

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" (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 f. ex. an intrinsic-safe version (zone 0), 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 / $V_S = 14 \dots 28 V_{DC}^1$
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: $\leq \pm 0.5 \% \text{ FSO}$
Permissible load	current 2-wire: $R_{\max} = [(V_S - V_{S \min}) / 0.02 \text{ A}] \Omega$ voltage 3-wire: $R_{\min} \geq 10 \text{ k}\Omega$ voltage 4-wire: $R_{\min} \geq 100 \text{ k}\Omega$
Influence effects	supply: 0.05 % FSO / 10 V load: 0.05 % FSO / k Ω
Long term stability	$\leq \pm 0.5 \% \text{ FSO}$ per 6 months
Response time	$\leq \pm 1.5 \text{ msec}$

Thermal effects (Offset and Span)	
Thermal errors	$\leq \pm 2 \% \text{ FSO} / 100 \text{ K}$ in compensated range -5 ... 60 °C

Permissible temperatures	
Permissible temperatures	medium / environment: -40 ... 125 °C storage: -55 ... 125 °C

Calibration	
Calibration signal accuracy	$\leq \pm 0.2 \% \text{ FSO}$
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	20g, 25 Hz ... 2 kHz 7.5 g _{RMS} , 5 Hz – 1 kHz	according to DIN EN 60068-2-6 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

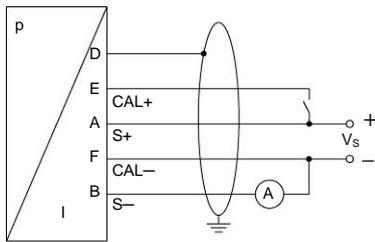
Explosion protection (only for 4 ... 20 mA / 2-wire)	
Approval DX18 HU300	IBExU08ATEX1127 X zone 0/1: II 1/2 G Ex ia IIC T4 Ga/Gb
Safety technical maximum values	$U_i = 28 \text{ V}$, $I_i = 100 \text{ mA}$, $P_i = 700 \text{ mW}$, $C_i = 1 \text{ nF}$, $L_i = 5 \mu\text{H}$, The supply connections have 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

Miscellaneous	
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 µH/m
Current consumption	2-wire signal output current: max. 50 mA 3-wire signal output voltage: approx. 15 mA 4-wire signal output voltage: 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) ²
ATEX Directive	2014/34/EU

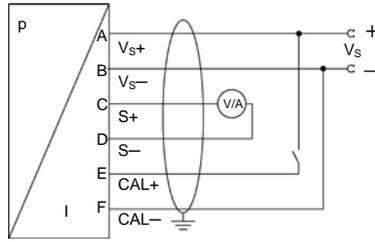
² This directive is only valid for devices with maximum permissible overpressure > 200 bar

Wiring diagrams

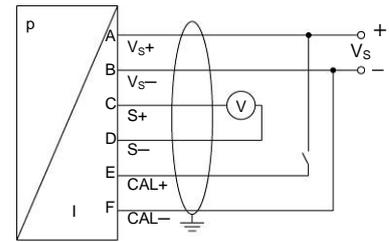
2-wire



3-wire



4-wire



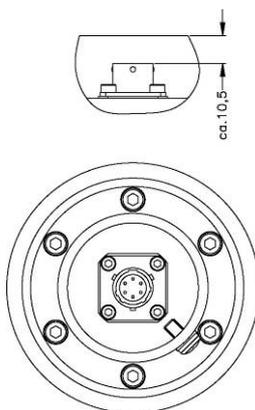
Pin configuration

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)

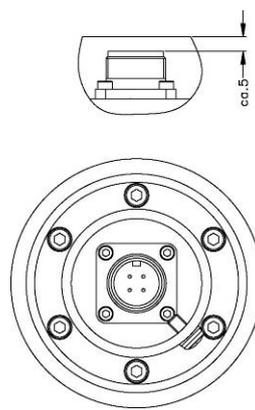
Electrical connections (dimensions in mm)

standard

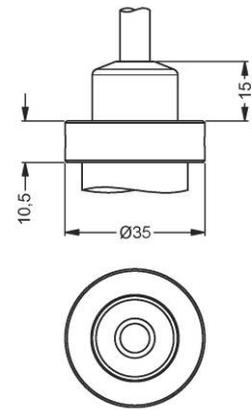
on request



MIL-/ Bendix (6-pin)
PT02_E10-6P-023
(IP 67)



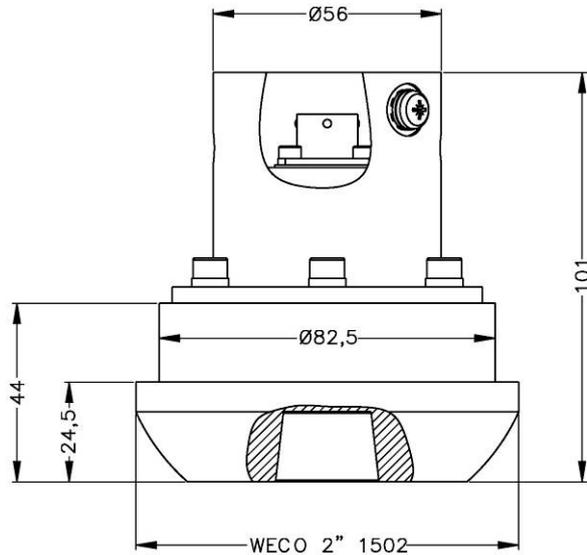
Glenair (4-pin)
GC379-2-14S-2P
(IP 65)



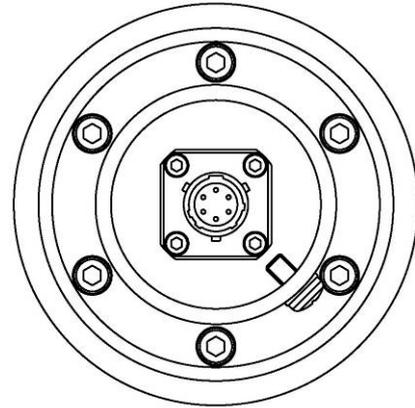
cable outlet
(IP 68)

Mechanical connection (dimensions in mm)

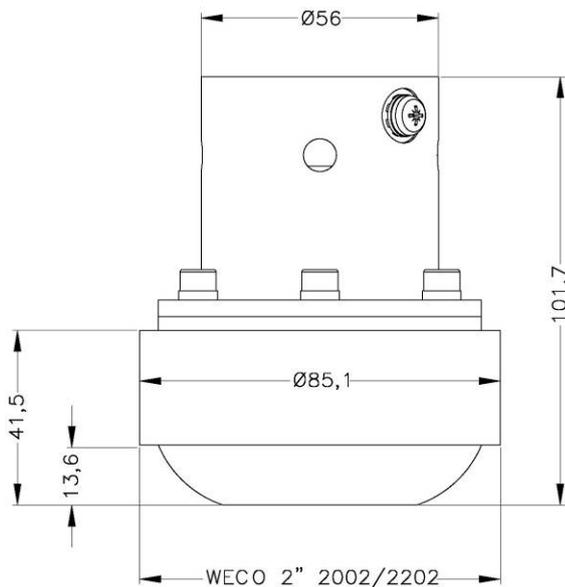
standard



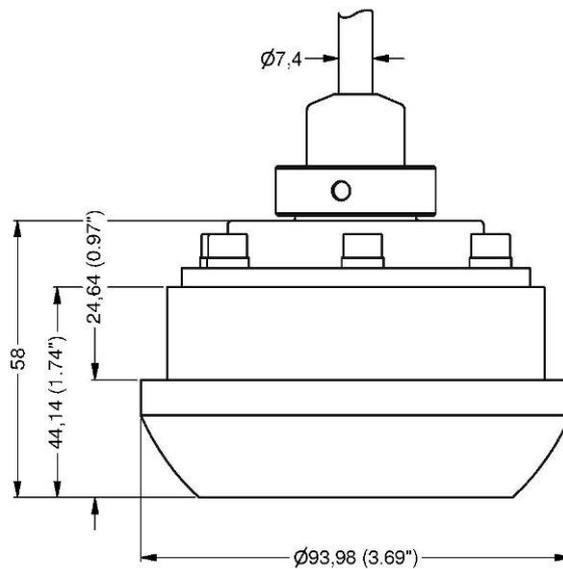
WECO® 2" (1502)



on request



WECO® 2" (2002/2202)



cable outlet

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