



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
Absolute	0 ... 5 – 2000 mbar
Barometric sensor	0 ... 500 – 2000 mbar
	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 <sub>2</sub> O <sub>3</sub> (96%)
Sensor	Silicon
Adhesives	Silicone, Epoxy
Plastic screwing	PC

### Electrical overview

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

### I<sup>2</sup>C Specification

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

### Dynamic response

Response time	< 2 ms
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### Pressure connection

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

### Electrical connection

PCB, Connector RAST 2.5	Protection standard	Protection Class
	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 length max. 3m)
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### 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
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## Accuracy

Parameter	Unit		≤ 10 mbar rel.	> 10 mbar rel.	absolute	Test conditions: 25 °C, 45% rH
	typ.	% fs	± 1.5	± 0.2	± 0.4	
Characteristic line <sup>2),3)</sup> (at 25 °C)	max.	% fs	± 2.5	± 0.5	± 0.6 <sup>4)</sup>	
	typ.	% fs	± 2.0	± 0.4	± 0.8	
Total accuracy (compensated -20 ... 70 °C) <sup>3)</sup>	max.	% fs	± 3.5	± 1.0	± 1.2	
		% fs/year	± 0.1	± 0.1	± 0.1	

<sup>1)</sup> at nominal pressure

<sup>2)</sup> incl. zero point, full scale, linearity, hysteresis and repeatability

<sup>3)</sup> ratiom. 10 ... 90%: Calibrated at 5 VDC. Other power supplies may influence the accuracy

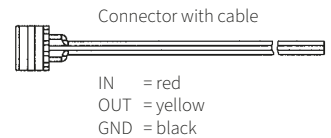
<sup>4)</sup> referring to the nominal pressure

Order code selection in bar			1	2	3	4	5	6	7	8
			664.	X	X	X	X	X	X	X
Pressure mode	Relative and differential		9							
	Absolute		5							
Pressure range <sup>1)</sup>	-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					
Adjustment	800 ... 1200 mbar	barometric sensor	5	2	0					
Output and power supply	Factory					0				
	0.5 ... 4.5 V	8.5 ... 30 VDC					0			
Electrical connection	ratiom: 10 ... 90% / Digital IFC 10 ... 90% from 2 <sup>15</sup> Digit						1			
	PCB version							1		
Pressure connection	Connector version							2		
	Hose connector Ø 4.8 mm									1
Pressure range variation (optional)	Plastic screw connection Ø 3.9 mm / M6x0.75									2
	Indicate W and state range on order (e.g.: W0... +9mbar/OUT0.5...4.5V)									

### 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

AMP connector <sup>2)</sup>	Manufacturer's Part. No.	colour	for flexible wire
	3-829868-3	grey	7 x 0.20 mm = 0.22 mm <sup>2</sup> 12 x 0.20 mm = 0.35 mm <sup>2</sup>
	1-966194-3	beige	7 x 0.25 mm = 0.35 mm <sup>2</sup>



### Recommended tubes

Hose connector Ø 4.8 mm:	Material: Silicon	Plastic screw connection:	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 IFC™

PCB version 0.5 ... 4.5 V

Connector version RAST 2.5

<sup>1)</sup> Customer specifies pressure range and ± ranges possible on request. <sup>2)</sup> To be ordered separately from original manufacturer. Further information can be found in the manufacturer specification No. 114-18049.

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