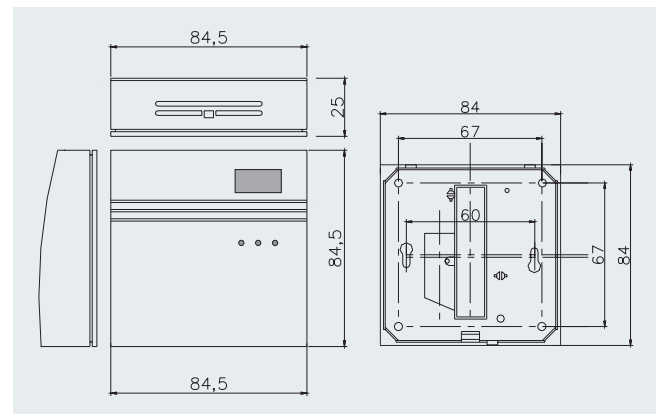
Self Calibration ABCLogic™

Connection (mm)



TECHNICAL DATA	
Sensor	NDIR (non dispersive infrared), no calibration necessary, automatic self-calibration ABCLogic™, please see page 198
Measuring range CO2	0...2.000ppm
Accuracy CO2	±40ppm+4% of meas. value (at 21°C)
Measuring range	Temperature 0...50°C
Accuracy temperature	Typ. 1% of measuring range
Measuring range	Humidity 0...100%rH
Accuracy humidity	Typ. ±3% between 20...80%rH
Ambient humidity	>85%rH
Ambient temperature	0...50°C
Power supply	15-24V= (±10%) oder 24V~ (±10%)
Power consumption	Max. 3W/6VA
Terminal clamp	Screwing terminal, max. 1,5mm ²
Enclosure	Material ASA, colour pure white similar to RAL9010, mountable on standard flush-mounting box
Cable entry	From back or sidewise top/bottom
Protection	IP20
Notice	For the automatic self-calibration it must be guaranteed that the ambient CO2 concentration reaches the level of the natural CO2-concentration once a day.

Dimensional Drawing (mm)



V / VV / VVV

WRF04 CO2

PG1

“LCD”: with display for indication of CO2 concentration, temperature and/or rel. humidity

“Z”: with 3 LEDs for indication of air quality (traffic light function)

Type	Output	For detection of	Art. No.
LC-WRF04 CO2 V	0-10V	CO2	431750
WRF04 CO2 VV	2x 0-10V	CO2 / Temperature	423717
WRF04 CO2 VV-Z	2x 0-10V	CO2 / Temperature, with traffic light function	423724
WRF04 CO2 VV LCD	2x 0-10V	CO2 / Temperature, with LCD	423731
WRF04 CO2 VVV	3x 0-10V	CO2 / Temperature / rel. humidity	423748
WRF04 CO2 VVV-Z	3x 0-10V	CO2 / Temp. / rel. humidity, traffic light function	423755
WRF04 CO2 VVV LCD	3x 0-10V	CO2 / Temperature / rel. humidity, with LCD	423762

Room CO2 Sensor active / LON / RS485 Modbus – WRF04 CO2 «

LON

WRF04 CO2

PG1

“LCD”: with display of CO2 concentration, temperature and/or rel. humidity
 “Z”: with 3 LEDs for indication of air quality (traffic light function)

Type	Output	For detection of	Art. No.
WRF04 CO2 LON	LON FT5000	CO2 / Temperature	470544
WRF04 CO2 LON-Z	LON FT5000	CO2 / Temperature, with traffic light function	470551
WRF04 CO2 LON LCD	LON FT5000	CO2 / Temperature, with LCD	470575
WRF04 CO2 rH LON	LON FT5000	CO2 / Temperature / rel. humidity	470582
WRF04 CO2 rH LON-Z	LON FT5000	CO2 / Temp. / rel. humidity, traffic light function	470599
WRF04 CO2 rH LON LCD	LON FT5000	CO2 / Temperature / rel. humidity, with LCD	470612

RS485 MODBUS

WRF04 CO2

PG1

“LCD”: with display of CO2 concentration, temperature and/or rel. humidity
 “Z”: with 3 LEDs for indication of air quality (traffic light function)

Typ	Ausgang	Zur Messung von	Art. No.
WRF04 CO2 RS485 Modbus	RS485 Modbus	CO2 / Temperature	470629
WRF04 CO2 RS485 Modbus-Z	RS485 Modbus	CO2 / Temperature with traffic light function	470636
WRF04 CO2 RS485 Modbus LCD	RS485 Modbus	CO2 / Temperature, with LCD	470643
WRF04 CO2 rH RS485 Modbus	RS485 Modbus	CO2 / Temperature / rel. humidity	470650
WRF04 CO2 rH RS485 Modbus-Z	RS485 Modbus	CO2 / Temp. / rel. humidity, traffic light function	470667
WRF04 CO2 rH RS485 Modbus LCD	RS485 Modbus	CO2 / Temperature / rel. humidity with LCD	470674

OPTION

WRF04 CO2

PG1

Description

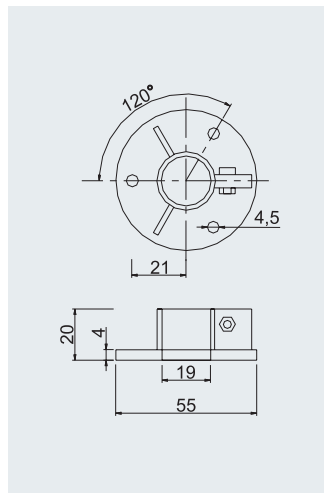
Adjustable CO2 threshold value with potential free relay output

» Information / Accessories – CO₂-Sensors



Mounting flange MF19
for duct air quality sensor LK

- › Material PA6.6, colour black
- › Operation temperature 130°C



MOUNTING FLANGE

FOR LK

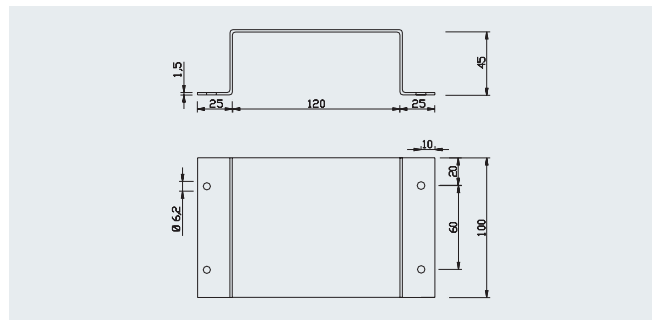
PG1

Description

Art. No.

Mounting flange MF19 (PA6.6)

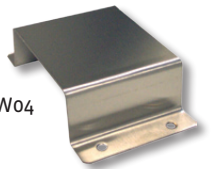
7375



Ball Stroke Protection BS100

Protection against mechanical influences
for surface-mounting room air quality sensor LW04

- › Material stainless steel 1.4301



BALL STROKE PROTECTION

FOR LW04

PG1

Description

Art. No.

Ball Stroke Protection BS100

103312

CO₂ Sensors – Self-Calibration by ABCLogic™

Virtually all gas sensors are subject to some sort of drift. The degree of drift is partially depending on the use of quality components and good design. But even with good components and excellent design a small amount of drift can still occur in the sensor that may ultimately result in the need for a sensor to be recalibrated.

Generally, recalibration involves a maintenance person visiting each sensor in a building and performing a 5 minute to 20 minute recalibration routine using gas bottles and plastic tubing.

The calibration process is simple but it can turn into a significant expense if recalibration is required frequently. If the wrong choice of sensors is made, the expense of sensor maintenance may wipe out any potential energy savings that could come from CO₂ based demand controlled ventilation.

How Thermokon sensors are differing from other devices?

Thermokon sensors have an automatic self-calibration counteracting this behaviour by an intelligent software and a dynamic offset evaluation.

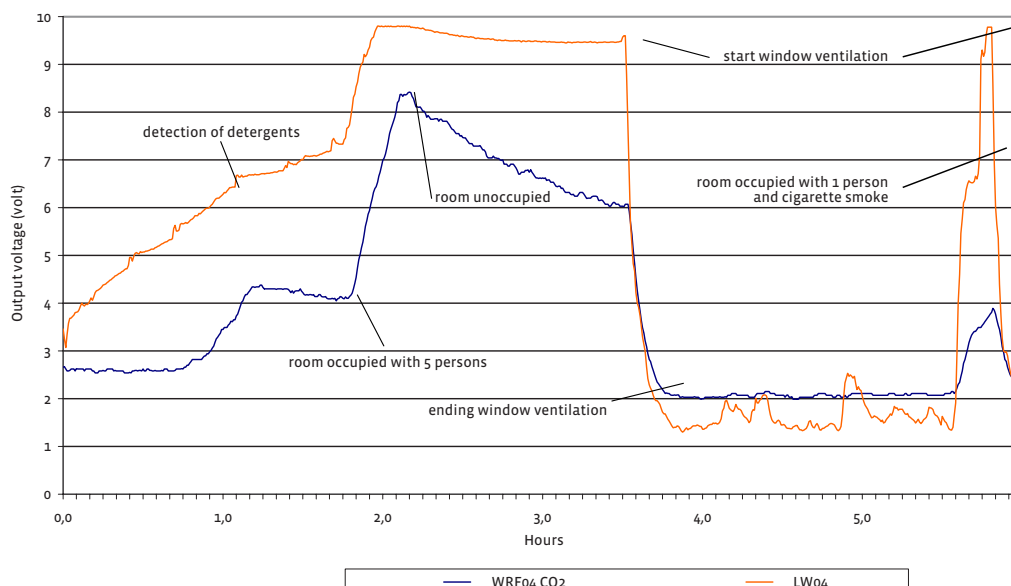
Thus, there is in principle no necessity for a re-calibration of the sensor during operation.

Many years of experience with the self-calibration ABCLogic™ prove the good features of the sensors.

Detailed information on the self-calibration can be found in the CO₂ data sheet.

ABCLogic™ is a registered trademark of the company Telaire, CA-93117 Goleta, USA

Comparison Measurement WRF04 CO₂ with LW04





Pressure & Air Velocity

Pressure sensors installed in air-conditioning and cooling systems have to withstand extreme conditions. Thus, tailor made pressure sensors resisting hardest applications are the solution.

PS	Differential pressure switch	P. 200
DPT	Differential pressure transmitter	P. 201
DPL	Differential pressure transmitter	P. 202
DLM	Pressure transmitter	P. 203
DPI	Electronic pressure transmitter	P. 205

DPG	Differential pressure gauge	P. 206
MM	Differential inclined tube manometer	P. 207
DPT Flow	Flow meter pressure transmitter	P. 208
AVT	Air velocity transmitter	P. 209

» PS – Differential Pressure Switch



Application

Adjustable differential pressure switch PS for monitoring the differential pressure of air and other nonflammable and non-aggressive gases.

Possible applications: Monitoring of air filters, fans, industrial cooling air cycles as well as overheating protection, control of air and fire dampers, anti-freeze with heat exchangers.

TECHNICAL DATA

Measuring ranges	PS 200:	20... 200Pa
	PS 300:	30... 300Pa
	PS 500:	30... 500Pa
	PS1500:	100...1500Pa
	PS4500:	500...4500Pa
Differential gap	PS 200:	10Pa
	PS 300:	20Pa
	PS 500:	20Pa
	PS1500:	80Pa
	PS4500:	180Pa
Max. working overpr.	50kPa	
Operating temperature	-20°C...+60°C	
Terminal clamp	Screwing terminal, max. 1,5mm ²	
Enclosure/Cover	ABS/PC	
Connecting tube	PVC, soft	
Cable entry	M16	
Protection	IP54	
Dimensions (LxBxH)	105mm x 73mm x 63mm	
Standard accessory included	2 fixing screws 2 plastic duct connectors 2m PVC flexible tube	
Notice	Other measuring ranges on request	

DIFFERENTIAL PRESSURE SWITCHES

PS		PG1
Type	Art. No.	
PS200	255196	
PS300	269971	
PS500	269995	
PS1500	255202	
PS4500	273138	

ACCESSORIES

PS		PG1
Description	Art. No.	
Metal duct connectors MKS40 (L=40mm) (1 piece), 2 pieces necessary per device	265138	
Metal duct connectors MKS100 (L=100mm) (1 piece), 2 pieces necessary per device	302531	

Differential Pressure Transmitter – DPT-R8 / DPT MODBUS «

Application

Differential pressure transmitter with 8 selectable measuring ranges and adjustable output (0-10V or 4-20mA) or Modbus output. For monitoring the differential pressure of air and other nonflammable and non-aggressive gases.

Possible applications: Monitoring for air filters, fans, industrial cooling air cycles as well as overheating protection, control of air and fire dampers.



DPTxxx-R8-D



DPTxxx-R8
DPTxxx-Modbus



DIFFERENTIAL PRESSURE TRANSMITTER

DPT-R8, DPT-MODBUS PG1

Type	Out	Art. No.
DPT2500-R8	4-20mA/0-10V	426572
DPT2500-R8-D	4-20mA/0-10V	426596
DPT7000-R8	4-20mA/0-10V	426619
DPT7000-R8-D	4-20mA/0-10V	426633
DPT2000-Modbus	Modbus	396660
DPT5000-Modbus	Modbus	396691

OPTION

DPT-R8 PG1

Description
Autom. zero point calibration

TYPES AVAILABLE

Type (-D=Display)	Measuring ranges (adjustable at the device)
DPT2500-R8 DPT2500-R8-D	-100...+100Pa / 0...100Pa / 0...250Pa 0...500Pa / 0...1.000Pa / 0...1.500Pa 0...2.000Pa / 0...2.500Pa
DPT7000-R8 DPT7000-R8-D	0...1.000Pa / 0...1.500Pa / 0...2.000Pa 0...2.500Pa / 0...3.000Pa / 0...4.000Pa 0...5.000Pa / 0...7.000Pa
DPT2000-Modbus	0...100Pa / 0...250Pa / 0...500Pa 0...1.000Pa / 0...2.000Pa
DPT5000-Modbus	0...1.000Pa / 0...2.000Pa / 0...3.000Pa 0...5.000Pa

TECHNICAL DATA

Output	4...20mA and 0-10V (adjustable at device), Modbus
Accuracy	DPT-R8: ±1,5% of measuring range, ±6Pa at measuring range <250Pa DPT-Modbus: ±1,5% from respective highest measuring range
Max. working overpressure	30kPa (DPT2500-R8), 80kPa (DPT7000-R8), 50kPa (DPT-Modbus)
Operating temperature	-10°C...+50°C
Power supply	DPT-R8: 24V= (±10%) or 24V~ (±10%) DPT-Modbus: 24V= (±10%)
Connection	DPT-R8: 3-wire DPT-Modbus: 4-wire
Terminal clamp	Screwing terminal, max. 1,5mm ²
Enclosure	ABS, cover PC
Connecting tube	PVC, soft
Cable entry	M16
Protection	IP54
Dimensions (LxWH)	90mm x 71,5mm x 36mm
Standard accessory included	2 fixing screws 2 plastic duct connectors 2m PVC flexible tube
Options	Automatic, periodical zero point calibration for increased long-time stability

ACCESSORIES

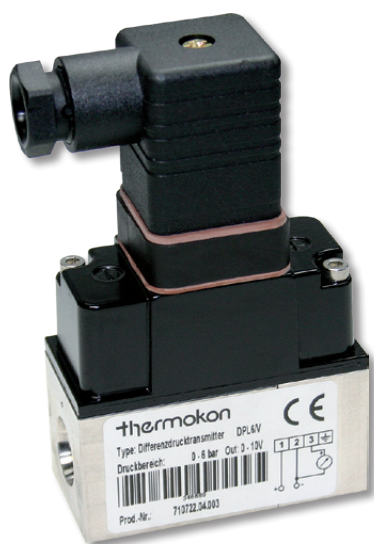
DPT-R8, DPT-MODBUS PG1

Description	Art. No.
Metal duct connectors MKS40 (L=40mm)	265138
Metal duct connectors MKS100 (L=100mm)	302531

» DPL – Differential Pressure Transmitter

Application

For differential pressure detection in liquid mediums of the air-conditioning, heating and water technique. Also suitable for light aggressive liquids.



TYPES AVAILABLE		
Type	Measuring range	Output
DPL1/A	0...1,0bar	4-20mA
DPL2,5/A	0...2,5bar	4-20mA
DPL4/A	0...4,0bar	4-20mA
DPL6/A	0...6,0bar	4-20mA
DPL1/V	0...1,0bar	0-10V
DPL2,5/V	0...2,5bar	0-10V
DPL4/V	0...4,0bar	0-10V
DPL6/V	0...6,0bar	0-10V

TECHNICAL DATA	
Accuracy	Typ. 1% in temperature range -5...+75°C
Medium temperature	-10...+80°C
Ambient temperature	-10...+50°C
Power supply	4-20mA: 15-24V= (±10%) 0-10V: 15-24V= or 24V~ (±10%)
Pressure connection	G 1/4"
Protection	IP65

DIFFERENTIAL PRESSURE TRANSMITTER

DPL			PG1
Type	Out	Art. No.	
DPL1/A	4-20mA	346597	
DPL2,5/A	4-20mA	346696	
DPL4/A	4-20mA	346702	
DPL6/A	4-20mA	346719	
DPL1/V	0-10V	346580	
DPL2,5/V	0-10V	346665	
DPL4/V	0-10V	346672	
DPL6/V	0-10V	346689	

ACCESSORIES

DPL		PG1
Description	Art. No.	
Screw connection set 6mm brass (2 pcs.)	373401	
Screw connection set 6mm stainless steel (2 pcs.)	373388	
Screw connection set 8mm brass (2 pcs.)	373418	
Screw connection set 8mm stainless steel (2 pcs.)	373395	



Application

Pressure transmitter for pressure detection in liquid mediums of the air-conditioning, heating and water technique. Suitable for plants with refrigerants.



DLM G 1/4"



DLM 7/16" Schrader

TYPES AVAILABLE

Type	Measuring range	Output
DLM-1...0/A	-1...0bar	4-20mA
DLM1/A	0...1bar	4-20mA
DLM1,6/A	0...1,6bar	4-20mA
DLM2/A	0...2bar	4-20mA
DLM2,5/A	0...2,5bar	4-20mA
DLM4/A	0...4bar	4-20mA
DLM6/A	0...6bar	4-20mA
DLM10/A	0...10bar	4-20mA
DLM16/A	0...16bar	4-20mA
DLM25/A	0...25bar	4-20mA
DLM40/A	0...40bar	4-20mA
DLM60/A	0...60bar	4-20mA
DLM100/A	0...100bar	4-20mA
DLM-0,5...9/A 7/16"	-0,5...9bar	4-20mA
DLM0...40/A 7/16"	0...40bar	4-20mA
DLM-1...0/V	-1...0bar	0-10V
DLM1/V	0...1bar	0-10V
DLM1,6/V	0...1,6bar	0-10V
DLM2/V	0...2bar	0-10V
DLM2,5/V	0...2,5bar	0-10V
DLM4/V	0...4bar	0-10V
DLM6/V	0...6bar	0-10V
DLM10/V	0...10bar	0-10V
DLM16/V	0...16bar	0-10V
DLM25/V	0...25bar	0-10V
DLM40/V	0...40bar	0-10V
DLM60/V	0...60bar	0-10V
DLM100/V	0...100bar	0-10V

TECHNICAL DATA

Accuracy	Typ. 0,7% in temperature range -20...+85°C
Overload range	double nominal pressure
Medium temperature	-40...+125°C
Ambient temperature	-40...+105°C
Power supply	4-20mA: 15-24V= (±10%) 0-10V: 15-24V= oder 24V~ (±10%)
Pressure connection	G 1/4" oder G 1/2", 7/16" Schrader
Protection	IP65
Notice	Other measuring ranges on request

» DLM – Pressure Transmitter

PRESSURE TRANSMITTER G ^{1/4} "		
DLM	PG1	
Type	Out	Art. No.
DLM-1...0/A	4-20mA	507561
DLM1/A	4-20mA	400794
DLM1,6/A	4-20mA	293198
DLM2/A	4-20mA	507578
DLM2,5/A	4-20mA	293204
DLM4/A	4-20mA	277020
DLM6/A	4-20mA	270960
DLM10/A	4-20mA	276627
DLM16/A	4-20mA	277037
DLM25/A	4-20mA	277044
DLM40/A	4-20mA	266574
DLM60/A	4-20mA	353328
DLM100/A	4-20mA	269261
DLM-1...0/V	0-10V	-
DLM1/V	0-10V	309066
DLM1,6/V	0-10V	-
DLM2/V	0-10V	-
DLM2,5/V	0-10V	310260
DLM4/V	0-10V	276993
DLM6/V	0-10V	265409
DLM10/V	0-10V	265461
DLM16/V	0-10V	277006
DLM25/V	0-10V	277013
DLM40/V	0-10V	507585
DLM60/V	0-10V	464185
DLM100/V	0-10V	464192

PRESSURE TRANSMITTER 7/16" SCHRADER		
DLM	PG1	
Type	Out	Art. No.
DLM-0,5...9/A 7/16"	4-20mA	396059
DLM0...40/A 7/16"	4-20mA	396073

PRESSURE TRANSMITTER G ^{1/2} "		
DLM	PG1	
Type	Out	Art. No.
DLM-1...0/A	4-20mA	350525
DLM1/A	4-20mA	306508
DLM1,6/A	4-20mA	449489
DLM2/A	4-20mA	287753
DLM2,5/A	4-20mA	449496
DLM4/A	4-20mA	277242
DLM6/A	4-20mA	277228
DLM10/A	4-20mA	277211
DLM16/A	4-20mA	277204
DLM25/A	4-20mA	277198
DLM40/A	4-20mA	460422
DLM60/A	4-20mA	327459
DLM100/A	4-20mA	494755
DLM-1...0/V	0-10V	-
DLM1/V	0-10V	370929
DLM1,6/V	0-10V	-
DLM2/V	0-10V	-
DLM2,5/V	0-10V	462730
DLM4/V	0-10V	277181
DLM6/V	0-10V	277174
DLM10/V	0-10V	277167
DLM16/V	0-10V	277150
DLM25/V	0-10V	277143
DLM40/V	0-10V	345378
DLM60/V	0-10V	507608
DLM100/V	0-10V	507622

OPTION	
DLM	PG1
Description	Art. No.
Adaptor G ^{1/4} " to G ^{1/2} "	277068

Application

Electronic differential pressure switch with 4 adjustable measuring ranges (0-10V) and up to 2 relays outputs. For monitoring and indicating low pressures of air or non-flammable and non-aggressive gases. Possible applications: Monitoring of air filters, fans, industrial cooling air cycles as well as overheating protection, flows in air ducts.



TYPES AVAILABLE

Type	Measuring range (adjustable)
DPI2500	0...100Pa / 0...250Pa / 0...1.000Pa 0...2.500Pa with 1 relay output
DPI2500-2R	0...100Pa / 0...250Pa / 0...1.000Pa 0...2.500Pa, with 2 relay outputs

TECHNICAL DATA

Output	DPI2500: 0-10V, 1x relay (250V~/ 30V= / 6A) DPI2500-2R: 0-10V, 2x relais (250V~/ 30V= / 6A)
Accuracy	±1,5% from respective highest range
Max. overpressure	30kPa
Ambient temperature	-10°C...+50°C
Power supply	21-35V= (±10%) or 24V~ (±10%), 24V~/24V~ (±10%) (with autom. zero point calibration)
Terminal clamp	Screwing terminal, max. 1,5mm ²
Enclosure	ABS, cover PC
Connection tube	PVC, soft
Cable entry	M16 and M20
Protection	IP54
Dimensions (LxBxH)	90mm x 71,5mm x 36mm
Inklusive standard accessory	2 fixing screws 2 plastic duct connectors 2m PVC-flexible tube
Optional	Automatic, periodical zero point calibration for improved long-time stability
Notice	Further ranges on request

ELECTRONIC DIFFERENTIAL PRESSURE SWITCH

DPI			PG1
Type	Out	Art. No.	
DPI2500	0-10V / 1x Relay	466844	
DPI2500-2R	0-10V / 2x Relais	466868	

OPTION

DPI		PG1
Description		
Automatic zero point calibration		

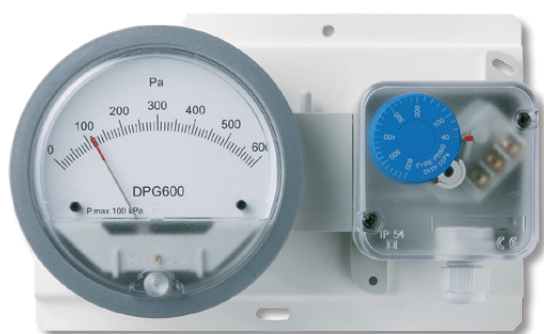
ACCESSORIES

DPI		PG1
Description		Art. No.
Metal duct connectors MKS40 (L=40mm)		265138
Metal duct connectors MKS100 (L=100mm)		302531

» DPG / DPG PS – Differential Pressure Gauge



DPG1k



DPG600/PS600

DIFFERENTIAL PRESSURE GAUGES

DPG	PG1
Type	Art. No.
DPG60	384438
DPG100	384445
DPG250	255264
DPG500	255271
DPG1k	285025

DIFFERENTIAL PRESSURE GAUGE / SWITCH

DPG PS	PG1
Type	Art. No.
DPG200/PS200	255233
DPG600/PS600	267205
DPG1,5k/PS1500	338066

Application

Differential pressure gauges for monitoring the differential pressure of air and other nonflammable and non-aggressive gases. Possible applications: Monitoring of air filters and fans, monitoring of industrial air cycles and flows in air ducts.

TECHNICAL DATA – DPG

Display range	DPG60: 0... 60Pa DPG100: 0...100Pa DPG250: 0...250Pa DPG500: 0...500Pa DPG1k: 0... 1kPa
Accuracy (at 20°C)	DPG250/DPG500/DPG1k <±2% of measuring range DPG100 <±3% of measuring range DPG60 <±4% of measuring range
Operating temperature	-5°C...+60°C
Enclosure/Cover	ABS/PC
Connecting tube	PVC, soft
Display panel	Ø100mm
Standard accessory included	2 fixing screws 2 plastic duct connectors 2m PVC flexible tube
Notice	Other display ranges on request

TECHNICAL DATA – DPG PS

Display range	DPG200/PS200: 0... 200Pa DPG600/PS600: 0... 600Pa DPG1,5k/PS1500: 0...1500Pa
Differential gap	DPG200/PS200: 20... 200Pa DPG600/PS600: 40... 600Pa DPG1,5k/PS1500: 100...1500Pa
Accuracy (at 20°C)	<±2% of measuring range
Operating temperature	-5°C...+60°C
Enclosure/Cover	ABS/PC (DPG and PS)
Connecting tube	PVC, soft
Protection	IP54
Display panel	Ø100mm
Standard accessory included	2 fixing screws 2 plastic duct connectors 2m PVC flexible tube incl. wall mounting plate

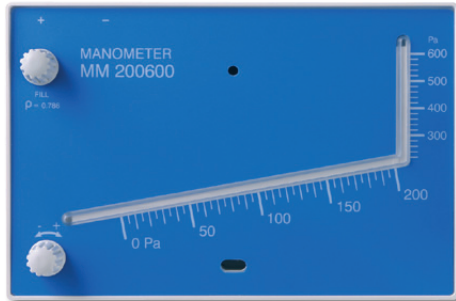
ACCESSORIES

DPG / DPG PS	PG1
Description	Art. No.
Metal duct connectors MKS40 (L=40mm)	265138
Metal duct connectors MKS100 (L=100mm)	302531

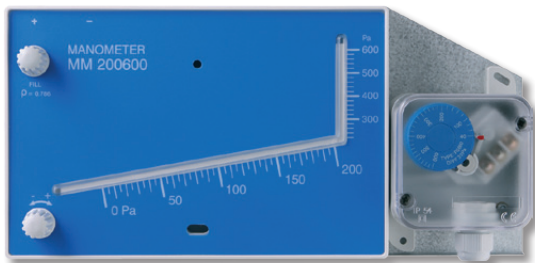
Differential Pressure Inclined Tube Manometers – MM / MM PS «

Application

Differential inclined tube manometers for monitoring of the differential pressure of air and other nonflammable and non-aggressive gases. Possible applications: Monitoring of air filters and fans, monitoring of industrial air cycles and flows in air ducts.



MM200600



MM200600/PS600

TECHNICAL DATA – MM

Display range	MM±50:	-50...50Pa
	MM100:	-10...100Pa
	MM±100:	-100...500Pa
	MM200600:	0...600Pa
	MM5001500:	0...1500Pa
Accuracy	MM±50:	1Pa
	MM100:	1Pa
	MM±100:	5Pa/25Pa
	MM200600:	5Pa/25Pa
	MM5001500:	10Pa/50Pa

Max. working overpressure 200kPa

Operation temperature -40°C...+60°C

Enclosure/Cover ABS/PMMA

Connecting tube PVC, soft

Dimensions (LxBxH) 210mm x 140mm x 34mm

Standard accessory included
2 fixing screws
2m PVC-flexible tube
30ml gauge fluid
2 indication stickers (red/green)

TECHNICAL DATA – MM PS

Display range	MM200600/PS600:	0... 600Pa
	MM5001500/PS1500:	0...1500Pa

Differential gap	MM200600/PS600:	40... 600Pa
	MM5001500/PS1500:	100...1500Pa

Max. working overpressure 50kPa

Operation temperature -20°C...+60°C

Enclosure/Cover
ABS/PMMA (MM)
ABS/PC (PS)

Connecting tube PVC, soft

Protection IP54

Dimensions (LxBxH) 290mm x 140mm x 65mm

Standard accessory included
2 fixing screws
2m PVC-flexible tube
30ml gauge fluid
2 indication stickers (red/green)

DIFFERENTIAL PRESSURE MANOMETER

MM	PG4
Type	Art. No.
MM±50	268912
MM100	284516
MM±100	384452
MM200600	255240
MM5001500	270908

DIFFERENTIAL PRESSURE MANOMETER/SWITCH

MM PS	PG4
Type	Art. No.
MM200600/PS600	255257
MM5001500/PS1500	285889

» DPT Flow – Flow Meter for Fan Control

Application

DPT Flow is an ideal device for monitoring and controlling the air flow and for measuring flow rate of centrifugal fans.

The flow rate measurement is based on differential pressure values measured directly from the fan. DPT Flow can be used to display the flow value on-site and to send the output value to a control system.



TYPES AVAILABLE	
Type	Measuring ranges
DPT Flow-D-1000 (with Display)	0...1.000Pa
DPT Flow-D-5000 (with Display)	0...5.000Pa

TECHNICAL DATA	
Supported fan manufacturers	Comferi, EBM-Pabst, Fläkt Woods, Gebhardt, Nicotra, Rosenberg, Ziehl-Abegg
Output	Volume flow: 0-10V Differential pressure: 0-10V
Accuracy	DPT Flow-1000/5000 ±5Pa and ±1,5% of display
Max. working overpressure	50kPa
Ambient temperature	-5°C...+50°C
Power supply	24V= (±10%) or 24V~ (±10%)
Terminal clamp	Screwing terminal, max. 1,5mm ²
Enclosure	ABS
Connecting tube	PVC, soft
Cable entry	M16
Protection	IP54
Dimensions (LxBxH)	90mm x 71,5mm x 36mm
Standard accessory included	2 fixing screws 2 plastic duct connectors 2m PVC flexible tube
Notice	Device has an automatical, periodical zero point calibration for increased long-time stability Other measuring ranges on request

FLOW METER

DPT FLOW

PG1

Type	Art. No.
DPT Flow-D-1000	370509
DPT Flow-D-5000	377546

ACCESSORIES

DPT FLOW

PG1

Description	Art. No.
Metal duct connectors MKS40 (L=40mm)	265138
Metal duct connectors MKS100 (L=100mm)	302531

Application

Air velocity transmitter for measuring and monitoring of air velocities in supply air/exhaust air plants, at ventilators, regulation flaps and electro damper registers.



TYPES AVAILABLE

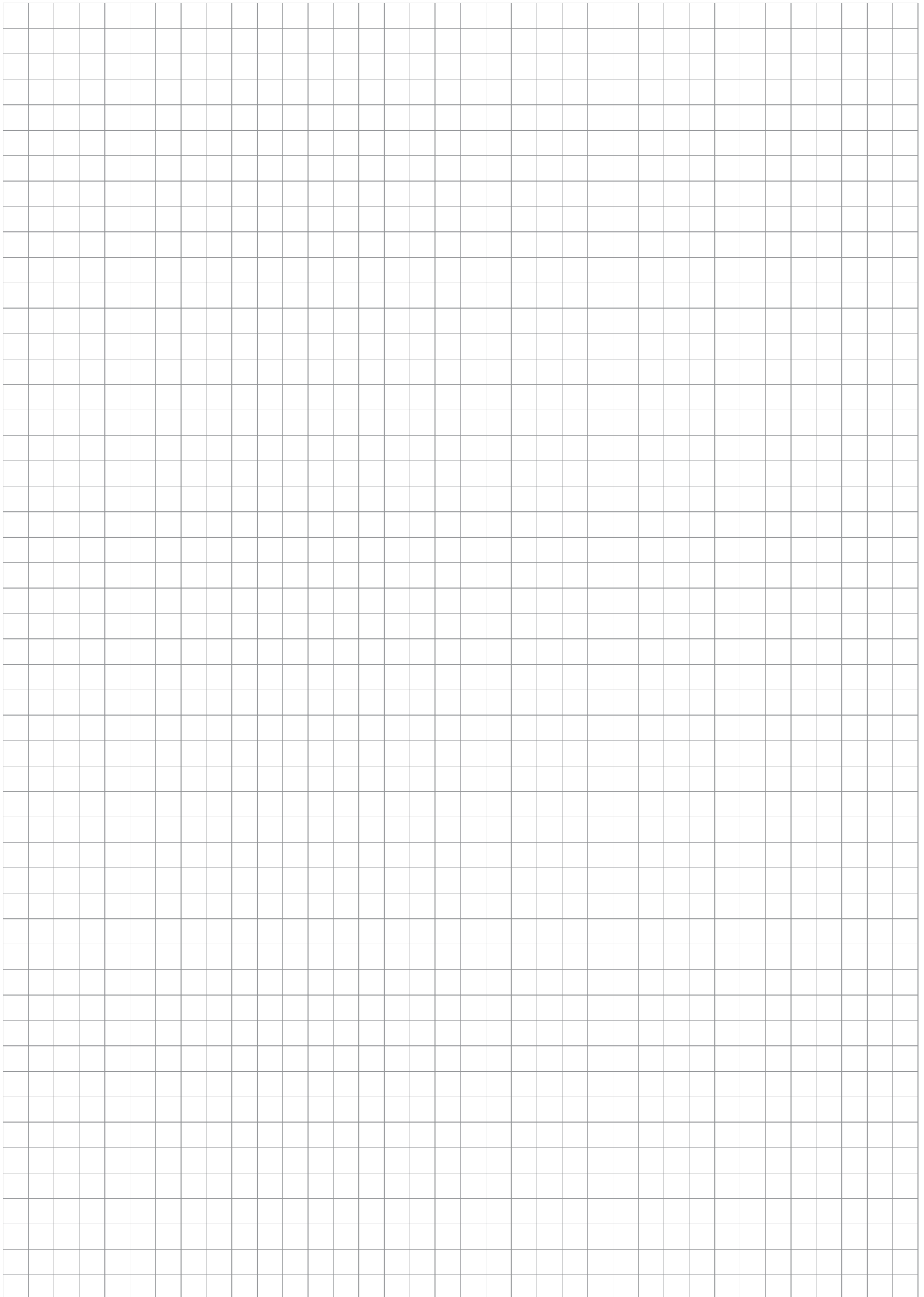
Type	Range (selectable on device)	Display	Relay
AVT	0...2m/s, 0...10m/s, 0..20m/s		
AVT-D	0...2m/s, 0...10m/s, 0..20m/s	X	
AVT-D-R	0...2m/s, 0...10m/s, 0..20m/s	X	X

TECHNICAL DATA

Output 1	4...20mA and 0-10V (selectable on device), 0...2m/s, 0...10m/s, 0...20m/s (selectable on device)
Output 2	4...20mA and 0-10V (selectable on device), 0...50°C
Output optionally	Relay (floating), 230V AC, 6A/30V DC, 6A
Working temperature	-20°C...+70°C
Enclosure	ABS, cover PC
Terminal	Screwing terminal, max. 1,5mm ²
Cable entry	2x M16
Sensor pocket	Stainless steel, Mat. 1.4571, L=210mm
Protection	IP54
Dimensions (LxBxH)	90mm x 71,5mm x 36mm
Notice	Incl. mounting flange

AIR VELOCITY TRANSMITTER

AVT	PG1	
Type	Out	Art. No.
AVT	2x 4-20mA/0-10V	430005
AVT-D	2x 4-20mA/0-10V	430036
AVT-D-R	2x 4-20mA/0-10V, Relay	430067





Power Thyristors

Applications for power thyristors can more and more be found where ohmic and inductive loads must be controlled (e.g. in industrial furnaces, plastics processing etc.). By means of the modular and compact construction and control with a continuous control signal power thyristors become the perfect actuators for industrial power control.

TS1	Power Thyristor	P. 212	TS3	Power Thyristor	P. 214
TS2	Power Thyristor	P. 213			

» TS1 – Power Thyristor



Application

Power thyristors are used as actuators for industrial power controls (e.g. fans, pumps, lamps, heating registers, industrial furnaces). By means of their solid and compact construction, a wearless control with high efficiency is guaranteed.

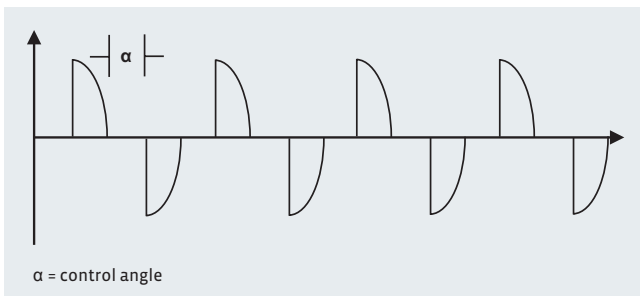
TYPES AVAILABLE

Type	Model	Control
TS1 1ph	single-phase 230V	Phase angle control
TS1 SP 1ph	single-phase 230V	Oscillation package
TS1 3ph	three-phase 400V	Phase angle control
TS1 SP 3ph	three-phase 400V	Oscillation package

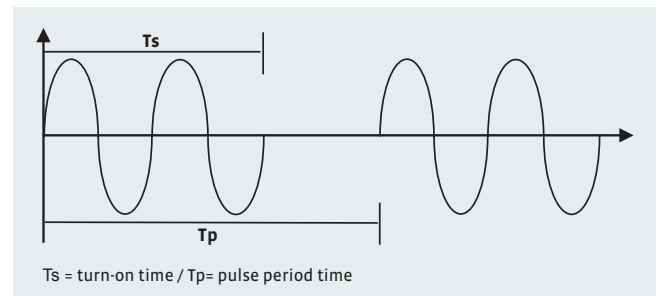
TECHNICAL DATA

Mains voltage	TS1 1ph: 230V~ TS1 3ph: 400V~
Supply voltage	Internal generation
Inputs	0-10V or potentiometer 10kOhm
Enclosure	ABS
Dimensions	100 x 70 x 100mm
Ambient temperature	0...45°C
Protection	IP40
Mounting	Snap mounting on DIN-rail
Notice	Other output currents on request

Phase Angle Control (for ohmic inductive load)



Oscillation Package (for ohmic load)



SINGLE-PHASE, 230V

TS1	PG1	
Type	kW	Art. No.
TS1 1ph 2A	0,46	229678
TS1 SP 1ph 2A	0,46	283137
TS1 1ph 4A	0,92	226639
TS1 SP 1ph 4A	0,92	226622
TS1 1ph 6A	1,38	224000
TS1 SP 1ph 6A	1,38	238885
TS1 1ph 8A	1,84	236980
TS1 SP 1ph 8A	1,84	255189
TS1 1ph 10A	2,30	223874
TS1 SP 1ph 10A	2,30	266109

THREE-PHASE, 400V

TS1	PG1	
Type	kW	Art. No.
TS1 3ph 2A	1,39	230148
TS1 SP 3ph 2A	1,39	273558
TS1 3ph 4A	2,77	246514
TS1 SP 3ph 4A	2,77	268226
TS1 3ph 6A	4,15	224260
TS1 SP 3ph 6A	4,15	275910
TS1 3ph 8A	5,54	233736
TS1 SP 3ph 8A	5,54	275927
TS1 3ph 10A	6,93	224314
TS1 SP 3ph 10A	6,93	241182

Application

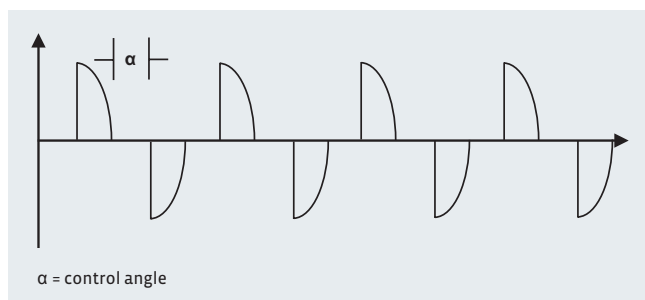
Power thyristors are used as actuators for industrial power controls (e.g. fans, pumps, lamps, heating registers, industrial furnaces). By means of their solid and compact construction, a wearless control with high efficiency is guaranteed.



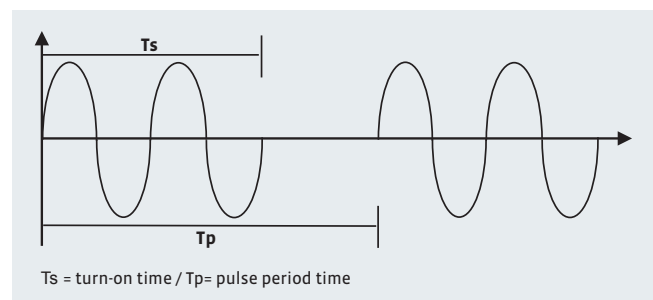
TYPES AVAILABLE		
Type	Model	Control
TS2 1ph	single-phase 230V	Phase angle control
TS2 SP 1ph	single-phase 230V	Oscillation package
TS2 3ph	three-phase 400V	Phase angle control
TS2 SP 3ph	three-phase 400V	Oscillation package

TECHNICAL DATA	
Mains voltage	TS2 1ph: 230V~ TS2 3ph: 400V~
Supply voltage	Internal generation
Inputs	0-10V or potentiometer 10kOhm
Fault indication	Phase failure, heat sink temperature, low voltage, power thyristor failure
Enclosure	Aluminium with plexiglass cover
Dimensions	Depending on type
Ambient temperature	0...45°C
Protection class	IP20
Mounting	Screw assembly
Notice	Other output currents

Phase Angle Control (for ohmic inductive load)



Oscillation Package (for ohmic load)



SINGLE-PHASE, 230V

TS2	PG1	
Type	kW	Art. No.
TS2 1ph 75A	17,25	223867
TS2 SP 1ph 75A	17,25	361453
TS2 1ph 90A	20,70	361484
TS2 SP 1ph 90A	20,70	361460
TS2 1ph 120A	27,60	361491
TS2 SP 1ph 120A	27,60	361477

THREE-PHASE, 400V

TS2	PG1	
Type	kW	Art. No.
TS2 3ph 75A	51,91	236522
TS2 SP 3ph 75A	51,91	339094
TS2 3ph 90A	62,28	260190
TS2 SP 3ph 90A	62,28	326926
TS2 3ph 120A	83,04	304719
TS2 SP 3ph 120A	83,04	336482

» TS3 – Power Thyristor

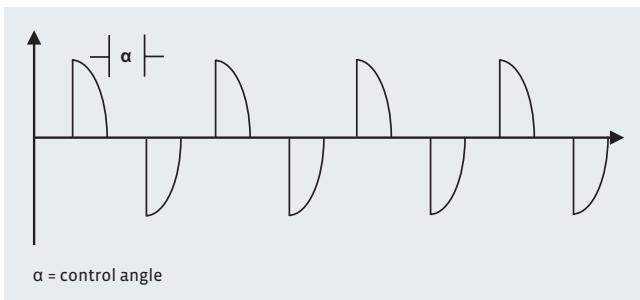


Application

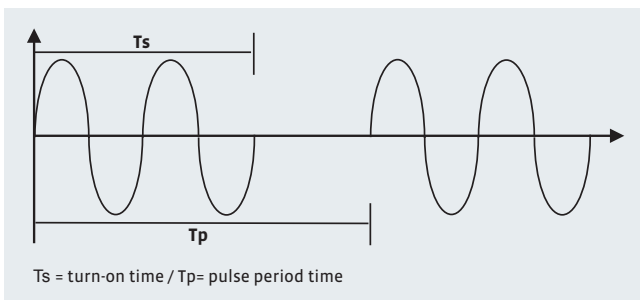
Power thyristors are used as actuators for industrial power controls (e.g. fans, pumps, lamps, heating registers, industrial furnaces). By means of their solid and compact construction, a wearless control with high efficiency is guaranteed.

TYPES AVAILABLE		
Type	Model	Control
TS3 1ph	single-phase 230V	Phase angle control
TS3 SP 1ph	single-phase 230V	Oscillation package
TS3 3ph	three-phase 400V	Phase angle control
TS3 SP 3ph	three-phase 400V	Oscillation package

Phase Angle Control (for ohmic-inductive loads)



Oscillation Package (for ohmic load)



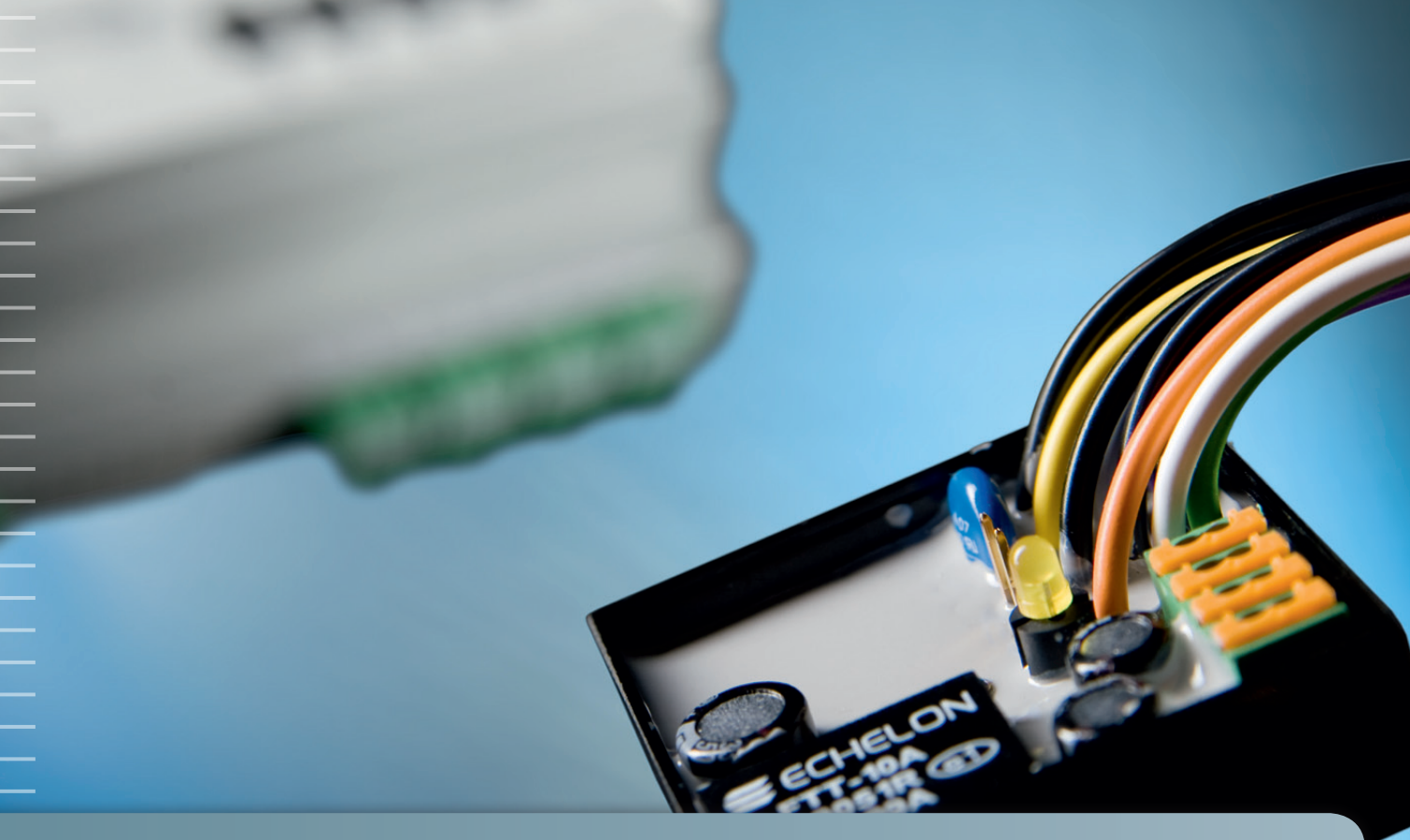
TECHNICAL DATA	
Mains voltage	TS3 1ph: 230V~ TS3 3ph: 400V~
Supply voltage	Internal generation
Inputs	0-10V respect. potentiometer 10kOhm
Input impedance	Switchable: 500Ohm, 50kOhm
Enclosure	Aluminium
Dimensions	1ph: 82x125x 90mm 3ph: 130x200x135mm
Ambient temperature	0...45°C
Protection	IP40
Mounting	TS3 1ph: Snap mounting on DIN-rail TS3 3ph: Screw assembly
Notice	Other output currents on request

SINGLE-PHASE, 230V

TS3	PG1	
Type	kW	Art. No.
TS3 1ph 15A	3,45	237161
TS3 SP 1ph 15A	3,45	245500
TS3 1ph 25A	5,75	241649
TS3 SP 1ph 25A	5,75	231091
TS3 1ph 35A	8,05	238489
TS3 SP 1ph 35A	8,05	270977
TS3 1ph 50A	11,50	361200
TS3 SP 1ph 50A	11,50	344333

THREE-PHASE 400V

TS3	PG1	
Type	kW	Art. No.
TS3 3ph 15A	10,38	224796
TS3 SP 3ph 15A	10,38	225236
TS3 3ph 25A	17,30	225649
TS3 SP 3ph 25A	17,30	240970
TS3 3ph 35A	24,22	225656
TS3 SP 3ph 35A	24,22	241014
TS3 3ph 50A	34,60	256353
TS3 SP 3ph 50A	34,60	223836



In-/Output Modules with LON Interface

In-/output modules are designed for status monitoring of floating contacts and control of actuators via relay contacts. By a corresponding software applications they are also suitable for control of lighting and blinds as well as inquiries of window contacts and fireflaps.

I/O HS	In-/output module LON	P. 216	DI UP	In-/output module LON	P. 219
I/O 8AI, 4AO	In-/output module LON	P. 217	ASM HS	Connecting module for bus connection	P. 220
I/O	In-/output module LON	P. 218			

» I/O HS – In-/Output Module with LON-Interface



I/O64 HS

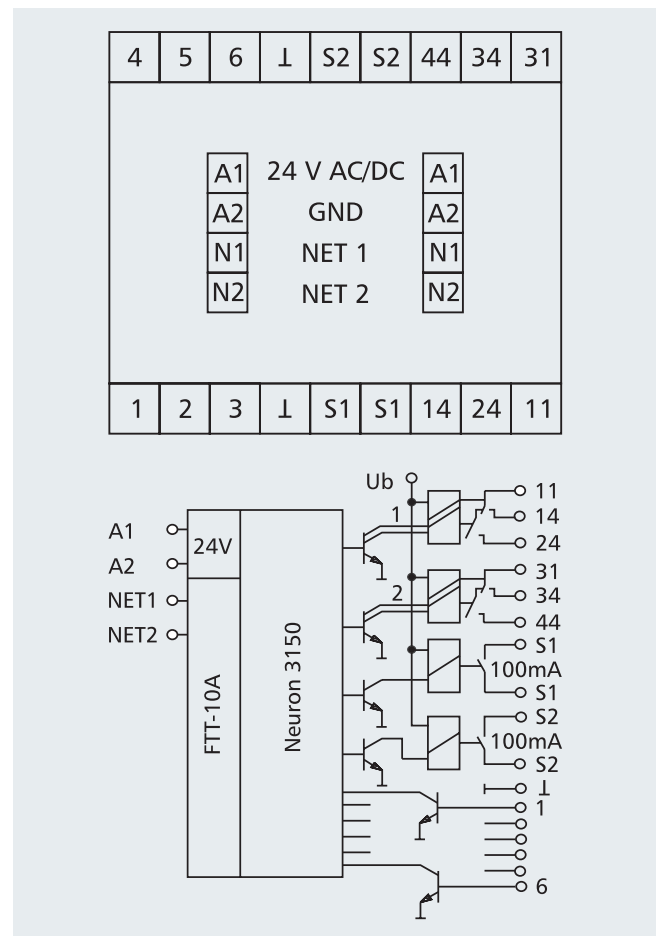
TYPES AVAILABLE	
Type	Output
I/O04 HS	4DO, FTT10A
I/O10-0 HS	10DI, FTT10A
I/O42 HS 16A	4DI, 2DO, FTT10A
I/O44 HS	4DI, 4DO, FTT10A
I/O64 HS	6DI, 4DO, FTT10A

TECHNICAL DATA	
Ambient temperature	-5°C...+55°C
Power supply	20...28V AC/DC
Power consumption	I/O04: Max. 205mA (AC), 67mA (DC) I/O10-0: Max. 63mA (AC), 21mA (DC) I/O42: Max. 220mA (AC), 90mA (DC) I/O44: Max. 200mA (AC), 65mA (DC) I/O64: Max. 220mA (AC), 90mA (DC)
Enclosure	Material PA6 (enclosure), Material PC (enclosure)
Dimensions	I/O04, I/O42: 35x70x74mm I/O44, I/O10-0: 35x70x65mm I/O64: 50x70x74mm
Terminal	Pluggable screwing terminal Supply and bus: 1,5mm ² In-/output: 2,5mm ²
Mounting	Snap mounting on rail according to DIN EN 50022
Protection	IP20

Application

I/O modules with digital inputs and outputs. For status detection of floating contacts and control of actuators by relay contacts. By means of the corresponding software application, the modules are also suitable for light and shutter control, inquiry of window contacts or fire flaps. Status indication of digital inputs and manual menu of relay outputs.

Connection (example I/O64 HS)



I/O HS		PG2
Type	Art. No.	
I/O04 HS	431217	
I/O10-0 HS	431224	
I/O42 HS 16A	431255	
I/O44 HS	431231	
I/O64 HS	431248	

In-/Output Module LON – I/O 8AI HS – I/O 4AO HS «

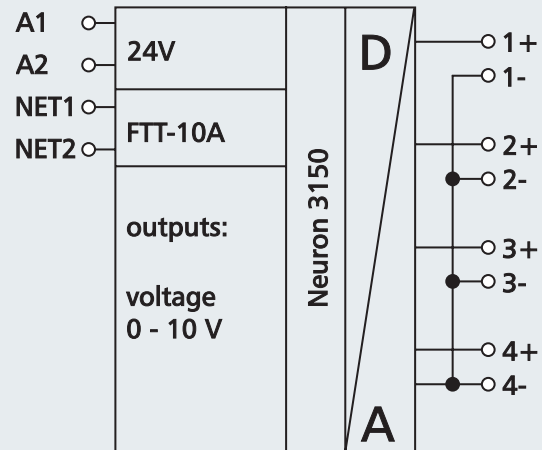
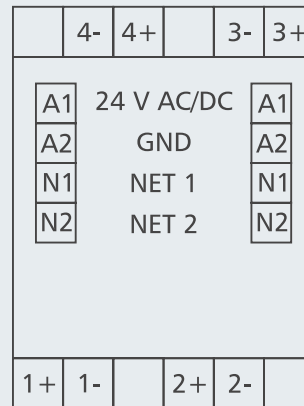


I/O 4AO HS

Application

Input module I/O 8AI HS with 8 configurable temperature or 8 voltage inputs for detection of e.g. passive and active temperature sensors. Output module I/O 4AO HS with 4 analogue outputs as transducer for variables (e.g. ventilation flaps, valve Lüftungsklappen, setting of valve etc.)

Connection (example I/O 4AO HS)



TYPES AVAILABLE

Type	Output
I/O 8AI HS	8AI, FTT10A
I/O 4AO HS	4AO, FTT10A

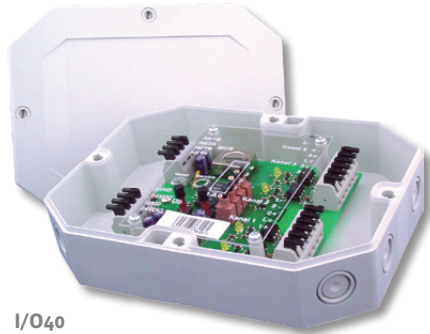
TECHNICAL DATA

Ambient temperature	-5°C...+55°C
Power supply	20...28V AC/DC
Power consumption	I/O 8AI: Max. 67mA (AC), 24mA (DC) I/O 4AO: Max. 90mA (AC), 32mA (DC)
Enclosure	Material PA6 (housing), Material PC (cover)
Dimensions	I/O 8AI: 50x68x65mm I/O 4AO: 35x70x65mm
Connection clamp	Pluggable screwing terminal Supply and bus: 1,5mm ² Analogue in-/outputs: 2,5mm ²
Mounting	Snap mounting on DIN rail accord. to DIN EN 50022
Protection	IP20

I/O 8AI HS, I/O 4AO HS

I/O 8AI HS, I/O 4AO HS		PG2
Type		Art. No.
I/O 8AI HS		427104
I/O 4AO HS		431262

» I/O – In-/Output Module with LON-Interface



I/O40

TYPES AVAILABLE

Type	Output
I/O40	4DI, FTT10A
I/O04	4DO, FTT10A

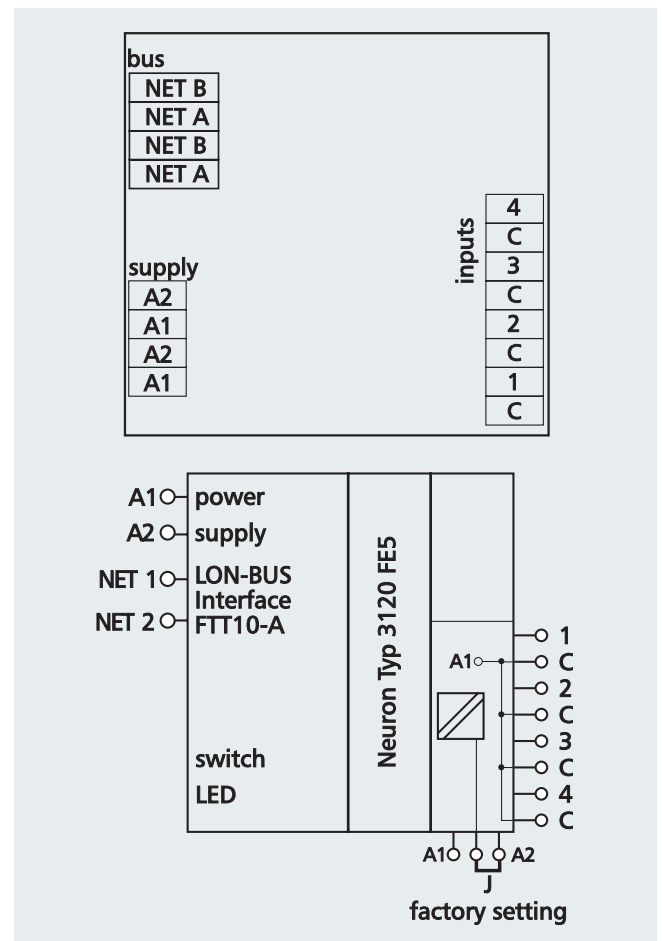
TECHNICAL DATA

Ambient temperature	-5°C...+55°C
Power supply	20...28V AC/DC
Power consumption	I/O40: Max. 63mA (AC), 21mA (DC) I/O04: Max. 205mA (AC), 67mA (DC)
Enclosure	Material ASA (housing), Material PC (cover)
Dimensions	159x41x120mm
Mounting	On smooth ground
Terminal	Pluggable screwing terminal 1,5mm ²
Protection	IP65

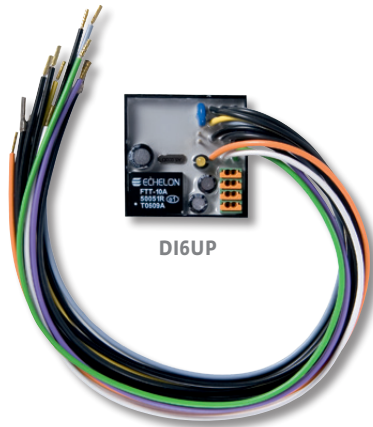
Application

I/O modules with digital inputs and outputs. For status detection of floating contacts and control of actuators by relay contacts. By means of the corresponding software application, the modules are also suitable for light and shutter control, inquiry of window contacts or fire flaps. Status indication of digital inputs and manual menu of relay outputs.

Connection (example I/O40)



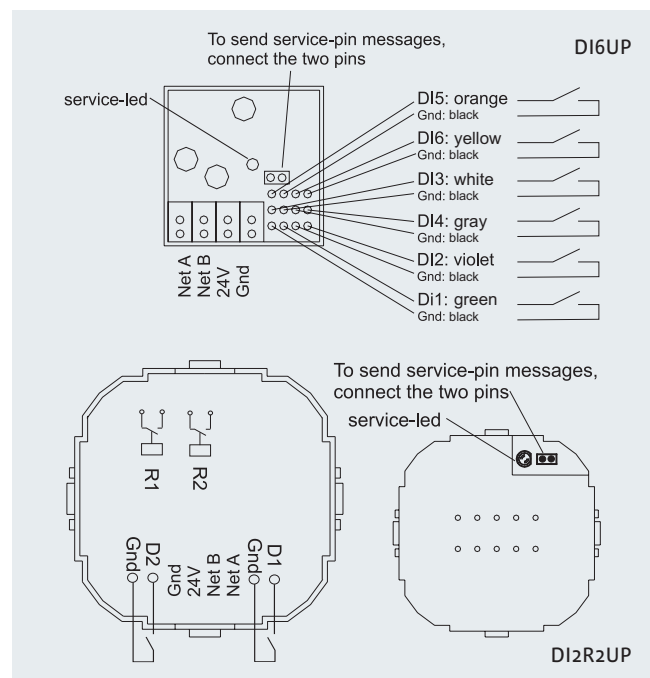
I/O		PG2
Type	Art. No.	
I/O40	431194	
I/O04	431187	



Application

I/O-modules with digital inputs and outputs. For status detection of floating contacts and control of actuators by relay contacts. By means of the corresponding software application, the modules are also suitable for light and shutter control, inquiry of window contacts or fire flaps. Designed for installation in deep switch boxes behind conventional light-/shutter keys and standard blind covers.

Connection



TYPES AVAILABLE	
Type	Output
DI6UP	6DI, FTT10A
DI2R2UP	2DI, 2DO, FTT10A

TECHNICAL DATA	
Ambient temperature	0...50°C
Power supply	24V= (±10%) or 24V~ (±10%)
Power consumption	DI6UP: Max. 25mA/24V=, 76mA/24V~ DI2R2UP: Max. 50mA/24V=, 50mA/24V~
Enclosure	Material PA
Terminal clamp	Terminal block, max. 1,0mm ²
Mounting	Flush-mounting in deep DIN-box
Protection	IP20

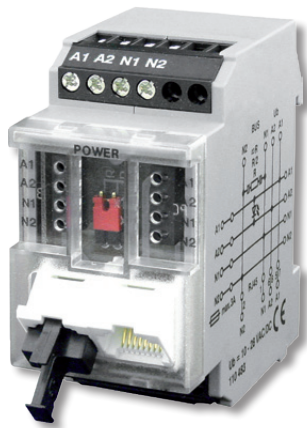
DI UP		PG2
Type	Art. No.	
DI6UP	181617	
DI2R2UP	207041	

» ASM HS – Connecting Module for Bus Connection

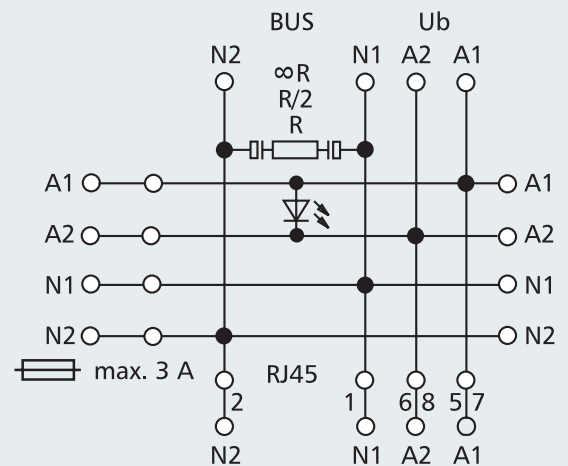
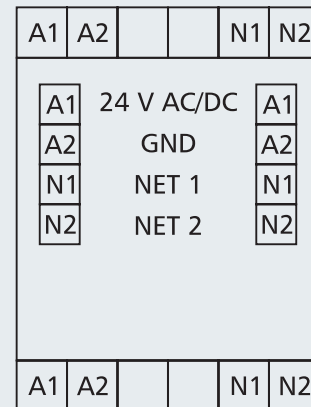


Application

The connecting module is designed as an ancillary wiring product to lead the supply voltage and a two-wire bus to the /O-modules.



Connection



TECHNICAL DATA

Ambient temperature	-5°C...+55°C
Power supply	20...28V AC/DC
Enclosure	Material PA6 (housing), Material PC (cover)
Dimensions	35x70x65mm
Mounting	Snap mounting on DIN-rail according to DIN EN 50022
Terminal	Pluggable screwing terminal, 2,5mm ²
Protection	IP20

ASM HS

ASM HS

Type

ASM HS

PG2

Art. No.

431200



Big Points – Preferential Programme General Information

On the following pages our BigPoints list including many products of our standard range which are available in limited quantities from stock are presented. Delivery is made within one week or sometimes already directly after receipt of order. Furthermore, the following pages are providing useful information, such as sensor characteristics and terms of delivery .

BigPoints – Preferential programme	P. 222	Sensor characteristics	P. 226
Painting / Engraving / Printing / Sensors	P. 225	Terms of delivery / Imprint	P. 227

DUCT TEMPERATURE SENSORS

AKF10 – POCKET Ø 7mm

Type	Pocket L	Art. No.
AKF10.062.07 LM235Z 120°C	62mm	10528
AKF10.062.07 Ni1000 160°C	62mm	9966
AKF10.062.07 Ni1000TK5000 160°C	62mm	10030
AKF10.062.07 NTC1,8k 150°C	62mm	242554
AKF10.062.07 NTC10k 150°C	62mm	10177
AKF10.062.07 NTC20k 150°C	62mm	10245
AKF10.062.07 PT100 160°C	62mm	9133
AKF10.062.07 PT1000 160°C	62mm	9829
AKF10.135.07 LM235Z 120°C	135mm	10535
AKF10.135.07 Ni1000 160°C	135mm	9973
AKF10.135.07 Ni1000TK5000 160°C	135mm	10047
AKF10.135.07 NTC1,8k 150°C	135mm	132541
AKF10.135.07 NTC10k 150°C	135mm	10184
AKF10.135.07 NTC20k 150°C	135mm	10252
AKF10.135.07 PT100 160°C	135mm	9140
AKF10.135.07 PT1000 160°C	135mm	9836
AKF10.192.07 LM235Z 120°C	192mm	10542
AKF10.192.07 Ni1000 160°C	192mm	9980
AKF10.192.07 Ni1000TK5000 160°C	192mm	10054
AKF10.192.07 NTC1,8k 150°C	192mm	230117
AKF10.192.07 NTC10k 150°C	192mm	10191
AKF10.192.07 NTC20k 150°C	192mm	10269
AKF10.192.07 PT100 160°C	192mm	9157
AKF10.192.07 PT1000 160°C	192mm	9843
AKF10.320.07 LM235Z 120°C	320mm	10566
AKF10.320.07 Ni1000 160°C	320mm	10009
AKF10.320.07 Ni1000TK5000 160°C	320mm	10078
AKF10.320.07 NTC1,8k 150°C	320mm	237147
AKF10.320.07 NTC10k 150°C	320mm	10214
AKF10.320.07 NTC20k 150°C	320mm	10283
AKF10.320.07 PT100 160°C	320mm	9171
AKF10.320.07 PT1000 160°C	320mm	9867
Accessory: Mounting flange MF7 flexible		399098



IMMERSION POCKETS FOR AKF10

BRASS NICKEL-PLATED

Type	L	Art. No.
THMS50 for AKF10.062.07	50mm	1793
THMS120 for AKF10.135.07	120mm	1809
THMS185 for AKF10.192.07	185mm	1823
THMS300 for AKF10.320.07	300mm	1830

STAINLESS STEEL

THVA50 for AKF10.062.07	50mm	1885
THVA120 for AKF10.135.07	120mm	1854
THVA185 for AKF10.192.07	185mm	1915
THVA300 for AKF10.320.07	300mm	1892



OUTDOOR TEMPERATURE SENSORS

AGS54

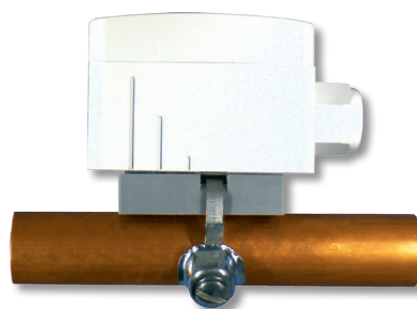
Type	Art. No.
AGS54 LM235Z	25485
AGS54 Ni1000	25300
AGS54 Ni1000TK5000	25317
AGS54 NTC1,8k	132534
AGS54 NTC10k	25379
AGS54 NTC20k	25386
AGS54 PT100	25263
AGS54 PT1000	25287
Accessory: Rawlplugs and screws (VPE)	102209



PIPE CONTACT TEMPERATURE SENSORS

VFG54

Type	Art. No.
VFG54 LM235Z	30458
VFG54 Ni1000	30274
VFG54 Ni1000TK5000	30281
VFG54 NTC1,8k	132558
VFG54 NTC10k	30342
VFG54 NTC20k	30359
VFG54 PT100	30236
VFG54 PT1000	30250
Accessory: Tightening strap and contact fluid	102254



CABLE TEMPERATURE SENSORS

100°C

TF25 – CONNECTION WIRE 2m – Pocket 6x50mm – IP67

Type	Art. No.
TF25.200.06 6x50 LM235Z IP67	120302
TF25.200.06 6x50 Ni1000 IP67	118361
TF25.200.06 6x50 Ni1000TK5000 IP67	118712
TF25.200.06 6x50 NTC1,8k IP67	242561
TF25.200.06 6x50 NTC10k IP67	129992
TF25.200.06 6x50 NTC20k IP67	118774
TF25.200.06 6x50 PT100 3-Leiter IP67	107198
TF25.200.06 6x50 PT1000 IP67	117555



ROOM TEMPERATURE SENSORS

WRF04

Type	Art. No.
WRF04 LM235Z	193191
WRF04 Ni1000	191616
WRF04 Ni1000TK5000	193214
WRF04 NTC1,8k	236775
WRF04 NTC10k	207584
WRF04 NTC20k	193177
WRF04 PT100	193221
WRF04 PT1000	191623
Accessory: Rawlplugs and screws (VPE)	102209



DUCT HUMIDITY- AND TEMPERATURE SENSORS

LCN-FTK

Type	Out	Tube L	Art. No.
LCN-FTK140VV 1P	2x0-10V	140mm	269681
LCN-FTK270VV 1P	2x0-10V	270mm	277518
LCN-FTK400VV 1P	2x0-10V	400mm	277525
Accessory: Mounting flange MF19 (PA6.6)			7375



OUTDOOR HUMIDITY SENSOR

LC-FA54

Type	Out	Art. No.
LC-FA54A	4-20mA	277594
LC-FA54V 1P	0-10V	277587
LC-FTA54VV 1P (Humidity +Temp.)	2x0-10V	277549



INDOOR HUMIDITY- AND TEMPERATURE SENSOR

LCN-FTW04

Type	Out	Art. No.
LCN-FTW04VV 1P	2x0-10V	287654



CONDENSATION SENSOR

WK01

Type	Art. No.
WK01	212816



ROOM SENSOR

LC-WRF04 CO2

Typ	Out	Art. No.
LC-WRF04 CO2 V	0-10V	431750



DIFFERENTIAL PRESSURE SWITCH

PS

Type	Art. No.
PS300	269971
PS500	269995



DIFFERENTIAL PRESSURE TRANSMITTER

DPT-R8

Type	Art. No.
DPT2500-R8	426572
DPT2500-R8-D (Display)	426596
DPT7000-R8	426619
DPT7000-R8-D (Display)	426633



SPECIAL ENGRAVING

MINIMUM ORDER QUANTITY

1 - 5 pcs.

6-10 pcs.

11-20 pcs.

SPECIAL PAINTING

MINIMUM ORDER QUANTITY

1 - 9 pcs.

10 - 49 pcs.

50-100 pcs.

Tool costs (one-time)

SPECIAL PRINTING

MIN. ORDER QUANTITY (min. 20 pcs)

20 - 49 pcs.

50 - 99 pcs.

100 - 249 pcs.

250 - 499 pcs.

500-1.000 pcs.

Tool costs for one-colour print (one-time)

Tool costs for two-colour print (one-time)

PLATINUM RESISTANCES

TEMPERATURE SENSORS

PT100 DIN Kl. B

PT100 1/3 DIN Kl. B

PT100 1/10 DIN Kl. B

PT500 DIN Kl. B

PT1000 DIN Kl. B

PT1000 1/3 DIN Kl. B

PT1000 1/10 DIN Kl. B

NTC-RESISTANCES

TEMPERATURE SENSORS

NTC 1k, 3k, 5k, 10k, 10k Precon, 20k, 30k, 50k

NTC 1,8k

NTC 12k Gasmodul

PTC-RESISTANCES

TEMPERATURE SENSORS

KTY81-110, -121, -122, -210*

*not suitable for temperature sensors with pocket diameter 4mm

NICKEL RESISTANCES

TEMPERATURE SENSORS

Ni1000 DIN Kl. B

Ni1000 1/2 DIN

Ni1000TK5000

MULTISENS RESISTANCES

TEMPERATURE SENSORS

FeT*

Balco500

NTC SAT*

T30*, T105*

ELEKTRONIC SENSORS

TEMPERATURE SENSORS

LM235Z*

AD592*

SMT160*

DS1820*

*Sensor prices include installation in our standard sensors

ULTRA-THIN METAL SENSORS

Platinum-, Nickel-, Multisens Sensors

- Excellent long-term stability (0,05% during 10.000 hours)
- Low self-heating (air: 4-8mW/K; water 40-90mW/K)
- Sensor capacity max. 10mW
- Resistant to vibration and temperature shock
- Please note: To avoid a too high self-heating:
max sensor current 1mA

Tolerance at 0°C

Platinum:

- DIN Kl. B ±0,3K
- 1/3 DIN Kl. B ±0,1K

Nickel

- Ni1000 DIN Kl. B ±0,4K
- Ni1000 1/2 DIN Kl. B ±0,2K
- Ni1000TK5000 ±0,4K

» Information – Sensor Characteristics

Temp. °C	PT100 Ohm	PT1000 Ohm	Ni1000 Ohm	Ni1000 TK5000 Ohm	KTY81-110 Ohm	KTY81-121 Ohm	KTY81-122 Ohm	KTY81-210 Ohm
-50	80,31	803,10	743,00	790,88	515	505	525	1.030
-40	84,27	842,70	791,00	830,83	567	557	577	1.135
-30	88,22	882,20	842,00	871,69	624	614	634	1.247
-20	92,16	921,60	893,00	913,48	684	674	694	1.367
-10	96,09	960,90	946,00	956,24	747	737	757	1.495
0	100,00	1.000,00	1.000,00	1.000,00	815	805	825	1.630
10	103,90	1.039,00	1.056,00	1.044,79	886	876	896	1.772
20	107,79	1.077,90	1.112,00	1.090,65	961	951	971	1.922
25	109,74	1.097,40	1.141,00	1.113,99	1.000	990	1.010	2.000
30	111,67	1.116,70	1.171,00	1.137,61	1.040	1.030	1.050	2.080
40	115,54	1.155,40	1.230,00	1.185,71	1.122	1.112	1.132	2.245
50	119,40	1.194,00	1.291,00	1.234,97	1.209	1.199	1.219	2.417
60	123,24	1.232,40	1.353,00	1.285,44	1.299	1.289	1.309	2.597
70	127,07	1.270,00	1.417,00	1.337,14	1.392	1.382	1.402	2.785
80	130,89	1.308,90	1.483,00	1.390,12	1.490	1.480	1.500	2.980
90	134,70	1.347,00	1.549,00	1.444,39	1.591	1.581	1.601	3.182
100	138,50	1.385,00	1.618,00	1.500,00	1.696	1.686	1.706	3.392
110	142,29	1.422,00	1.688,00	1.556,98	1.805	1.795	1.815	3.607
120	146,06	1.460,60	1.760,00	1.615,36	1.915	1.905	1.925	3.817
130	149,82	1.498,20	1.853,00	1.675,18	2.023	2.013	2.033	4.008
140	153,58	1.535,80	1.909,00	1.736,47	2.124	2.114	2.134	4.166
150	157,31	1.573,10	1.987,00	1.799,26	2.211	2.201	2.221	4.280

Temp. °C	NTC1,8kOhm Ohm	NTC5kOhm Ohm	NTC10kOhm kOhm	NTC10k PRE kOhm	NTC20kOhm kOhm	FeT Ohm	LM235Z mVolt
-50		333.914,00	667,83	441,30	1.667,57		
-40		167.835,50	335,67	239,80	813,44		2.332
-30	24.500	88.341,50	176,68	135,20	415,48	1.934,70	2.432
-20	14.000	48.487,00	96,97	78,91	221,30	2.030,41	2.532
-10	8.400	27.649,00	55,30	47,54	122,47	2.127,68	2.632
0	5200	16.325,40	32,65	29,49	70,20	2.226,53	2.732
10	3330	9.951,75	19,90	18,79	41,56	2.327,01	2.832
20	2200	6.246,85	12,49	12,26	25,35	2.429,15	2.932
25	1800	5.000,00	10,00	10,00	20,00	2.480,86	2.982
30	1480	4.028,00	8,06	8,19	15,89	2.533,00	3.032
40	1040	2.662,45	5,32	5,59	10,21	2.638,60	3.132
50	740	1.800,50	3,60	3,89	6,72	2.745,99	3.232
60	540	1.243,55	2,49	2,76	4,52	2.855,23	3.332
70	402	875,80	1,75	1,99	3,10	2.966,36	3.432
80	306	628,09	1,26	1,46	2,12	3.079,42	3.532
90	240	458,06	0,92	1,08	1,54	3.194,47	3.632
100	187	339,32	0,68	0,82	1,12	3.311,56	3.732
110	149	255,03	0,51	0,62	0,82	3.430,75	3.832
120	118	194,30	0,39	0,48	0,61	3.552,09	3.932
130	95	149,91	0,30	0,38	0,46	3.675,65	
140	77	117,04	0,23	0,30	0,35	3.801,48	
150	64	92,40	0,18	0,24	0,27	3.929,65	

Orders

We are pleased to receive your purchase orders by phone, fax or e-mail including the product descriptions and article numbers mentioned in the catalogue. For technical support or individual solutions for special applications of sensing components we are certainly at your disposal.

Lead Times

Standard sensors are available from stock in limited quantities, i.e. delivery is effected within one week, often even immediately, after receipt of order. Lead times for huge quantities or custom-made products on request.

Terms of Delivery

Delivery is made ex works by parcel service or forwarding agency excluding costs for packaging insurance and customs clearance.

Terms of Payment

Upon agreement

Return of Goods

Products of our standard product line are taken back against a 2/3 credit note, provided the goods are as good as new standard components. Room sensors with operating elements and custom-made products cannot be returned, at all.

In principle our general terms and conditions of sales are valid which can be provided on request.

All information are subject to technical alteration and price changes.

Imprint

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www.thermokon.asia

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