Pressure transmitter COMPACT ECOnomic HYDROGEN

Type series CA1600

Features

- Digital pressure transmitter for hydrogen applications
- Case and wetted parts of stainless steel, degree of protection IP 65
- Measuring ranges
  - 0…4 bar up to 0…700 bar
  - -1…3 bar up to -1…15 bar
- Output signal 4…20 mA , in 2-wire technology
- Accuracy ≤ 0.5 %
- Easy zero point correction using a magnet
- Media temperature -20…120 °C
- Thin film sensor
- EAC declaration (upon request)

Options

- Approvals/Certificates
  - Explosion protection for gases
  - Certificate of measuring equipment for Russian Federation
- Output signal (invers) 20…4 mA
- Various process connections
- Further electrical connections
- Accuracy ≤ 0.3%

Application area

- Chemical and petrochemical industry
- Machinery construction
- Automotive technology
- Hydrogen production and storage

Application

The pressure transmitter COMPACT ECOnomic HYDROGEN is suitable for measuring the relative and absolute pressure of hydrogen and media containing hydrogen.

Technical data

Constructional design / case

Design:	Compact case with outstanding protection against moisture
Material:	Stainless steel mat.-no. 1.4301 (304)
Degree of protection per EN 60529:	IP 65
Pressure compensation:	Ventilation via electrical connection
Electrical connection	Right-angle plug per DIN EN 175 301-803-A (DIN 43650 model A)
Weight:	Approx. 0.15 kg

Process connection

Design:

- G 1/2 B per EN 837-1
- G 1/4 B per EN 837-1
- G 1/4 A per DIN EN ISO 1179-2 (DIN 3852-11) model E
- SITEC (M16x1,5, 60°, female thread)

Material wetted parts

Process connection:	St. steel mat.-no. 1.4404/1.4435 (316L)
Diaphragm:	St. steel mat.-no. 1.4404/1.4435 (316L)
Internal gasket:	NBR (for process connection G1/2B and SITEC (M16x5) only)

Measuring system

Sensor: Thin film sensor

Nominal range

Nominal ranges [bar]	Standard measuring ranges* [bar]		Measuring spans min. [bar]	Measuring spans max. [bar]	Overload limits [bar]	Vacuum tight
10	0..4 0…6 0…10	-1…3 -1...5 -1…9	3	12	20	-1 bar
50	0..16 0…25 0…40	-1...15	12.5	50	100	
200	0..60 0…100 0…160		50	200	400	
700	0..250 0…400 0…600 0…700		200	1000	1400	

* different measuring ranges upon request

Accuracy

General

Limit point setting: per DIN 16086

Reference conditions: per DIN EN 60770-1

Calibration position: vertical mounting position

Accuracy: (Lin./Hyst./Rep.) ≤ 0.5 % of adjusted measuring range
optional:
≤ 0.3 % of adjusted measuring range

Long term drift: ≤ 0.1 % / year of nominal range

Temperature influence: range 0…50 °C:
≤ 0.2 % of nominal range
range -20…0 and 50…80 °C:
≤ 0.3 % of nominal range

Output

Signal: 4…20 mA (20…4 mA), 2-wire technology

Damping: 30 ms

Measuring rate: 250 Hz

Current range: 3.7…23 mA

Resolution: 0.04 % of nominal range

Load, R_B: $R_B \leq (U_V\text{-}10V)/0{,}02A$ [Ohm]
U_V = supply voltage

Supply voltage

Standard version:

Functional range: 10…30 V DC

Ex-design:

Functional range: 20…27 V DC

Temperature ranges

Ambient: -20…85 °C

Media: -20…120 °C *

Storage: -40…80 °C

* at a maximal ambient temperature of 40 ° C

Extended temperature ranges upon request

Tests and certificates

Ex approval

ATEX: IBExU 14 ATEX 1119
Ⓔx II 2G Ex ia IIC T4 Gb
Ⓔx II 1G Ex ia IIC T4 Ga

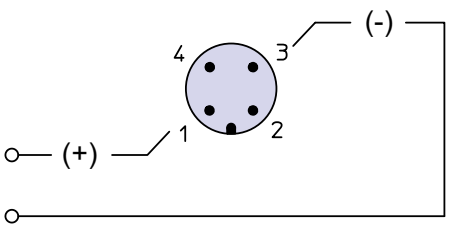
For more detailed information see Ex Safety Instruction XA_012

EMC: EMC directives 2014/30/EU

- EAC declaration upon request
- Certificate of measuring equipment for Russian Federation

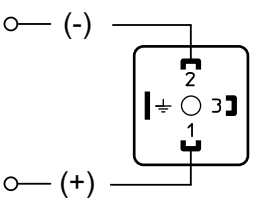
Connection diagram

circular connector M12



Do not wire terminal 2 + 4

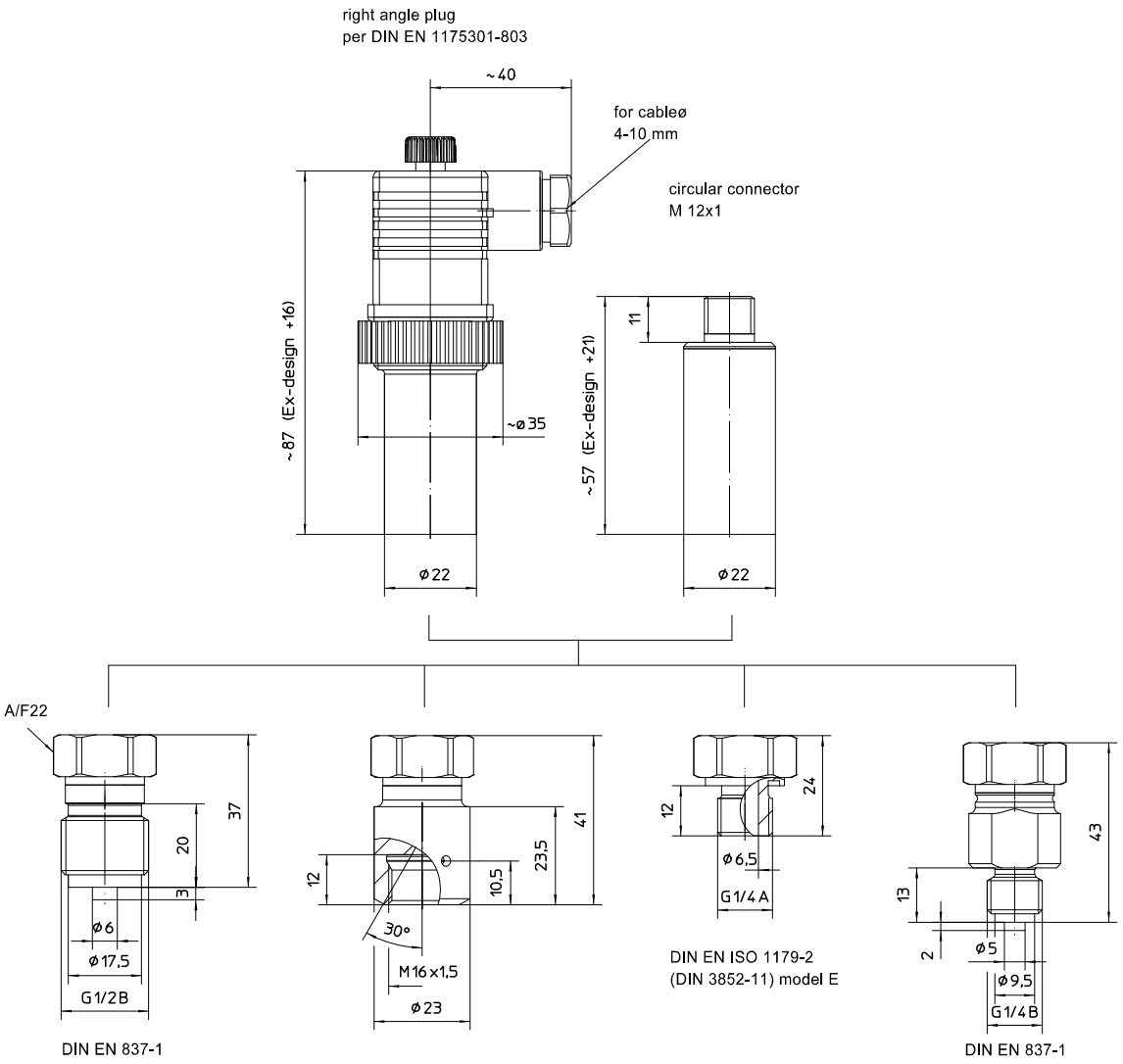
right-angle plug



Do not wire terminals 3 + 4

The transmitter is grounded via the process connection

Dimensions

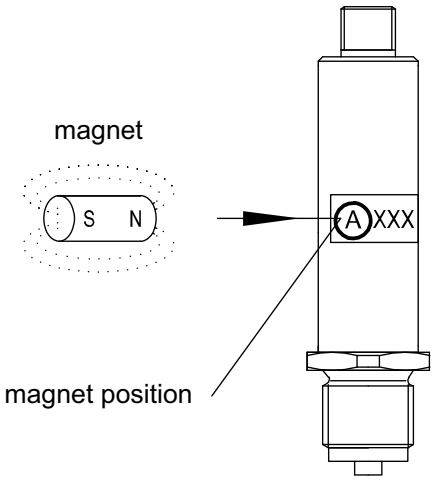


All dimensions are in millimeters

Zero point correction

The zero point can be set easily with a magnet within ± 10% of the nominal range.

To correct the zero point, hold a permanent magnet – a pin board magnet, for example – at the position marked on the pressure transmitter (i.e. the letter in a circle) for 1/2 to 2 1/2 minutes after the power has been switched on. To correct the zero point, atmospheric pressure has to be applied. Offsets for previously set values for initial and ultimate pressures will be corrected automatically by the device. A magnetic field applied outside of this time period has no effect on the setting. The power must be switched off and on before the zero point can be set again.



Order details

Pressure transmitter COMPACT HYDROGEN
Type series CA1600

Order details COMPACT HYDROGEN CA1600		
CA1600	Pressure transmitter COMPACT HYDROGEN	
A3056	Measuring ranges (bar)	0…4
A3057		0…6
A3058		0…10
A3059		0…16
A3060		0…25
A3061		0…40
A3062		0…60
A3063		0…100
A3064		0…160
A3065		0…250
A3066		0…400
A3068		0…600
A3069		0…700
A3089		-1…3
A3090		-1…5
A3091		-1…9
A3092		-1…15
A9999		different measuring ranges upon request
H1	Output signal	4…20 mA, 2-wire technology (standard)
H7		20…4 mA, 2-wire technology
T110	Electrical connection	Right-angle plug per DIN EN 175 301-803-A (DIN 43650, model A)
T120		Circular connector M12 x 1 (4-pin)
K10	Process connection internal diaphragm	G 1/2 B, EN 837-1
K12		G 1/4 B, EN 837-1
K24		G 1/4 A, DIN EN ISO 1179-2 (DIN 3852-11) model E
K70		SITEC (M 16 x 1,5, 60° , female thread)

Additional features (to be indicated if required)		
S69	Ex marking	Ⓔx II 2G Ex ia IIC T4 Gb
S78		Ⓔx II 1G Ex ia IIC T4 Ga [1]
Q3	Accuracy	≤ 0,3 %
W2673	certificate of measuring equipment for Russian Federation	

Order code (example): CA1600 – A3092 – H1 - T120 – K70

[1] with circular connector M12 only