Technical Data and Specification

Hydrogen Sensor Type H2MEMS 1A /1B /1Z

materion
thin films and sensors

The micro-electronic Hydrogen Sensor is designed for use in process controlling and industrial applications
Key Features: explosion proof, unaffected by electromagnetic fields, measurement in hazardous environments, low cross sensitivity, long life time, easy handling, DIN - mounting

Performance

Measurement Range:	0,1 to 100 % hydrogen by volume
Accuracy:	from 0,1 to 40 Vol.- %: ± (0.05 x indicated value) Vol.- % more than 40 Vol.- %: ± (0.10 x indicated value) Vol.- %
Expected Operation Life:	more than 2 years
Power Supply V_{DD}:	3 … 5 V
Power Consumption:	< 10 mW
Output Signal @ V_{DD} = 5 V:	offset -25 … +25 mV (-5 … +5 mV/V_{DD}) FS (@ 100 % H_2) 7,5 … 10 mV (1,5 … 2 mV/V_{DD})
Time t_{90} (20°C):	from 1 to 4 Vol.- %: < 15 s from 4 to 10 Vol.%: < 10 s for more than 10 Vol.%: < 5 s
Operation Temperature:	15° C to 30° C
Operation Humidity:	0 % to 70 % RH, non-condensing
Pressure Range:	750 hPa to 1750 hPa (75 mbar to 750 mbar overpressure)
Flow Rate:	0 to 1000 sccm (100 sccm recommended)
Interferences:	non to: CH_4, saturated hydrocarbons, 20 ppm H_2S, 50 ppm CO, N_2, O_2, CO_2, and inert gases
Signal Drift:	< 1 % of signal / a in air
Material in Contact with Medium:	stainless steel, Al_2O_3, silicon, SiO_2, palladium, gold, titanium, epoxy, Teflon

All characteristics are based on conditions on 20°C, 50% RH and 1013 mbar

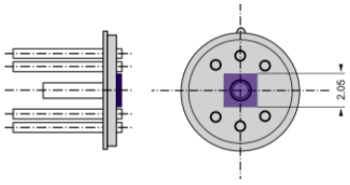
Storage Conditions

Temperature Range:	-30°C to 45°C (15°C to 30°C recommanded)
Ambient Pressure:	750 hPa to 1750 hPa
	Used materials for storage should be ESD protective according JESD625, non-outgassing, and chemically stable. Furthermore the following storage conditions should be preserved (storage in cabinets if shipment package is opened): a) Atmosphere: inert gas, dry air or dry nitrogen b) Temperature range (in cabinet): 20±3 °C c) Relative humidity range (in cabinet): < 40 %

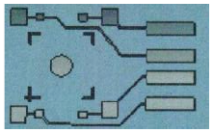
Package (1A)

optional: a) wire bonded on TO 39 standard socket
b) wire bonded on customised ceramic carrier
c) SMD encapsulated

a)



b)



c)

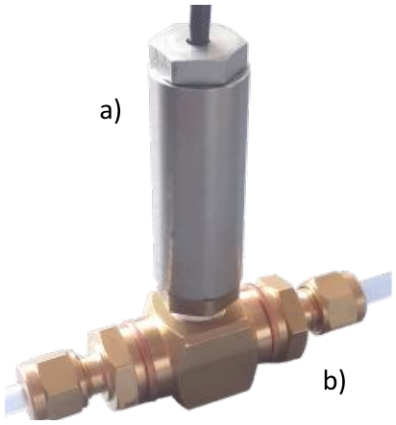


pin configuration on request

Sensor Element (1B)

a) customised stainless-steel housing
screw connection G ¼ “
with amplifier circuit:
power supply 5 V,
output signal 1 - 5 V
power consumption 120 mW
sealed leads through

optional: b) standard gas line adapter

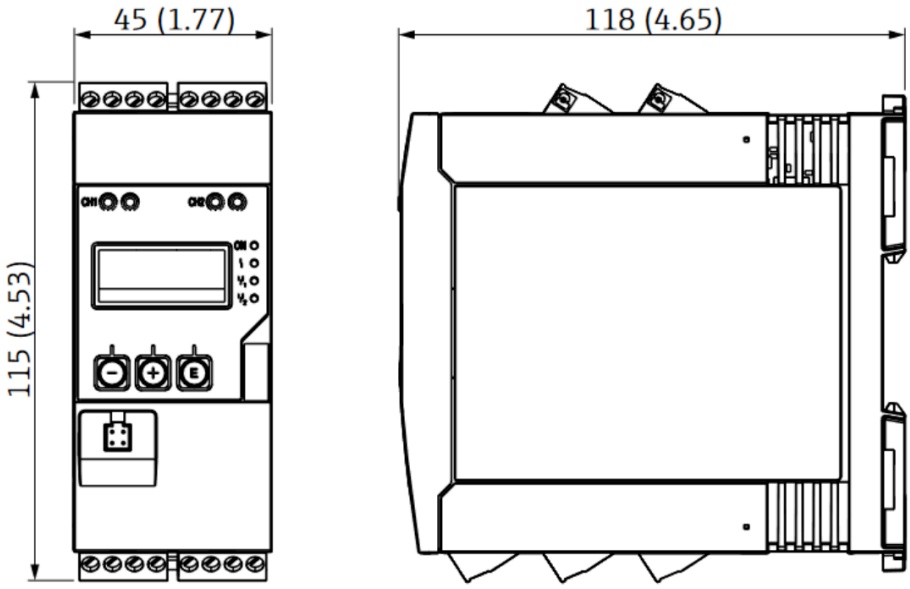


Transmitter electronic (1Z)

optional:

Signal Output:	either 0/4 … 20 mA or 0/2 … 10 V or 0/1 … 5 V linear
Power Supply:	24 to 230 V AC/DC (-20%/+10%) 50/60 Hz
Power Consumption:	7 W max.

DIN rail mounted
Display



Transmitter purchased from Endress and Hauser

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