

# 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 / $V_S = 10 \dots 30 V_{DC}$ <sup>1</sup>
Ex-protection	2-wire: 4 ... 20 mA / $V_S = 14 \dots 28 V_{DC}$ <sup>1</sup>
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 / $V_S = 6 \dots 10 V_{DC}$
<sup>1</sup> 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: $R_{max} = [(V_S - V_{S \text{ min}}) / 0.02 A] \Omega$ 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 $\Omega$
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	20g, 25 Hz ... 2 kHz according to DIN EN 60068-2-6 7.5 g <sub>RMS</sub> , 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

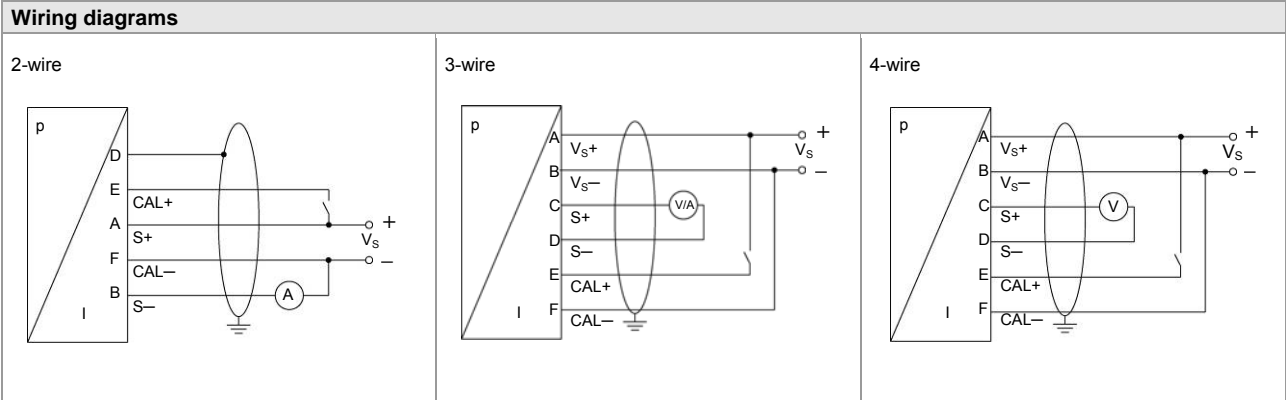
Materials	
Pressure port / diaphragm	standard: stainless steel 1.4548 (316L) on request: Inconel X750® Inconel X718®
Housing	stainless steel 1.4404 (316L)
Media wetted parts	pressure port

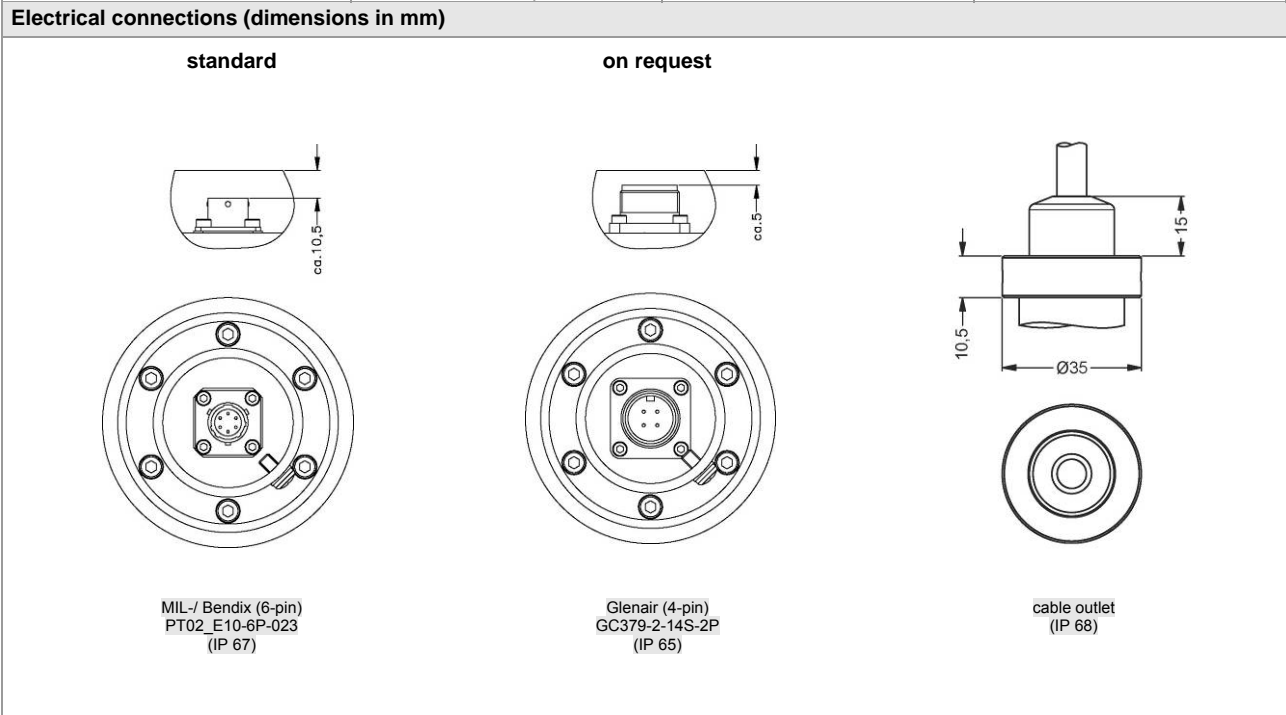
Explosion protection (only for 4 ... 20 mA / 2-wire)	
Approval DX18 HU300	<b>IBExU08ATEX1127 X</b> zone 0/1: II 1/2 G Ex ia IIC T4 Ga/Gb
Safety technical maximum values	$U_i = 28 \text{ V}$ , $I_i = 100 \text{ mA}$ , $P_i = 700 \text{ mW}$ , $C_i = 1 \text{ nF}$ , $L_i = 5 \mu\text{H}$ , The supply connections 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) <sup>2</sup>
ATEX Directive	2014/34/EU

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

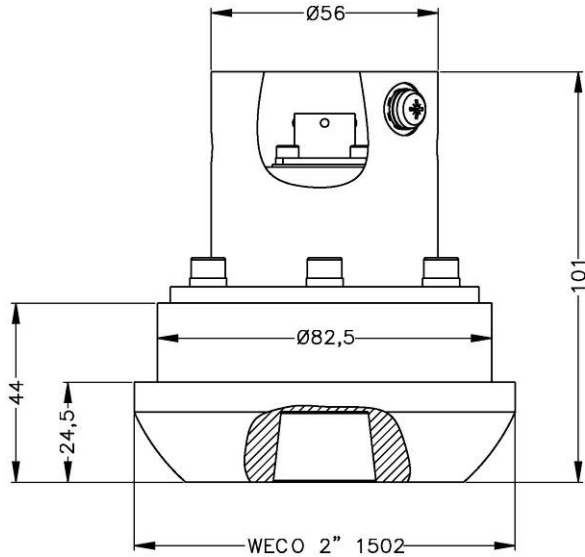


Pin configuration			
Electrical connection	MIL-/ Bendix (6-pin)	Glenair (4-pin)	cable colours (IEC 60757)
Supply +	pin A	pin C	wh (white)
Supply -	pin B	pin B	bn (brown)
Calibration +	pin E	pin D	pk (pink)
Calibration -	pin F	pin A	gy (grey)
for 3-wire / 4-wire:			
Signal +	pin C	-	-
Signal -	pin D	-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

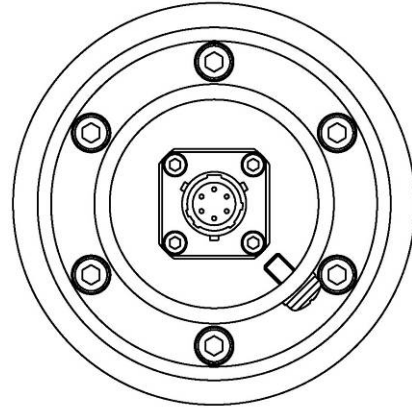


### Mechanical connection (dimensions in mm)

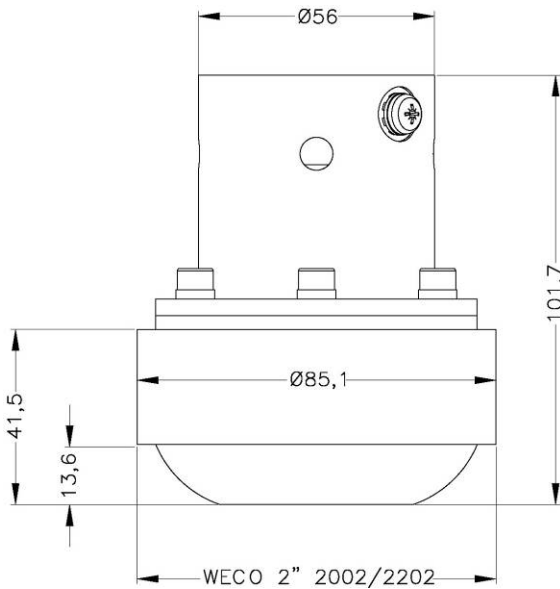
#### standard



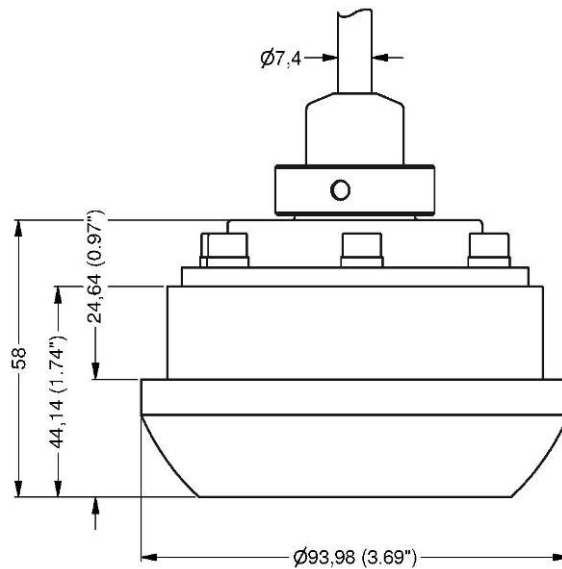
WECO® 2" (1502)



#### on request



WECO® 2" (2002/2202)



cable outlet

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## Ordering code HU 300

HU 300



Standard version		H	U	0																
<b>Input</b>	[psi]																			
	5 000	P	5	K	0															
	6 000	P	6	K	0															
	10 000	P	1	0	K															
	15 000	P	1	5	K															
	customer	9	9	9	9															consult
<b>Output</b>																				
	4 ... 20 mA / 2-wire																			
	Intrinsic safety 4 ... 20 mA / 2-wire																			
	0 ... 5 V / 3-wire																			in preparation
	3 mV/V / 4-wire																			in preparation
	customer																			consult
<b>Accuracy</b>																				
	0.5 %																			
	customer																			consult
<b>Electrical connection <sup>1</sup></b>																				
	MIL-/ Bendix (6-pin) type PT02_E10-6P-023																			
	Glenair (4-pin) GC379-2-14S-2P																			
	Cable outlet IP 68 with FEP cable																			
	customer																			consult
<b>Mechanical connection</b>																				
	WECO 2" 1502																			
	WECO 2" 2002/2202																			
	customer																			consult
<b>Material pressure port</b>																				
	Stainless steel 1.4548 (17-4PH)																			
	customer																			consult
<b>Material diaphragm</b>																				
	Stainless steel 1.4548 (17-4PH)																			
	customer																			consult
<b>Special version</b>																				
	standard																			0 0 0
	customer																			9 9 9

<sup>1</sup> only male plugs

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This document contains product specification; properties are not guaranteed. Detailed information about options are defined in the datasheet. Subject to change without notice.

