



Differential pressure transmitter

Huba Control

Relative and differential pressure module

Type 698



The pressure modules type 698 are suitable for monitoring pressure and flow in air conditioning systems and in the laboratory sector.

The module is optionally available with a 3 digit LED display, two limit value switches (potential free) as well as a square root extraction.

Pressure range

-5 ... 5 mbar /

0 ... 1 – 10000 mbar

- + Rugged measured value detector, owing to outstanding synergy obtained by combining diaphragm technology with a ceramic element
- + High overpressure safety margin, even in the lowest pressure range
- + Easy to install and commission
- + No maintenance required
- + High Protection standard

Technical overview

Pressure range

Relative	-1 ... 0 bar
	0 ... 10 bar
Differential	-5 ... 5 mbar
	0 ... 500 mbar

Operating conditions

Medium		Air and neutral gases
Temperature	Medium	0 ... +70 °C
	Ambient	-10 ... +70 °C
	Storage	-40 ... +70 °C
Tolerable overload on one side	Differential pressure	0 ... 50 mbar
	Relative pressure	0.1 ... 10 bar
		3x fs ¹⁾
		100 mbar
		200 mbar
Rupture pressure	Differential pressure	100 ... 500 mbar
	Relative pressure	0.1 ... 10 bar
		5x fs
		3x fs ¹⁾

Materials in contact with the medium

Pressure connections	PVC
Hose connection	Silicone / PA
Diaphragm	Silicone / Al ₂ O ₃ (96%) / Silicium
Sensor housing	PA, PC, Ultem
Sealing material	NBR
Sensor	Al ₂ O ₃ (96%) / Silicium

Electrical overview

Output (Selectable by customer)		0 ... 10 V
		0 ... 20 mA
		4 ... 20 mA
		17 ... 33 VDC
Power supply		24 VAC
		115 VAC
		230 VAC
Tolerable load	0 ... 10 V	> 2 kOhm
	0 ... 20 mA / 4 ... 20 mA	< 500 Ohm
Current consumption		< 4 VA
Polarity reversal protection	Extra-low voltage	Each connection is protected against crossover up to max. power supply
	Low voltage	230 VAC / 115 VAC only on supply terminals, transformer short-circuit

Dynamic response

Response time	< 20 ms
Load cycle	< 10 Hz

Protection standard

IP 65	
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Limit switches

Two potential free change over contacts adjustable over the full range (Adjustment with potentiometer).	
Contact rating	250 VAC / 6A
Switching hysteresis	~ 1% fs fixed

Electrical connection

Screw terminals for 1.5 mm ²	
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Pressure connection

Connection pipe (conical)	Ø 4 ... 7 mm
Quick fitting	Ø 3.9 mm / M6x0.75

Display

LED, 3 digit	
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Mounting instruction

Installation arrangement	Unrestricted ²⁾
Mounting	Fixing holes integrated in housing

Tests / Admissions

Electromagnetic compatibility	CE conformity acc. EN 61326-2-3
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Weight

24 VDC, without display	~ 440 g
230 VAC, with display	~ 640 g

Packaging

Single packaging in cardboard	
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¹⁾ max. 14 bar at 20 °C and max. 7 bar at 70 °C²⁾ Positional error versions with full scale ≤ 50 mbar = 0.13 mbar

Accuracy

Parameter	Unit		-0.5 ... +0.5 mbar	-5 ... +5 mbar	-1 ... 0 bar
			0 ... 1 mbar	0 ... 3 - 500 mbar	0 ... 1 - 6 bar
Tolerance zero point	max	% FS	± 1.0	± 0.7	± 0.7
Tolerance full scale	max	% FS	± 1.0	± 0.7	± 0.7
Resolution		% FS	± 0.2	0.1	0.1
Total of linearity, hysteresis and repeatability		% FS	± 2.5	± 1.0	± 1.0
Long term stability acc. DIN EN 60770		% FS	± 1.0	± 1.0	± 0.5
TC zero point ¹⁾	max.	% FS/10K	± 1.0	± 0.5	± 0.3
TC sensitivity ¹⁾	max.	% FS/10K	± 0.6	± 0.5	± 0.2

With root-extracted output (2 ... 100% pressure)
Absolute error: (% of full scale)

TC zero point: % fs/10 K ¹⁾

0 ... 1 mbar

$$\max. \pm 0.6 \sqrt{\frac{P_{FS}}{p}} + 1.5$$

0 ... 3 mbar - 6 bar

$$\max. \pm 0.3 \sqrt{\frac{P_{FS}}{p}} + 1.5$$

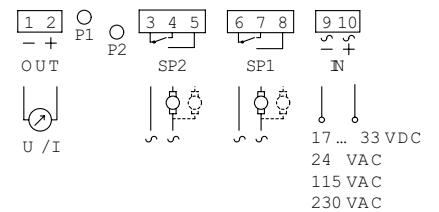
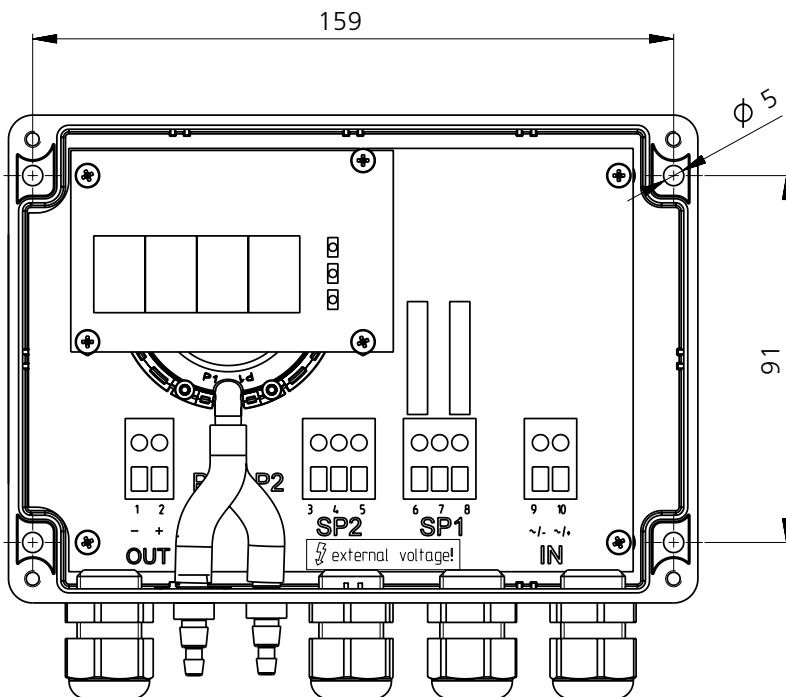
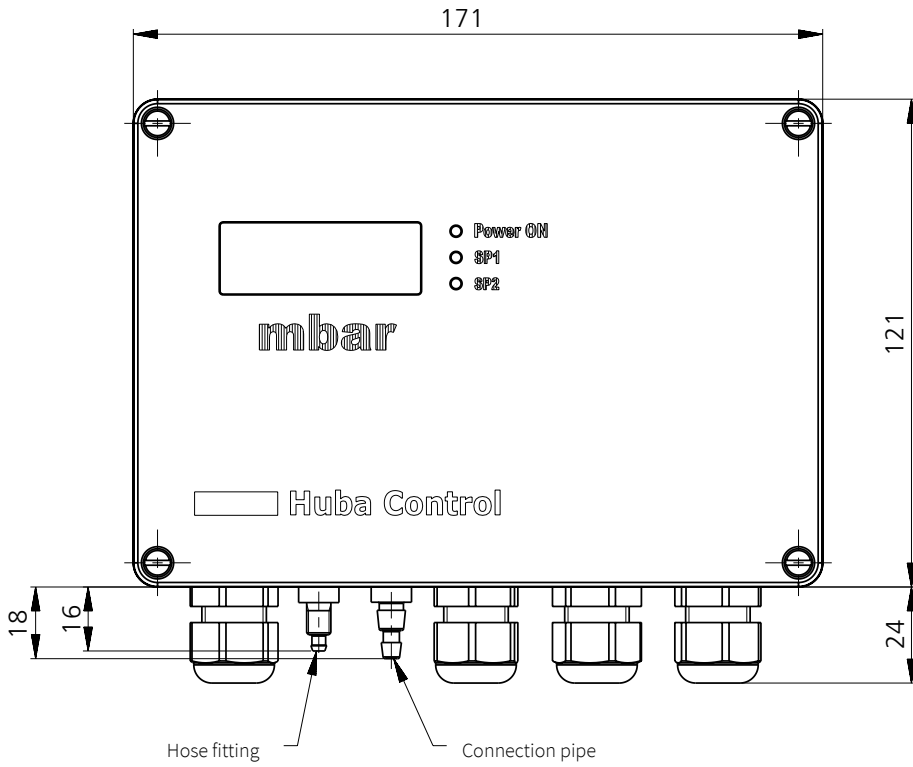
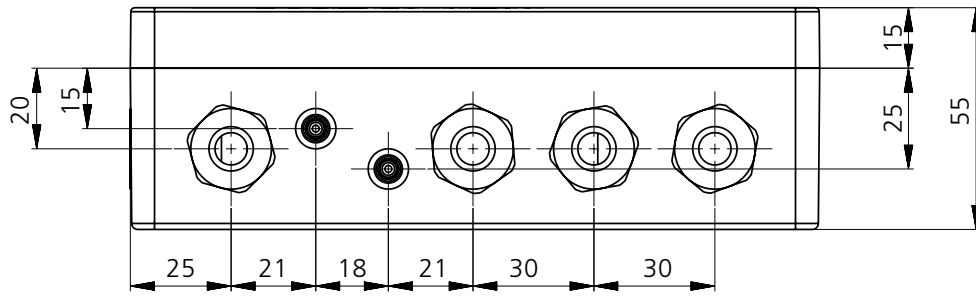
$$\max. \pm 0.6 \sqrt{\frac{P_{FS}}{p}} + 1.5$$

Test conditions:
25 °C, 45% RH, power supply 24VDC
TC z.p. / TC s. -10 ... +50 °C

Order code selection table

		1	2	3	4	5	6	7	8	9	10
		698. X X X X X X X X X X X									
Version	without limit switches	0									
	with limit switches	1									
Pressure range	-5 ... + 5 mbar		0	0					0		
	-0.5 ... + 0.5 mbar		0	1					0		
	-0.5 ... + 1 mbar		0	2					0		
	-0.5 ... + 3 mbar		0	3					0		
	-0.5 ... + 5 mbar		0	4					0		
	0 ... + 1 mbar		0	5							
	0 ... + 3 mbar		0	6							
	0 ... + 5 mbar		0	7							
	0 ... + 10 mbar		0	8							
	0 ... + 30 mbar		1	0							
	0 ... + 50 mbar		1	1							
	0 ... + 100 mbar		1	2							
	0 ... + 200 mbar		1	3							
	0 ... + 500 mbar		1	4							
	-1 ... + 0 bar	Relative pressure	1	6					0		1
	0 ... + 1 bar	Relative pressure	1	7							1
	0 ... + 1.6 bar	Relative pressure	1	8							1
0 ... + 2.5 bar	Relative pressure	1	9							1	
0 ... + 4 bar	Relative pressure	2	0							1	
0 ... + 6 bar	Relative pressure	2	1							1	
0 ... + 10 bar	Relative pressure	2	2							1	
Pressure unit	mbar / bar				0						
	Pa				1						
	kPa				2						
	MPa				3						
Power supply	17 ... 33VDC / 24VAC ± 15%					0					
	24 VAC					1					
	115 VAC					2					
	230 VAC					3					
Output	0 ... 10V							0			
	0 ... 20 mA							1			
	4 ... 20 mA							2			
Square root extraction	Without root extraction								0		
	With root extraction								1		
Display	Without display									0	
	In pressure unit chosen above									0	1
	With display in %										2
Pressure connection	Connection pipe										0
	Quick fitting										1
Installation arrangement	Horizontal										0
	Vertical										1

¹⁾ TC = Temperature coefficient



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