



DMP 331i RS 485 DMP 333i RS 485 LMP 331i RS 485

Precision pressure transmitter / screw-in transmitter with digital signal RS 485

Stainless steel sensor

Accuracy according to IEC 60770:
0.1 % FSO

Nominal pressure

from 0 ... 400 mbar up to 0 ... 600 bar

Output signal

digital signal RS 485

digital output UART/5V

Digital signal

HART[®]

ModbusRTu

Product characteristics

- ▶ thermal error in compensated range
-20 ... 80 °C: 0.2 % FSO
TC 0.02 % FSO / 10K
- ▶ turn-Down 1:10
- ▶ communication interface for adjusting
of offset, span and damping

Optional version

- ▶ other pressure ranges on request

The precision pressure transmitter DMP 331i RS 485 and DMP 333i RS 485 together with screw-in transmitter LMP 331i RS 485 demonstrate further development of our industrial pressure transmitters of DMP, LMP series.

The signal processing of sensors signal is done by digital electronics with 16-bit analog digital converter. Consequently it is possible to conduct an active compensation and the transmitters with excellent measurements and exceptionally attractive price to offer on the market

Preferred areas of use are DMP 331i / DMP 333i RS 485



laboratory techniques



energy production (gas consumption
and thermal energy measurement)

Preferred areas of use are LMP 331i RS 485



environmental engineering
(water / sewage / recycling)



chemical / petrochemical industry



DMP 331i / DMP 333i / LMP 331i – RS 485

Precision Pressure Transmitter / Screw-in Transmitter

Technical data

Pressure ranges DMP 331i ¹							
Nominal pressure gauge / absolute [bar]	0,4	1	2	4	10	20	40
Overpressure [bar]	2	5	10	20	40	80	105
Burst pressure [bar]	3	7,5	15	25	50	120	210
¹ On cusotomer request we adjust the device within the turn-down-possibility by software on the required pressure range.							
Vacuum ranges							
Nominal pressure [bar]	-0,4 ... 0,4	-1 ... 1	-1 ... 2	-1 ... 4	-1 ... 10		
Overpressure [bar]	2	5	10	20	40		
Burst pressure [bar]	3	7,5	15	25	50		
Pressure ranges DMP 333i ¹							
Nominal pressure gauge / absolute [bar]	60	100	200	400	600		
Overpressure [bar]	210	210	600	1050	1250		
Burst pressure [bar]	420	420	1000	1250	1250		
¹ On cusotomer request we adjust the device within the turn-down-possibility by software on the required pressure range.							
Pressure ranges LMP 331i ¹							
Nominal pressure gauge / absolute [bar]	0,4	1	2	4	10	20	40
Level gauge [mH ₂ O]	4	10	20	40	100	200	400
Overpressure [bar]	2	5	10	20	40	80	105
Burst pressure [bar]	3	7,5	15	25	50	120	210
¹ On cusotomer request we adjust the device within the turn-down-possibility by software on the required pressure range.							
Output signal / Supply							
Standard	V _s = 10 ... 36 V _{DC} V _s = 8 ... 15 V _{DC} V _s = 3,3 ... 5,0 V _{DC} (regulated voltage)						
Performance							
Accuracy	IEC 60770 ² : ≤ ± 0,1 % FSO						
Long term stability	≤ 0,1 % FSO / year						
Response time	200 ms						
² accuracy according to IEC 60770 – limmit point adjustment (non-linearity, hysteresis, repeatability)							
Thermal effects (Offset and Span) / Permissible temperatures							
Tolerance band [% FSO]	≤ ± 0,2 in compensated range			-20 ... 80 °C			
TC, average [% FSO / 10 K]	± 0,02 in compensated range			-20 ... 80 °C			
Permissible temperatures	medium: -25 ... 125 °C			electronics / environment: -25 ... 85 °C		storage: -40 ... 100 °C	
Electrical protection							
Short-circuit protection	permanent						
Reverse polarity protection	no damage, but also no fuction						
Electromagnetic compatibility	emission and immunity according to EN 61326						
Materials							
Pressure port	stainless steel 1.4404 (316 L)						
Housing	stainless steel 1.4404 (316 L)						
Seals	DMP 331i / LMP 331i: FKM			DMP 333i: NBR			
	option: welded version ³ ; other on request						
Diaphragm	stainless steel 1.4435 (316L)						
Media wetted parts	pressure port, seal, diaphragm						
³ welded version only with pressure ports according to EN 837; welded version not available with pressure ranges > 60 bar							
Mechanical stability							
Vibration	10 g RMS (20 ... 2000 Hz)						
Shock	100 g / 11 ms						
Transmission baud rate							
HART®	1200 Baud	2400 Baud					
ModbusRTU	4800 Baud	19200 Baud	9600 Baud	38400 Baud			
Miscellaneous							
Current consumption	≤ 2,5 mA						
Weight	approx. 200 g						
Installation position	any ⁴						
Measurement mode (only with HART®)	continuous noncontinuous						
Operational life	100 million load cycles						
CE-conformity	EMC Directive: 2014/30/EU			Pressure Equipment Directive: 2014/68/EU (module A) ⁵			
ATEX Directive	2014/34/EU						
⁴ Pressure transmitters are calibrated in a vertical position with the pressure connection down. If this position is changed on installation there can be slight deviations in the zero point for pressure ranges P _N ≤ 1 bar.							
⁵ This directive is only valid for devices with maximum permissible overpressure > 200 bar							

DMP 331i / DMP 333i / LMP331i – RS 485

Precision Pressure Transmitter / Screw-in Transmitter

Technical data

Map of Input registers (read only, function #4 – Read input registers)					
Address	Register	Description	Data type	Example	
0x0000	SerialNr	Serial Number	UInt32	0x0012	123456
0x0001				0xd687	
0x0002	CalDate	Date of last calibration	Date	0x07de	2014
0x0003				0x051b	27.5.
0x0004	PressUpperRange	Upper range of pressure channel	Float, IEEE754	0x4120	10,0
0x0005				0x0000	
0x0006	PressLowerRange	Lower range of pressure channel	Float, IEEE754	0x0000	0,0
0x0007				0x0000	
0x0008	Pressure	Actual pressure	Float, IEEE754	0x3f9e	1,2345
0x0009				0x0419	
0x000A	MaxPress	Maximal Pressure	Float, IEEE754	0x3f00	1,5
0x000B				0x0000	
0x000C	MinPress	Minimal Pressure	Float, IEEE754	0x3f00	0,5
0x000D				0x0000	
0x000E	TempUpperRange	Upper range of temperature channel	Float, IEEE754	0x42a0	80,0
0x000F				0x0000	
0x0010	TempLowerRange	Lower range of temperature channel	Float, IEEE754	0xc1a0	-20,0
0x0011				0x0000	
0x0012	Temperature	Actual temperature	Float, IEEE754	0x41a0	20,0
0x0013				0x0000	
0x0014	MaxTemp	Maximal temperature	Float, IEEE754	0x4270	60,0
0x0015				0x0000	
0x0016	MinTemp	Minimal temperature	Float, IEEE754	0x4170	15,0
0x0017				0x0000	

Map of Holding registers (read and write, function #3 - Read Holding Registers , fce #6 - Write Single Register)					
Address	Register	Description	Data type	Example	
0x0000	PressUnitsCode	Unit of pressure channel	UInt16	0x0006	bar
0x0001	TempUnitsCode	Unit of temperature channel	UInt16	0x0000	°C
0x0002	DeviceAddress	Device address (1...247)	UInt16	0x0001	1
0x0003	Baudrate	Baud rate	UInt16	0x0005	9600
0x0004	Parity	Parity	UInt16	0x0000	PA_none

Pressure unit enumeration													
Code (Unit16)	0x0003	0x0004	0x0005	0x0006	0x0007	0x0008	0x0009	0x000A	0x000B	0x000C	0x000D	0x000E	0x000F
Unit	mmH2O	mmHG	psi	bar	mbar	g/cm^2	kg/cm^2	Pa	kPa	torr	atm	mH2O	MPa

Temperature unit enumeration			
Code (UInt16)	0x0000	0x0001	0x0002
Unit	°C	°K	°F

Baud rate enumeration				
Code (UInt16)	0x0004	0x0005	0x0006	0x0007
Baud rate [Bd]	4800	9600	19200	38400

Parity enumeration			
Code (UInt16)	0x0000	0x0001	0x0002
Parity	Žádná (None)	Lichá (Odd)	Sudá (Even)

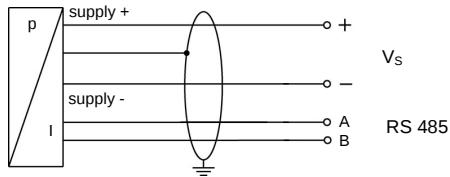
⁷It is necessary to make device reset (Power supply off and on) after changing Address, Baud rate or Parity (command #6).
If reset is not performed, device uses old communication parameters.

DMP 331i / DMP 333i / LMP 331i – RS 485

Precision Pressure Transmitter / Screw-in Transmitter

Technical data

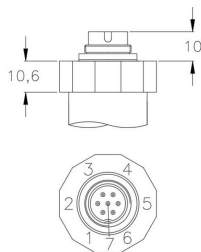
Wiring diagrams



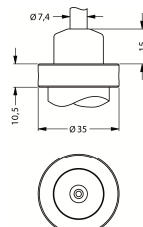
Pin configuration

Electrical connections	Binder 723 (7-pin)	cable colours (DIN 47100)
supply +	3	wh (white)
supply -	1	bn (brown)
shield	2	gn/ye (green / yellow)
Communication interface A	4	ye (yellow)
Communication interface B	5	pk (pink)

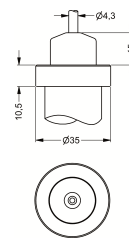
Electrical connections (dimensions in mm / inch)



Binder serie 723 7-pin
(IP 67)



cable outlet
(IP 67)⁶



cable gland
(IP 67)⁷

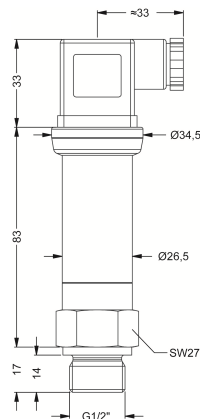
⁶ different cable types and lengths available, permissible temperature depends on kind of cable

⁷ standard: 2 m PVC cable (without ventilation tube, permissible temperature: -5 ... 70 °C)

Mechanical connection (dimensions in mm/ inch)

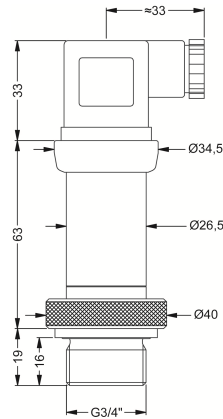
standard

DMP 331i / DMP 333i



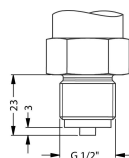
G1/2" DIN 3852

LMP 331i

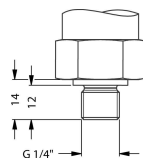


G3/4" DIN 3852

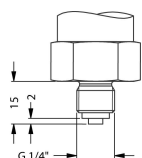
options for DMP 331i and DMP 333i



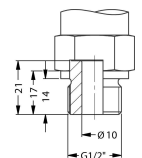
G1/2" EN 837



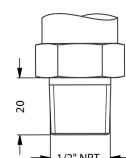
G1/4" DIN 3852



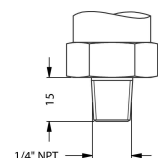
G1/4" EN 837



G1/2" open port



1/2" NPT



1/4" NPT

⇒ metric threads and others on request

This data sheet contains product specification, properties are not guaranteed. Subject to change without notice.