HYDAC INTERNATIONAL

Pressure transmitter

HPT 1400

CAN interface

Relative pressure	Device Temperature	Accuracy 0.5%

CANopen SAE J1939 E13

Features

- CAN interface
- Robust
- Very compact design
- Approval for road vehicles E13

Description

HPT 1400 with CAN interface is a compact pressure transmitter which is used to measure relative pressures in hydraulics and pneumatics. The measured pressure value is digitised and made available to the CAN field bus system via the CANopen or the SAE J1939 protocol. The instrument parameters can be viewed and configured by the user using standard CAN software.

This pressure transmitter, which is based on the HPT 1400 dimensions, has a very accurate and robust sensor cell with a thin-film strain gauge on a stainless steel membrane.

Due to their outstanding temperature and EMC characteristics, together with their compact dimensions, these instruments can be used in a wide range of applications in the mobile and industrial sectors.

Application fields

Wide range of applications within the mechanical engineering sector, such as:

- Hydraulics
- Pneumatics
- Cooling power units
- Compressors
- and much more

Technical details

Input data									
Measuring ranges	bar	16	25	40	60	100	250	400	600
Overload pressures	bar	32	50	80	120	200	500	800	1000
Burst pressure	bar	125	125	200	300	500	1250	2000	2000
Mechanical connection		G 1/4 A ISO 1179-2, male							
Tightening torque, recommended		20 Nm							
Parts in contact with the fluid		Mech. connection: stainless steel Seal: FKM							
Output data									
Output signal		CANopen / SAE J1939							
Accuracy acc. to DIN 16086, terminal based		≤ ± 0.5 % FS typ. ≤ ± 1.0 % FS max.							
Accuracy at minimum value setting (B.F.S.L)		≤ ± 0.25 % FS typ. ≤ ± 0.5 % FS max.							
Temperature compensation, zero point		≤ ± 0.015 % FS / °C typ. ≤ ± 0.025 % FS / °C max.							
Temperature compensation, over range		≤ ± 0.015 % FS / °C typ. ≤ ± 0.025 % FS / °C max.							
Non-linearity acc. to DIN 16086, terminal based		≤ ± 0.3 % FS max.							
Hysteresis		≤ ± 0.4 % FS max.							
Repeatability		≤ ± 0.1 % FS							
Rise time		≤ 1 ms							
Long-term drift		≤ ± 0.3 % FS typ. / year							
Environmental conditions									
Compensated temperature range		-25 .. +85 °C							
Operating temperature range [1]		-40 .. +100 °C / -25 .. +100 °C							
Storage temperature range		-40 .. +100 °C							
Fluid temperature range [1]		-40 .. +125 °C / -25 .. +125 °C							
CE mark		EN 61000-6-1 / -2 / -3 / -4							
E13 mark		E13*10R05/01*14850*00							
Vibration resistance to DIN EN 60068-2-6 at 10 .. 500 Hz		≤ 25g							
Shock resistance acc. to DIN EN 60068-2-27		100 g / 6 ms / half-sine 500 g / 1 ms / half-sine							
Protection class acc. to IEC 60529 [2]		IP 67							
CANopen									
Communication profile		CiA DS 301 V4.2							
Device profile		CiA DS 404 V2.1							
Layer setting services and protocol		CiA DSP 305 V3.0							
Automatic bit-rate detection		CiA AN 801							
Baud rates		10 kbit .. 1 Mbit acc. to. DS305 V3.0							
Transmission services - PDO - Transfer		Measured value as 16 bit integer / 32 bit integer or 32 bit float; status synchronous, asynchronous, cyclical, measured value change, exceeding boundaries							
Node ID/ Baud rate		Settable via Manufacturer Specific Profile							
SAE J1939									
Data Link Layer		SAE J1939-21							
Network Layer		SAE J1939-31							
Network Management		SAE J1939-81							
Other data									
Supply voltage		9 .. 35 V DC							
Residual ripple of supply voltage		≤ 5 %							
Current consumption		≤ 25 mA							
Life expectancy		> 10 million load cycles (0 .. 100 % FS)							
Weight		~ 45 g							

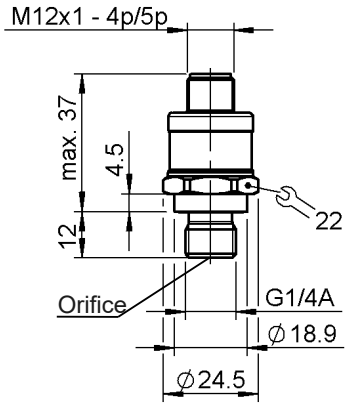
Note: Reverse polarity protection of the supply voltage, overvoltage, override and short circuit protection are provided.

FS (**F**ull **S**cale) = relative to complete measuring range

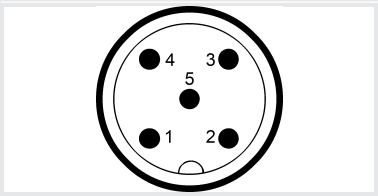
[1] In the standard up to -25°C with FKM seal, -40 °C on request

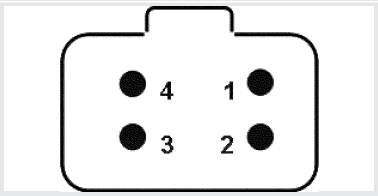
[2] With mating connector of corresponding protection type fitted

Dimensions



Pin connections

M12x1, 5-pin	Pin	Output signal: F1X	
		Signal	Description
	1	Housing	Shield/housing
	2	$+U_B$	Supply +
	3	0 V	Supply -
	4	CAN_H	Bus line dominant high
	5	CAN_L	Bus line dominant low

Deutsch DT 04, 4 pole	Pin	Output signal: F1X	
		Signal	Description
	1	$+U_B$	Supply +
	2	0 V	Supply -
	3	CAN_H	Bus line dominant high
	4	CAN_L	Bus line dominant low

Model code

HPT 1 4 4 X - FXX - XXXX - 000

Mechanical connection
4 = G 1/4 A ISO 1179-2 with orifice

Electrical connection
8 = Plug connector M12x1 , 5 pole
V = Plug connector Deutsch DT 04 , 4 pole

Output signal
F11 = CANopen
F12 = CAN SAE J1939

Pressure ranges in bar
0016; 0025; 0040; 0060; 0100; 0160; 0250; 0400; 0600

Modification number
000 = Standard

Accessories:
Appropriate accessories, such as mating connectors, can be found in the Accessories brochure.

Note

The information in this brochure relates to the operating conditions and applications described.
For applications or operating conditions not described, please contact the relevant technical department.
Subject to technical modifications.

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