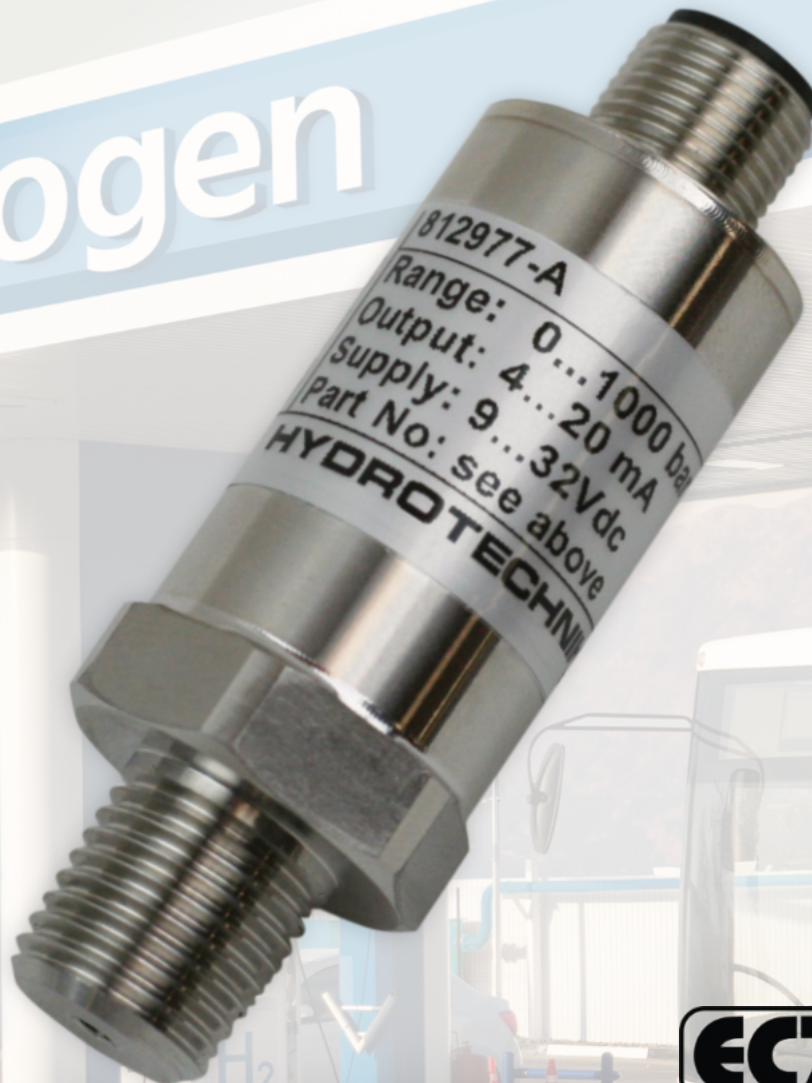


# HT-H2 Pressure sensor

# Hydrogen



Storage

Fuel Cells

Chemical Engineering

Gas Engineering

Automotive

- Durable & rugged industrial pressure transmitter
- Up to 1000 bar
- Designed for used with Hydrogen gases
- Adapted piezo-resistive measuring cell prevents embrittlement

## DESCRIPTION

The piezoresistive stainless steel measuring cell has especially been adapted to suit the chemical and physical properties of hydrogen. The entire sensing element is made from of a single piece without welds, which is designed to prevent embrittlement of the metal surface by ionised hydrogen. It is also completely vacuum tight and elastomer free.

Leaks caused by material fatigue on internal seals are thus eliminated from the outset. It has no disturbance due to pressure transfer fluid and no large pressurised surfaces.

The link into the connection pins are made by wedge wedge bonding and is therefore completely stable even at low temperatures, or when subject to shocks or vibrations. The measuring bridge evaluates the pressure via a mixed signal ASIC. The HT-H2 can also be used for other critical media.

## HYDROGEN PRESSURE TRANSMITTER

Stainless steel single piece measuring cell

- Suitable for Hydrogen
- Measuring cell, free from welds & seams
- Elastomer seal free
- Long term durability & accuracy

## TECHNICAL PARAMETERS

- Vacuum and 1 bar to 1,000 bar
- relative pressure, sealed reference
- (0)4...20 mA, 0...(5)10 V, ratiometric and more
- M12x1, Packard Metri-Pack, AMP and many more
- precision < 0,5 % FS (limit-point calibration)
- medium-contacting parts of stainless steel 1.4404/316L
- response time < 1ms
- optionally with EX protection (ATEX, IECEx, CSA)



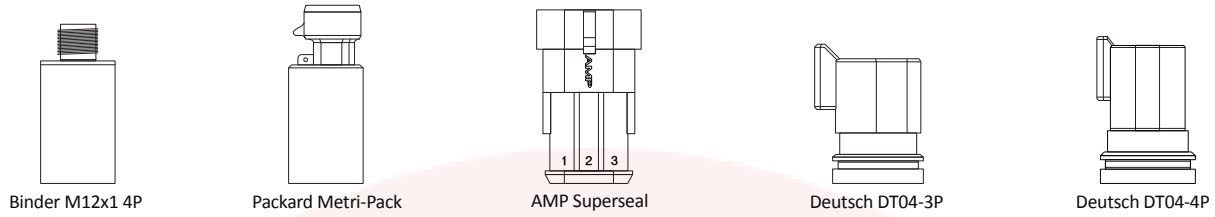
## TECHNICAL DATA

Pressure measuring ranges available between 0..1000 bar	P nominal -1...1 to -1...600 bar	-1...1000 bar
	P overload 2x	1.5x
	P burst 3x	2x
Type of pressure	Relative pressure	
Measuring principle	Piezoresistive (semiconductor on stainless steel)	
Medium contacting parts	Stainless steel 1.4404 (316L) (others on request)	

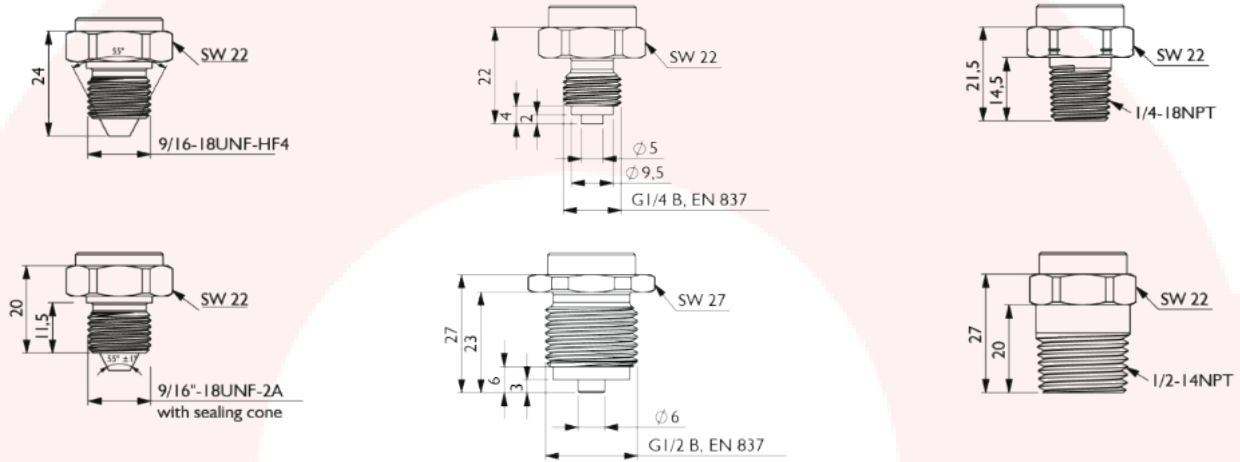
## TECHNICAL DATA (Continued)

Internal seals	None (single piece solid stainless steel measuring cell)
Pressure-transmitting medium	None (dry stainless-steel measuring cell)
Housing material	1.4301 / AISI 304
Process connections *	1/4" and 1/2" NPT, 9/16"-18 UNF-2A with sealing cone, 9/16"-18 UNF-2A HF 4 G1/4" BSP and G1/2" BSP acc. to EN 837 (manometer nipple) or to ISO 228-1
Electrical connections *	Plug connectors acc. to EN 175301-803 Form A and C, M12x1, Packard Metri-Pack, AMP Superseal, German, field housing, wire output port
Mass	Approx. 120g
Output signal, supply voltage and load resistance *	4...20 mA, 2-wire RA ≤ (UB-10V) / 20mA (supply 10...32VDC) 0...10V, 3-wire RL > 5kΩ (supply 12...2VDC) 0...5 V, 3 -wire RL > 2.5kΩ (supply 7...2VDC) 0.5...4.5V ratiometric, 3 Leiter RL > 4.7kΩ (supply 5VDC +/-10%)
Response time (T90)	< 1 ms
Total error **	≤ 0.5%FS after limit-point calibration (≤ 0.35% FS BFSL) acc.to DIN EN 61298-2 (incl. non-linearity, zero offset, hysteresis and repeatability) in the compensated range
Non-linearity	≤ 0.2% FS after limit-point calibration (≤ 0.1% FS acc. to BFSL)
Non-repeatability	≤ 0.10% FS
Hysteresis	≤ 0.15% FS
Medium TK of the offset	≤ 0.15%FS/ 10K
Medium TK of the range	≤ 0.15%FS/ 10K
Long-term durability	≤ 0.1% FS per year in referential conditions
<b>Permissible temperatures</b> Temperature of the medium Ambient temperature Storage Temperature Compensated Range	-40...+125°C -40...+105°C -40...+125°C 0...+80°C
CE-conformity	EC Directive 89 / 336 / EEC 2014
ATEX option	II 2G Ex ia IIC T4 Gb
Pressure devices EMC directive	68/EU 2004 /108 / EC acc. To EN 61326g
Shock resistance	1000 acc. to IEC 60068-2-32 g 20
Vibration resistance	Acc. to IEC 60068-2-6
Weight	~ 50g
<b>Electrical protection</b> Dielectric strength Short circuit resistance Reverse polarity protection	350VDC Out+ / UB- (for 1s) UB+ / UB in place
IP ratings *	plug connections acc. to EN 175301-803 IP65, M12 x 1, Packard Metri-Pack, AMP, Deutsch DT04-3P and 4P IP67/IP6K9K. The IP types specified in the data sheets generally apply to a mating plug connected. An aerated counter plug and / or wire is usually required for relative transmitters to enable atmospheric pressure balance. From a pressure range of 60 bar, no ventilated mating connector and / or cable is necessary.
* Others on request;	
** Special custom made solutions with optionally higher precision on request.	

## ELECTRICAL CONNECTIONS EXAMPLES



## PROCESS CONNECTIONS EXAMPLES



## ORDERING CODE

**HT-H2-AA-BB-CCCC-DD-EE-FF**

Replace **AA** with the code for the approval required  
**XX** = No extra approval  
**X1** = Zone 1 II 2G EX ia IIC T4 Gb (4...20mA only)  
**XD** = Exd | Ex db IIC T5 GB

EC79 as standard

Replace **BB** with the code for output signals required  
**I2** = 4...20mA  
**UX** = 1...5V  
**U1** = 0...10V  
**U5** = 0...5V  
**UR** = 0.5...4.5V ratiometric

Replace **CCCC** with the required pressure range (bar OR PSI)  
 Examples below for illustration only - use the values you require  
**0001** = 0...1  
**0130** = 0...130  
**0600** = 0...600  
**1000** = 0...1000

See DD to specify bar or psi.

Other configurations available on request.

Replace **FF** with the process connections required  
**01** = 9/16-18 UNF-HF4  
**02** = 9/16-18 UNF-2A  
**03** = G1/4 B, EN 837  
**04** = G1/2 B, EN 837  
**05** = 1/4-18 NPT  
**06** = 1/2-14 NPT

Other connections available on request

Replace **EE** with the code for electrical connections required  
**01** = Binder M12x14P  
**02** = Packard Metri-Pack  
**03** = AMP Superseal  
**04** = Deutsch DT04-3P  
**05** = Deutsch DT04-4P  
**06** = DIN Form A  
**07** = Pre-cable at 5 meters

Other connections available on request

Replace **DD** with the code for unit required  
**01** = bar  
**16** = psi

Other units available on request

## ORDERING EXAMPLE

**HT-H2-X1-UR-0600-01-05-01**

HT-H2 with Zone 1 approval, 0.5...4.5V (ratiometric) output signal, 0...600 bar pressure range, Binder M12x1 (plastic); 4P electrical connections and G1/4"A form E.