

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

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⁾
Rupture pressure	Differential pressure	0 ... 50 mbar
		200 mbar
	Relative pressure	100 ... 500 mbar
		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
Power supply	17 ... 33 VDC
	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

Limit switches

Two potential free change over contacts adjustable over the full range (Adjustment with potententionmeter).	
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

Parameter		Unit	-0.5 ... +0.5 mbar 0 ... 1 mbar	-5 ... +5 mbar 0 ... 3 – 500 mbar	-1 ... 0 bar 0 ... 1 – 6 bar
Transmitter type		Unit			
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

$$\max. \pm 0.6 \sqrt{\frac{p_{FS}}{p}}$$

0 ... 3 mbar - 6 bar

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

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

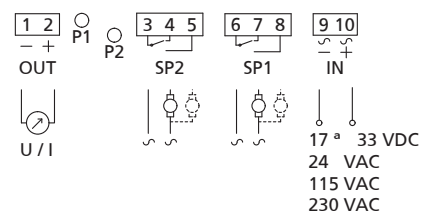
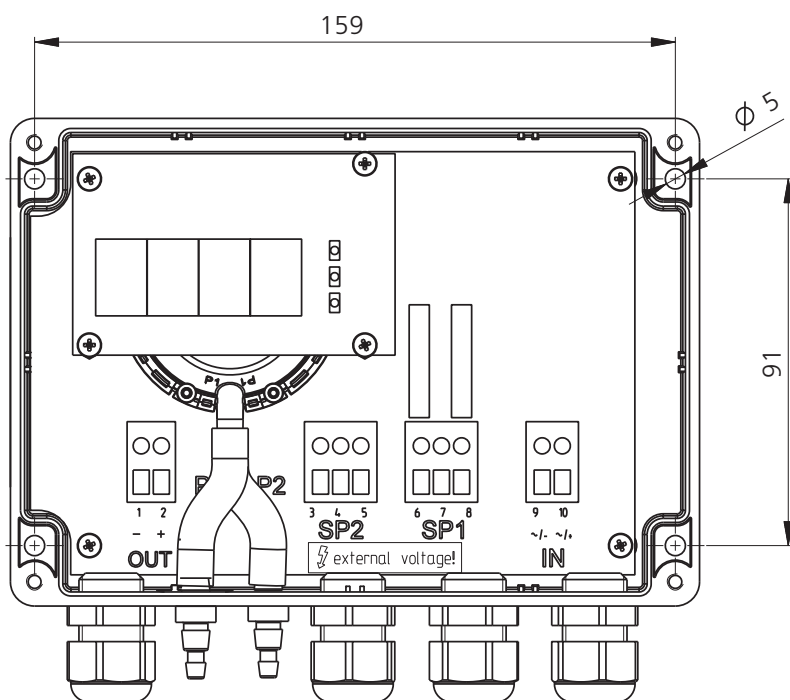
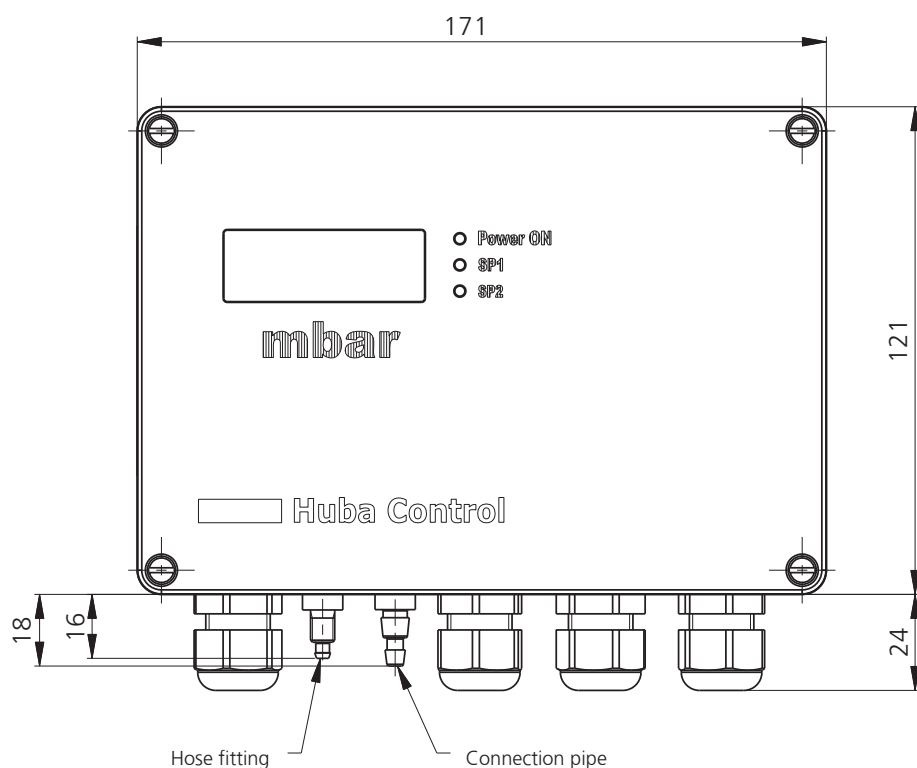
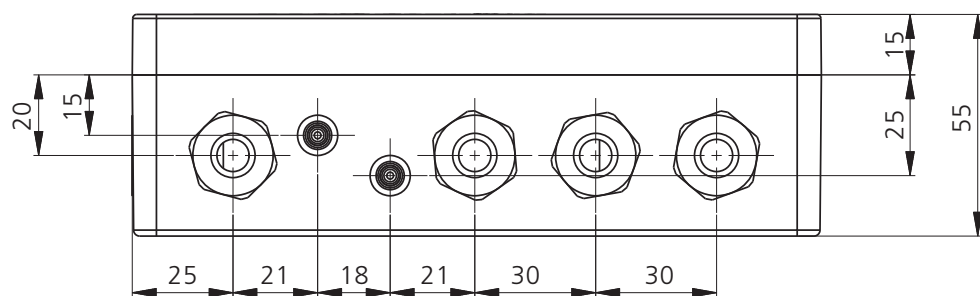
Test conditions:

25 °C, 45 % RH, power supply 24 VDC

TC z.p. / TC s. -10 ... +50 °C

Order code selection table			698.	X	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	Differential pressure		0	0						0				
	-0.5 ... + 0.5 mbar	Differential pressure		0	1						0				
	-0.5 ... + 1 mbar	Differential pressure		0	2						0				
	-0.5 ... + 3 mbar	Differential pressure		0	3						0				
	-0.5 ... + 5 mbar	Differential pressure		0	4						0				
	0 ... + 1 mbar	Differential pressure		0	5										
	0 ... + 3 mbar	Differential pressure		0	6										
	0 ... + 5 mbar	Differential pressure		0	7										
	0 ... + 10 mbar	Differential pressure		0	8										
	0 ... + 30 mbar	Differential pressure		1	0										
	0 ... + 50 mbar	Differential pressure		1	1										
	0 ... + 100 mbar	Differential pressure		1	2										
	0 ... + 200 mbar	Differential pressure		1	3										
	0 ... + 500 mbar	Differential pressure		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	for pressure ranges ≤ 10 mbar								1					
	kPa	for pressure ranges 3 mbar ... 6 bar								2					
	MPa	for pressure ranges 2.5 bar ... 10 bar								3					
Power supply	17 ... 33VDC / 24VAC ±15%									0					
	24 VAC	galvanically isolated								1					
	115 VAC	galvanically isolated								2					
	230 VAC	galvanically isolated								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⁾ TC = Temperature coefficient





FOR FINE PRESSURE AND FLOW MEASUREMENT

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