

# Diaphragm Seal

990.10 male threaded connection  
with process transmitter UPT-20

E 06.01.05

Ed.17.01

<b>Design</b>	Diaphragm Seal with male threaded for process With process transmitter UPT-20 in stainless steel
<b>Type</b>	<b>990.10</b>
<b>Pressure rating</b>	PN 100 for pressure range 0-1 bar to 0-100 bar PN 250 for pressure range 0-160 bar and 0-250 bar
<b>Material standard</b>	Upper body of stainless steel 1.4404 (316L) Lower body and connection of stainless steel 1.4404 (316L) Diaphragm of stainless steel 1.4435 (316L) Retainer flange and bolts of stainless steel 1.4404 (316L) Sealing PTFE (max +260°C) Special material see page 2
<b>Level of cleanliness</b>	Oil and grease free per ASTM G93-03 level E (< 550 mg/m <sup>2</sup> )
<b>Process connection</b>	G1/2" male or 1/2"NPT male or G1/2" female Option G3/8", G3/4" or G1" male or female Option 1/2"NPT, 3/4"NPT or 1"NPT female Option with drilled connection Ø 9 mm
<b>Working Pressure</b>	90% of full scale range by fluctuating pressure full scale value by short time pressure
<b>Process temperature</b>	Process temperature standard max +200°C Option lowest temperature to max -90°C Option highest temperature to max +400°C Max temperature depending on material and filling media
<b>Ambient temperature</b>	Ambient temperature standard +10+40°C Option lowest temperature to max -40°C Option highest temperature to max +60°C
<b>Cooling/capillary</b>	The pressure instrument must be protected in process temperatures over +200°C with cooling tower or capillary
<b>Filling media</b>	KN 2 silicone oil (standard) temperature -45+300°C KN 17 silicone oil for low temperatures -90+200°C KN 32 silicone oil for high temperatures -25+400°C KN 21 halocarbhone for oxygen and chlorine -60+175°C KN 70 silicone free filling -20+200°C KN 59 Neobee M-20 FDA (Food & Pharma) -35+260°C KN 92 white mineral oil FDA (Food & Pharma) -15+260°C
<b>Certificate (option)</b>	EN 10204-3.1 Certificate wetted parts incl. chemical analysis EN 10204-3.1 Certification of class and accuracy EN 10204-3.1 Accuracy calibration values listed EN 10204-3.1 Pressure and stability test EN 10204-3.1 Helium leak test
<b>More options</b>	Mounted TAG-schild with customer numbers Design according to NACE MR 0175 or MR 0103 Origen of wetted parts from EU, Schweiz or USA Sealing Metal C spring, stainless steel +260+400°C Retainer flange and bolts in steel, highly heat-resistant +400°C

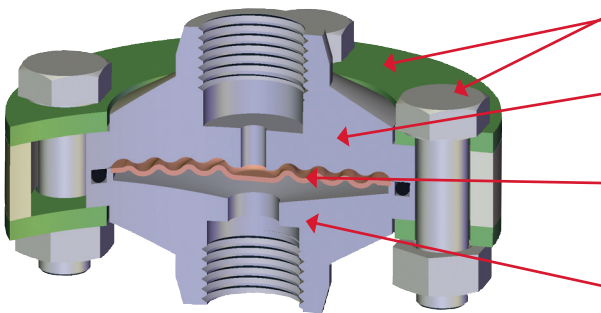


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## Material for upper body and wetted parts



### Retainer flange and bolts

Standard = stainless steel 1.4404 (316L)

### Upper body

Standard = stainless steel 1.4404 (316L)

### Diaphragm

Standard = stainless steel 1.4435 (316L)

### Lower body and connection

Standard = stainless steel 1.4404 (316L)

Lower body stainless steel 1.4404 (316L) Material membran	Temperature
Stainless steel 1.4435 (316 L) <b>standard</b>	max +400°C
Stainless steel 1.4541 (321)	max +400°C
Stainless steel 1.4571 (316Ti)	max +400°C
Stainless steel with ECFTE-coating	max +150°C
Stainless steel with PFA-coating	max +260°C
Stainless steel with Gold-plating	max +400°C
Hastelloy C22 (2.4602)	max +260°C
Hastelloy C276 (2.4819)	max +400°C
Monel 400 (2.4360)	max +400°C

Lower body stainless steel 1.4404 (316L) Material membran	Temperature
Inconel 600 (2.4816)	max +400°C
Inconel 625 (2.4856)	max +400°C
Incoloy 825 (2.4858)	max +400°C
Duplex 2205 (1.4462)	max +300°C
Superduplex 2507 (1.4410)	max +300°C
Titanium (3.7035)	max +150°C
Titanium (3.7235)	max +150°C
Tantalum	max +150°C
Nickel	max +260°C

Lower body and diaphragm = material wetted parts	Temperature
Stainless steel 1.4571 (316Ti)	max +400°C
Stainless steel with ECFTE-coating	max +150°C
Stainless steel with PFA-coating	max +260°C
Duplex 2205 (1.4462)	max +300°C
Superduplex 2507 (1.4410)	max +300°C
Hastelloy C22 (2.4602)	max +260°C

Lower body and diaphragm = material wetted parts	Temperature
Hastelloy C276 (2.4819)	max +400°C
Monel 400 (2.4360)	max +400°C
Incoloy 825 (2.4858)	max +400°C
Titanium (3.7035)	max +400°C
Titanium (3.7235)	max +260°C
Nickel	max +400°C

Upper body, lower body and diaphragm = upper body + wetted parts	Temperature
Stainless steel 1.4571 (316Ti)	max +400°C
Duplex 2205 (1.4462)	max +300°C
Superduplex 2507 (1.4410)	max +300°C

Upper body, lower body and diaphragm = upper body + wetted parts	Temperature
Hastelloy C276 (2.4819)	max +400°C
Incoloy 825 (2.4858)	max +400°C
Titanium (3.7035)	max +400°C

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## Technical data process transmitter UPT-20

<b>Design</b>	Process transmitter for: Chemical and petrochemical industry, Control and process technology, machine building and plant construction. Pharmaceutical, hygienic industries and food industry. Standard design or with HART-protocol Mounted with diaphragm seal
<b>Accuracy</b>	0,15% including non-linearity, hysteresis, zero offset and end value deviation
<b>Wetted parts</b>	Wetted parts in stainless steel 1.4404
<b>Case</b>	The case is rotatable by 330° Material Plastic (PBT) or stainless steel or stainless steel case with electropolished surface
<b>Display (option)</b>	4 1/2-digit LC-display shows actual pressure, maximum pressure, pressure unit, bargraph and information
<b>Pressure range</b>	Adjustable turndown 20:1 for pressure range
<b>Power supply</b>	12-36 VDC
<b>Output signal</b>	4-20 mA 2-wire or 4-20 mA 2-wire with HART-protocol 4-20 mA RA[Ohm] = (UB[V]-12 V)/0,023 A
<b>Zero point adjustment</b>	-5+95%
<b>Settling time (10-90%)</b>	≤ 250 ms
<b>Electrical connection</b>	Cable gland M20x1,5 in plastic or stainless steel Angular connector DIN 175301-803A Circular connector M12 x 1 (4-pin)
<b>Electrical safety</b>	Reverse polarity protection
<b>Ingress protection</b>	IP 66/67
<b>Chock/vibration</b>	Mechanical chock 150 g, vibration safe 4 g (5-100Hz)
<b>CE-marking</b>	EMC 2004/108/EC enligt EN 61326, PED 97/23/EG
<b>Ex-design (option)</b>	Ex-design ATEX II 1/2G Ex ia IIC T4/T5/T6 Gc/Gb Process temperature T5/T6 -40+60°C, T4 -40+80°C
<b>Pressure range</b>	0-0,4 bar, 0-1,6 bar, 0-6 bar, 0-16 bar, 0-40 bar, 0-100 bar -1/0 bar, -1/+0,6 bar, -1/+5 bar eller -1/+15 bar



Plastic design with display



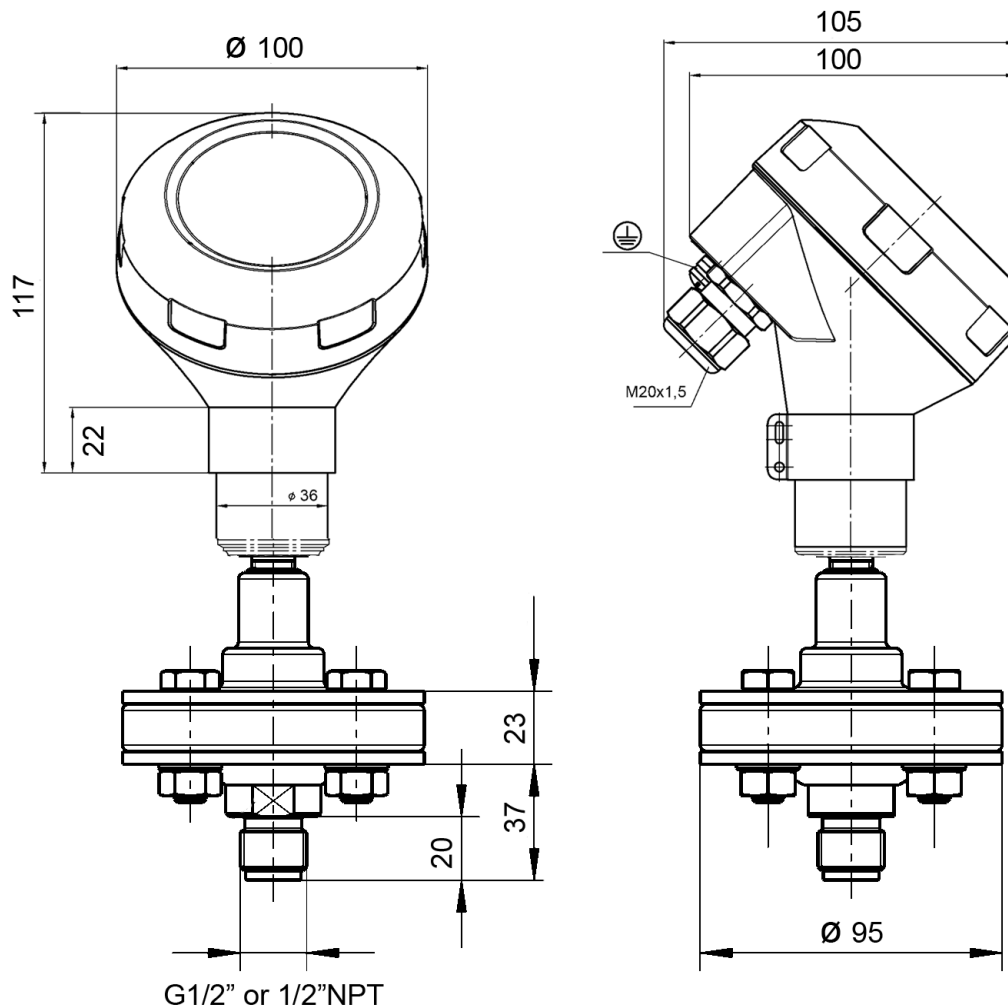
Stainless steel case with display

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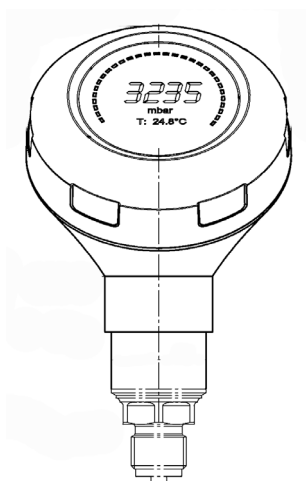
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## Process transmitter UPT-20 with diaphragm seal type 990.10



Dimensions refers to 990.10 with pressure rate PN 100 and in material stainless steel  
Specified dimensions may be different in other materials or with pressure rate PN 250



### Display

4 1/2-LC-display

Main display with shows the the output signal

The additional display shows different values from the menu  
20-segments bar-graph display