



■ **Operational Description**

**Designed for the rugged environment of land-based and offshore drilling installations**

The HU Hammer Union is an extremely rugged pressure transmitter. It is designed specifically for use with the 1502 Hammer Wing Union. These units are constructed from materials designed for service with highly abrasive and corrosive media and comply with NACE MR-01-75 and ISO 15156-3 standards.

■ **Applications**

The HU is designed specifically for the harsh environment in the oil patch including mud logging, cementing, fracturing, and acidizing applications.



pressure products



# HU

## Intrinsically Safe Hammer Union Pressure Transmitter

- Ranges to 15,000 psi
- 4-20 mA or 0 to 5 VDC output
- 1502 fitting
- Exceptional shock and vibration resistance
- Accuracy is  $\pm 0.35\%$  of full scale
- NEMA 4X/IP44
- Wetted materials comply with NACE standards for sour gas pressure applications
- Industry standard electrical connectors
- Shunt Cal for testing full output

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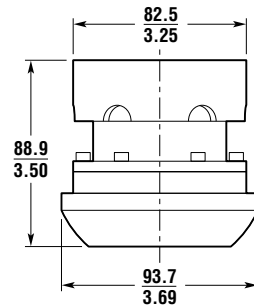
■ Specifications

<b>Performance</b>
<b>Standard Pressure Ranges</b> 0 to 15,000 PSIS
<b>Overpressure:</b> 1.5 X full scale or limit of WECO® fitting, whichever is less
<b>Burst Pressure:</b> 3 X full scale or limit of WECO® fitting, whichever is less
<b>Accuracy (linearity, hysteresis, and repeatability):</b> ±0.35% of full scale B.F.S.L.
<b>Temp Effects on Zero:</b> ±0.026% FSO/°C (±0.01% FSO/°F)
<b>Temp Effects on Span:</b> ±0.026% FSO/°C (±0.01% FSO/°F)
<b>Life:</b> 10 million cycles minimum
<b>Environmental</b>
<b>Compensated Temp:</b> -40 to 65°C (-40 to 150°F)
<b>Storage Temp:</b> -50 to 120°C (-50 to 248°F)
<b>Operating Temp:</b> -40 to 85°C (-40 to 185°F)
<b>Electrical</b>
<b>Supply Voltage:</b> 10-30 VDC on sensor
<b>Output Signal @ 21°C</b>
<b>4-20 mA:</b> 3-30 mA max.
<b>0 to 5 VDC:</b> 110 mA inrush current
<b>Loop Resistance:</b> 1125 ohms @ 30 VDC decreasing linearly to 0 ohms at 10 VDC
<b>Insulation Resistance:</b> >100 megohms @ 500 VAC, 70°C
<b>Shunt Cal:</b> 100% of full scale output
<b>ESD:</b> 2 KV
<b>EMC:</b> IEC 1000-4-3
<b>Materials of Construction</b>
<b>Wetted Materials:</b> NACE MR-01-75 and ISO 15156-3
<b>Enclosure:</b> 316L stainless steel
<b>Mechanical</b>
<b>Pressure Connection:</b> WECO® standard 1502 or equivalent
<b>Shock:</b> 100 g for 11 msec
<b>Thermal Cycling &amp; Vibration:</b> 15 g @ 10-2000 Hz, -40 to 85°C, 1000 cycles
<b>Enclosure:</b> NEMA 4X/IP44
<b>Hazardous Location Approvals:</b>
CSA/cCSAus Contract #237484
IS: Class 1, Division 1; Groups C & D
Ex ia IIB T4
Class 1, Zone 0, AEx ia IIB T4
Ambient: -40 to 85°C

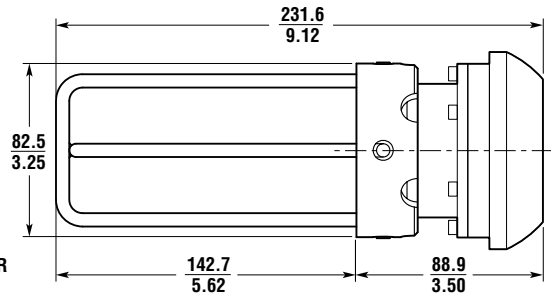
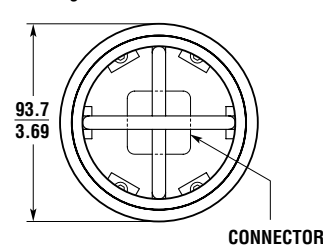
Specifications are subject to change without notice.  
WECO® is a registered trademark of FMC.

■ Dimensions — mm/in.

1502 FITTING

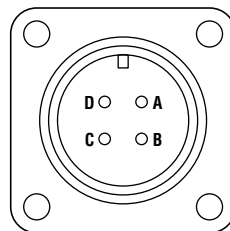


With Cage

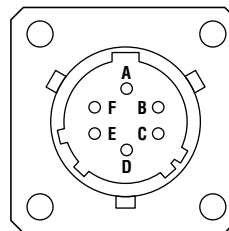


■ Wiring

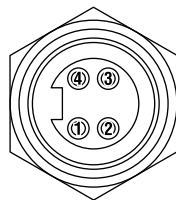
Face view, male connector on HU shown on connectors



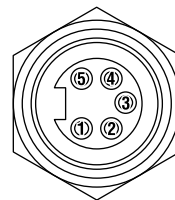
4-Pin MS3102 Connector



6-Pin Bayonet Connector



4-Pin "Mini" Style Connector



5-Pin "Mini" Style Connector

■ **Option Tables**

**Electrical Connections**

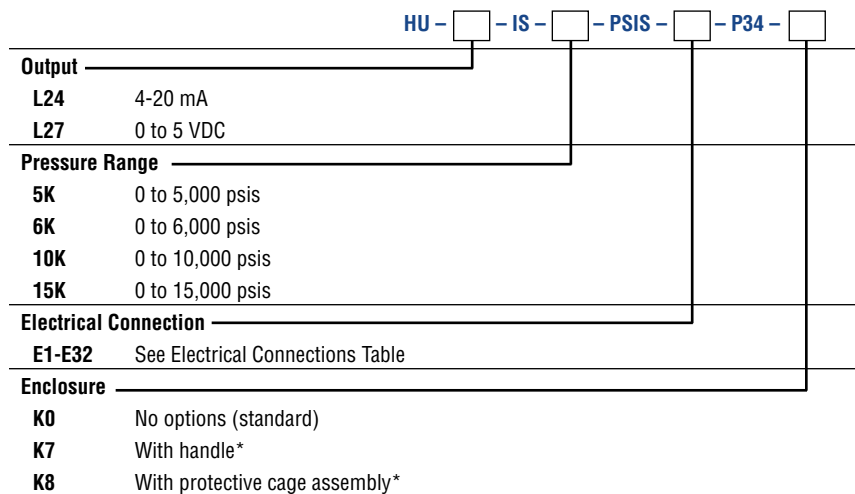
Pin	0 to 5 VDC Output		4-20 mA Output					
	E3 4 pin MS3102 Electroplate Nickel	E4 6 pin Bayonet SS Stainless Steel	E1 4 pin "Mini" Style Nickel Plated Zinc	E2 5 pin "Mini" Style Nickel Plated Zinc	E26 4 pin MS3102 Electroplate Nickel	E27 6 pin Bayonet SS Stainless Steel	E29 6 pin Bayonet SS Stainless Steel	E32 4 pin MS3102 Electroplate Nickel
A (1)	+ Power	+ Power	+ Signal	+ Signal	No Connection	+ Signal	+ Signal	+ Signal
B (2)	- Power	- Power	- Signal	- Signal	- Signal	- Signal	- Signal	- Signal
C (3)	+ Signal	+ Signal	Shunt Cal	No Connection	+ Signal	Case Gnd	No Connection	+ Shunt Cal
D (4)	- Signal	- Signal	No connection	Shunt Cal	Shunt Cal	No Connection	Shunt Cal	No Connection
E (5)	-	No Connection	-	No Connection	-	Shunt Cal	No Connection	-
F	-	No Connection	-	-	-	No Connection	No Connection	-

Note: Mating connectors sold separately.



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■ **Ordering Information**



\*Consult factory

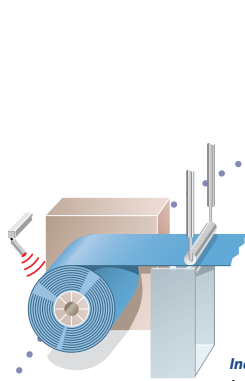
**Accessories**

Please order separately, by part number.

Description	Part Number
6-pin bayonet mating connector	509120
4-pin bayonet mating connector	556176

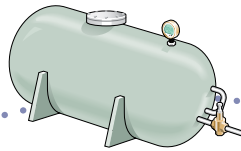
# Application Solutions

Imagine the possibilities that APG can offer to solve your application needs!



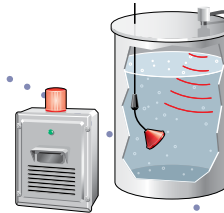
### Industrial Automation

Applications that monitor, control, or automate a repetitive process. Examples include measuring roll diameter, loop control, positioning, proximity detection, conveyors and product dimensioning.



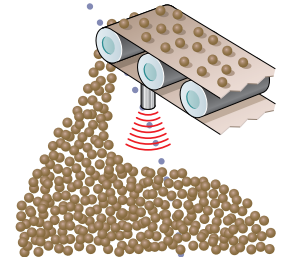
### Chemical, Gas or Hydraulic and Pneumatic Pressure Monitoring

Digital pressure gauges monitor pressure from 5 psi to 5,000 psi. Transmitters send the pressure signal to a control or remote monitoring system. Switches open and close valves or provide alarm signals.



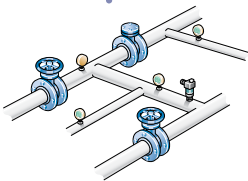
### Vendor Managed Inventory

Detect empty or full bin status and send an alarm. Control pumps and motors. Monitor inventories and request replenishment.



### Equipment Positioning

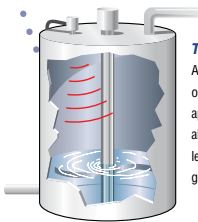
Non-contact detection of materials or objects to signal motors, drives or cylinders to move to a specific position.



### Pipe, Pressure and Valve Monitoring

APG manufactures pressure gauges, transmitters and sensors for pipelines, as well as valve position transducers. Monitor gas or liquid pressure, detect leaks, monitor or control linear displacement of valve stems.

**APG will MODIFY**  
standard products to give you a  
unique solution and  
competitive advantage!

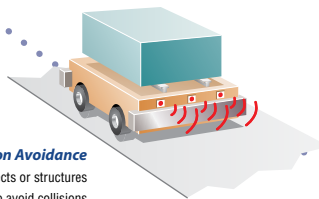
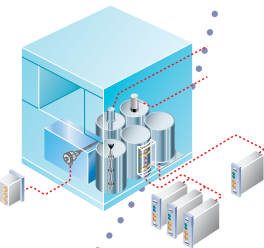


### Tank Measurement and Control

Applications where level control is required for liquid or bulk solid level control or measurement. In many applications, the output is interfaced to pumps, alarms, drives and other devices used to control level. Examples include tanks, feed bins and sand or gravel bins.

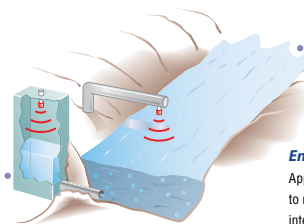
### Semiconductor/ Etching System

Requires precise and repeatable measurement and control of aggressive chemicals. No contamination of chemicals is allowed. A range of ultrasonic, pressure and float switch sensors are available to provide application solutions.



### Collision Avoidance

Involves detection of objects or structures in the path of mobile equipment to avoid collisions or accidents. APG offers several technologies for this application including: laser scanners, ultrasonic sensors, bumpers and photoelectrics. Examples include golf carts, automated guided vehicles (AGVs), overhead cranes and fleet vehicles backing to loading docks or with restricted rear viewing.



### Environmental Monitoring

Applications where a level sensor is used to monitor the level of water or snow, and interfaced with a data collection platform. APG offers pressure transducers, ultrasonic sensors, bubblers and float switches for this application. Examples include fresh or wastewater flow monitoring, stream staging, reservoir level and snow level.