Huba Control

FOR FINE PRESSURE AND FLOW MEASUREMENT

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 cermaic 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	100 mbar
	Relative pressure	0.1 ... 10 bar	3x fs [1]
Rupture pressure	Differential pressure	0 ... 50 mbar	200 mbar
		100 ... 500 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_2O_3 (96%) / Silicium
Sensor housing	PA, PC, Ultem
Sealing material	NBR
Sensor	Al_2O_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 potentionmeter).	
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

Weight

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

Packaging

Single packaging in cardboard

深圳市昊森科技有限公司 Closense Technology Shenzhen Co., Ltd.
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[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 Transmitter type		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)

0 ... 1 mbar

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

0 ... 3 mbar - 6 bar

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

TC zero point: % fs/10 K [1]

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

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
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 … 33 VDC / 24 VAC ±15%							0					
	24 VAC	galvanically isolated						1					
	115 VAC	galvanically isolated						2					
	230 VAC	galvanically isolated						3					
Output	0 … 10 V								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

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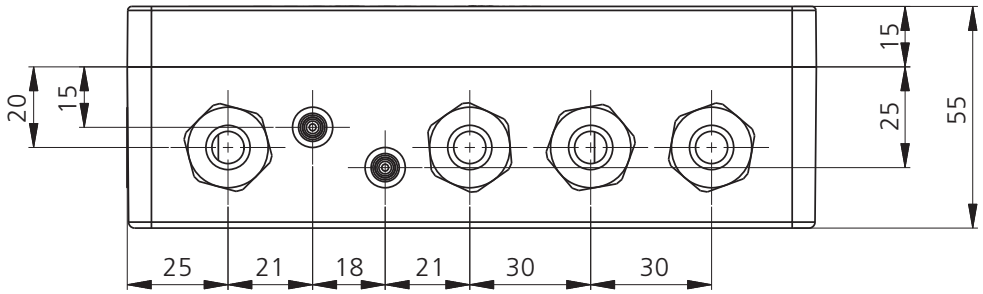
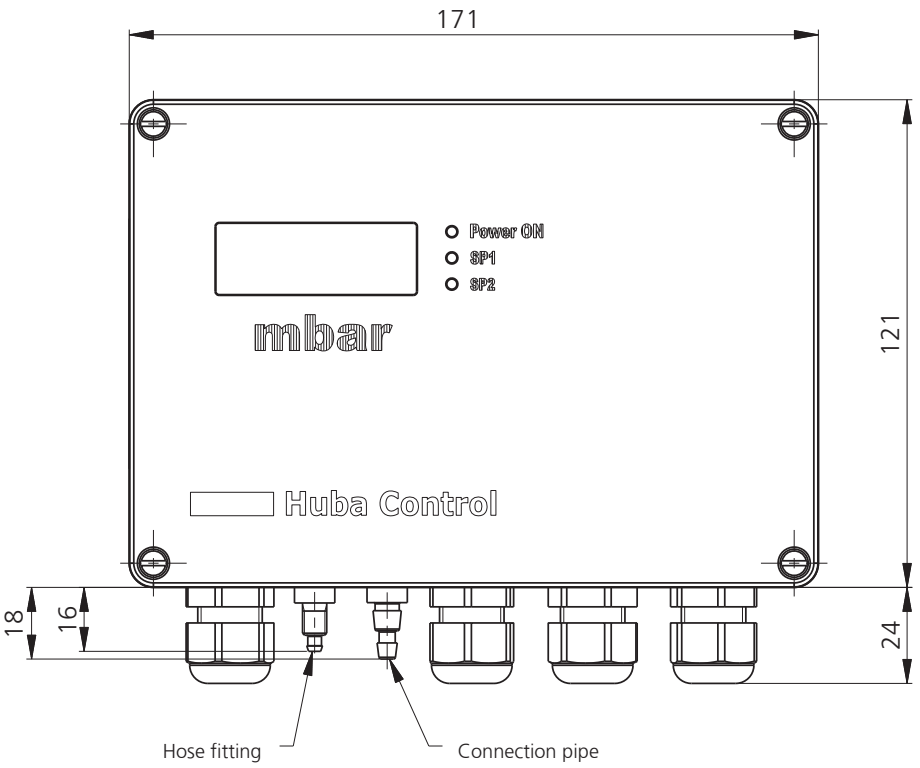
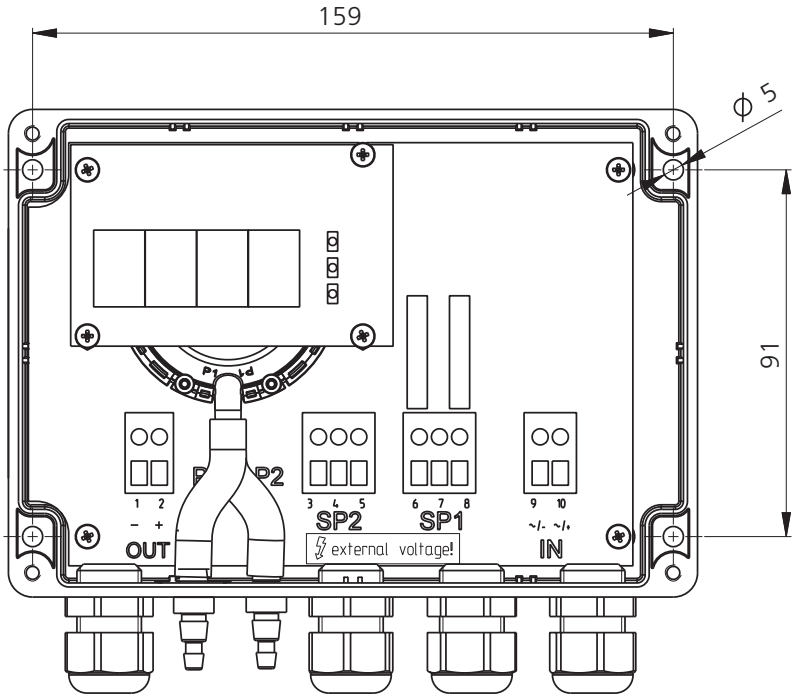
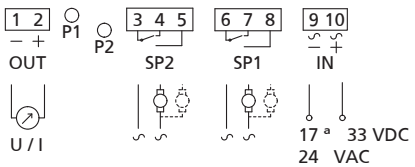
[1] TC = Temperature coefficient
[2] Other pressure units on request

Dimensions in mm / Electrical connections









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