

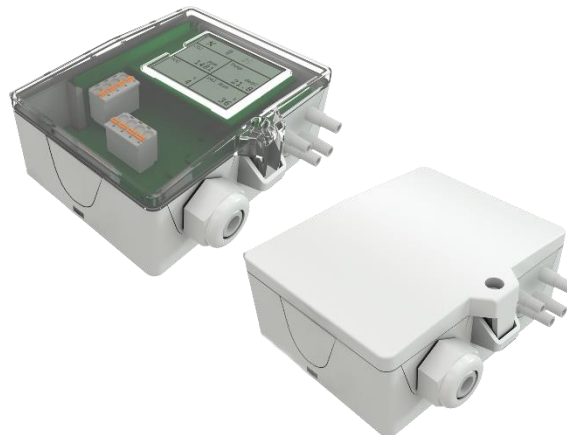
## » DPA+ Dual | DPA+ LCD Dual

Differential Pressure Transmitter

**thermokon**<sup>®</sup>  
HOME OF SENSOR TECHNOLOGY

### Datasheet

Subject to technical alteration  
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The following illustrations show the version with LCD

### » APPLICATION

Differential pressure and volume flow transducer for monitoring differential pressure and volume flow of air and other non-flammable and non-aggressive gases. LCD models with RGB background light have a transparent cover. Display configuration, k-values for flow calculation (default 1500) and threshold values for color changes can be parameterized via Thermokon USEapp. The mounting base (included in delivery) allows mounting on a level surface or mounting on DIN rail TS35 (35x7,5 mm) according to EN 60715.

### » TYPES AVAILABLE

#### Dual differential pressure transducer – active 2x 0..10 V | 2x 4..20 mA | LCD

DPAx+ Dual VV MultiRange <AZ>  
DPAx+ Dual AA MultiRange <AZ>  
DPAx+ LCD Dual VV MultiRange <AZ>  
DPAx+ LCD Dual AA MultiRange <AZ>

#### Dual differential pressure and volume flow transducer – active 4x 0..10 V | LCD

DPAx+ Dual 4xV MultiRange <AZ>  
DPAx+ LCD Dual 4xV MultiRange <AZ>

x: 250 | 2500 | 7000

MultiRange: Measuring ranges adjustable at the transducer

<AZ>: automatic zero-point calibration (optional)

### » SECURITY ADVICE – CAUTION



The installation and assembly of electrical equipment should only be performed by authorized personnel.

The product should only be used for the intended application. Unauthorised modifications are prohibited! The product must not be used in relation with any equipment that in case of a failure may threaten, directly or indirectly, human health or life or result in danger to human beings, animals or assets. Ensure all power is disconnected before installing. Do not connect to live/operating equipment.

Please comply with

- Local laws, health & safety regulations, technical standards and regulations
- Condition of the device at the time of installation, to ensure safe installation
- This data sheet and installation manual

## » NOTES ON DISPOSAL



As a component of a large-scale fixed installation, Thermokon products are intended to be used permanently as part of a building or a structure at a pre-defined and dedicated location, hence the Waste Electrical and Electronic Act (WEEE) is not applicable. However, most of the products may contain valuable materials that should be recycled and not disposed of as domestic waste. Please note the relevant regulations for local disposal.

## » TECHNICAL DATA

<b>Measuring values</b>	differential pressure, volume flow		
<b>Medium</b>	air or other non-flammable/non-aggressive gases		
<b>Output voltage</b> (type-dependent)	1..4x 0..10 V or 0..5 V, min. load 10 kΩ (live-zero configuration via Thermokon USEapp)		
<b>Output Amp</b> (type-dependent)	<b>Dual AA</b> 2x 4..20 mA. max. load 500 Ω		
<b>Power supply</b> (type-dependent)	<b>Dual VV   4xV</b> 15..35 V = or 19..29 V ~	<b>Dual AA</b> 15..35 V =	
<b>Power consumption</b>	max. 2,3 W (24 V =)   max. 4,3 VA (24 V ~)		
<b>Measuring range velocity</b>	0... 750.000 m³/h (default), optionally onfigurable via Thermokon USEapp		
<b>Measuring range pressure</b> *selectable at the device	<b>type 250</b> 0..+25   0..+50   0..+100   0..+250   -25..+25   -50..+50   - 100..+100   -150..+150 Pa	<b>type 2500</b> -100..+100   0..+100   0..+250   0..+500   0..+1000   0..+1500   0..+2000   0..+2500 Pa	<b>type 7000</b> 0..+1000   0..+1500   0..+2000   0..+2500   0..+3000   0..+4000   0..+5000   0..+7000 Pa
<b>Accuracy pressure</b> *deviation from calibration reference device (calibrator)	±1 Pa at range <250 Pa	±5 Pa at range <500 Pa, ±10 Pa at range >500 Pa,	±10 Pa at range <2000 Pa, ±25 Pa at range >2000 Pa
<b>Max. working overpressure</b>	40 kPa		
<b>Calibration</b>	manually, automatic zero-point calibration (optional)		
<b>Sensor</b>	piezo measuring element		
<b>Display</b> (optional)	LCD 29x35 mm with RGB backlight units, pressure: Pa, inchWC, volume flow: m3/h, cfm (configurable)		
<b>Enclosure</b> (type-dependent)	<b>without LCD</b> enclosure USE-L, PC, pure white, with removable cable entry	<b>with LCD</b> enclosure USE-L, PC, pure white, cover PC, transparent, with removable cable entry	
<b>Protection</b>	IP65 according to EN 60529		
<b>Cable entry</b>	<b>VV</b> Flextherm M16, for wire Ø=3..7 mm	<b>4xV</b> M20, for wire max. Ø=10 mm, seal insert for double cable entry for wire max Ø=6 mm	
<b>Connection electrical</b>	removable plug-in terminal, max. 2,5 mm²		
<b>Connection mechanical</b>	pressure connection male Ø=5,0 mm / Ø=6,3 mm, connection tube: PVC, soft		
<b>Ambient condition</b>	-10..+50 °C, max. 85% rH short term condensation		
<b>Mounting</b>	screw mounted onto flat surface, prepared for mounting on DIN rail TS35 (35x7,5 mm) according to EN 60715		

## » PRODUCT TESTING AND CERTIFICATION



### Declaration of conformity

The declaration of conformity of the products can be found on our website <https://www.thermokon.de/>.

## » AUTOMATIC ZERO-POINT CORRECTION - (OPTIONAL)



### Transmitters equipped with the auto-zero correction are maintenance free.

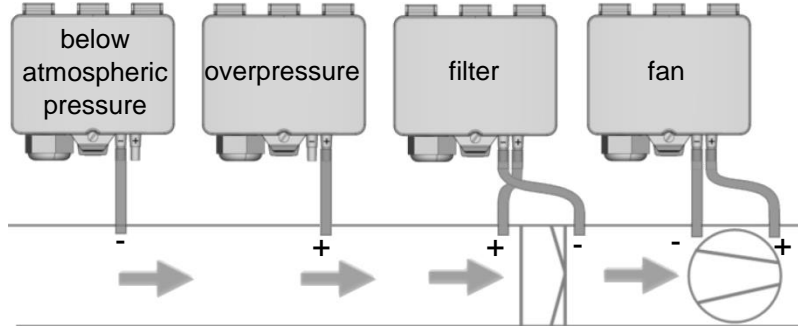
The auto-zero correction electronically adjusts the transmitter zero every 10 minutes. The function eliminates all output signal drift due to thermal, electronic or mechanical effects. The auto-zero correction takes approx. 4 seconds after which the device returns to its normal measuring mode. During the 4 second correction period, the output and display values will freeze to the latest measured value.

» **MOUNTING ADVICES**

Before installing the device, please check the leak tightness of the pressure lines.

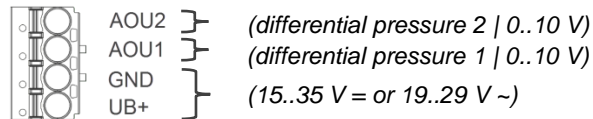
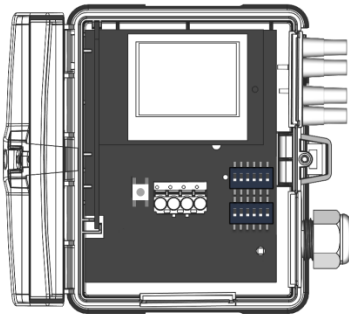
A prerequisite for the operation is a proper installation of all electrical supply, control and sensing leads as well as the pressurized connection line.

- In order to connect the device, the process lines must be unpressurized
- Consider the suitability of the device for the medium to be measured
- Consider maximum pressures

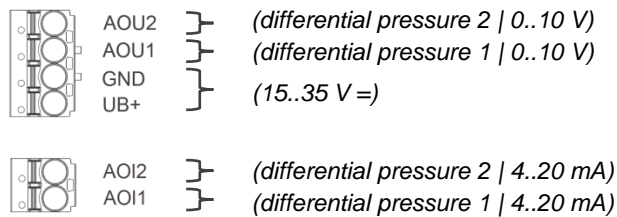
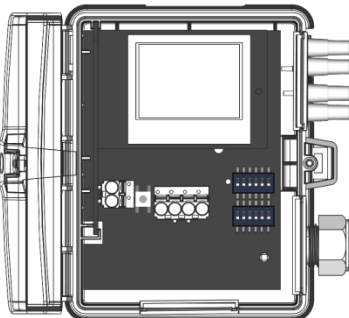


» **CONNECTION PLAN**

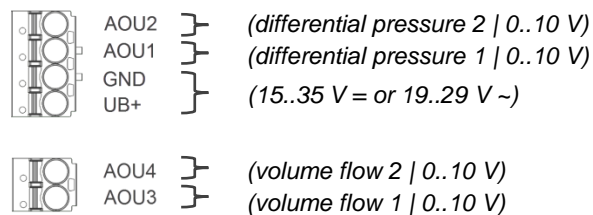
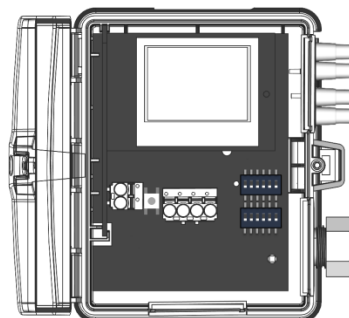
**DPA+ (LCD) Dual VV MultiRange**



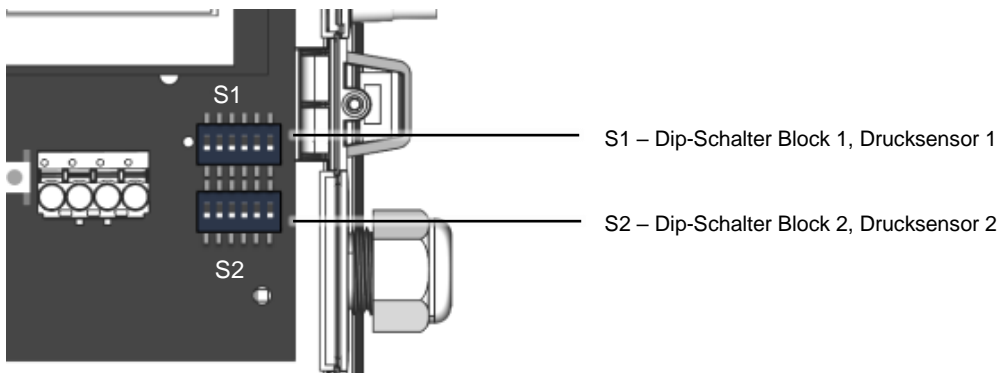
**DPA+ (LCD) Dual AA MultiRange**



**DPA+ (LCD) Dual 4xV MultiRange**



**Dip switch, pressure sensor (2x)**



**Measuring range adjustment – type 250 | 2500 | 7000**

ON								= ON = OFF
1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	
0..+250	0..+100	0..+50	0..+25	-25..+25	-50..+50	-100..+100	-150..+150	Pa
0..+2500	0..+2000	0..+1500	0..+1000	0..+500	0..+250	0..+100	-100..+100	Pa
0..+7000	0..+5000	0..+4000	0..+3000	0..+2500	0..+2000	0..+1500	0..+1000	Pa
0..+1	0..+0.4	0..+0.2	0..+0.1	-0.1..+0.1	-0.2..+0.2	-0.4..+0.4	-0.6..+0.6	inchWC
0..+10	0..+8	0..+6	0..+4	0..+2	0..+1	0..+0.4	-0.4..+0.4	inchWC
0..+28	0..+20	0..+16	0..+12	0..+10	0..+8	0..+6	0..+4	inchWC

default

Response time		Output voltage		Unit	
ON	ON	ON	ON	ON	ON
4	4	5	5	6	6
0,8 sec	4,0 sec	0..10 V	0..5 V	Pa	inchWC

default

Flow calculation: (default parameters)

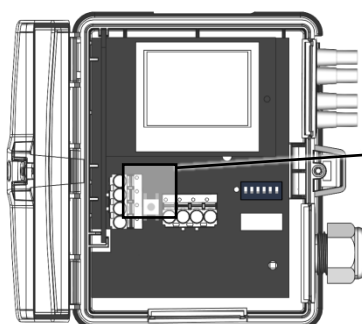
$$q = k * \sqrt{2 * \frac{\Delta p}{\rho}}$$

with k=1500, fan manufacturer Rosenberg, Comefri, Nicotra Gebhardt, default measuring range 0..750.000 m³/h.

Further calculation formulas, fan manufacturers and k-values can be selected via the USEapp.

Rosenberg · Comefri · Gebhardt · Nicotra	Ziehl-Abegg · EBM-Papst	Fläkt Woods
$q = k * \sqrt{2 * \frac{\Delta p}{\rho}}$	$q = k * \sqrt{\Delta p}$	$q = \frac{1}{k} * \sqrt{\Delta p}$

**» MANUAL ZERO-POINT CORRECTION (FOR DEVICES WITHOUT AUTO-ZERO FUNCTION)**



In normal operation zero point correction should be executed every 12 months.

**Attention! For executing zero point correction the power supply must be connected one hour before.**

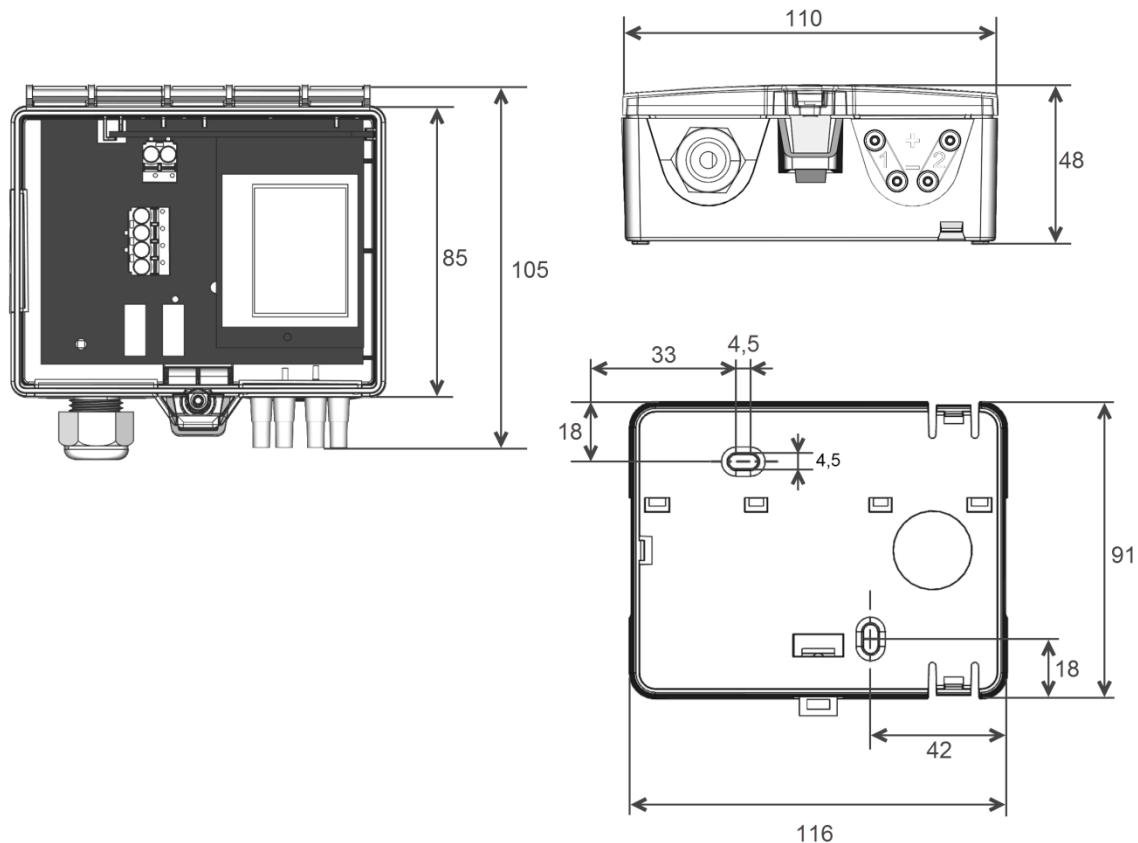
- Release both connection tubes from the pressure terminals + and -
- Press the button until the LED lights permanently
- Wait until the LED flashes again and reinstall the connection tubes to the pressure ports (note + and -)

» **CONFIGURATION**

The Thermokon bluetooth dongle with micro-USB is required for communication between USEapp and USE-M / USE L (Item No.: 668262). Commercial bluetooth dongles are not compatible.

Application-specific reconfiguration of the devices can be carried out using the Thermokon USEapp. The configuration is carried out in the voltage-supplied state.

The configuration-app and the app description can be found in the Google Play Store or in the Apple App Store.

» **DIMENSIONS (MM)**» **ACCESSORIES (INCLUDED IN DELIVERY)**

Mounting base enclosure USE-L  
2x 2 m PVC connection tube  
2x KKS40 kit

- 2 plastic duct flanges
- 4 mounting screws 4x20

Item No. 668361  
Item No. 484268  
Item No. 430135

Mounting kit universal

- Cover screw + screw cover • 2 Rawlplugs • 2 Screws (countersunk head) • 2 Screws (rounded head)

Item No. 698511

» **ACCESSORIES (OPTIONAL)**

Bluetooth dongle USE for USEapp  
Cable entry M25 USE white, sealing insert 4x Ø=7 mm (4 pcs)  
T-hose connector for pressure hoses Ø=4 mm (10 pcs)  
Adapter 90° angle for pressure hoses Ø=4 mm  
Metal duct connectors 40 mm  
Metal duct connectors 100 mm  
M16 Sealing inserts cable entry (packaging unit 10 pcs.) for wire with Ø 8 mm

Item No. 668262  
Item No. 641364  
Item No. 668323  
Item No. 668330  
Item No. 265138  
Item No. 302531  
Item No. 641340