

Relative and differential pressure module type 698

Pressure range

-5 ... 5 mbar / 0 ... 1 – 10000 mbar



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.

- 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
		100 mbar
		3x fs ¹⁾
Rupture pressure	Differential pressure	0 ... 50 mbar
		200 mbar
		5x fs
	Relative pressure	0.1 ... 10 bar
		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
		24 VAC
Power supply		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

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

Pressure connection

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

Display

LED, 3 digit

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

¹⁾ max. 14 bar at 20 °C and max. 7 bar at 70 °C

²⁾ Positional error versions with full scale ≤ 50 mbar = 0.13 mbar

Accuracy

Parameter	Unit	-0.5 ... +0.5 mbar 0 ... 1 mbar	-5 ... +5 mbar 0 ... 3 - 500 mbar	-1 ... 0 bar 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/10K ¹⁾

0 ... 1 mbar
max. ±0.6 $\sqrt{\frac{p_{fs}}{p}} + 1.5$

0 ... 3 mbar - 6 bar
max. ±0.3 $\sqrt{\frac{p_{fs}}{p}} + 1.5$

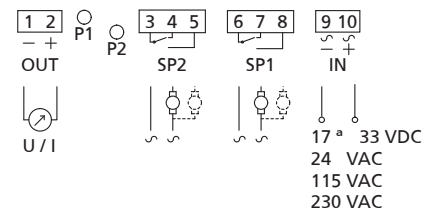
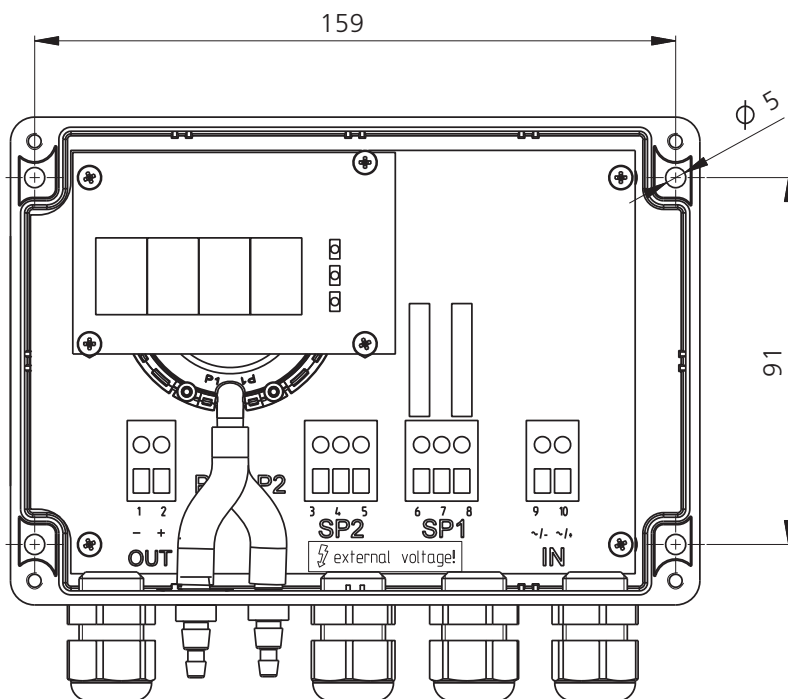
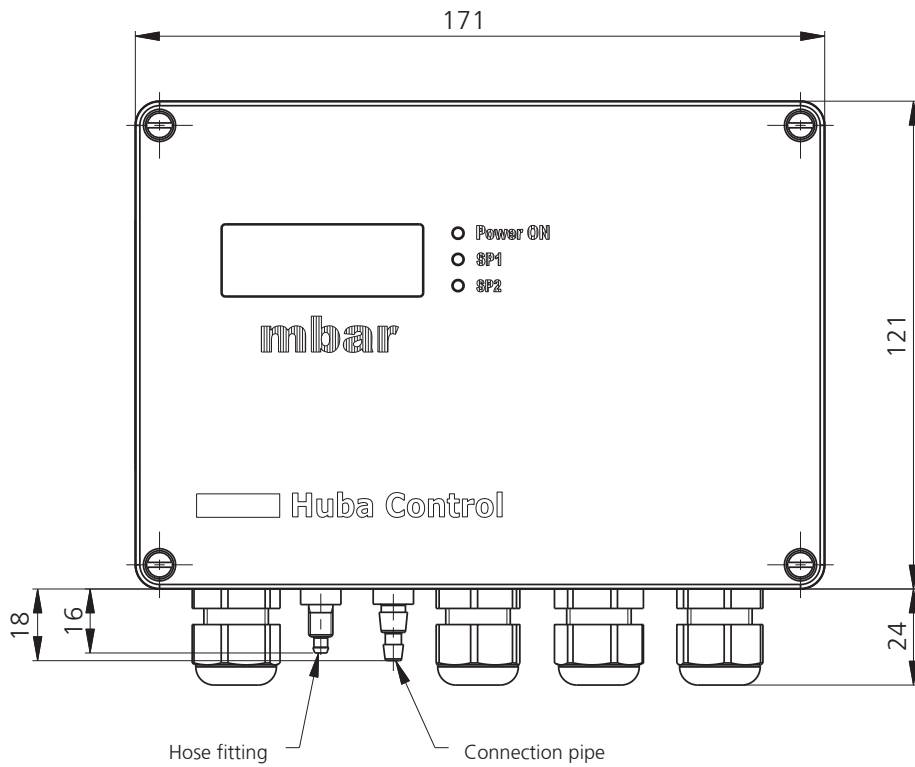
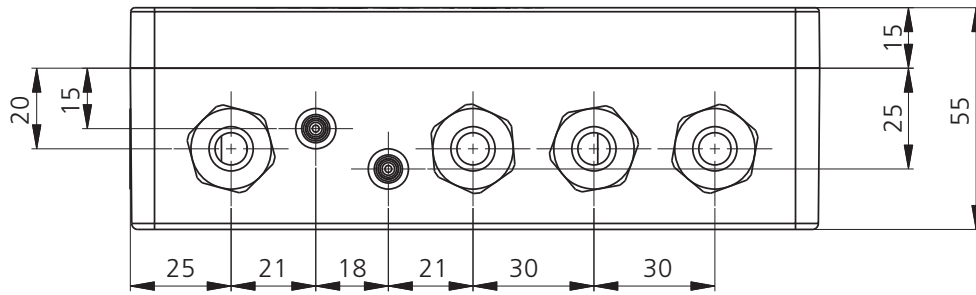
max. ±0.6 $\sqrt{\frac{p_{fs}}{p}} + 1.5$

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
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 ²⁾	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 ... 20mA							1			
	4 ... 20mA							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

²⁾ Other pressure units on request



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