

Pressure sensors/pressure switches

Pressotronik

Monitoring the oil pressure is essential in hydraulic systems and oil supply systems. It's important to monitor both process-related pressure ranges as well as safety shutdowns, load limits or simply to determine if the lubricating pressure is adequate.

The pressure transmitters must meet a variety of requirements with respect to their pressure resistance, signal output, programmability or the plug connection style. A local or status display is often required for safety reasons

The Pressotronik series spans a wide range of pressure transmitters and programmable pressure switches. They cover a broad pressure range, meet high safety requirements and feature different signal types. The easyMont housings of the remote displays can be grouped for easy and space-saving display groups, making them easier to monitor.

Pressure ratings up to 600 bar (8700 psi)

Compact size.

Up to four programmable switching outputs

Alternative analogue output (configurable to current or voltage) plus one, two or four programmable switching outputs

Switching outputs characteristics configurable as window or hysteresis

Two switching outputs configurable as window or hysteresis

Direct or external display and control mounting

Virtually any cable length between measuring point and display

Easy to read LED display with status of switching outputs, 270° pivot when direct mounted

Standard menu structure based on VDMA standard sheet 24574 ff.

Min/max memory, logbook function



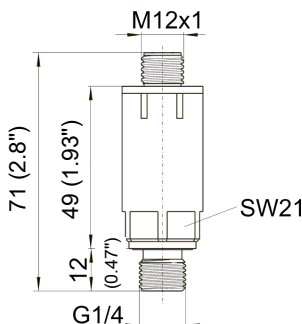
Fluidcontrol

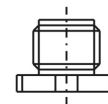
easyMont

IO-Link



Technical Data Pressotronik 700
Pressure transmitter

Pressure range		Dimensions Presstronik 700	
	0 - 10 bar (0 - 145 psi) 0 - 25 bar (0 - 362 psi) 0 - 100 bar (0 - 1450 psi) 0 - 250 bar (0 - 3625 psi) 0 - 400 bar (0 - 5800 psi) 0 - 600 bar (0 - 8700 psi)		
	Other pressure ranges available upon request		
Pressure connection	G1/4 external thread, DIN 3852 Form E; peak pressure aperture standard for 100 bar (1450 psi) and higher		
Overload higher values available upon request	2.5 x full range at 10 to 600 bar (145 to 8700 psi) (but max. 900 bar/13000 psi)		
Burst pressure Higher burst pressure available upon request	2.5 x full range at 6 to 600 bar (87 to 8700 psi) (but max. 900 bar/13000 psi) Patented medium stop system to prevent medium leaks when exceeding the bursting pressure range (>40 bar/ 580 psi rated pressure)		
Material / version			
Housing	1.4305		
Material in contact with media	Ceramic, 1.4305, PPS, FPM		
Weight	approx. 95 g (0.2 lb)		
Temperature			
Medium	-15 °C to + 125 °C (5 °F to 257 °F)		
Ambient temperature	max. 85 °C (185 °F)		
Temperature influences	Within -40 to +125 °C (-40 °F to 257 °F) temperature range		
	Calibration in bar	Calibration in psi	
TC0 - Temperature zero error	< ±0.15 % FS/10 K	< ±0.25 % FS/10 K	
TCE - Temperature full range error	< ±0.15 % FS/10 K	< ±0.15 % FS/10 K	
Response time	< 2 ms / typically 1 ms		
Electrical data		Standard pin assignment Pressotronic 700	
Supply voltage (U _B)	10 – 30 V DC (nominal voltage 24 V DC)	Plug: 1xM12x1	
Degree of protection	IP67	Pin	
Burden Ω	= (U _B -8 V) / 0.02 A	1	+24 V DC
Dielectric strength	500 V DC	3	4-20 mA



Accuracy

Parameter	Unit
Tolerance zero	max. ± 0.3 % FS
Tolerance full range	max. ± 0.3 % FS
Resolution	0.1 % FS
Sum of linearity, hysteresis and reproducibility	max. $\pm 0.3\%$ FS/10K
Long-term stability per DIN EN 60770	± 1 % FS
TC zero	max. ± 0.15 % FS/10K
TC sensitivity	max. ± 0.15 % FS/10K

Test conditions: 25 °C (77 °F), 45 % rF, supply 24 V DC, K0/TCE -40 °C... +125 °C (-40 °F... 257 °F)

Ordering instructions Pressotronik 700
Pressotronik 700 - Transmitter only

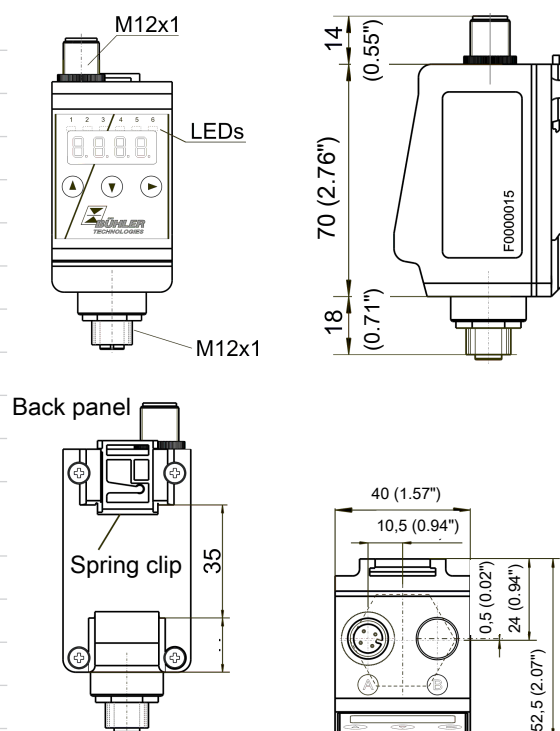
Item no.	Description	Pressure range
137000100	PT700-010	0 - 10 bar (0 - 145 psi)
137000250	PT700-025	0 - 25 bar (0 - 362 psi)
137001000	PT700-100	0 - 100 bar (0 - 1450 psi)
137002500	PT700-250	0 - 250 bar (0 - 3600 psi)
137004000	PT700-400	0 - 400 bar (0 - 5800 psi)
137006000	PT700-600	0 - 600 bar (0 - 8700 psi)

Accessories

Item no.	Description
9144050010	Connecting cable M12x1, 4-pin, 1.5 m (4.9 ft), angular coupling and straight plug
9144050046	Connecting cable M12x1, 4-pin, 3.0 m (9.8 ft), angular coupling and straight plug
9144050047	Connecting cable M12x1, 4-pin, 5.0 m (16.4 ft), angular coupling and strands

Technical Data Pressotronik 770
Remote display version (PT700 pressure transmitter must be ordered separately)

Pressure transmitter	Pressotronik 700
Control unit	
Housing material	PA
Mount	35 mm (1.38 inch) top-hat rail mounting
Weight	approx. 400 g (0.88 lb)
Degree of protection	IP65
Analysis display electronics	
Display	4 character 7 segment LED display
Operation	via 3 keys
Starting current input	approx. 100 mA for 100 ms
Power input during operation	approx. 50 mA
Supply voltage (U_B)	10 - 30 V DC (nominal voltage 24 V DC) 18 - 30 V DC (1D1S version)
Ambient temperature	-20 °C to +70 °C (-4 °F to 158 °F)
Accuracy	± 1 % from end value
Response time	< 10 ms
Input values	
Display units	b (bar), P (psi), °MPa
Input signal	4-20 mA



Optional switching outputs	-1D1S	-2S	-4S	-6S
Plug (base)	1 x M12 – 4-pin	1 x M12 – 4-pin	1 x M12 – 8-pin	1 x M12 – 8-pin
Plug (jack)	1 x M12 – 4-pin	1 x M12 – 4-pin	1 x M12 – 4-pin	1 x M12 – 4-pin
Switching outputs	IO-Link and 1x freely programmable	2 x freely programmable	4 x freely programmable	6 x freely programmable
Alarm memory	with 1 x assignable to alarm logbook	with 1 x assignable to alarm logbook	with 1 x assignable to alarm logbook	with 1 x assignable to alarm logbook
max. switching current	0.5 A per output*	0.5 A per output*	0.5 A per output*	0.5 A per output*
Contact load	max. 1 A total	max. 1 A total	max. 1 A total	max. 1 A total

*Output 1 max. 0.2 A.

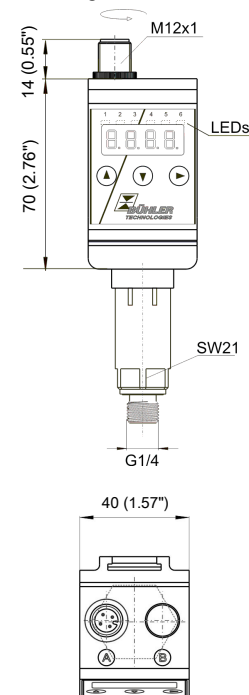
	-1S-K	-2S-K	-4S-K
Plug (base)	1 x M12 – 4-pin	1 x M12 – 5-pin	1 x M12 – 8-pin
Plug (jack)	1 x M12 – 4-pin	1 x M12 – 4-pin	1 x M12 – 4-pin
Switching outputs	1 x freely programmable	2 x freely programmable	4 x freely programmable
Alarm memory	with 1 x assignable to alarm logbook	with 1 x assignable to alarm logbook	with 1 x assignable to alarm logbook
max. switching current	0.5 A per output*	0.5 A per output*	0.5 A per output*
Contact load	max. 1 A total	max. 1 A total	max. 1 A total
Analogue outputs	1 x pressure	1 x pressure	1 x pressure
Programmable as	1 x 4 – 20 mA 2 - 10 V DC, 0 - 10 V DC, 0 - 5 V DC	1 x 4 – 20 mA 2 - 10 V DC, 0 - 10 V DC, 0 - 5 V DC	1 x 4 – 20 mA 2 - 10 V DC, 0 - 10 V DC, 0 - 5 V DC
max. load Ω as current output	$(U_B - 8V) / 0.02 A$	$(U_B - 8V) / 0.02 A$	$(U_B - 8V) / 0.02 A$
min. input load as voltage input	10 k Ω	10 k Ω	10 k Ω

*Output 1 max. 0.2 A.

Technical Data Pressotronik 771
Version with attached transmitter

Pressure transmitter	Pressotronik 700
Control unit	
Housing material	PA
Mount	G1/4 directly mounted display rotates 270°
Weight	approx. 500 g (1.1 lb)
Degree of protection	IP65
Display electronics	
Display	4 character 7 segment LED display
Control	via 3 keys
Starting current input	approx. 100 mA for 100 ms
Power input during operation	approx. 50 mA
Supply voltage (U _B)	10 - 30 V DC (nominal voltage 24 V DC) 18 - 30 V DC (1D1S and 1D1A versions)
Ambient temperature	-20 °C to +70 °C (-4 °F to 158 °F)
Accuracy	± 1% from full range
Response time	< 10 ms
Input values	
Display units	b (bar), P (psi), °MPa

Housing swivels 270 °C



Optional switching outputs	-1D1A	-1D1S	-2S	-4S
Plug (base)	1 x M12 – 4-pin	1 x M12 – 4-pin	1 x M12 – 4-pin	1 x M12 – 8-pin
Switching outputs	IO-Link and 1x freely programmable	IO-Link and 1x freely programmable	2 x freely programmable*	4 x freely programmable*
Alarm memory	with 1 x assignable to alarm logbook	with 1 x assignable to alarm logbook	with 1 x assignable to alarm logbook	with 1 x assignable to alarm logbook
max. switching current	0.5 A per output*	0.5 A per output**	0.5 A per output**	0.5 A per output**
Contact load	max. 1 A total	max. 1 A total	max. 1 A total	max. 1 A total
Analogue outputs	1 x pressure	-	-	-
Programmable as	1 x 4 – 20 mA, 2 - 10 V DC, 0 - 10 V DC, 0 - 5 V DC	-	-	-
Max. load Ω as current output	(U _B – 8V) / 0.02 A	-	-	-
Min. input resistance as voltage input	10 kΩ	-	-	-

*also programmable as frequency output

**Output 1 max. 0.2 A.

	-6S	-1S-K	-2S-K
Plug (base)	1 x M12 – 8-pin	1 x M12 – 4-pin	1 x M12 – 5-pin
Switching outputs	6 x freely programmable*	1 x freely programmable	2 x freely programmable
Alarm memory	with 1 x assignable to alarm logbook	with 1 x assignable to alarm logbook	with 1 x assignable to alarm logbook
max. switching current	0.5 A per output**	0.5 A per output*	0.5 A per output*
Contact load	max. 1 A total	max. 1 A total	max. 1 A total
Analogue outputs	-	1 x pressure	1 x pressure
Programmable as	-	1 x 4 – 20 mA, 2 - 10 V DC, 0 - 10 V DC, 0 - 5 V DC	1 x 4 – 20 mA, 2 - 10 V DC, 0 - 10 V DC, 0 - 5 V DC
Max. load Ω as current out-put	-	$(U_B - 8V) / 0.02 A$	$(U_B - 8V) / 0.02 A$
Min. input resistance as voltage input	-	10 k Ω	10 k Ω

**Output 1 max. 0.2 A.

Ordering instructions Pressotronik 770/771

Model key Pressotronik 770/771

Model designation	PT-XXX-XXX-XXX	Output card
Version		-1D1A** IO-Link 1 x PNP analogue output
770 Remote display for transmitter		-1D1S IO-Link 1 x PNP switching output
771 Transmitter built into display		-2S 2 x PNP switching output
		-4S 4 x PNP switching output
		-6S 6 x PNP switching output
		-1S-K 1 x PNP switching output 1 x analogue output
		-2S-K 2 x PNP switching output 1 x analogue output
		-4S-K 4 x PNP switching output 1 x analogue output

*on PT770 the pressure range can be preset at the factory.

**only for version PT771.

Item no. 4-pin	Item no. 5-pin	Item no. 8-pin	Description
9144050010	9144050016	9144050048	Connecting cable M12x1, 1.5 m, angular coupling and straight plug
9144050046	9144050017	9144050049	Connecting cable M12x1, 3.0 m, angular coupling and straight plug
9144050047	9144050018	9144050033	Connecting cable M12x1, 5.0 m, angular coupling and strands

Ordering example

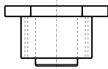
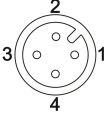
You require: Pressure transmitter with 400 bar (5800 psi); 4 programmable PNP switching outputs; remote display; 3 m (9.8 ft) connecting cable

Order: Pressotronik 700 (item no.: 13700 4000)
Connecting cable (item no.: 9144 05 0046)
Pressotronik 770 display and controller (item no.: 1377 000)

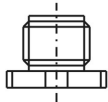
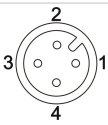
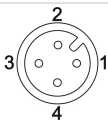
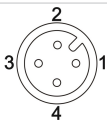
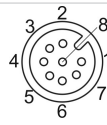
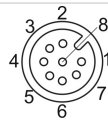
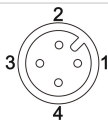
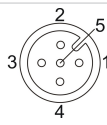
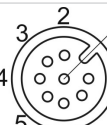
Standard pin assignment Pressotronik 770

Pin assignment Pressotronik 770

For the pressure transmitter assignment, see **Pressotronik 700 standard pin assignment**

Panel jack	1x M12x1
	4-pin
	
Panel jack	
Pin	
1	+24 V DC
3 / 4	4 - 20 mA

Standard pin assignment Pressotronik 770 and 771

Version	-1D1A	-1D1S	-2S	-4S	-6S	-1S-K	-2S-K	-4S-K
Panel plug	1x M12x1							
	4-pin	4-pin	4-pin	8-pin	8-pin	4-pin	5-pin	8-pin
								
Panel plug								
Pin								
1	+24 V DC	+24 V DC	+24 V DC	+24 V DC	+24 V DC	+24 V DC	+24 V DC	+24 V DC
2	Analogue (out)	S2 (PNP)	S2 (PNP)	S2 (PNP)	S2 (PNP)	Analogue (out)	S2 (PNP)	S2 (PNP)
3	GND	GND	GND	GND	GND	GND	GND	GND
4	C/Q (IO-Link)	C/Q (IO-Link)	S1 (PNP)	S1 (PNP)	S1 (PNP)	S1 (PNP)	S1 (PNP)	S1 (PNP)
5				S3 (PNP)	S3 (PNP)		Analogue (out)	S3 (PNP)
6				S4 (PNP)	S4 (PNP)			S4 (PNP)
7					S5 (PNP)			Analogue (out)
8					S6 (PNP)			