

Differential pressure transmitter





Relative and differential pressure transmitter 450

Type 450

The pressure transmitter type 450 is a robust sensor integrated in a compact housing for the use in various applications with air or neutral gases. Pollutions with small particles do not harm the function of this pressure transmitter. The type 450 is ideal for HVAC applications.

Additionally to the analogue output the pressure transmitter type has a digital output I²C. These output signals are temperature compensated, linear and reinforced. The transmitter is fitted directly on a PCB.

Pressure range -1.5 ... 1.5 mbar / 0 ... 3 – 100 mbar

- + Suitable for low pressure measurements
- + Excellent accuracy and long term stability at whole measuring range
- + Output sensor signal temperature compensated from -10°C ... +80°C

Pressure ange .1.51.5 mbar / 03 - 100 mbar Operating conditions	Technical overview				
Relative and offerential -15. 15 mbar / C. 3 - 100 mbar Operating condition					
A rand metal gases. Marging pressure A rand metal gases. Marging pressure A rand metal gases. The pressure A rand metal gases. Marging pressure A rand metal gase. Marging pressure A rand metal gase. Cappe: Capp			-15 15 mbar/0 3 - 100 mb	bar	
Medium And neutral gass. Rupture pressure 250 mbar 100 mbar 250 mbar 33 rFS Temperature 250 mbar 33 rFS Temperature 250 mbar 33 rFS Magniah in contact with the medium Compensated 1.0			10 10 mbar / 0 0 100 ma		
auguture pressure 2 Onhaiz 3 ArB Emperature 3 ArB 3 ArB Temperature 3 ArB 3 ArB Emperature 3 ArB 3 ArB Storage 40 - 100 °C 3 ArB Storage Storage 40 - 100 °C Storage Storage 40 - 100 °C Storage Storage 40 - 100 °C Storage Storage Storage Storage	Operating conditions				
120 mbar 3 xF 5 Heniperature 20 mbar 3 xF 5 Compersated 30 mbar 30 mbar 30 mbar Storage 40 mbar 40 mbar 30 mbar Storage 40 mbar 40 mbar 40 mbar Storage 70 mbar 40 mbar 40 mbar Storage 70 mbar 40 mbar 40 mbar Storage 70 mbar 70 mbar 40 mbar Storage 70 mbar 70 mbar 70 mbar Storage 70 mbar 20 mbar 20 mbar Storage 70 mbar 20 mbar	Medium				
Medium and ambient -20187*C Temperature -40197*C Materials is contact with the medium -40197*C Case Polyamid (PA) Case Polyamid (PA) Case Case (A)0690 Membrane Silicone Electrical overview Output Distance Silicone Electrical overview Output Distance Silicone Electrical overview Output Distance Silicone Electrical overview Output Output Polyamid (PA) Awire Digital /2CW/ref (A) Digital /2CW/ref (0.99% of 2" digits 2.755 VDC <5 nA	Rupture pressure				
Temperature Compensated -10					
Storage 40100 °C Materials in contact with the medium	Temperature				
Caee Polyamid (PA) Sealing Polyamid (PA) Carantic A(Q, (9%)) Sealing Polyamid (PA) Sealing Polyamid (PA) Po					
Caee Polyamid (PA) Sealing Polyamid (PA) Carantic A(Q, (9%)) Sealing Polyamid (PA) Sealing Polyamid (PA) Po			~		
Sensor Ceramic ALQ, (99%) Sensor TPE Wembrane TPE Wembrane Silicone Electrical overview Electrical overview Use Current consumption (0.5,45.V (7,33VG) (-5, mA (7,55.VDC) (-5, mA (7,55.VDC		ium			
Sealing TPE Selicone	Case				
Membrane Silicone Electrical overview 0.utout Power supply Current consumption 9. vice 0.stout 0.stout 2.stout 9. vice 0.stout 0.stout 2.stout 9. vice 0.stout 2.stout 2.stout 9. vice 0.stout 2.stout 2.stout 9. vice 0.stout 2.stout 2.stout Polarity reversal protection ration. 10. s0% of 2" digits 2.stout 2.stout Polarity reversal protection mechanically protected response Pressure connection connector 2.stout 2.stout Pressure connection 100 0 10 10 Pressure connection standard Protection standard Protection class Pressure connection standard 100 0 10 Pressure connection standard Pressure connection standard Protection class Pressure connection standard Pressure connection standard Pressure connection standard Pressure connection standard Pressure connection standard Pressure connection standard Pressure connection standard Pressure connection standard Pressure connection standard Pressure connection standard Pressure connection standard Pressure connection standard </td <td></td> <td></td> <td></td> <td></td>					
Electrical overview Output Power supply Current consumption 3 wire 0.54.5V 733/0C < 5 mA					
Output Power supply Current consumption 3 wire 0.5	Membrane		Silicone		
Output Power supply Current consumption 3 wire 0.5	Electrical overview				
3 wire intermediate intermedintermediate intermediate intermediate intermediate intermediate in					
Digital ZACWRe TM 1090% of 2 th digits 2.755 VDC < 5 mA					
4 wire Digital PC 10 90% of 2 th digits 2.75.5 VOC <5 mA Prolarity reversal protection mechanically protected (C Specification) Clock- and Dataline Pull-up-Resistor ≥ 1 kQ to VDD, Capacity ≤ ≤ 000 pF (user specification) Clock frequency = 100 kHz (Standard 100 kbit/s) Dynamic Response Response time <2 ms Pressure connection Tube connector Electrical connection Protection standard Protection class Pressure connections to P 4.5 Pa Pressure connections to p 4.4.5 Pa Pressure connections on to p 4.5 Pa Pressure connections on t	3 wire				
Pelafty reversal protection mechanically protected PC Specification Clock-and DataIne Pull-up-Resistor ≥ 1 kD to VDD, Capacity ≤ ≤ 200 pF (user specification) Clock frequency ≤ 100 kHz (Standard 100 kbit/s) Pyramic Response Pressore connection Pressore connection Pelafty reversal Protection standard PCB	4	Digital ZACWire ¹¹⁰ 90% of 2 ⁻¹ digits			
Clock- and Dataline Pull-up-Resistor >> 1 kD to VDD, Capacity s < 200 pF (user specification)		Digital FC 10 90% OF 2 digits	2.7 5.5 VDC		
Clock-and Dataline Pullup-Resistor >> 1.62 to VDD, Capacity < \$ 200 pF (user specification) Clock frequency < 100 kHz (Standard 100 kbit/s) Dynamic Response Response Ime Pressure connection Tube connector PCB PCB IP 00 III Adjusting position Persure connections lateral Presure connections on top Presure connections on top Presure connections lateral Presure connections on top Presure connections on top Presure connections on top +4.5 Pa Presure connections at bottom -4.5 Pa Presure connections on top Pressure connections at bottom -9 Pa Pressure connections at betral +5 Pa Pressure connections on top Pressure connections on top +9 Pa Mounting instruction Mounting Soldering process Soldering process Soldering process Soldering process Soldering compatibility CE conformity acc. EN 61326-2-3	I ² C Specification				
Clock frequency ≤ 100 kHz (Standard 100 kbit/s) Dynamic Response Response time < 2ms		or >> 1 kO to VDD. Capacity << 200 pE (user specificati	00)		
Optimite Response Response time < 2ms	Clock frequency < 100 kHz (Standar	rd 100 kbit/s)	(1)		
Response time < 2ms					
Pressure connection Protection standard Protection class PCB IP 00 III Adjusting position Depency on fitting position (< 10mbar)	Dynamic Response				
Tube connector Protection standard Protection class PCB IP 00 III Adjusting position Depency on fitting position (< 10mbar)	Response time		< 2ms		
Tube connector Protection standard Protection class PCB IP 00 III Adjusting position Depency on fitting position (< 10mbar)					
Electrical connection Protection standard Protection class PCB IP 00 III Adjusting position Depency on fitting position (< 10mbar)					
PCB IP 00 III Adjusting position Depency on fitting position (< 10mbar) Pressure connections lateral Pressure connections on top +4.5 Pa Pressure connections on top Pressure connections lateral -4.5 Pa Pressure connections on top Pressure connections lateral -4.5 Pa Pressure connections below Pressure connections lateral +4.5 Pa Pressure connections below Pressure connections lateral +4.5 Pa Mounting instruction PCB mounting Mounting PCB mounting Soldering process suitable for wave soldering (process time < 3 minutes, temperature peak top side PCB < 145°C Soldering process suitable for manual soldering UL UL 60730-1 UL UL 60730-1 Electromagnetic compatibility CE conformity acc. EN 61326-2-3 Weight -12 g Packaging Packaging	l ube connector				
PCB IP 00 III Adjusting position Depency on fitting position (< 10mbar) Pressure connections lateral Pressure connections on top +4.5 Pa Pressure connections on top Pressure connections lateral -4.5 Pa Pressure connections on top Pressure connections lateral -4.5 Pa Pressure connections below Pressure connections lateral +4.5 Pa Pressure connections below Pressure connections lateral +4.5 Pa Mounting instruction PCB mounting Mounting PCB mounting Soldering process suitable for wave soldering (process time < 3 minutes, temperature peak top side PCB < 145°C Soldering process suitable for manual soldering UL UL 60730-1 UL UL 60730-1 Electromagnetic compatibility CE conformity acc. EN 61326-2-3 Weight -12 g Packaging Packaging	Electrical connection		Protection standard	Protection class	
Adjusting position Depency on fitting position (≤ 10mbar) Pressure connections lateral Pressure connections on top +4.5 Pa Pressure connections on top Pressure connections at bottom -4.5 Pa Pressure connections on top Pressure connections lateral -4.5 Pa Pressure connections below Pressure connections lateral +4.5 Pa Pressure connections below Pressure connections at bottom -9 Pa Mounting instruction Pressure connections on top +9 Pa Mounting PCB mounting Soldering process suitable for wave soldering (process time < 3 minutes, temperature peak top side PCB < 145°C	PCB				
Pressure connections lateral Pressure connections on top +4.5 Pa Pressure connections on top Pressure connections lateral -4.5 Pa Pressure connections below Pressure connections lateral +4.5 Pa Pressure connections below Pressure connections lateral +4.5 Pa Mounting instruction PCB mounting Mounting PCB mounting Soldering process suitable for wave soldering (process time <3 minutes, temperature peak top side PCB <145°C suitable for manual soldering not suitable for reflow soldering					
Pressure connections lateral Pressure connections at bottom -4.5 Pa Pressure connections on top Pressure connections lateral -4.5 Pa Pressure connections at bottom -9 Pa Pressure connections lateral +4.5 Pa Pressure connections below Pressure connections lateral +4.5 Pa Mounting instruction Pressure connections on top +9 Pa Mounting PCB mounting Soldering process suitable for wave soldering (process time < 3 minutes, temperature peak top side PCB < 145°C suitable for manual soldering not suitable for reflow soldering	Adjusting position		Depency on fitting position (≤	10mbar)	
Pressure connections at bottom -4.5 Pa Pressure connections at bottom -9 Pa Pressure connections at bottom -9 Pa Pressure connections below Mounting instruction Mounting Soldering process Soldering process Soldering process Soldering compatibility UL UL UL UL UL VL	Pressure connections lateral				
Pressure connections on top Pressure connections at bottom -9 Pa Pressure connections below Pressure connections lateral +4.5 Pa Pressure connections on top +9 Pa Mounting instruction PCB mounting Mounting PCB mounting suitable for wave soldering (process time < 3 minutes, temperature peak top side PCB < 145°C suitable for manual soldering not suitable for reflow soldering Soldering process Image: Connection of the second secon					
Pressure connections at bottom -9 Pa Pressure connections lateral +4.5 Pa Pressure connections lateral +4.5 Pa Pressure connections on top +9 Pa Mounting instruction Mounting PCB mounting Soldering process Soldering process Soldering struction UL UL Electromagnetic compatibility Weight ~12 g Packaging	Pressure connections on top				
Pressure connections below Pressure connections on top +9 Pa Mounting instruction PCB mounting Mounting PCB mounting Soldering process suitable for wave soldering (process time < 3 minutes, temperature peak top side PCB < 145°C)					
Mounting PCB mounting Mounting Suitable for wave soldering (process time < 3 minutes, temperature peak top side PCB < 145°C	Pressure connections below				
Mounting PCB mounting Soldering process suitable for wave soldering (process time < 3 minutes, temperature peak top side PCB < 145°C)			Tressure connections on top 1.		
Mounting PCB mounting Soldering process suitable for wave soldering (process time < 3 minutes, temperature peak top side PCB < 145°C)	Mounting instruction				
Soldering process suitable for wave soldering (process time < 3 minutes, temperature peak top side PCB < 145°C	Mounting		PCB mounting		
Inst suitable for reflow soldering Tests / Admissions UL UL Electromagnetic compatibility CE conformity acc. EN 61326-2-3				ocess time < 3 minutes, temperature peak top side PCB < 145°C)	
Tests / Admissions UL 00730-1 Electromagnetic compatibility CE conformity acc. EN 61326-2-3 Weight ~ 12 g Packaging	Soldering process				
UL 60730-1 Electromagnetic compatibility CE conformity acc. EN 61326-2-3 Weight ~12 g Packaging			not suitable for reflow solderin	g	
UL 60730-1 Electromagnetic compatibility CE conformity acc. EN 61326-2-3 Weight ~12 g Packaging	Tasts / Admissions				
Electromagnetic compatibility CE conformity acc. EN 61326-2-3 Weight ~12 g Packaging	· · ·		LIL 60730-1		
Weight				3	
~ 12 g Packaging				•	
Packaging	Weight				
	~ 12 g				
Multiple packaging in caroboard boxes with blister (0 pieces			70		
	multiple packaging in cardboard bo	oxes with Dilster	/U pieces		

Accuracy							
Parameter Pressure < 5 mbar	Unit						
Characteristic line (-10 +80 °C) ^{1), 2)}	% fs	± 1.5					
Long term stability acc. IEC EN 60770-1	% fs	±0.25					

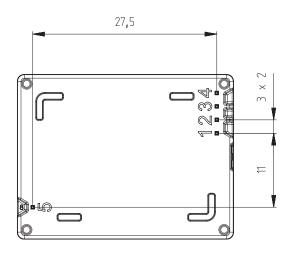
Parameter Pressure \geq 5 mbar	Unit		
Characteristic line (-10 +80 °C) ^{1), 2)}	% fs	± 1.0	
Long term stability acc. IEC EN 60770-1	max.	% fs	± 0.25

¹) incl. zero point, full scale, linearity, hysteresis and repeatability ²) ratiom. 10 ... 90 %: Calibrated at 5 VDC. Other power supplies may influence the accuracy.

Test conditions: 25 °C, 45% RH

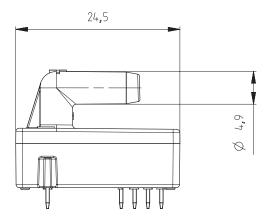
		1	2	3	4	5	6	7	8
Order code selection table 450.				Х	X	Χ	Х	Х	Х
	-1.5 1.5 mbar	9	0						
	0 3 mbar	9	1						
	0 5 mbar	9	2						
Pressure range	0 10 mbar	9	3						
	0 30 mbar	9	4						
	0 50 mbar	9	5						
	0 100 mbar	9	6						
	Pressure connections lateral			0					
Adjusting position	Pressure connections on top			1					
	Pressure connections below			2					
Diaphragm	Silicone				0				
	0.5 4.5 V 7 33 VDC					0			
	ratiom. 10 90% 2.7 5.5 VDC					1			
Output / power supply	Digital ZAC wire [™] 10 90% of 2 ¹⁴ digits 2.7 5.5 VDC					3			
	Digital I ² C 10 90% of 2 ¹⁴ digits 2.7 5.5 VDC					4			
Electrical connection	PCB						1		
Pressure connection	Tube connector							1	
Pressure range variation									
(optional)	Indicate W and state range on order (e.g.: W0 + 9mbar/OUT0.54.5V)								W

Dimensions in mm / Electrical connections

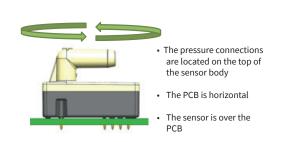


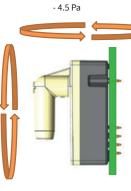
	32,3		
		9,2	17,8
× 0,5		t	t

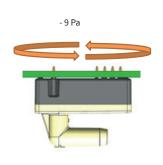
pin assignment				
Analog outpu	ut / ZAC wire	Digital output		
1: 2: 3: 4: 5:	GND OUT IN no pin NC	GND IN SDA SCL NC		



Pressure connections on top

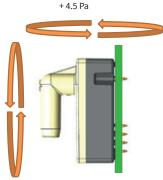


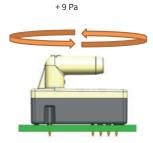




Pressure connections below

- The pressure connections are located at the bottom of the sensor body.
- The PCB is horizontal.
- The sensor is under the PCB.







www.hubacontrol.com







■カタログに掲載してある販品の色は印刷インキの関係上、実際とは異なる場合があります。
■ 飯品のデザイン、仕様等などは、予告なく変更する場合があります。

本 社:〒124-0023 東京都葛飾区東新小岩3丁目9番6号 TEL:(03)3695-5431/FAX:(03)3695-5698 大阪支店:〒530-0054 大阪市北区南森町2-2-9頃初八千代ビルF) TEL:(06)6361-4831/FAX:(06)6361-9360 e-mail: sales-tokyo@krone.co.jp URL: https://www.krone.co.jp