Differential pressure transmitter

Huba Control

Relative, absolute and differential pressure transmitter

Type 664



The pressure transmitter type 664 is designed for low pressure measurements in air and neutral gases environments. The type 664 is based on silicon technology with good accuracy and long term performance characteristics.
The compact housing dimensions of the type 664 makes suitable for applications where the size plays an important role, it is also provided with I2C digital output additionally to analogue and ratiometric outputs.

Pressure range

-5 ... 5 mbar /
0 ... 5 – 2000 mbar

+ The output signal is temperature compensated (from -20 up to +70 °C), linearized and amplified
+ Mounting on PCB possible
+ Robust design

Technical overview

Pressure range

Relative and differential		-5 ... 5 mbar
		0 ... 5 – 2000 mbar
Absolute		0 ... 500 – 2000 mbar
Barometric sensor		800 ... 1200 mbar

Operating conditions

Medium		Air and neutral gases
Tolerable overload on one side	5 ... 50 mbar	10 x fs
	100 ... 2000 mbar	3 x fs
Rupture pressure	5 ... 50 mbar	15 x fs
	100 ... 2000 mbar	5 x fs
Temperature	medium / ambient	-40 ... + 85 °C
	storage	-40 ... +100 °C

Materials in contact with the medium

Case	LCP
Substrate	Ceramic Al_2O_3 (96%)
Sensor	Silicon
Adhesives	Silicone, Epoxy
Plastic screwing	PC

Electrical overview

	Output	Power supply	Load	Current consumption [1]
3 wire	0.5 ... 4.5 V	8.5 ... 30 VDC	> 10 kOhm (to GND)	< 5 mA
	ratiom. 10 ... 90%	2.7 ... 5.5 VDC	> 10 kOhm (to GND)	< 5 mA
5 wire	digital I^2C^{TM} 10 ... 90% from 2^{15} digits	2.7 ... 5.5 VDC	> 10 kOhm (to GND)	< 5 mA
Polarity reversal protection				Mechanically protected

I2C Specification

Clock- and Dataline Pull-up-Resistor ≥ 1 kOhmΩ to VDD, Capacity ≤ ≤ 200 pF (user specification)
Clock frequency ≤ 100 kHz (Standard 100 kbit/s)

Dynamic response

Response time	< 2 ms

Pressure connection

Hose connector	Ø 4.8 mm
Plastic screw connection	Ø 3.9 mm / M6x0.75

Electrical connection	Protection standard	Protection Class
PCB	IP 00	III
Connector RAST 2.5	IP 00	III

Mounting instruction

Installation arrangement	unrestricted
Mounting	Snap mounting or PCB mounting
Soldering process	suitable for manual soldering
	not suitable for reflow soldering and wave soldering

Tests / Admissions

Electromagnetic compatibility	CE conformity acc. EN 61326-2-3 (connector version: cable lenght max. 3m)

Weight

Print version		~ 7.5 g
Connector version		~ 8.5 g
Plastic screw connection	additional	~ 1.5 g

Packaging

Strips of 10 pieces	in covering box of 120 pieces

Accuracy

Parameter		Unit	≤ 10 mbar rel.	> 10 mbar rel.	absolute
Characteristic line (at 25 °C) [2] [3]	typ.	% fs	± 1.5	± 0.2	± 0.4
	max.	% fs	± 2.5	± 0.5	± 0.6
Total accuracy (compensated -20 ... 70 °C) [3]	typ.	% fs	± 2.0	± 0.4	± 0.8
	max.	% fs	± 3.5	± 1.0	± 1.2
Long term stability		% fs/year	± 0.1	± 0.1	± 0.1

Test conditions: 25 °C, 45% rH

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

Order code selection in bar

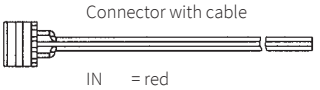
			1	2	3	4	5	6	7	8
	664.		X	X	X	X	X	X	X	X
Pressure mode	Relative and differential		9							
	Absolute		5							
Pressure range [1]	-5 ... 5 mbar		9	L	1					
	0 ... 5 mbar		9	L	2					
	0 ... 10 mbar		9	L	3					
	0 ... 20 mbar		9	0	0					
	0 ... 50 mbar		9	0	1					
	0 ... 100 mbar		9	0	2					
	0 ... 200 mbar		9	0	3					
	0 ... 500 mbar			1	0					
	0 ... 1000 mbar			1	1					
	0 ... 2000 mbar			1	3					
	800 ... 1200 mbar	barometric sensor	5	2	0					
Adjustment	Factory					0				
Output and power supply	0.5 ... 4.5 V	8.5 ... 30 VDC					0			
	ratiom. 10 ... 90%/ Digital I²C 10 ... 90% from 2¹⁵ Digit	2.7 ... 5.5 VDC					1			
Electrical connection	PCB version							1		
	Connector version							2		
Pressure connection	Hose connector Ø 4.8 mm								1	
	Plastic screw connection Ø 3.9 mm / M6x0.75								2	
Pressure range variation (optional)	Indicate W and state range on order (e.g.: W0... + 9mbar/OUT0.5...4.5V)									W

Accessories *(Accessories supplied loose)*

	Order number
Connector RAST 2.5 with cable 30 cm	111668
Connector RAST 2.5 with cable 110 cm	101817
Connector RAST 2.5 with cable 150 cm	112282
Calibration certificate	104551

AMP connector [2]	Manufacturer's Part. No.	colour	for flexible wire
	3-829868-3	grey	7 x 0.20 mm = 0.22 mm²
			12 x 0.20 mm = 0.35 mm²
	1-966194-3	beige	7 x 0.25 mm = 0.35 mm²

Connector with cable



IN = red
OUT = yellow
GND = black

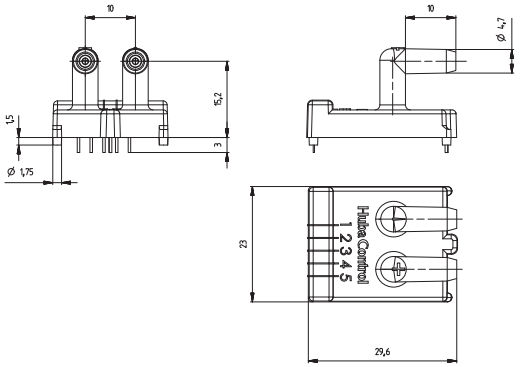
Recommended tubes

Hose connector Ø 4.8 mm:			Plastic screw connection:		
	Material:	Silicon		Material:	Polyamid
	Ø inside:	4 mm		Ø inside:	2.9 mm
	Ø outside:	6 mm		Ø outside:	4 mm
	Temperature:	-40 ... +85 °C		Temperature:	-40 ... +85 °C
	max. pressure:	0.5 bar		max. pressure:	6 bar

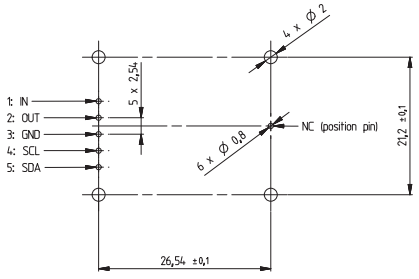
Please note: max. admissible pressure and temperature can be limited with the applied tube. It is essential to consider the manufacturers' instruction for the tube.

Dimensions in mm / Electrical connections

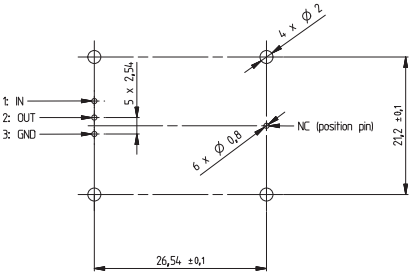
PCB version



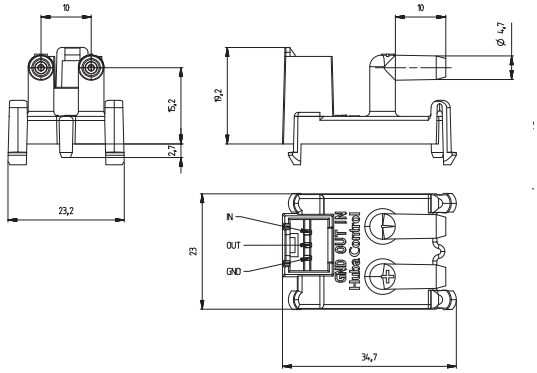
PCB version ratiom. 10 … 90% / Digital I²C™

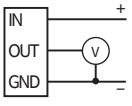


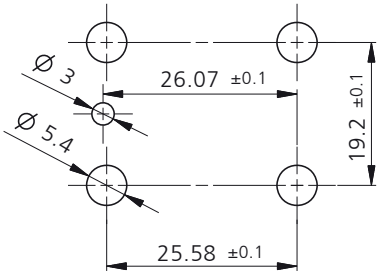
PCB version 0.5 ... 4.5 V



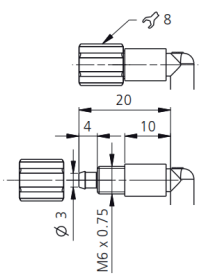
Connector version RAST 2.5







plastic screw connection



[1] Customer specifics pressure range and ± ranges possible on request.
[2] To be ordered separately from original manufacturer. Further information can be found in the manufacturer specification No. 114-18049.

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