

Pressure transmitter in mobile hydraulics

S M O

Main features

- Measuring ranges 0...4 bar and to 0...4000 bar
- Output signals 4-20 mA; 1-5 V; 0-10 V; 0.5-4.5 V ratiometric
- Temperature range of media up to 150°C
- Shock and vibration resistance > 1000 g shock, > 30 g vibration
- Protection class IP67 (special version up to IP69K)
- Compact and rugged model in stainless steel
- High flexibility for options thanks to modular design
- Highly reliable

Applications

- Automotive industry
- Diesel and natural gas engines
- Braking systems
- Hydraulics
- Pneumatics
- Industrial Equipment and Automation technology

Description

Thanks to its stainless steel membrane and to its semiconductor thin-film technology, the transducer has excellent properties regarding its long-term stability, medium compatibility and pressure peaks that suggest its advantageous use in most industrial applications. Also its robustness even in very rugged ambient conditions in the field of mobile hydraulics is guaranteed by its welded stainless steel housing.

The EMC properties of the SMO series permit its application also in sophisticated environments. Its ratiometric model has been successfully tested up to 300V/m.

ADZ NAGANO GmbH has been certified acc. to ISO/TS 16949, among others.



Specifications

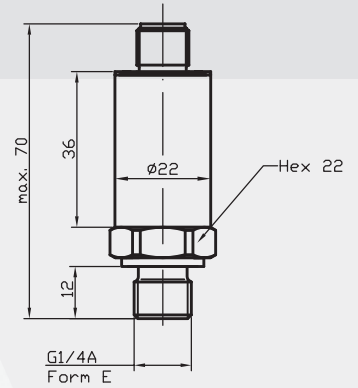
PRESSURE RANGE								
Measuring range*	p [bar]	4	6	10	16	20	25	40
Overload pressure	p [bar]	20	20	20	40	40	100	100
Burst pressure	p [bar]	30	30	30	60	60	150	150
Measuring range*	p [bar]	60	100	160	200	250	400	600
Overload pressure	p [bar]	200	200	400	400	750	750	840
Burst pressure	p [bar]	300	300	600	600	1000	1000	1050
Measuring range*	p [bar]	1000	1600	2000	2500	4000		
Overload pressure	p [bar]	1200	2400	2400	4500	4500		
Burst pressure	p [bar]	1500	3000	3000	5000	5000		
ELECTRICAL PARAMETER								
		signal			U_s [V _{DC}]	R_L [k Ω]	R_A [Ω]	
Output signal * and	R_A in Ohm	4...20 mA	(2-wire, 3-wire)		9...32		acc. to $R_A = < (U_s - 10V) / 0,02 A$	
maximum acceptable burden R_A		0...10 V _{DC}	(3-wire)		12...32	> 5,0		
		1...5 V _{DC}			8...32	> 1,0		
		0,5...4,5 V _{DC}	ratiometric		5 \pm 10%	> 4,7		
Response time* (10...90%)	t [ms]	< 1						
Withstand voltage	U [V _{DC}]	350	(option 710)					
ACCURACY								
Accuracy @ RT	% of the range	$\leq 0,50^{**}$	option $\leq 0,25$		** incl. nonlinearity, hysteresis, repeatability, zero-offset- and final-offset (acc. to IEC 61298-2)			
	BFSL	$\leq 0,125$						
Non-linearity	% of the range	$\leq 0,15$						
Repeatability	% of the range	$\leq 0,10$						
Stability/year	% of the range	$\leq 0,10$						
ACCEPTABLE TEMPERATURE RANGES								
Measuring medium	T [°C]	-40...125						
Ambience	T [°C]	-40...105	(option -55)					
Storage	T [°C]	-40...125						
Compensated range*	T [°C]	-20...85						
Temperature coefficient within the compensated range								
Mean TC offset	% of the range	$\leq 0,15 / 10K$						
Mean TC range	% of the range	$\leq 0,15 / 10K$						
Total error	% of the range	-40°C	2,00%					
	% of the range	105°C	2,00%					
MECHANICAL PARAMETER								
Parts in contact with the measuring medium*		stainless steel						
Housing*		stainless steel						
Shock resistance	g	1000	acc.to IEC 68-2-32					
Vibration resistance	g	20	acc. to IEC 68-2-6 und IEC 68-2-36					
Mass	m [g]	80-120 (depending on design)						
CE - conformity		EC Directive 89/336/EWG						
IP system of protection	The IP system of protection as specified in the data sheets generally applies, with their mating plug connected.							
	Relative pressure transmitters usually require a ventilated mating plug and/or cable to allow for pressure compensation. From a pressure range of 60bar, a ventilated mating plug and/or cable is not necessarily required.							
Options	with Load-Dump modul, with restrictor							
* others upon request								

Configurations -examples-

SMO (M12 connector)

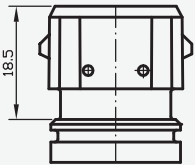


Packard cable Superseal M12x1 (S763) AMP-connector Junior-Timer

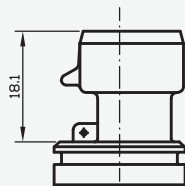


Connectors*

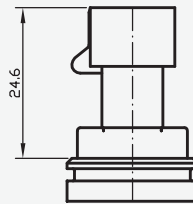
Junior-Timer connector



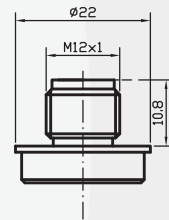
Packard connector



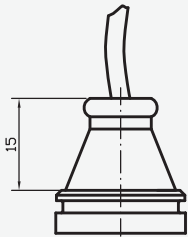
Superseal connector



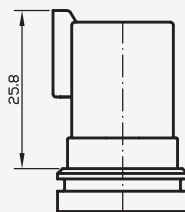
male socket M12x1 (S763)



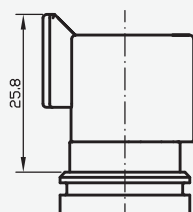
cable output



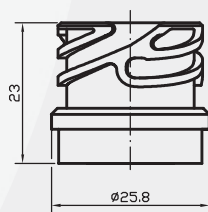
Deutsch-connector 4-pin



Deutsch-connector 3-pin

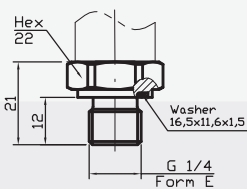


round-connector DIN 72585

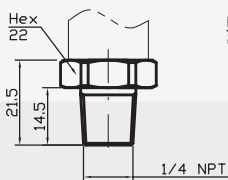


Pressure Connections*

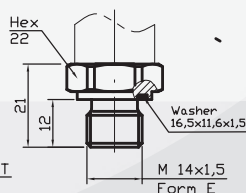
G 1/4 A;
DIN 3852; Form E



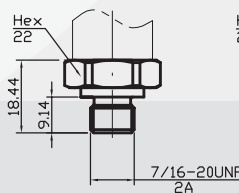
1/4 NPT



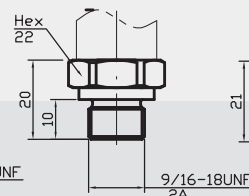
M 14x1,5;
DIN 3852; Form E



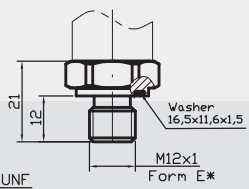
7/16-20UNF-2A
SAE 514



9/16-18UNF-2A



M12x1,5



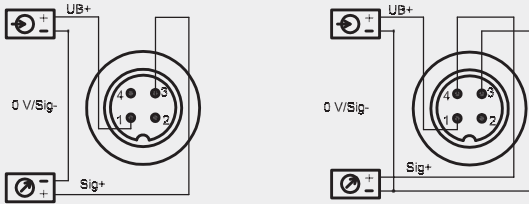
* custom-made adjustments acc. to pressure connections and connecting options are possible

S M O

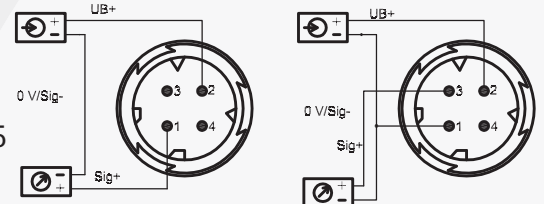
Pressure transmitter
in mobile hydraulics

Electrical Connections* (left: 2-wire, right: 3-wire)

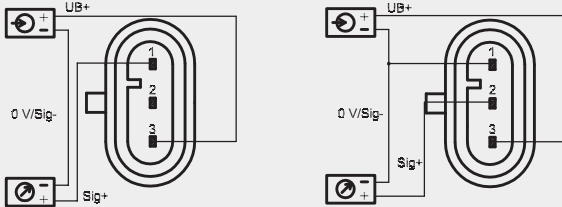
male
socket
M12x1
(S763)



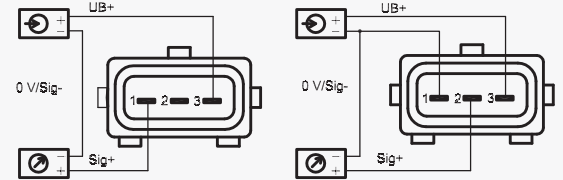
round-
connector
DIN 72585



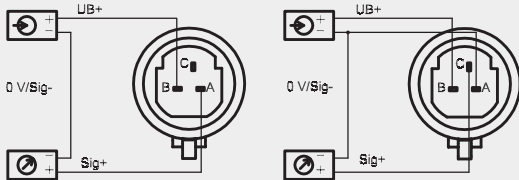
Superseal
connector



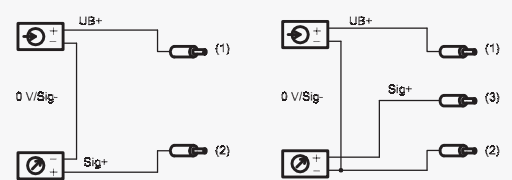
Junior-
Timer-
connector



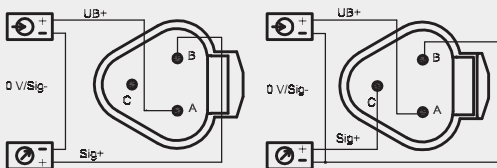
Packard-
connector



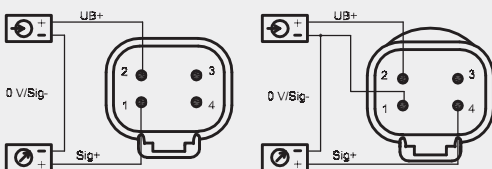
cable
output



Deutsch-
connector
3-pin



Deutsch-
connector
4-pin



Legend

power supply
 consumer

<1> red
<2> black
<3> white

* custom-made adjustments acc. to pressure connections and connecting options are possible