DRUCK & TEMPERATUR
LEITENBERGER GMBH

DMP 333

Industrial Pressure Transmitter For High Pressure

Stainless Steel Sensor

accuracy according to IEC 60770:
standard: 0.35 % FSO
option: 0.25 / 0.1 % FSO

Nominal pressure

from 0 ... 100 bar up to 0 ... 600 bar

Output signals

2-wire: 4 ... 20 mA
3-wire: 0 … 20 mA / 0 … 10 V
others on request

Special characteristics

- excellent long-term stability, also with high dynamic pressure loads
- insensitive to pressure peaks
- high overpressure capability

Optional versions

- IS-version
  Ex ia = intrinsically safe for gases and dusts
- SIL 2 version
  according to IEC 61508 / IEC 61511
- customer specific versions

The pressure transmitter type **DMP 333** has been especially designed for use in hydraulic applications with high static and dynamic pressure. The transmitter is characterized by an excellent long term stability, also under fast changing pressure as well as positive and negative pressure peaks.

The modular concept of the device allows to combine different stainless steel sensors and electronic modules with a variety of electrical and mechanical versions.Thus a diversity of variations is created, meeting almost all requirements in hydraulic applications.

Preferred areas of use are

Plant and Machine Engineering
- machine tools
- hydraulic presses
- injection moulding machine
- handling equipment
- elevated platforms
- test benches

Mobile Hydraulics

DRUCK & TEMPERATUR Leitenberger GmbH • Bahnhofstr. 33 • D-72138 Kirchentellinsfurt • GERMANY
Tel. +49 (0) 7121-90920-0 • Fax +49 (0) 7121-90920-99 • E-Mail: DT-Info@Leitenberger.de • www.druck-temperatur.de

Input pressure range						
Nominal pressure gauge [1] / abs.	[bar]	100	160	250	400	600
Overpressure	[bar]	210	600	1000	1000	1000
Burst pressure ≥	[bar]	1000	1000	1250	1250	1800
[1] measurement starts with ambient pressure						

Output signal / Supply	
Standard	2-wire: 4 ... 20 mA / V_S = 8 ... 32 V_{DC} SIL-version: V_S = 14 … 28 V_{DC}
Option IS-protection	2-wire: 4 ... 20 mA / V_S = 10 ... 28 V_{DC} SIL-version: V_S = 14 … 28 V_{DC}
Options 3-wire	3-wire: 0 ... 20 mA / V_S = 14 ... 30 V_{DC} 0 ... 10 V / V_S = 14 ... 30 V_{DC}
Performance	
Accuracy [2]	standard: ≤ ± 0.35 % FSO option 1: ≤ ± 0.25 % FSO option 2: ≤ ± 0.1 % FSO
Permissible load	current 2-wire: $R_{max} = [(V_S - V_S\ min) / 0.02\ A]\ \Omega$ current 3-wire: R_{max} = 500 Ω voltage 3-wire: R_{min} = 10 kΩ
Influence effects	supply: 0.05 % FSO / 10 V load: 0.05 % FSO / kΩ
Long term stability	≤ ± 0.1 % FSO / year at reference conditions
Response time	2-wire: ≤ 10 msec 3-wire: ≤ 3 msec
[2] accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)	
Thermal effects (Offset and Span)	
Tolerance band	≤ ± 0.75 % FSO
in compensated range	0 ... 70 °C
Permissible temperatures	
Permissible temperatures	medium: -40 ... 125 °C electronics / environment: -40 ... 85 °C storage: -40 ... 100 °C
Electrical protection	
Short-circuit protection	permanent
Reverse polarity protection	no damage, but also no function
Electromagnetic compatibility	emission and immunity according to EN 61326
Mechanical stability	
Vibration	10 g RMS (25 ... 2000 Hz) according to DIN EN 60068-2-6
Shock	100 g / 11 msec according to DIN EN 60068-2-27
Materials	
Pressure port	stainless steel 1.4404 (316 L)
Housing	stainless steel 1.4404 (316 L)
Option compact field housing	stainless steel 1.4305 (303), cable gland brass, nickel plated others on request
Seals (media wetted)	standard: FKM options: EPDM (for P_N ≤ 160 bar) others on request
Diaphragm	stainless steel 1.4435 (316 L)
Media wetted parts	pressure port, seals, diaphragm
Explosion protection (only for 4 ... 20 mA / 2-wire)	
Approvals DX19-DMP 333	**IBExU 10 ATEX 1068 X / IECEx IBE 12.0027X** zone 0: II 1G Ex ia IIC T4 Ga zone 20: II 1D Ex ia IIIC T 85°C Da
Safety technical maximum values	U_i = 28 V_{DC}, I_i = 93 mA, P_i = 660 mW, C_i ≈ 0 nF, L_i ≈ 0 µH, the supply connections have an inner capacity of max. 27 nF to the housing
Permissible temperatures for environment	in zone 0: -20 ... 60 °C with p_{atm} 0.8 bar up to 1.1 bar in zone 1 or higher: -20 ... 70 °C
Connecting cables (by factory)	cable capacitance: signal line/shield also signal line/signal line: 160 pF/m cable inductance: signal line/shield also signal line/signal line: 1µH/m

DRUCK & TEMPERATUR Leitenberger GmbH • Bahnhofstr. 33 • D-72138 Kirchentellinsfurt • GERMANY
Tel. +49 (0) 7121-90920-0 • Fax +49 (0) 7121-90920-99 • E-Mail: DT-Info@Leitenberger.de • www.druck-temperatur.de

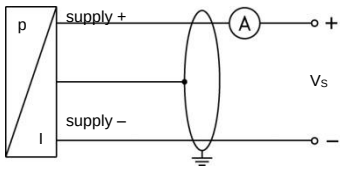
Miscellaneous

Option SIL[3] 2	according to IEC 61508 / IEC 61511
Current consumption	signal output current: max. 25 mA signal output voltage: max. 7 mA
Weight	approx. 140 g
Installation position	any[4]
Operational life	> 100 x 10^6 pressure cycles
CE-conformity	EMC Directive: 2004/108/EC Pressure Equipment Directive: 97/23/EC (module A) [5]
ATEX Directive	94/9/EG

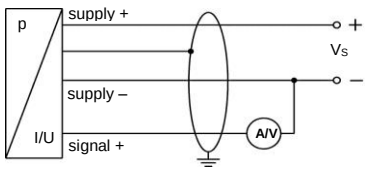
[3] only for 4 … 20 mA / 2-wire, not in combination with the accuracy 0.1%
[4] Pressure transmitters are calibrated in a vertical position with the pressure connection down.
[5] This directive is only valid for devices with maximum permissible overpressure > 200 bar

Wiring diagrams

2-wire-system (current)



3-wire-system (current / voltage)

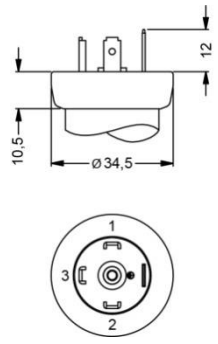


Pin configuration

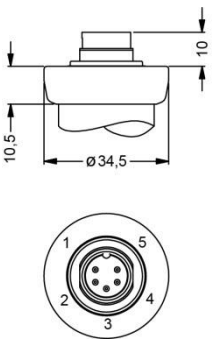
Electrical connection	ISO 4400	Binder 723 (5-pin)	M12x1/metal (4-pin)	Bayonet MIL-C-26482 (10-6) 2-wire	Bayonet MIL-C-26482 (10-6) 3-wire	field housing	cable colours (DIN 47100)
Supply +	1	3	1	A	A	IN +	wh (white)
Supply –	2	4	2	B	D	IN –	bn (brown)
Signal + (for 3-wire)	3	1	3	-	B	OUT +	gn (green)
Shield	ground pin	5	4	pressure port		⏚	ye/gn (yellow/green)

Electrical connections (dimensions in mm)

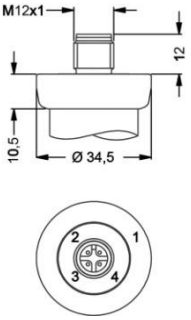
standard **option**



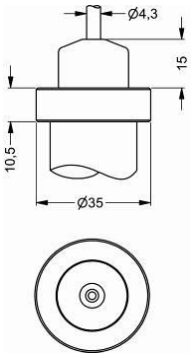
ISO 4400
(IP 65)



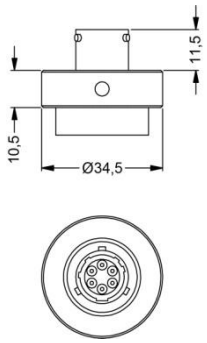
Binder Series 723 5-pin
(IP 67)



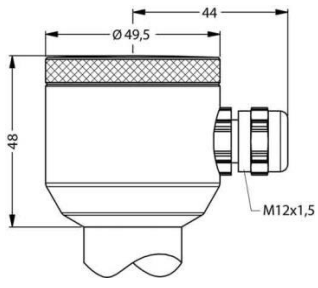
M12x1 4-pin
(IP 67)



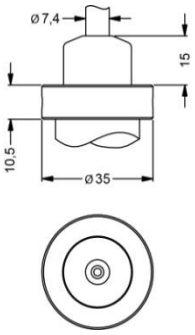
cable outlet with PVC cable
(IP 67) [6]



Bayonet MIL-C-26482 (10-6)
(IP 67)



compact field housing
(IP 67)



cable outlet, cable with ventilation tube
(IP 68) [7]

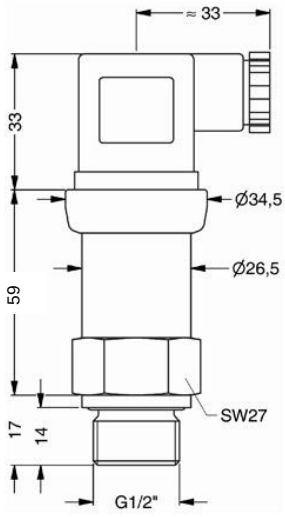
⇨ **universal field housing stainless steel 1.4404 (316 L) with cable gland M20x1.5 (ordering code 880) and other versions on request**

[6] standard: 2 m PVC cable without ventilation tube (permissible temperature: -5 ... 70 °C)
[7] different cable types and lengths available, permissible temperature depends on kind of cable

DRUCK & TEMPERATUR Leitenberger GmbH • Bahnhofstr. 33 • D-72138 Kirchentellinsfurt • GERMANY
Tel. +49 (0) 7121-90920-0 • Fax +49 (0) 7121-90920-99 • E-Mail: DT-Info@Leitenberger.de • www.druck-temperatur.de

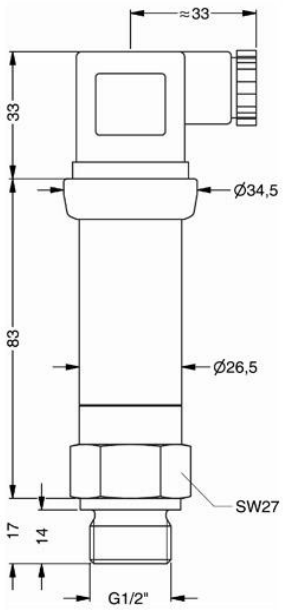
Mechanical connections (dimensions in mm)

standard for accuracy 0.35 / 0.25 %



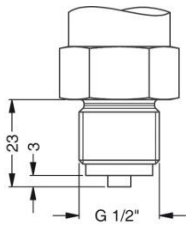
G1/2" DIN 3852
with ISO 4400

**standard for accuracy 0.1 % ;
SIL- and SIL-IS-version**

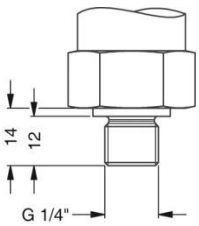


G1/2" DIN 3852
with ISO 4400

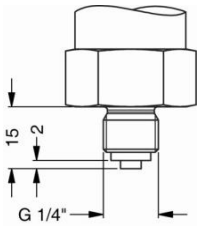
option



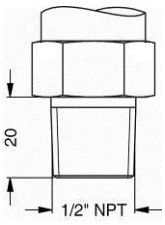
G1/2" EN 837



G1/4" DIN 3852



G1/4" EN 837



1/2" NPT

⇨ **metric threads and other versions on request**

DRUCK & TEMPERATUR
LEITENBERGER GMBH

Spezifikationsblatt / specification sheet

DMP 333

DMP 333 □□□-□□□□-□-□-□□□-□□□-□-□□□

Deutsch		English		Code	
Messgröße		**Pressure**			
	relativ		gauge [1]	130	
	absolut		absolute	131	
Eingang	**[bar]**	**Input**	**[bar]**		
	100		100	1003	
	160		160	1603	
	250		250	2503	
	400		400	4003	
	600		600	6003	
	Sondermessbereiche		customer	9999	auf Anfrage consult
Ausgang		**Output**			
	4 … 20 mA / 2-Leiter		4 … 20 mA / 2-wire	1	
	0 … 20 mA / 3-Leiter		0 … 20 mA / 3-wire	2	
	0 … 10 V / 3-Leiter		0 … 10 V / 3-wire	3	
	Ex-Schutz 4 … 20 mA / 2-Leiter		Intrinsic safety 4 … 20 mA / 2-wire	E	
	SIL2 4 … 20 mA / 2-Leiter		SIL2 4 … 20 mA / 2-wire	1S	
	SIL2 mit Ex-Schutz 4 … 20 mA / 2-Leiter		SIL2 with Intrinsic safety 4 … 20 mA / 2-wire	ES	
	andere		customer	9	auf Anfrage consult
Genauigkeit		**Accuracy**			
Standard	0,35 %	standard	0.35 %	3	
Option 1	0,25 %	option 1	0.25 %	2	
Option 2	0,1 %	option 2	0.1 % [2]	1	
	andere		customer	9	auf Anfrage consult
Elektrischer Anschluss		**Electrical connection**			
	Stecker und Kabeldose ISO 4400		Male and female plug ISO 4400	100	
	Stecker Binder Serie 723 (5-polig)		Male plug Binder series 723 (5-pin)	200	
	Kabelausgang mit PVC-Kabel		Cable outlet with PVC cable [3]	TA0	
	Kabelausgang		Cable outlet [4]	TR0	
	Stecker M12x1 (4-polig) / Metall		Male plug M12x1 (4-pin) / metal	M10	
	Bajonett MIL-C-26482 (10-6); 2-Leiter		Bayonet MIL-C-26482 (10-6); 2 wire	BG0	
	Bajonett MIL-C-26482 (10-6); 3-Leiter		Bayonet MIL-C-26482 (10-6); 3 wire	BG1	
	Kompakt-Feldgehäuse Edelstahl 1.4305		Compact field housing stainless steel 1.4305	850	
	andere		customer	999	auf Anfrage consult
Mechanischer Anschluss		**Mechanical connection**			
	G1/2" DIN 3852		G1/2" DIN 3852	100	
	G1/2" EN 837		G1/2" EN 837	200	
	G1/4" DIN 3852		G1/4" DIN 3852	300	
	G1/4" EN 837		G1/4" EN 837	400	
	1/2" NPT		1/2" NPT	N00	
	andere		customer	999	auf Anfrage consult
Dichtung		**Seals**			
	FKM		FKM	1	
	EPDM		EPDM [5]	3	
	andere		customer	9	auf Anfrage consult
Sonderausführungen		**Special version**			
	Standard		standard	000	
	andere		customer	999	auf Anfrage consult

Preise EXW Thierstein, ausschl. Verpacl **Prices EXW Thierstein, excluding package**

[1] Messanfang bei Umgebungsdruck — measurement starts with ambient pressure
[2] nicht in Verbindung mit SIL — not in combination with SIL
[3] Standard: 2 m PVC-Kabel ohne Belüftungsschlauch (' — standard: 2 m PVC cable without ventilation tube (permissible temperature: -5 … 70 °C), optionally without ventilation tube
[4] Kabel mit Luftschlauch (Code TR0 = PVC-Kabel), Kab — cable with ventilation tube (code TR0 = PVC cable), different cable types and lengths available, permissible temperature depends on kind of cable, price without cable
[5] nur möglich für $P_N \leq 160$ bar — possible for nominal pressure ranges $P_N \leq 160$ bar

Rel. 20160318

DRUCK & TEMPERATUR Leitenberger GmbH • Bahnhofstr. 33 • D-72138 Kirchentellinsfurt • GERMANY
Tel. +49 (0) 7121-90920-0 • Fax +49 (0) 7121-90920-99 • E-Mail: DT-Info@Leitenberger.de • www.druck-temperatur.de