Pressure measurement

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Overview

- Standard use in hydraulics from 10 to 1000 bar
- Robust stainless steel housing
- Compact design
- Fully welded, dry measuring cell
- E1 approval for mobile hydraulics
- Relative pressure measurement

Technical data

Performance characteristics	
Measuring range	0… 1000 bar
Min. measuring span	10 bar
Max. measuring span	1000 bar
Pressure type	Relative (gauged)
Standard error of measurement (BFSL)	± 0.3 % FS , 0 … 105 °C ± 0.8 % FS , -40 … 0 °C ± 0.8 % FS , 105 … 125 °C Including non-linearity, hysteresis and non-repeatability according BFSL
Max. measuring error	± 0.5 % FS , 0 … 105 °C ± 1.5 % FS , 105 … 125 °C ± 1.5 % FS , -40 … 0 °C Including zero-point and span error, non-linearity (by terminal base line), hysteresis and non-repeatability (EN 61298-2)
Compensated temperature range	0… 80 °C
Long term stability	≤ 0.2 % FS/a
Rise time (10 ... 90 %)	≤ 1 ms
Process conditions	
Process pressure	Refer to section "Operating conditions"
Process temperature	-40 … 150 °C
Process connection	
Connection variants	Refer to section "Dimensional drawings"
Wetted parts material, gasket	FKM (Viton®), optional FKM (Viton®) gaskets require a minimum ambient temperature of -20 °C and a minimum medium temperature of -25 °C
Wetted parts material, membrane	AISI 630 (1.4548)
Wetted parts material, process connection	AISI 630 (1.4548)
Ambient conditions	
Shock (EN 60068-2-27)	500 g
Vibration (sinusoidal) (EN 60068-2-6)	20 g

Ambient conditions	
Degree of protection (EN 60529)	IP 67
Operating temperature range	-40 … 125 °C -25 … 85 °C , with cable outlet
Storage temperature range	-40 … 125 °C -25 … 85 °C , with cable outlet
Output signal	
Current output	4 … 20 mA , 2-wire
Voltage output	0… 10 V , 3-wire 0… 5 V , 3-wire 0.5 … 4.5 V , 3-wire 0.5 … 4.5 V DC ratiometric , 3-wire 1 … 6 V , 3-wire
Short circuit protection	Yes
Housing	
Overall size	Refer to section "Dimensional drawings"
Style	Compact transmitter
Material	AISI 304 (1.4301)
Electrical connection	
Cable outlet	2 m, 3-wire
Connector	AMP superseal 1.5, 3-pin Bayonet connection DIN 72585, 4-pin DT04, 3-pin M12-A, 5-pin DT04, 4-pin
Power supply	
Voltage supply range	9 … 36 V DC , with 4 … 20 mA output signal 14 … 36 V DC , with 0 … 10 V output signal 9 … 36 V DC , with 1 … 6 V output signal 9 … 36 V DC , with 0 … 5 V output signal 9 … 36 V DC , with 0.5 … 4.5 V output signal 5 V DC ratiometric , with 0.5 … 4.5 V output signal

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Technical data

Compliance and approvals

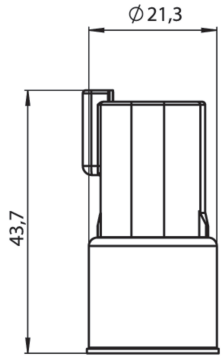
E1 accreditation	E1 accreditation
EMC	2004/108/EC EN 61000-6-2 EN 61000-6-3

Operating conditions

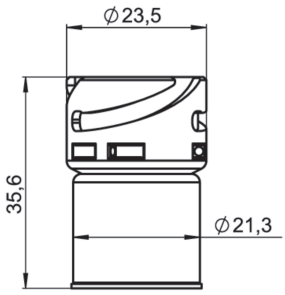
Measuring range (bar)	Proof pressure (bar)	Burst Pressure (bar)
0 … 10	40	60
0 … 25	40	60
0 … 60	100	500
0 … 100	200	1000
0 … 160	500	2500
0 … 250	500	2500
0 … 400	800	4000
0 … 600	800	4000
0 … 1000	1200	> 4000

Dimensional drawings

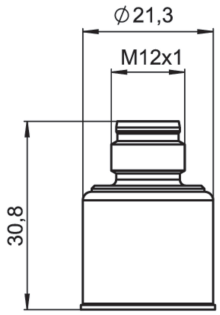
Housing



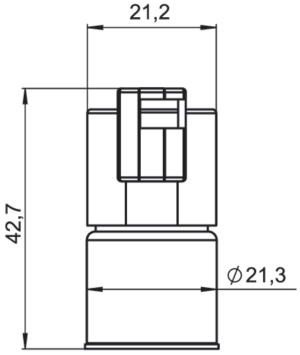
Housing with connector DT04, 4-pin



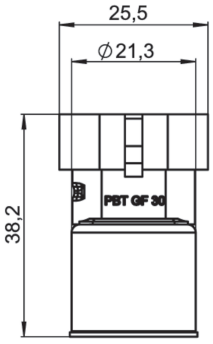
Housing with connector Bayonet connection DIN 72585, 4-pin



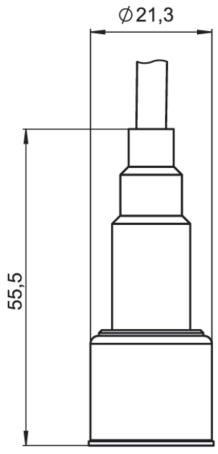
Housing with connector M12-A, 5-pin



Housing with connector DT04, 3-pin



Housing with connector AMP superseal 1.5, 3-pin



Housing with cable outlet, 3-wire

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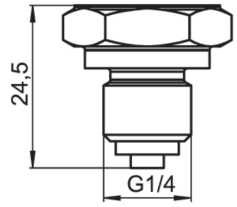
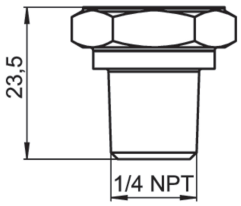
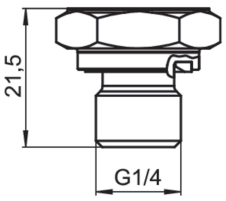
Process connection



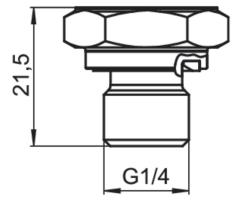
G 1/4 B EN 837-1 (BCID: G30)



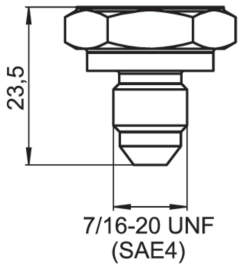
1/4-18 NPT (BCID: N01)



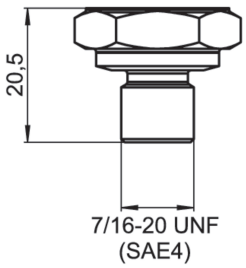
G 1/4 A DIN 3852-E (BCID: G50)



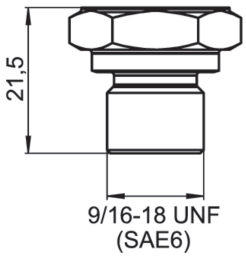
G 1/4 A DIN 3852-E with mit Ø 0,6 mm pressure channel (BCID: G50)



7/16-20 UNF with cone (SAE 4) (BCID: U01)



7/16-20 UNF with O-ring (SAE 4) (BCID: U02)



9/16-18 UNF with O-ring (SAE 6) (BCID: U04)

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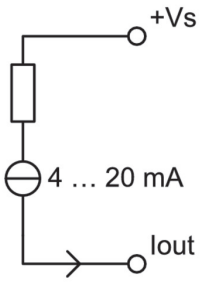
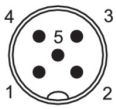
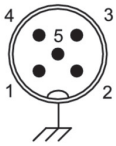
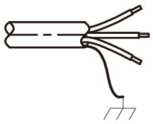
Electrical connection

Output signal	Equivalent circuit	Electrical connection	Function	Pin assignment
Current output, 2-wire (e.g. 4 … 20 mA)			+Vs	1
			Iout	3
			n.c.	2, 4, 5
			+Vs	1
			Iout	3
			Frame ground	Plug thread
			n.c.	2, 4, 5
			+Vs	1
			Iout	2
			n.c.	3, 4
			+Vs	A
			Iout	C
			n.c.	B
			+Vs	3
			Iout	1
			n.c.	2
			+Vs	BN
			Iout	BU
			Frame ground	Shield
			n.c.	BK
			+Vs	1
			Iout	2
			n.c.	3, 4

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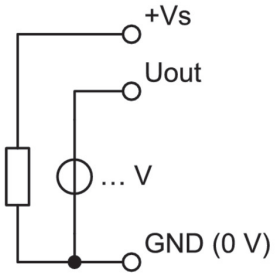
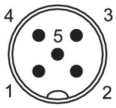
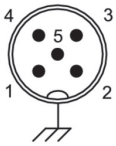
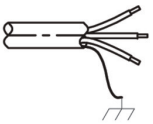
Electrical connection

Output signal	Equivalent circuit	Electrical connection	Function	Pin assignment
Voltage output, 3-wire (e.g. 0 … 10 V)			+Vs	1
			Uout	4
			GND (0 V)	3
			n.c.	2, 5
			+Vs	1
			Uout	4
			GND (0 V)	3
			Frame ground	Plug thread
			n.c.	2, 5
			+Vs	1
			Uout	3
			GND (0 V)	2
			n.c.	4
			+Vs	A
			Uout	B
			GND (0 V)	C
			+Vs	3
			Uout	2
			GND (0 V)	1
			+Vs	BN
			Uout	BK
			GND (0 V)	BU
			Frame ground	Shield
			+Vs	1
			Uout	3
			GND (0 V)	2
			n.c.	4

Ordering information

Ordering key - Configuration possibilities see website

	PBM4	-	1	3	.	###	R	.	##	##	.	##	6	#
Product														
PBM4	PBM4													
Housing material														
SS 1.4301 AISI 304			1											
Accuracy														
±0.5 % FS				3										
Measuring range														
0 ... 10 bar (EN)						B22								
0...25 bar (EN)						B26								
0...60 bar (EN)						B29								
0...100 bar (EN)						B31								
0 ... 160 bar (EN)						B33								
0...250 bar (EN)						B35								

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Ordering key - Configuration possibilities see website	PBM4	-	1	3	.	###	R	.	##	##	.	##	6	#
0...400 bar (EN)						B38								
0...600 bar (EN)						B39								
0...1000 bar (EN)						B41								
0...400 psi (ANSI)						H26								
0...1000 psi (ANSI)						H30								
0...1500 psi (ANSI)						H31								
0...3000 psi (ANSI)						H34								
0...6000 psi (ANSI)						H38								
0...9000 psi (ANSI)						H39								
0...15000 psi (ANSI)						H41								
Kind of pressure														
Relative (gauged)							R							
Output signal														
4...20 mA									A1					
0…10 V									A2					
0...5 V									A4					
0.5...4.5 V									A5					
0.5...4.5 V ratiometric									A6					
1...6 V									A8					
Output Connection														
M12-A, 5-pin										15				
M12-A, 5-pin, stainless steel										16				
Cable outlet 2 m, shielded										52				
Bayonet connection DIN 72585, 4-pin										85				
AMP Superseal 1.5, 3-pin										86				
DT04, 4-pin										87				
DT04, 3-pin										88				
Process connection														
G 1/4 B EN 837-1 (G30)												02		
1/4-18 NPT (N01)												04		
G 1/4 A DIN 3852-E (G50)												06		
G 1/4 A DIN 3852-E, pressure channel 0.6 mm (G50)												26		
7/16-20 UNF cone (SAE 4) (U01)												34		
7/16-20 UNF o-ring (SAE 4) (U02)												35		
9/16-18 UNF o-ring (SAE 6) (U04)												36		
Process connection material														
SS 1.4548 AISI 630													6	
Seal														
None														0
FKM (Viton®)														3

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