

HU 300

Hammer Union Pressure Transmitter

special application
petrochemical industry / offshore

accuracy according to IEC 60770:
0.5 % FSO



Nominal pressure

from 0 ... 5 000 psi up to 0 ... 15 000 psi

Output signals

2-wire: 4 ... 20 mA
3-wire: 0 ... 5 V
4-wire: 3 mV/V
others on request

Product characteristics

- ▶ extreme robust and stable
- ▶ vibration / shock

Optional versions

- ▶ IS-version zone 0 / 1
(only for 4 ... 20 mA / 2-wire)
- ▶ different output signals

Versions on request

- ▶ pressure port in Inconel®
- ▶ electrical connection Glenair (4-pin)
- ▶ mechanical connection
WECO®2" (1502, 2002/2202)

The pressure transmitter HU 300 has been especially developed for extreme operating conditions in the petrochemical industry (on- and offshore sites). A high degree of reliability and accuracy is the precondition for a perfect function during cementing and tightening processes (annulus) on wellbores.

A one-piece pressure port, a high quality pressure sensor and precise machining and assembly techniques ensure a small drifting and a high long-term stability. A very high resistance against vibration, shock and pressure peaks without any influence on the measurement characteristics is guaranteed.

Due to the extreme environmental conditions on-site, it is important to offer solutions to different requirements, as an intrinsic-safe version (zone 0/1), an electrical connection with IP 68 or special steel materials.

Preferred areas of use are

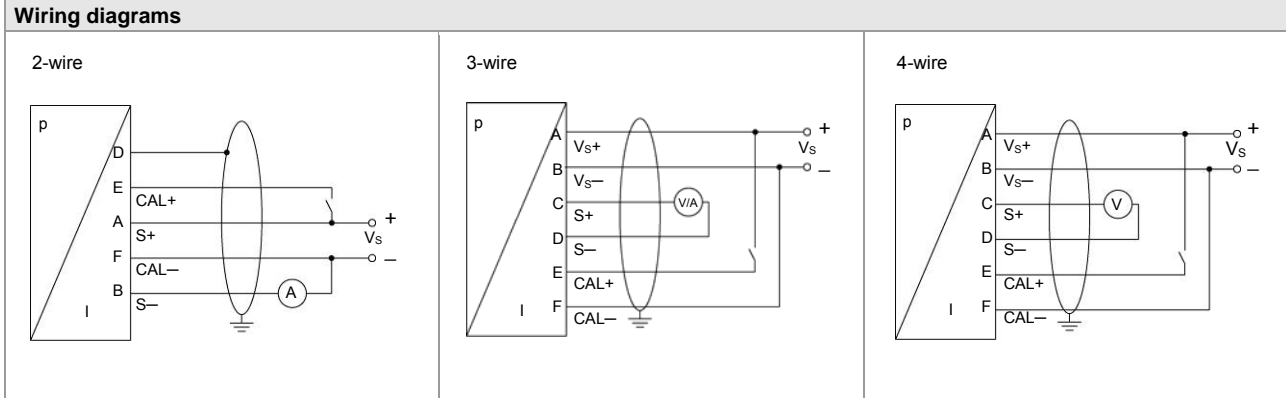


Cementing wellbores
Hydraulic fracturing
Intensifying wellbores



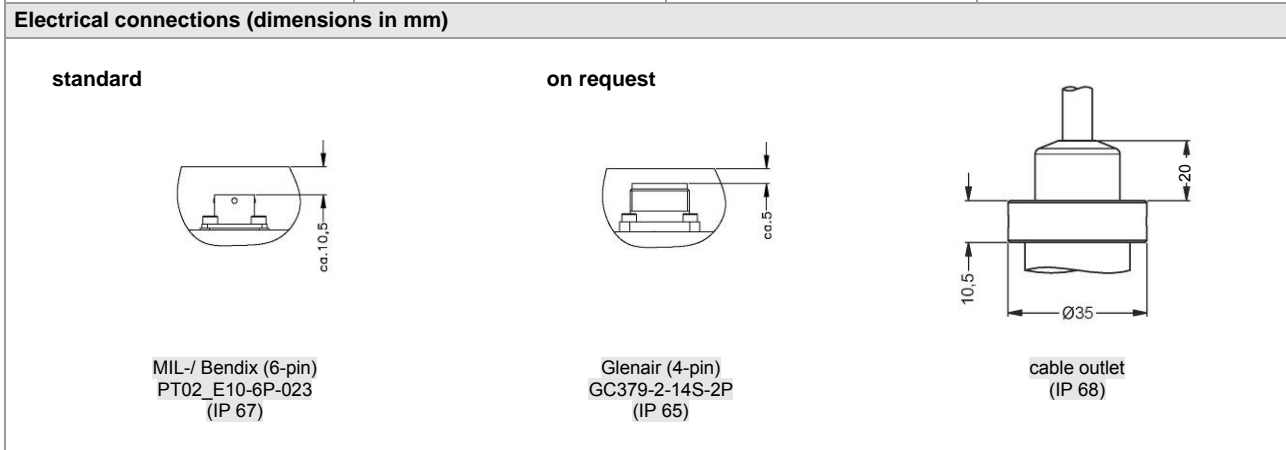
Pressure ranges					
Nominal pressure	[psi]	5 000	6 000	10 000	15 000
Permissible overpressure	[psi]	7 500	9 000	15 000	22 500
Burst pressure \geq	[psi]	10 000	12 000	20 000	30 000
Supply					
Standard		2-wire: 4 ... 20 mA / $V_S = 10 \dots 30 V_{DC}^1$			
Ex-protection		2-wire: 4 ... 20 mA / $V_S = 14 \dots 28 V_{DC}$			
In preparation (only possible with MIL- / Bendix-connector)		3-wire: 0 ... 5 V / $V_S = 14 \dots 30 V_{DC}$ 4-wire: 3 mV/V / $V_S = 6 \dots 10 V_{DC}$			
¹ valid for temperature from -40 ... 85 °C; for higher temperatures the supply has to be limited					
Performance					
Accuracy		IEC 60770: $\leq \pm 0.5 \%$ FSO			
Permissible load		current 2-wire: $R_{max} = [(V_S - V_{S \min}) / 0.02 A] \Omega$ voltage 3-wire: $R_{min} \geq 10 k\Omega$ voltage 4-wire: $R_{min} \geq 100 k\Omega$			
Influence effects		supply: 0.05 % FSO / 10 V load: 0.05 % FSO / $k\Omega$			
Long term stability		$\leq \pm 0.5 \%$ FSO per 6 months			
Response time		$\leq \pm 1.5$ msec			
Thermal effects (Offset and Span)					
Thermal errors		$\leq \pm 2 \%$ FSO / 100 K	in compensated range -5 ... 60 °C		
Permissible temperatures					
Permissible temperatures		medium / environment:	-40 ... 125 °C		
		storage:	-55 ... 125 °C		
Calibration					
Calibration signal accuracy		$\leq \pm 0.2 \%$ FSO			
Calibration signal		80 % FSO (16.8 mA)			
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		20 g, 25 Hz ... 2 kHz	according to DIN EN 60068-2-6		
		7.5 g_{RMS} , 5 Hz – 1 kHz	according to DIN EN 60068-2-64		
Shock		500 g / 1 msec	according to DIN EN 60068-2-27		
Free Fall		1 m (free fall base: steel)	according to DIN EN 60068-2-32		
Materials					
Pressure port / diaphragm		standard: stainless steel 1.4548 (316L) on request: Inconel X750® Inconel X718®			
Housing		stainless steel 1.4404 (316L)			
Media wetted parts		pressure port			
Explosion protection (only for 4 ... 20 mA / 2-wire)					
Approval DX18 HU300		IBExU08ATEX1127 X zone 0/1: II 1/2 G Ex ia IIC T4 Ga/Gb			
Safety technical maximum values		$U_i = 28 V$, $I_i = 100 mA$, $P_i = 700 mW$, $C_i = 1 nF$, $L_i = 5 \mu H$, The supply connections have an inner capacity of max. 27 nF opposite the housing.			
Permissible temperatures for medium		-40 ... 70 °C			
Permissible temperatures for environment		in zone 0: -20 ... 60 °C with p_{atm} 0.8 bar up to 1.1 bar in zone 1: -25 ... 70 °C			
Connecting cables (by factory)		cable capacitance: signal line/shield also signal line/signal line: 150 pF/m cable inductance: signal line/shield also signal line/signal line: 1 $\mu H/m$			

Miscellaneous		
Current consumption	2-wire signal output current: 3-wire signal output voltage: 4-wire signal output voltage:	max. 50 mA approx. 15 mA 29 mA @ 10 V
Installation position	any	
Weight	2.1 kg	
CE-conformity	EMC Directive: 2014/30/EU	Pressure Equipment Directive: 2014/68/EU (module A)
ATEX Directive	2014/34/EU	



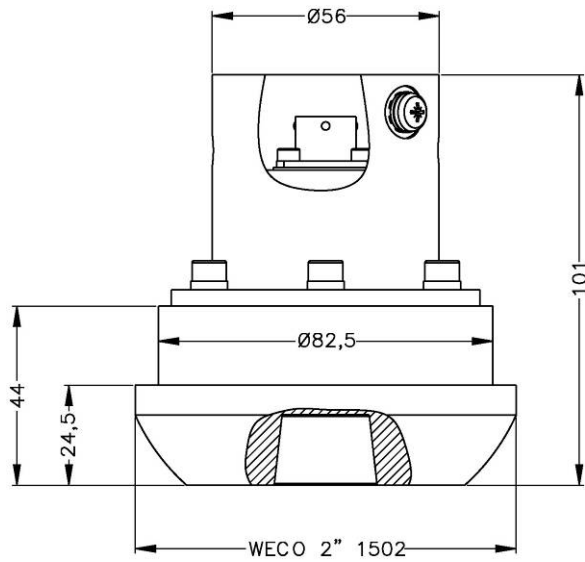
Pin configuration

Electrical connection	MIL-/ Bendix (6-pin)	Glenair (4-pin)	cable colours (IEC 60757)
Supply +	pin A	pin C	wh (white)
Supply -	pin B	pin B	bn (brown)
Calibration +	pin E	pin D	pk (pink)
Calibration -	pin F	pin A	gy (grey)
for 3-wire / 4-wire:			
Signal +	pin C	-	-
Signal -	pin D	-	-
Shield	cable shield / for 2-wire: pin D	plug housing	gnye (green-yellow)

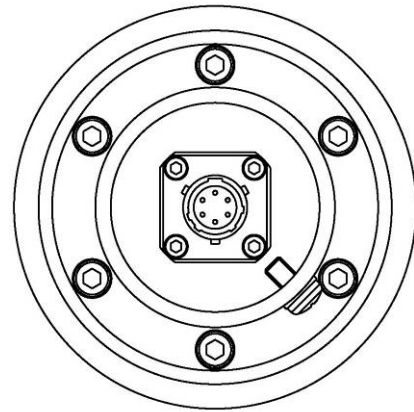


Mechanical connection (dimensions in mm)

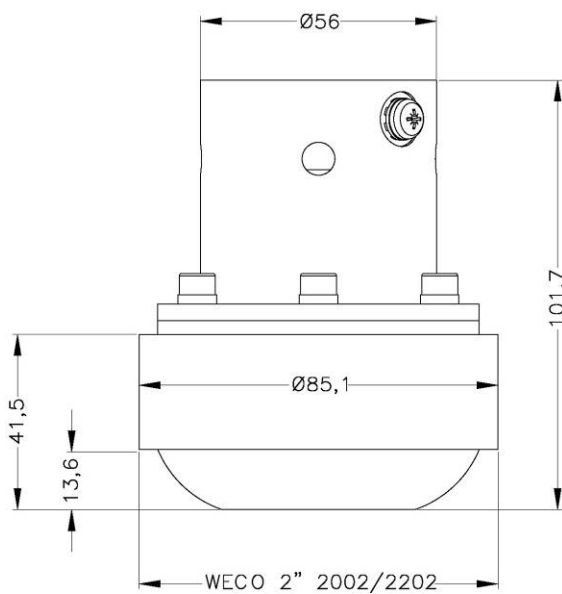
standard



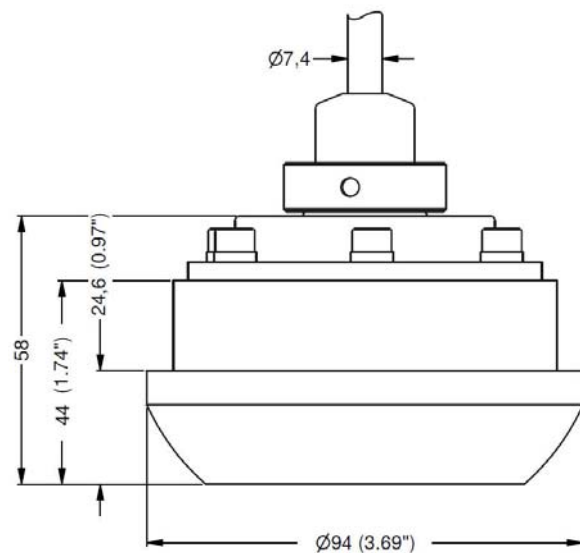
WECO® 2" (1502)



on request



WECO® 2" (2002/2202)



cable outlet

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