Multi Vision® 2020TG/TA

Digital transmitters with remote seals for gauge / absolute pressure and level

Spans:6 kPa ... 60 MPa (0.9...9000 psi)
6 kPa abs. ... 3 MPa abs. (0.9...450 psia)

10/15-4.15 EN

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- **Isolation between process and transmitter for media with**
  - **high temperatures and viscosities**
  - **corrosive ingredients, a tendency to polymerization**
- **Prevention of deposits in the process connection flanges by extended remote seals**
- **Mounting to various DIN or ANSI flanges**
- **High overload capability**
- **Span and zero externally adjustable**
- **Transfer response configurable:**
  - **linear** • **freely programmable**
- **In conjunction with the LCD indicator, the transmitter can be configured with the external keys**
- **Communication protocol:**
  - **PROFIBUS PA** • **FOUNDATION Fieldbus**
  - **HART 4...20mA**
- **Surge voltage resistant acc. to IEC 61000-4**
- **Interchangeable electronics with self reconfiguration**

Application

The Multi Vision® - series is a complete series of differential pressure, gauge pressure and absolute pressure transmitters with an analogue or digital output signal for the process industry.

The transmitter 2020TG with remote seal measures gauge pressure or level, the transmitter 2020TA absolute pressure of aggressive / non-aggressive media.

It is based on a highly-stable sensor, on which a remote seal in flange design is fitted (directly or with capillary tube). The internal sensing diaphragm is slightly deflected corresponding to the pressure present at the remote seal and converted into an electrical signal by the electronics.

The process-wetted parts of the remote seal can be selected from different materials such as stainless steel, Hastelloy C or tantalum and others, depending on the required resistance to corrosion. Various filling liquids, for example for the food and beverages industry, complete the spectrum of applications.

Description

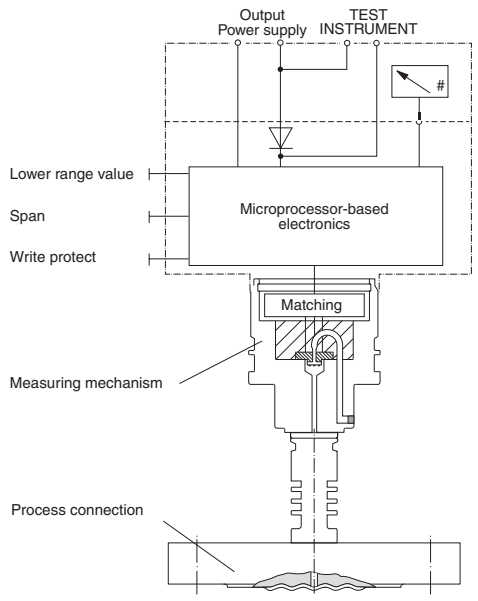
Principle of operation and construction

The transmitter has a modular design and consists of the gauge pressure/absolute pressure sensor module on which a remote seal in flange design is fitted (directly or with capillary tube) with an integrated electronic matching unit and an amplifier with control unit.

The applied process pressure (p_e / $p_{abs.}$) is transferred via the remote seal diaphragm and the fill fluid to the measuring diaphragm of the pressure sensor.

A minimal deflection of the measuring diaphragm changes the output voltage of the pick-up system. This output voltage, proportional to the pressure, is converted by the matching unit and the amplifier into an electrical signal.

Example: Transmitter 2020TG with directly connected flush diaphragm remote seal



Technical data

Input

Measured value

2020TG: Gauge pressure
2020TA: Absolute pressure

Measuring range (upper and lower range values)

Lower range value (continuously adjustable)
2020TG: -100 % (≥ −100 kPa) up to +100 % of the URL
2020TA: 0 % up to +100 % of the URL
Application limits dependent of the filling liquid: see Table 2

Upper range value (continuously adjustable)
Up to 100 % of the URL

Spans (dependent of remote seal type !)
The adjusted span must not be lower than the minimum range.
Smallest span see table 1 “Type of construction, spans ...”

Measuring ranges

Code	min.	max.
B		6 kPa / 60 mbar / 25 in. H_2O
C		40 kPa / 400 mbar / 160 in. H_2O
D		250 kPa / 2.5 bar / 1000 in. H_2O
F		3 MPa / 30 bar / 450 psi
G	see Table 1	10 MPa / 100 bar / 1500 psi
H		60 MPa / 600 bar / 9000 psi
K		6 kPa / 60 mbar abs. / 25 in. H_2O
L		40 kPa / 400 mbar abs. / 160 in. H_2O
M		250 kPa / 2.5 bar abs. / 1000 in. H_2O
O		3 MPa / 30 bar abs. / 450 psia

Output

Output signal

Transmitters with 4...20mA
Analogue signal 4 ... 20 mA
Output signal limits: I_{min} = 3.5 mA, I_{max} = 22.5 mA (conf.)
Standard setting: I_{min} = 3.8 mA, I_{max} = 20.5 mA

Alarm current
Min. alarm current: configurable from 3.5 mA to 4 mA, standard setting: 3.6 mA
Max. alarm current: conf. from 20 mA to 22.5 mA, standard setting: 21 mA
Standard setting: max. alarm current

Load of transmitters with 4...20 mA

$$R \leq \frac{Us - 10,5V}{I_{max}} \quad \text{in kOhm}$$

I_{max} = 20...22.5 mA (configurable)
Us = supply voltage
min. power supply: 10.5 VDC, 14 V DC with backlit LCD-indic.
min. load for digital communications > 250 Ohm

Fieldbus units (communication code: P / F)
Digital signal
Transmission technique: acc. to IEC 61158-2
Power supply: 10.2 V DC ... 32 V DC
Base current: 14 mA
Transmission rate: 31.25 kbd/s
PROFIBUS-PA: Version 3.0, Profile B for pressure transmitters; Ident No.: 04C2 HEX
FOUNDATION Fieldbus: FF-890 / 891 ans FF-902 / 903

Characteristic
Linear, freely programmable with 20 reference points

Technical data

Accuracy

Reference conditions

to DIN IEC 60 770
Temperature: 20 °C (68 °F)
Relative humidity: 65 %
Atmospheric conditions: 1013 mbar (1013 hPa / 14.7 psia)
Additional conditions:
"Linear output" and transmitters with measuring ranges ≥ 250 kPa...60 MPa (1000 in. H_2O...9000 psi):
Separating diaphragm material "Hastelloy C", fill fluid "silicone oil"

All specifications are limits and relate to the output range or calibrated range. The influences marked * relate to the measuring range (URL) and are to be multiplied by the turn down factor (ratio range (URL)/calibrated span). The turn down factor should be kept to a minimum.

The accuracy and response times are dependent upon the remote seal and the measuring point.

Data for the instrument combination are only possible after knowledge of all the data submitted in the questionnaire 80/15-105 EN (see pages 15 and 16).

Data for transmitter **(without effect from the remote seal):**

Conformity
0.075 % [1], terminal based, including hysteresis and the dead band

Reproducibility
0.01 %

Hysteresis
0.05 %

Warm-up time
< 15 s

[1] additionally with turn-down factor > 10:1

$$\pm\left(0.005 \times \frac{\text{measuring range}}{\text{adjusted span}} - 0.05\right)\%$$

Rise time
The time behaviour of this transmitter is composed of the rise time of the sensor and an adjustable integration time constant of the A/D converter. A high time constant results into a high resolution, e.g. required for a high span ratio, and at the same time into a higher rise time for the output signal. A low time constant means a lower resolution, but a shorter rise time and thus a faster reaction time of the transmitter. In case of the standard integration time constant the values shown in the table below apply.

linear				freely programmable function
turn down factor				
≤ 1 : 10	> 1 : 10 up to ≤ 1 : 20	> 1 : 20 up to ≤ 1 : 40	> 1: 40	
~ 0.3 s	~ 0.5 s	~ 0.9 s	~ 1.4 s	~ 0.5 s

additional adjustable time constant 0...60 s

The effect appearing at the output for non-linear output depends on the function and is to be calculated accordingly.

Long-term drift
* 0.05 % per 12 months

Ambient temperature effect
Thermal change (-40 °C...+80 °C)[2]/(-40 °F...+176 °F)[2]
* on zero 0.1 %
on span 0.1 %
Temperature coefficient (-40 °C...+80 °C)[2]/(-40 °F... +176 °F)[2]
* on zero 0.04 % per 10K (50 °F)
on span 0.04 % per 10K (50 °F)

Effect of electro-magnetic interference
* 0.05 %

[2] with carbon fluoride filling liquid: -20 °C...+80 °C (-4 °F...+176 °F)

* please refer to "Accuracy" / "Reference conditions"

Technical data

Installation conditions

Remote Seal with Capillary Tube:
The maximun difference in height between the remote seal and the transmitter when mounting the remote seal below the transmitter is:

with silicone oil	(IB)	5.0 m
with carbon fluoride	(L)	2.5 m
with high temperature oil	(IH)	5.0 m
with white oil	(WB)	2.5 m
with vacuumproof design	(IC)	0.0 m

Caution:
With an operating pressure < 1000 mbar abs, the transmitter must be mounted at the same height or below the remote seal.
The minimum bending radius of the capillary tube is 75 mm; do not kink!

Mounting

Flange Remote Seal with Flush / Extended diaphragm:
The remote seal is mounted at the DIN / ANSI connection flange with a gasket (soft packing) and fixing screws on site.
(Gasket and fixing screws not supplied)
Only gaskets of soft materials to be used with remote seals having diaphragms and sealing surfaces made of tantalum.

In-line Remote Seal:
The remote seal is mounted direct in the process piping between two flanges.

Remote Seal with Fast Coupling:
The remote seal is mounted directly onto the process via either a Running union or a clamp connection.

Miniature Remote Seal:
The threaded remote seal is screwed with the available threaded process connector.

Transmitter:
The transmitter is wall or pipe mounted, when the transmitter is connected to the remote seal with a flexible capillary tube. When the transmitter is directly connected to the remote seal, then no supplementary mountings or supports are necessary.

The electronic housing can be rotated through 360°∠ and can be fixed in any position. A stop prevents the housing beeing turned too far.

Installation position:
The transmitter can be directly mounted in any position. Preferably in a vertical position. Deviations from this can cause a shift in the zero, which can be corrected.

Ambient conditions

Ambient temperature, transmitter:
T_{min} : dependent of the filling liquid, T_{max} : +85 °C / (185 °F),
Observe approvals for explosion-protected transmitters!

Storage temperature / transport temperature
-50 °C ... +85 °C, with LCD-indicator -40 °C ... +85 °C
(-58 °F ... +185 °F), with LCD-indicator (-40 °F ... +185 °F)

Humidity

Relative humidity:	≤ 95 % annual average
Condensation, icing:	admissible

Protection class
IP 67 acc. to EN 60 529 (≡ NEMA Standard Type 6);
with measuring ranges ≤ 30 bar (range-Code: B, C, D or F)
and with Han 8U plug: IP 65 (≡ NEMA Standard Type 4x)

Protective varnish
epoxy resin, greywhite, RAL 9002

Electromagnetic compatibility (EMC)
to EN 50 082-2

Definition:	Class 3
Radio suppression (EN 55 011):	Limit class B

Fulfills NAMUR recommendation.

Process conditions

Temperature limits at the remote seal:

Medium temperature (max. ambient temperature in brackets)

for direct mounting:	max. +180 °C	(≤ + 40 °C)
(Code-No. 699)	max. +356 °F	(≤ +104 °F)
	max. +140 °C	(≤ + 60 °C)
	max. +284 °F	(≤ +140 °F)

minimal medium temperature dependent on the filling liqiuid (see Table 2)
Remote seal with Running Union and Buna O-ring:
maximal +120 °C / (248 °F)

with Capillary tube:
dependent on the filling liquid (see Table 2) with the following restrictions:
– Flush diaphragm DN 25 / DN 1": maximal +250 °C (482 °F)
– Flush diaphragm, material tantalum: max. +220 °C (428 °F)
– In-line remote seal DN 25 / DN 1": maximal +250 °C (482 °F)

Pressure limits

From vacuum (with corresponding instrument version, s. Table 2,) up to maximum span

Over-ranging limit

Measuring ranges ≤ 400 mbar: (≤ 160 in. H_2O)	10 bar (150 psi)
Measuring ranges 2.5 bar...100 bar: (1000 in. H_2O...1500 psi)	2 times upper range value
Measuring range 600 bar: (9000 psi)	900 bar (13000 psi)

Weight

Transmitter:	approx.1.2 kg
Capillary tube:	approx. 0.15 kg/m

Flange Remote Seals with Flush diaphragm /Extended diaphragm DN50 / 2", DN 80 / 3":
- DN 50, PN16/40 with Flush diaphragm: approx. 3.3 kg
- DN 2", Class 300 with Flush diaphragm: approx. 3.7 kg
- DN 50, PN 16/40 w. Extended diaphr.100 mm: approx. 4.0 kg
- DN 2", Class 300 w. Extended diaphr.100 mm: approx. 5.4 kg

- DN 80, PN16/40 with Flush diaphragm: approx. 5.8 kg
- DN 3", Class 150 with Flush diaphragm: approx. 5.3 kg
- DN 80, PN 16/40 w. Extended diaphr.100 mm: approx. 7.5 kg
- DN 3", Class 150 w. Extended diaphr.100 mm: approx. 7.0 kg

Flush Diaphragm Remote Seals DN 25 / 1", Miniature Remote Seals, In-line Remote Seals and Fast Coupled Remote Seals:
See dimensional drawings

Technical data

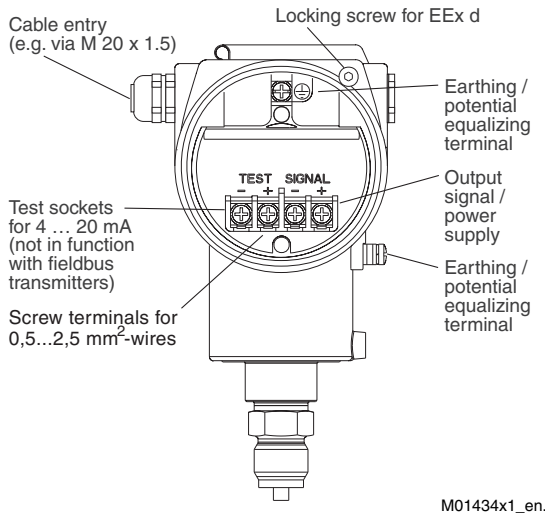
Electrical specifications

Electrical connections

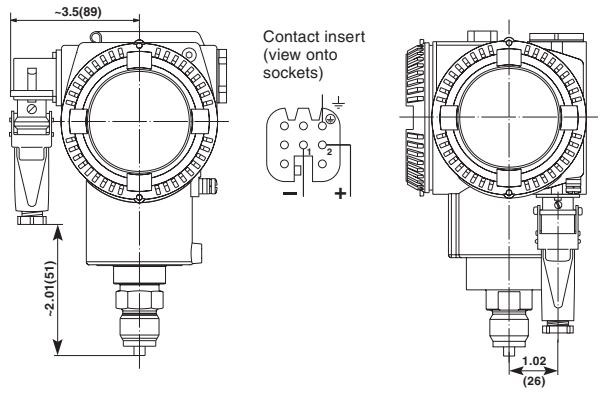
Two female threads 1/2-14 NPT or M 20 x 1.5 or one plug Han 8 U (with Profibus PA: plug connector M 12 [without female mating plug]).

Screw terminals for wire cross-sections up to 2.5 mm^2.

Cable connection compartment /electrical connection



Electrical connection with plug



Auxiliary energy

Transmitters with 4...20 mA (communication code: H)

Power supply: 10.5...45 V DC (14...45 V DC with backlit indicator), inverse polarity protection. Explosion-protected transmitters, observe the approvals!

Harm. distortion: Maximal permissible voltage ripple of the power supply during communication:
7 V_{pp} at 50 Hz ≤ f ≤ 100 Hz
1 V_{pp} at 100 Hz < f ≤ 200 Hz
0.2 V_{pp} at 200 Hz < f ≤ 300 Hz

Field Bus units (communication code: P/F)

Power supply 10.2...32 V DC, inverse polarity protection. Explosion-protected transmitters, observe the approvals!

Pollution degree
2 according to ANSI / ISA 82.01

Overvoltage category
II according to ANSI / ISA 82.01

Display and operating interface

Operation with keys

Retrofit / optional key unit for external adjustment of zero and span and a write protect switch. There are no physical connections through the housing for the keys.

In conjunction with an LCD indicator, the transmitter can be configured with the keys as follows:

Zero and span with or without applied pressure, oblique sensor, damping, output current during faults, displayed value, pressure unit, characteristic curve adjustment: linear or freely programmed, temperature unit, as well as address with fieldbus devices.

Operation via remote communications

Communication protocol
PROFIBUS-PA® or FOUNDATION Fieldbus® or HART®

Hardware
for HART®: FSK modem for PC / notebook

Handheld Terminal
STT 04 or HHT 275 or 691 HT

Management-Software
SMART VISION®: from version 4.01 + DTM (Device Type Manager) 2000T

LCD indicator

2-line, 6-character 19-segment alphanumeric display with additional bar chart display, optionally with back illumination.

User-specific displays:
Pressure value as a physical unit or
percentage of the output current or
output current in mA or
instrument temperature in freely selectable units or
free process variable
address (only with Fieldbus-Transmitters)

Diagnostic messages, alarms, measuring range infringements and changes in the configuration are also displayed.

Technical data

Hazardous atmospheres

Transmitters of protection type "Intrinsically safe EEx ia" according to Directive 94 / 9 / EC (ATEX)

- Transmitters with 4...20 mA output signal and HART communication

  Marking: II 1/2 GD T 50°C EEx ia IIC T6
  II 1/2 GD T 95°C EEx ia IIC T4

  EC type examination certificate number: ZELM 01 ATEX 0064 and 1st. / 2nd. Supplement

  Supply and signal circuit with type of protection Intrinsic Safety EEx ib IIB/IIC or EEx ia IIB/IIC for connection to supply units with the following maximum values:
  II 1/2 GD T 50°C EEx ia or ib IIC T6
  II 1/2 GD T 95°C EEx ia or ib IIC T4

  for Temperature Class T4:
  U_i = 30 V
  I_i = 200 mA
  P_i = 0.8 W for T4 with Ta = -40...+85 °C / (-40...+185 °F)
  P_i = 1.0 W for T4 with Ta = -40...+70 °C / (-40...+158 °F)

  for Temperature ClassT6:
  P_i = 0.7 W for T6 with Ta = -40...+40 °C (-40...+104 °F)

  Effective internal capacitance $C_i \leq 10$ nF
  Effective internal inductance $L_i \approx 0$

  Do not install 2020TG/TA transmitters with measuring ranges ≤ 400 mbar and which are supplied through an intrinsically safe current circuit in the partition between category 1G and 2G.

- Fieldbus transmitters (PROFIBUS PA / FOUNDATION Fieldbus)

  Marking : II 1/2 GD T 50°C EEx ia IIC T6
  II 1/2 GD T 95°C EEx ia IIC T4

  EC type examination certificate number: ZELM 01 ATEX 0063 and 1st. Supplement

  Supply and signal circuit with type of protection Intrinsic Safety EEx ia IIB/IIC or EEx ib IIB/IIC for connection to FISCO supply units with rectangluar or trapezoidal characteristics with the following maximum values:

  II 1/2 GD T 50°C EEx ia or ib IIC T6 / II 1/2 GD T 95°C EEx ia or ib IIC T4: U_i = 17.5 V, I_i = 360 mA, P_i = 2.52 W

  II 1/2 GD T 50°C EEx ia or ib IIB T6 / II 1/2 GD T 95°C EEx ia or ib IIB T4: U_i = 17.5 V, I_i = 380 mA, P_i = 5.32 W

  or for connecion to supply unit / barrier with linear characteristic.

  Maximum values:
  II 1/2 GD T 50°C EEx ia or ib IIC T6 / II 1/2 GD T 95°C EEx ia or ib IIC T4: U_i = 24 V, I_i = 250 mA, P_i = 1.2 W
  Effective internal inductance $L_i \leq 10$ µH,
  Effective internal capacitance $C_i \approx 0$

  Maximum permissible ambient temperatures depending on the temperature class:

Temperature class	Min. permissible ambient temperature	Max. permissible ambient temperature
T4	-40 °C (-40 °F)	+85 °C (+185 °F)
T5, T6	-40 °C (-40 °F)	+40 °C (+104 °F)

Transmitters of Category 3 for use in "Zone 2" according to Directive 94 / 9 / EC (ATEX)

- Transmitters with 4...20 mA output signal and HART communication

  Marking: II 3 GD T 50°C EEx nL IIC T6
  II 3 GD T 95°C EEx nL IIC T4

  EC type examination certificate number: ZELM 01 ATEX 3059 and 1st. Supplement

  Operating conditions:
  Supply and signal circuit (terminals signal + / -): U ≤ 45 V, I ≤ 22.5 mA

  Max. permissible ambient temperatures depending on the temperature class:
  T4 Ta = -40...+85 °C / (-40...+185 °F)
  T5, T6 Ta = -40...+40 °C / (-40...+104 °F)

Transmitters of protection type "Flameproof enclosure EEx d" according to Directive 94 / 9 / EC (ATEX)

- Transmitters with 4...20 mA output signal and HART communication and fieldbus transmitters (PROFIBUS PA / FOUNDATION Fieldbus)

  Marking: II 1/2 G EEx d IIC T6
  EC type examination certificate number: PTB 00 ATEX 1018

  Operating conditions:
  Ambient temperature range: -40...+75 °C / (-40...167 °F)

Factory Mutual (FM)

- Transmitters with 4...20 mA output signal and HART communication

  Intrinsically Safe: Class I; Division 1; Groups A, B, C, D; Class I; Zone 0; Group IIC; AEx ia IIC
  Degree of protection: NEMA Type 4X (indoor or outdoor)

  Maximum permissible ambient temperatures depending on the temperature class

U_{max} = 30 V, C_i = 10.5 nF, L_i = 10 µH			
Ambient temperature	Temperature class	I_{max}	P_i
-40…+85 °C (-40...+185 °F)	T4	200 mA	0.80 W
-40…+70 °C (-40...+158 °F)			1.00 W
-40…+40 °C (-40...+104 °F)	T5	25 mA	0.75 W
	T6		0.50 W

Technical data

Hazardous atmospheres (continued)

- Fieldbus transmitters
  (PROFIBUS PA / FOUNDATION Fieldbus)
  Intrinsically Safe Class I, II, and III Division 1
  Groups A, B, C, D, E, F, G;
  Class I, Zone 0, AEx ia Group IIC T6; T4
  Non-incendive Class I, II, and III, Div. 2,
  Groups A, B, C, D, F, G

- Transmitters with 4...20 mA output signal and HART communication and fieldbus transmitters (PROFIBUS PA / FOUNDATION Fieldbus)
  Explosion-Proof: Class I, Division 1, Groups A, B, C, D
  Class II / III, Division 1, Groups E, F, G
  Degr. of protection: NEMA Type 4X (indoor or outdoor)

Canadian Standard (CSA)

- Transmitters with 4...20 mA output signal and HART communication and fieldbus transmitters (PROFIBUS PA / FOUNDATION Fieldbus)
  Explosion-Proof: Class I, Division 1, Groups B, C, D
  Class II/III, Division 1, Groups E, F, G
  Degr. of protection: NEMA Type 4X (indoor or outdoor)

Tables

Table 1: Type of construction, spans and length of capillary tube

Remote seal type		Nominal diameter	Min. / max. span	Max. length of capillary tube
Flush diaphragm		DN 25 / DN 1”	160 mbar / 250 bar	6 m
		DN 50 / DN 2”	100 mbar / 100 bar	16 m
		DN 80 / DN 3”	60 mbar[1] / 100 bar	16 m
Extended diaphragm		DN 50 / DN 2”	160 mbar / 100 bar	16 m
		DN 80 / DN 3”	60 mbar[1] / 100 bar	16 m
In-line remote seal		DN 25 / DN 1”	4 bar / 250 bar	4 m
		DN 40 / DN 1 1/2”	2.5 bar / 250 bar	6 m
		DN 50 / DN 2”	2.5 bar / 250 bar	8 m
		DN 80 / DN 3”	2.5 bar / 250 bar	16 m
with fast coupling	Running union acc. to DIN 11 851	DN 50	1.3 bar / 25 bar	---
	Clamp connection	DN 2”	6 bar / 40 bar	---
Miniature remote seal		G 1 A	6 bar / 600 bar	---
		G 1 1/2 A	1.2 bar / 600 bar	---

[1] With 2020TA use 400 mbar abs. range.

When selecting the transmitter range, consider the nominal pressure (PN) of the remote seal !

Table 2: Application limits: permissible temperature / minimum operating pressure

Note:
- The pressure must be linearly interpolated between the stated temperatures.
- Flush diaphragm remote seals with **tantalum diaphragms** (code No. P02, P05, P08, P11, P14, P17, P20, P23) should not be used at operating temperatures of more than 220 °C (428 °F).

Filling liquid	Silicone oil	Carbon fluoride	High-temperature oil	White oil	Vacuum-proof design
Identification	IC	L	IH	WB	IC-V
Density at 20 °C (68 °F) in kg/m^3	1055	1880	1070	849	1055
Operating temperature in °C (in °F)	-30...+250 (-22...+482)	-30...+150 (-22...+302)	-10...+400 (+14...+752)	-10...+200 (+14...+392)	-30...+200 (-22...+392)
Pressure rating in mbar abs.					
at 20 °C (68 °F)	> 500	> 1000	> 500	> 500	> 5
100 °C (212 °F)	> 500	> 1000	> 500	> 1000	> 25
150 °C (302 °F)	> 500	> 1000	> 500	> 1000	> 38
200 °C (392 °F)	> 750	---	> 750	> 1000	> 50
250 °C (482 °F)	> 1000	---	> 1000	---	---
400 °C (752 °F)	---	---	> 1000	---	---

Ordering information

			Catalog No.								Code		
Transmitter 2020TG for Pressure / Level Measurement			**V15753-**										
Transmitter 2020TA for Absolute Pressure Measurement			**V15754-**										
Communication													
HART, 4...20 mA				H									
Foundation Fieldbus				F									
PROFIBUS-PA				P									
Measuring Ranges													
60 mbar	(6kPa / 25 inch H2O)	adj. to … [1), 2)]			B								
400 mbar	(40kPa / 160 inch H2O)	adj. to … [1), 2)]			C								
2.5 bar	(250kPa / 1000 inch H2O)	adj. to … [1), 2)]			D								
30 bar	(3MPa / 450 psi)	adj. to … [1), 2)]			F								
100 bar	(10MPa / 1500 psi)	adj. to … [1), 2)]			G								
600 bar	(60MPa / 9000 psi)	adj. to … [1), 2)]			H								
400 mbar abs.	(40kPa / 160 inch H2O)	adj. to … [1), 2)]			L								
2.5 bar abs.	(250kPa / 1000 inch H2O)	adj. to … [1), 2)]			M								
30 bar abs.	(3MPa / 450 psi)	adj. to … [1), 2)]			O								
Measuring sensor	(ranges 60 and 400 mbar)												
Diaphragm	O-ring												
Ceramics	Perbunan					1							
Ceramics	for Vacuumproof design (Code No. 739)					H							
Measuring sensor	(ranges 2.5 up to 600 bar (range-code: D,F,G,H,M,O,))												
Diaphragm	Fill fluid												
Hastelloy C	Silicone oil					4							
	Carbon fluoride					5							
	White oil (Temp. Limits: -10 °C … +120 °C) (+14 °F … +248 °F)					6							
Material process connection													
Stainless steel							A						
Process connection													
for remote seal								G					

1) Possible units: mbar, bar, atm, Pa, kPa, MPa, mmH_2O, in H_2O, ftH_2O, mmHg, in Hg, g/cm², kg/cm², psi, torr

2) Completed questionnaire 80/15-105 (page 15/16) necessary, when connection via capillary tube takes place and remote seal and transmitter are not at the same height.

Ordering information

		Catalog No.		Code		
Amplifier Housing						
Type	Material	Electrical connection				
Barrel - Type, ID Plate, Stainless Steel	Aluminium	1/2 NPT	A[1]			
Barrel - Type, ID Plate Plastic	Aluminium	1/2 NPT	D			
		One M20 x 1.5 cable gland	E			
		Plug Han 8U, (with Profibus PA: plug M12 [2])	F			
Barrel - Type, ID Plate Plastic	Stainless Steel	1/2 NPT	J			
		One M20 x 1.5 cable gland	K			
DIN - Type, ID Plate Plastic	Aluminium	1/2 NPT	L			
		One M20 x 1.5 cable gland	M			
		Plug Han 8U, (with Profibus PA: plug M12 [2])	N			
Amplifier housing accessories						
Local keys (not with amplifier housing Code J, K)				5C2		
LCD indicator				5C4		
LCD indicator, back lit (only with communication HART, 4…20 mA)				5C5		
Transient Suppression (not with Ex-Protection "Intrinsically Safe")				5C6		
Explosion Protection (acc. to ATEX)						
II 1/2 G EEx d IIC T6 (not with housing Code F or N; without cable gland) (not with range B, C, L)				5A1		
FM Explosion Proof (only with amplifier housing code A and not with range B, C, L)				5A2		
II 1/2 GD EEx ia IIC T6				5A3		
FM Intrinsically Safe				5A4		
II 3 GD EEx nL IIC T6 (supply without cable gland)				5AC		
Mounting Bracket						
Wall and pipe mounting, carbon steel				143		
Wall and pipe mounting, stainless steel				144		
Tag-No.						
on Type plate (max. 30 characters)				205		
Stainless Steel Tag Plate (max. 30 characters)				5C8		
Operating manual (1 pcs. free of charge)						
German			each	Z2D		
English			each	Z2E		
Certificates						
Factory Certificate „EN 10 204“ of the instrument design				530		
Acceptance Test Certificate B „EN 10 204“ of the conformity, hysteresis				531		
Acceptance Test Certificate B „EN 10 204“ of the pressure testing				532		
Factory Certificate „EN 10 204“ of process wetted parts				533		
Acceptance Test Certificate B „EN 10 204“ of the Cleanliness Stage acc. to DIN 25410				534		
Accept. Test Certificate B „EN 10 204“ Helium leakage test of the sensor module (only with Code 150)				535		
Acceptance Test Certificate B „EN 10 204“ of the pressure-bearing and process wetted parts with analysis certificates as material verification (minor parts with Factory Certificate acc. to EN 10 204)				536		
Factory Certificate „EN 10 204“ of the pressure-bearing and process wetted parts				537		

[1] for Explosion Proof acc. to FM

[2] without mating plug (female), see Data Sheet 10/63-6.44

Scope of Delivery
1 Instructions
1 Instrument socket with plug connector (only with plug-connection Han 8U)

Supplied against special order:
Power supply e.g. TZN 128 (Data Sheet 18-8.39 EN)
Spare Parts Transmitter 2020TG / 2020TA
Management Software SMART VISION® (Data Sheet 10/63-1.20)

Flush diaphragm remote seal DN 25/ DN 1” (with internal diaphragm)

Options			Code-No.			
Remote seal mounting [1]						
Directly mounted (**without** capillary tube)			699			
Connection to sensor **with** capillary tube			754			
Materials						
Diaphragm and sealing surface made of stainless steel 316 Ti (1.4571)						
Sealing ring (only with nominal pressure up to PN 63 or 600 psi) PTFE						
Flange						
acc. to DIN 2501, made of stainless steel 316 Ti (1.4571)						
Nominal diameter	Pressure rating	Sealing surface				
DN 25	PN 10 / 40	Form D (DIN 2526)	P70			
DN 25	PN 10 / 40	Form N (DIN 2512)	P71			
DN 25	PN 63 / 100	Form D (DIN 2526)	701			
DN 25	PN 160	Form D (DIN 2526)	702			
DN 25	PN 250	Form D (DIN 2526)	703			
acc. to ANSI B 16.5, made of stainless steel 316 Ti (1.4571)						
Nominal diameter	Pressure rating	Sealing surface				
DN 1"	Class 150 psi	Form RF	P72			
DN 1"	Class 300 psi	Form RF	P73			
DN 1"	Class 600 psi	Form RF	706			
DN 1"	Class 1500 psi	Form RF	707			
Filling Liquid						
Silicone oil			074			
Vacuumproof design (is always necessary with 2020TA)			739			
Lengths of capillary tube						
1 m			755			
2 m			757			
4 m			759			
6 m			760			
Special length between 1 m and 6 m						
Basic price of the next longer standard length plus an extra fee			764			
Special features						
Capillary tube with PVC protective cover			775			
Other variations regarding pressure rating, material, sealing surface, filling liquid **on request**						

The three-digit code numbers are added to the order number, separated by diagonal strokes.

[1] When mounted on an absolute or gauge pressure transmitter for measurement < 500 mbar (abs,), the vacuumproof design must be ordered (Code.No. 739).

Flush diaphragm seal / Extended diaphragm seal DN 50 / DN 2" (complete with flange)

Options			Code-No.			
Remote seal mounting						
Directly mounted (**without** capillary tube)			699			
Connection to sensor **with** capillary tube			754			
Nominal diameter	**Sealing surface**	**Diaphragm / sealing**				
DN 50	Form E (DIN 2526)	316 L st.st. (1.4404)	P00			
		Hastelloy C	P01			
		Tantalum	P02			
	Form V 13 (DIN 2513)	316 L st.st. (1.4404)	P03			
		Hastelloy C	P04			
		Tantalum	P05			
	Form N (DIN 2512)	316 L st.st. (1.4404)	P06			
		Hastelloy C	P07			
		Tantalum	P08			
DN 2"	Form RF (ANSI B 16.5)	316 L st.st. (1.4404)	P09			
		Hastelloy C	P10			
		Tantalum	P11			
Flange / Pressure rating						
DN 50	PN 16 / 40		P30			
	PN 64	diaph. Tantalum on request	P31			
	PN 100	diaph. Tantalum on request	P32			
ANSI 2"	Class 150 psi	only sealing RF	P33			
	Class 300 psi	only sealing RF	P34			
	Class 600 psi	only sealing RF, diaph. Tantalum on request	P35			
Flush diaphragm / extended diaphragm						
Remote seal with flush diaphragm (without extension)			P50			
Remote seal with extension (not combineable with diaphragm material "Tantalum")						
DN 50 / 2"	Extension made of 316 L st.st.	Extension length 50 mm	P51			
		Extension length 100 mm	P52			
		Extension length 150 mm	P53			
	Extension made of Hastelloy C	Extension length 50 mm	P54			
		Extension length 100 mm	P55			
		Extension length150 mm	P56			
Filling liquid [1]						
Silicone oil			074			
Carbon fluoride			687			
White oil (suitable for the use in the food and beverage industry)			660			
High-temperature oil (not for 'close coupled to sensor' design, Code-No. 699)			663			
Vacuumproof design (is always necessary with 2020TA)			739			
Lengths of capillary tube						
1 m			755			
2 m			757			
4 m			759			
6 m			760			
8 m			761			
11 m			762			
16 m			763			
Special length between 1 m and 16 m						
Basic price of the next longer standard length plus an extra fee			764			
Special features						
Diaphragm with FEP-coating [2]			662			
(for material 316L (1.4404) and Hast. C; medium temperature < 150 °C / 302 °F)						
Capillary tube with PVC protective cover			775			

Other variations regarding pressure rating, material, sealing surface, filling liquid on request
For mounting from **remote seals in "sandwich construction"** (additional blank flange required) see data sheet 15-8.14 EN.

The three-digit code numbers are added to the order number, separated by diagonal strokes.

[1] When mounted on an absolute or gauge pressure transmitter for measurement < 500 mbar (abs,), the vacuumproof design must be ordered (Code.No. 739).

[2] With "extended diaphragm" on request.

Flush diaphragm seal / Extended diaphragm seal DN 80 / DN 3" (complete with flange)

Options			Code-No.			
Remote seal mounting						
Directly mounted (**without** capillary tube)			699			
Connection to sensor **with** capillary tube			754			
Nominal diameter	**Sealing surface**	**Diaphragm / sealing**				
DN 80	Form E (DIN 2526)	316 L st.st. (1.4404)	P12			
		Hastelloy C	P13			
		Tantalum	P14			
	Form V 13 (DIN 2513)	316 L st.st. (1.4404)	P15			
		Hastelloy C	P16			
		Tantalum	P17			
	Form N (DIN 2512)	316 L st.st. (1.4404)	P18			
		Hastelloy C	P19			
		Tantalum	P20			
DN 3"	Form RF (ANSI B 16.5)	316 L st.st. (1.4404)	P21			
		Hastelloy C	P22			
		Tantalum	P23			
Flange / Pressure rating						
DN 80	PN 16 / 40		P36			
	PN 64	diaph. Tantalum on request	P37			
	PN 100	diaph. Tantalum on request	P38			
ANSI 3"	Class 150 psi	only sealing RF	P39			
	Class 300 psi	only sealing RF	P40			
	Class 600 psi	only sealing RF, diaph. Tantalum on request	P41			
Flush diaphragm / extended diaphragm						
Remote seal with flush diaphragm (without extension)			P50			
Remote seal with extension (not combineable with diaphragm material "Tantalum")						
DN 80 / 3"	Extension made of 316 L st.st.	Extension length 50 mm	P57			
		Extension length 100 mm	P58			
		Extension length 150 mm	P59			
	Extension made of Hastelloy C	Extension length 50 mm	P60			
		Extension length 100 mm	P61			
		Extension length150 mm	P62			
Filling liquid [1]						
Silicone oil			074			
Carbon fluoride			687			
White oil (suitable for the use in the food and beverage industry)			660			
High-temperature oil (not for 'close coupled to sensor' design, Code-No. 699)			663			
Vacuumproof design (is always necessary with 2020TA)			739			
Lengths of capillary tube						
1 m			755			
2 m			757			
4 m			759			
6 m			760			
8 m			761			
11 m			762			
16 m			763			
Special length between 1 m and 16 m						
Basic price of the next longer standard length plus an extra fee			764			
Special features						
Diaphragm with FEP-coating [2]			662			
(for material 316L (1.4404) and Hast. C; medium temperature < 150 °C / 302 °F)						
Capillary tube with PVC protective cover			775			
Other variations regarding pressure rating, material, sealing surface, filling liquid on request						
For mounting from **remote seals in "sandwich construction"** (additional blank flange required) see data sheet 15-8.14 EN.						

The three-digit code numbers are added to the order number, separated by diagonal strokes.

[1] When mounted on an absolute or gauge pressure transmitter for measurement < 500 mbar (abs,), the vacuumproof design must be ordered (Code.No. 739).

[2] With "extended diaphragm" on request.

In-line remote seal DN 25 ... DN 80 1” ... 3”

Options		Code-No.			
Remote seal mounting [1]					
Directly mounted (**without** capillary tube)		699			
Connection to sensor **with** capillary tube		754			
Pressure rating					
PN 6...PN 400 or					
Class 150 psi...Class 2500 psi					
Connection acc. to DIN 2501 or ANSI B 16.5					
Diaphragm and sealing surface made of 316 Ti st.st. (1.4571)					
Nominal diameter	Sealing surface				
DN 25 / ANSI 1"	Form E (DIN 2526) / Form RF	740			
DN 40 / ANSI 1 1/2"	Form E (DIN 2526) / Form RF	741			
DN 50 / ANSI 2"	Form E (DIN 2526) / Form RF	742			
DN 80 / ANSI 3"	Form E (DIN 2526) / Form RF	743			
Diaphragm and sealing surface made of Hastelloy C					
Nominal diameter	Sealing surface				
DN 25 / ANSI 1"	Form E (DIN 2526) / Form RF	744			
DN 40 / ANSI 1 1/2"	Form E (DIN 2526) / Form RF	795			
DN 50 / ANSI 2"	Form E (DIN 2526) / Form RF	749			
DN 80 / ANSI 3"	Form E (DIN 2526) / Form RF	727			
Filling liquid [1]					
Silicone oil		074			
Carbon fluoride		687			
White oil (suitable for the use in the food and beverage industry)		660			
High-temperature oil (not for direct mounting, Code-No. 699)		663			
Vacuumproof design (is always necessary with 2020TA)		739			
Length of capillary tube					
1 m		755			
2 m		757			
4 m	(maximal length with DN 25 / ANSI 1")	759			
6 m	(maximal length with DN 40 / ANSI 1 1/2")	760			
8 m	(maximal length with DN 50 / ANSI 2")	761			
11 m		762			
16 m	(maximal length with DN 80 / ANSI 3")	763			
Special length between 1 m and 6 m					
Basic price of the next longer standard length plus an extra fee		764			
Special features					
Capillary tube with PVC protective cover		775			
Other variations regarding pressure rating, material, sealing surface, filling liquid on request					

The three-digit code numbers are added to the order number, separated by diagonal strokes.

[1] When mounted on an absolute or gauge pressure transmitter for measurement < 500 mbar (abs,), the vacuumproof design must be ordered (Code.No. 739).

Fast coupled remote seals DN 50 / DN 2”

Options			Code-No.			
Remote seal mounting [1]						
Directly mounted (**without** capillary tube)			699			
with Running Union acc. to DIN 11 851						
Nominal diameter	Pressure rating	Process wetted parts				
DN 50	PN 25	316 Ti st.st. (1.4571)	712			
DN 50	PN 25	Hastelloy C	713			
with Clamp connection						
Nominal diameter	Pressure rating	Process-wetted parts				
ANSI 2"	PN 40	316 Ti st.st. (1.4571)	716			
ANSI 2"	PN 40	Hastelloy C	726			
Sealing ring (O-ring) (only in conjunction with running union acc. to DIN 11 851)						
Buna (Tmax. = 120 °C)			714			
PTFE			715			
Filling liquid [1]						
Silicone oil			074			
Carbon fluoride			687			
White oil (suitable for the use in the food and beverage industry)			660			
Vacuumproof design (is always necessary with 2020TA)			739			
Other variations regarding pressure rating, material, sealing surface, filling liquid on request						

The three-digit code numbers are added to the order number, separated by diagonal strokes.

[1] When mounted on an absolute or gauge pressure transmitter for measurement < 500 mbar (abs.), the vacuumproof design must be ordered (Code.No. 739).

Miniature Remote Seal						
Options			Code-No.			
Remote seal mounting [1]						
Direct mounting (**without** capillary tube)			699			
with Spigot acc. to DIN 16 288						
Process connection	Pressure rating	Process-wetted parts				
G 1 A	PN 600	316 Ti st.st. (1.4571)	708			
G 1 A	PN 600	Hastelloy C	710			
G 1 1/2 A	PN 600	316 Ti st.st. (1.4571)	709			
G 1 1/2 A	PN 600	Hastelloy C	711			
Filling liquid [1]						
Silicone oil			074			
Carbon fluoride			687			
White oil (suitable for the use in the food and beverage industry)			660			
Vacuumproof design			739			
Other variations regarding pressure rating, material, sealing surface, filling liquid on request						

The three-digit code numbers are added to the order number, separated by diagonal strokes.

[1] When mounted on an absolute or gauge pressure transmitter for measurement < 500 mbar (abs.), the vacuumproof design must be ordered (Code.No. 739).

Questionnaire 80/15-105 EN (page 1 of 2)

Measuring instruments with remote seals for measuring gauge pressure, differential pressure, flowrate and level

The information given in this questionnaire is binding for the technical design of measuring system.
Only when exact and correct information is provided it can be ensured satisfactory measurement results .
The questions identfied by ◯ will be answered by ABB.

☐ Company

☐ Location

☐ Customer number: ◯ Offer number:

☐ Measuring-point number: ◯ Contract number:

◯ Position number:

Level Measurement

	Measuring instrument with one remote seal (see Fig. 1)	Measuring instrument with two remote seals (see Fig. 2)
1 Medium to be measured _____		
2 Operating data of the medium to be measured which will be referred to for the calculation and design Temperatures Process pressure Density Density of the gas above the process Process variable (e.g. 0 ... 5m ≙ 0 ... 20mA)	t = _____ °C ϱ M = _____ kg/m³ _____ ≙ 0/4...20mA)	t = _____ °C p = _____ bar ϱ M = _____ kg/m³ ϱ G = _____ kg/m³ _____ ≙ 0/4...20mA)
3 Elevation between remote seal and measuring instr. Instrument above the remote seal Instrument below the remote seal	a = + _____ m a = – _____ m	
4 Difference in elevation of the two remote seals		e = _____ m
5 Tank dimensions: Difference in height of levels Dimension: from lower remote seal up to lower level from lower remote seal up to upper level	c = _____ m b = _____ m d = _____ m	c = _____ m b = _____ m d = _____ m
6 Capillary tube length + (HP) side – (LP) side	_____ m	_____ m _____ m
7 Additional data Process temperature range Average ambient temperature at the measuring instr. Average ambient temperature at the capillary tube	t_M = from ..... to ..... °C t_{uM} = _____ °C t_{uK} = _____ °C	t_M = from ..... to ..... °C t_{uM} = _____ °C t_{uK} = _____ °C
8 Data of limits which for example can occur with cleaning processes or blowing through (not measuring operation) Temperature Pressure	t_{max} = _____ °C t_{min} = _____ °C p_{max} = _____ bar p_{min} = _____ bar	t_{max} = _____ °C t_{min} = _____ °C p_{max} = _____ bar p_{min} = _____ bar

Note: Remote seals with silicone oil (standard) may be mounted up to a maximum of 5m below the measuring instrument.

H_1 = lower level
H_2 = upper level

Fig. 1

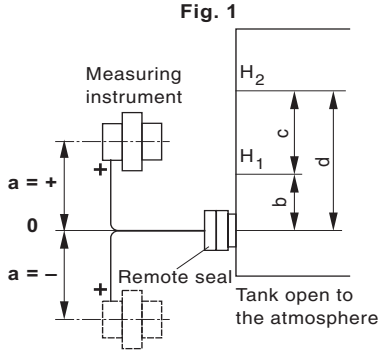
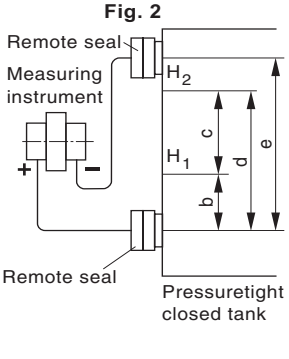


Fig. 2



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Questionnaire 80/15-105 EN (page 2 of 2)

Gauge pressure, Differential pressure and Flowrate Measurement

	Measuring instrument with one remote seal (see Fig. 3)	Measuring instrument with two remote seals (see Fig. 4)
1 Medium to be measured _____		
2 Operating data of the medium to be measured which will be referred to for the calculation and design Temperatures Process pressure Measuring span Differential pressure Density of the gas above the process Process variable (e.g. 0 ... 500mbar ≙ 0 ... 20mA)	 t = _____ °C p = _____ bar △M = _____ bar ϱ_M = _____ kg/m³ _____ ≙ 0/4...20mA	 t = _____ °C p_1 = _____ bar p_2 = _____ bar △M = _____ bar △p = $p_1 - p_2$ = _____ bar ϱ_M = _____ kg/m³ _____ ≙ 0/4...20mA
3 Elevation between remote seal and measuring instr. Instrument above the remote seal Instrument below the remote seal	 a = + _____ m a = – _____ m	
4 Difference in elevation of the two remote seals		e = _____ m
5 Capillary tube length + (HP) side – (LP) side	 _____ m	 _____ m _____ m
6 Additional data Process temperature range Average ambient temperature at the measuring instr. Average ambient temperature at the capillary tube	 t_M = from ..... to ..... °C t_{uM} = _____ °C t_{uK} = _____ °C	 t_M = from ..... to ..... °C t_{uM} = _____ °C t_{uK} = _____ °C
7 Data of limits which for example can occur with cleaning processes or blowing through (not measuring operation) Temperature Pressure	 t_{max} = _____ °C t_{min} = _____ °C p_{max} = _____ bar p_{min} = _____ bar	 t_{max} = _____ °C t_{min} = _____ °C p_{max} = _____ bar p_{min} = _____ bar

Note: Remote seals with silicone oil (standard) may be mounted up to a maximum of 5m below the measuring instrument.

Fig. 3

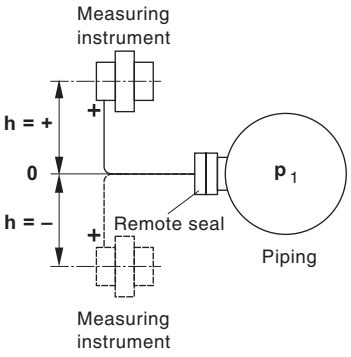
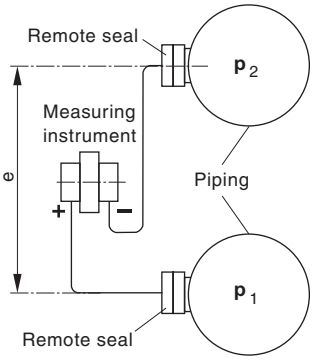


Fig. 4



e.g. also with filter measurements; in front of and behind the filter

Compiled: , Date 20

Company stamp (Signature)

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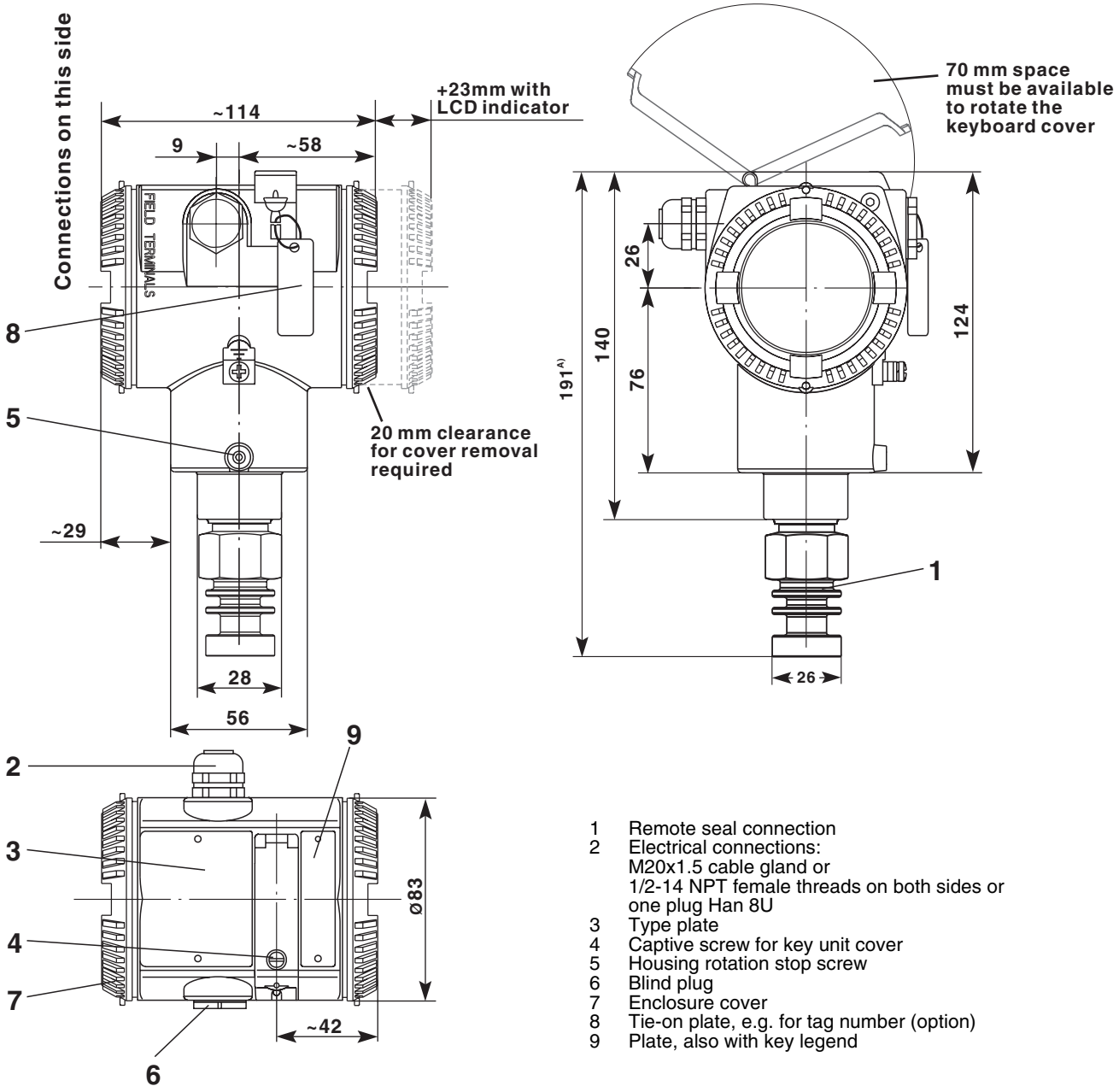
Dimensional drawings

Construction

Transmitter with barrel-type amplifier housing

Errors and omissions excepted. Dimensions are in mm



1 Remote seal connection
2 Electrical connections:
M20x1.5 cable gland or
1/2-14 NPT female threads on both sides or
one plug Han 8U
3 Type plate
4 Captive screw for key unit cover
5 Housing rotation stop screw
6 Blind plug
7 Enclosure cover
8 Tie-on plate, e.g. for tag number (option)
9 Plate, also with key legend

A) With directly connected remote seal, the length (height) of the remote seal must be added to the mentioned dimension (see corresponding dimensional drawing).

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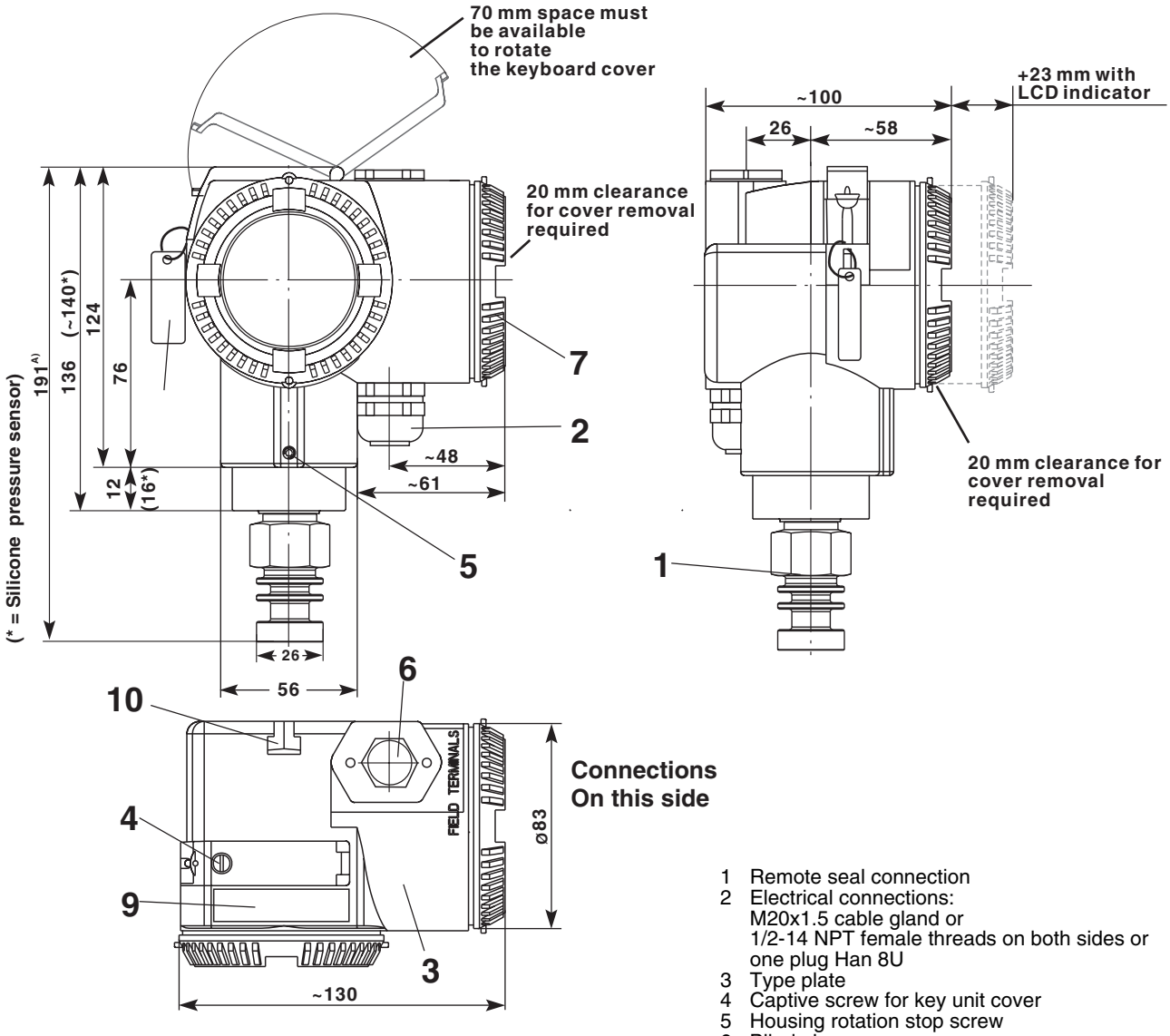
Dimensional drawings

Transmitter with DIN-type amplifier housing

Errors and omissions excepted. Dimensions are in mm.



A) With directly connected remote seal, the length (height) of the remote seal must be added to the mentioned dimension (see corresponding dimensional drawing).

1 Remote seal connection
2 Electrical connections:
M20x1.5 cable gland or
1/2-14 NPT female threads on both sides or
one plug Han 8U
3 Type plate
4 Captive screw for key unit cover
5 Housing rotation stop screw
6 Blind plug
7 Enclosure cover
8 Tie-on plate, e.g. for tag number (option)
9 Plate, also with key legend
10 T-slot for screws when wall or pipe mounting

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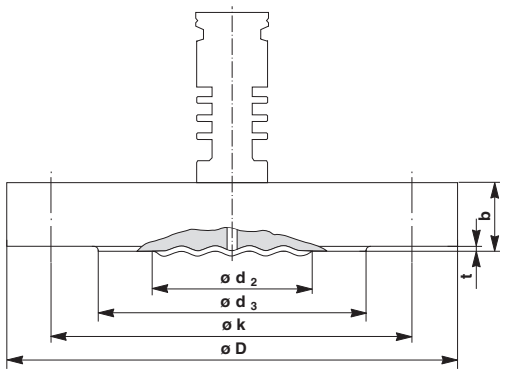
Dimensional drawings

Sealing rings and fixing materials not supplied!

Directly Connected

- **Flush diaphragm remote seals**



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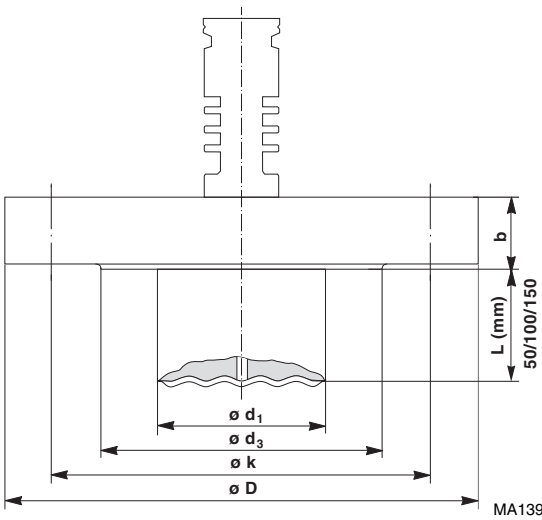
- **Extended diaphragm remote seals**



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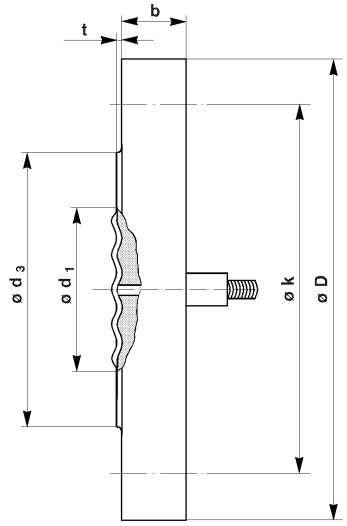
Mounting with Capillary Tube

- **Flush diaphragm remote seals**



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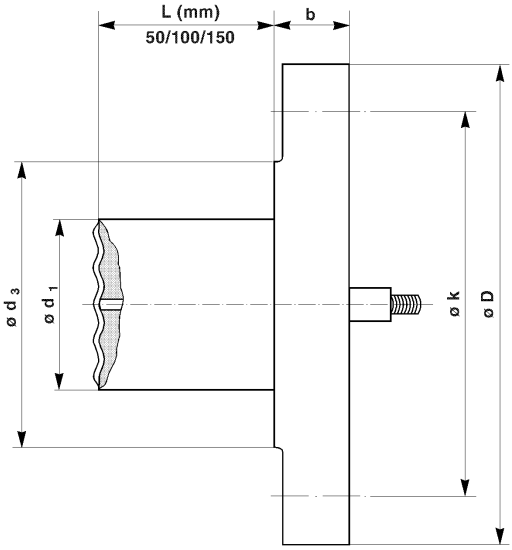
- **Extended diaphragm remote seals**



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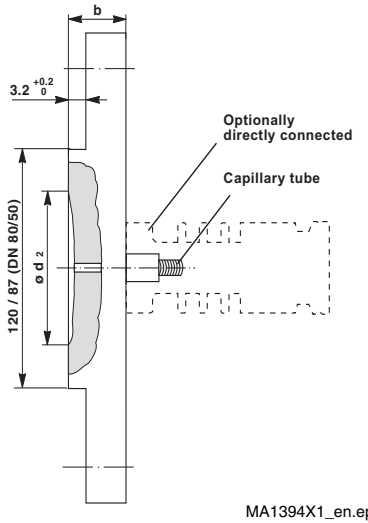
Form V13 Sealing Surface



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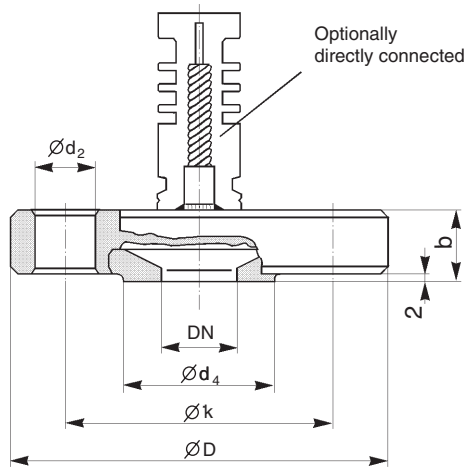
Sealing Surfaces: Form E (DIN 2526), Form N (DIN 2512), Form RF (ANSI B16.5)										
Nominal diameter DN	Pressure rating PN	øD	ø k	Extension ø d_1	ø d_2	ø d_3	t	b	Screws	
									Number	Thread
50	PN 16/40	165	125	51	57	102	$3^{+0.5}$	20	4	M 16
	PN 64	180	135	51	57	102	$3^{+0.5}$	26	4	M 20
	PN 100	195	145	51	57	102	$3^{+0.5}$	28	4	M 20
80	PN 16/40	200	160	76	75	138	$3^{+0.5}$	24	8	M 16
	PN 64	215	170	76	75	138	$3^{+0.5}$	28	8	M 20
	PN 100	230	180	76	75	138	$3^{+0.5}$	32	8	M 24
2"	class 150	152.4	120.6	51	57	92.1	$3^{+0.5}$	17.4	4	M 18
	class 300	165.1	127.0	51	57	92.1	$3^{+0.5}$	20.6	8	M 18
	class 600	165.1	127.0	51	57	92.1	$3^{+0.5}$	31.75	8	M 18
3"	class 150	190.5	152.4	76	75	127	$3^{+0.5}$	22.2	4	M 16
	class 300	209.5	168.3	76	75	138	$3^{+0.5}$	27.0	8	M 20
	class 600	209.5	168.3	76	75	138	6.35	38.05	8	M 20

Dimensional drawings

Flush Diaphragm Remote Seals DN 25 / DN 1" with internal Diaphragm

PN 10/40 or Class 150 / 300



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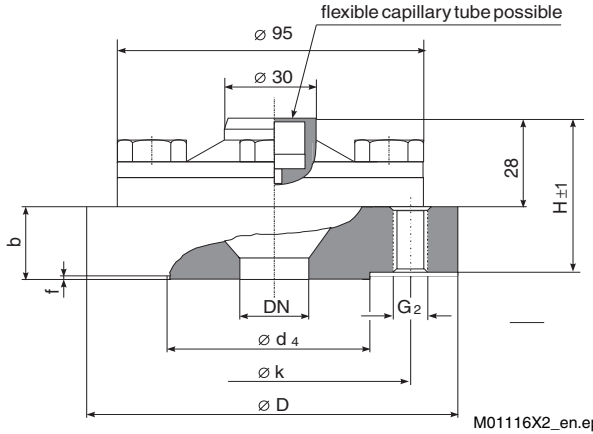
PN 63 ... 250 or Class 600 / 1500



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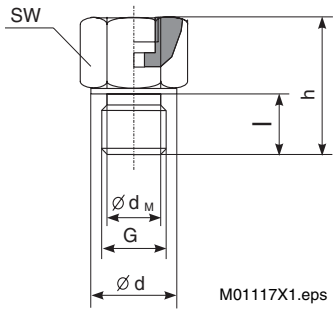
Miniature Remote Seals



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DN (G)	PN	Dimensions in mm					Weight in kg
		d_M	SW	d	l	h	
G 1A	600	25	41	39	28	64	0.3
G 1 1/2A	600	40	55	60	30	50	0.5

effective diaphragm diameter = d_M
SW = width across flats

Connections to DIN 2501

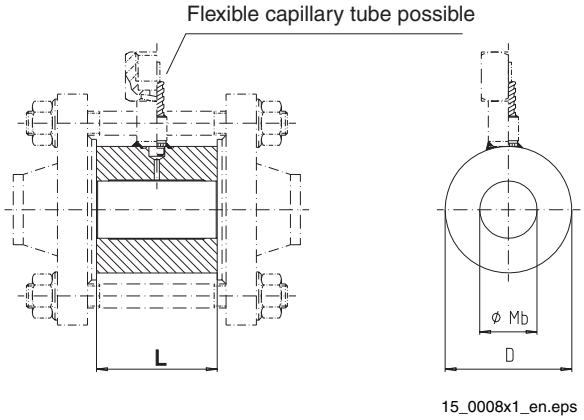
DN	PN	Dimensions in mm								Weight in kg
		D	k	d_4	b	f	H	d_2	G_2	
25	10/40	115	85	68	22	2	--	14	--	1.5
25	63/100	140	100	68	24	2	52	--	4xM16	3.2
	160	140	100	68	24	2	52	--	4xM16	3.6
	250	150	105	68	28	2	56	--	4xM16	4.0

Connections to ANSI B 16.5

DN	Class	Dimensions in mm								Weight in kg
		D	k	d_2	d_4	b	f	H	G_2 UNC	
1"	150	110	79.5	16	51	22	2	--	--	1.4
	300	125	89	20	51	22	2	--	--	1.7
1"	600	125	89	--	51	25	7	53	4x5/8"	3.6
	1500	150	101.5	--	51	36	7	64	4x7/8"	4.0

Dimensional drawings

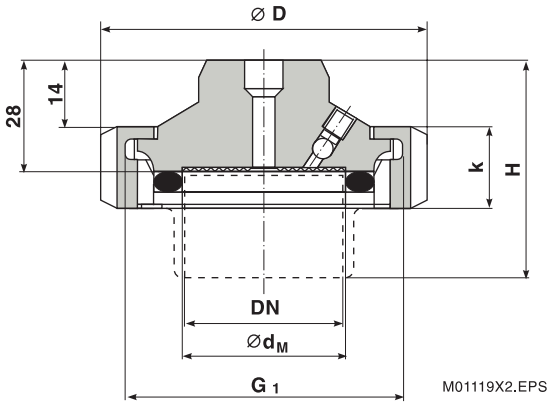
In-Line Remote Seals (without flanges)



Connection acc. to DIN 2501 / acc. ANSI B 16.5					
DN in mm / inch	PN in bar / psi	Dimensions in mm			Weight in kg
		D	L	Mb	
25 / 1”	6...400 / 150...2500	63	60	28.5	1.4
40 / 1 1/2”	6...400 / 150...2500	85 / 78	60	43	2.2
50 / 2”	6...400 / 150...2500	95	60	54.5	2.5
80 / 3”	6...400 / 150...2500	130	60	82.5	4.0

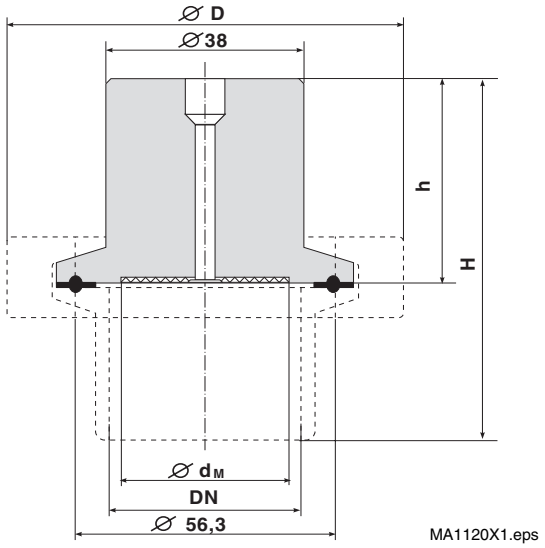
Fast Coupled Remote Seals

- **with Running Union DN 50, PN $_{max}$ 25**



Connection acc. to DIN 11851						
Dimensions in mm					Design	Weight in kg
d_M	D	$H_{approx.}$	k	G_2		
52	92	57	22	Rd 78 x 1/6	Form D-F	0.8

- **with Clamp-connection DN 2”, PN$_{max}$ 40**



Dimensions in mm				Weight in kg
d_M	D	$H_{approx.}$	$h_{approx.}$	
40	75	58	35	0.75

effective diaphragm diameter = d_M

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