Characteristics

1540 - DMS -

- Input:	1 strain gauge full bridge, 4-wire
- Bridge resistance:	350 Ω minimum
- Sensitivity:	1...4 mV/V
- Output:	4...20 mA HART
- Resolution:	16 bit
- Bridge supply:	1 VDC
- Combined error:	0,3% of range
- Electrical connection:	Several plugs, cable
- Enclosure:	PBT GF30 black
- Dimensions:	72x28x35 mm (without electrical connection)
- Protection:	At least IP65

Technical data

Input		
Sensor:	1 strain gauge full bridge	
Bridge resistance:	350 Ω minimal	
Bridge supply:	1 VDC	
Bridge connection:	4-wire	
Range input signal:	1...4 mV/V	
Cable towards sensor:	Length:	10 m maximum
	Type:	Double-shielded
Output		
Current signal:	4...20 mA with superimposed communication signal (HART), 2-wire current loop	
Current range:	3,6...21 mA	
Signal on error:	21 mA (sensor break, sensor open circuit, sensor short circuit, underflow)	
Measuring amplifier		
Combined error:	0,3% of range	
Resolution:	16 Bit	
Filter adjustment:	0...99 s	
Transmission behaviour:	Linear with strain gauge signal	
Turn-on delay time:	<5 s	
Measuring rate:	10 Measurements/s	
Linearization:	10 calibration points	
Configuration:	Via software (HART communication)	
Supply		
Current loop:	12...40 VDC	
Load:	R = (U_B-12 V) / 21 mA	
Reverse battery protection:	Available (no function, no damage)	

Applications

The measuring amplifier is an adaption of the sensor signal for the evaluation.The output of the measuring amplifier is a standard signal and can then be processed with eg. a SPS and at the same time the higher signal level avoids interferences.

Photo: Rainer Sturm @ pixelio.de

Technical data

Ambient conditions

Operation temperature:	-20...+80 °C
Storage temperature:	-20...+85 °C

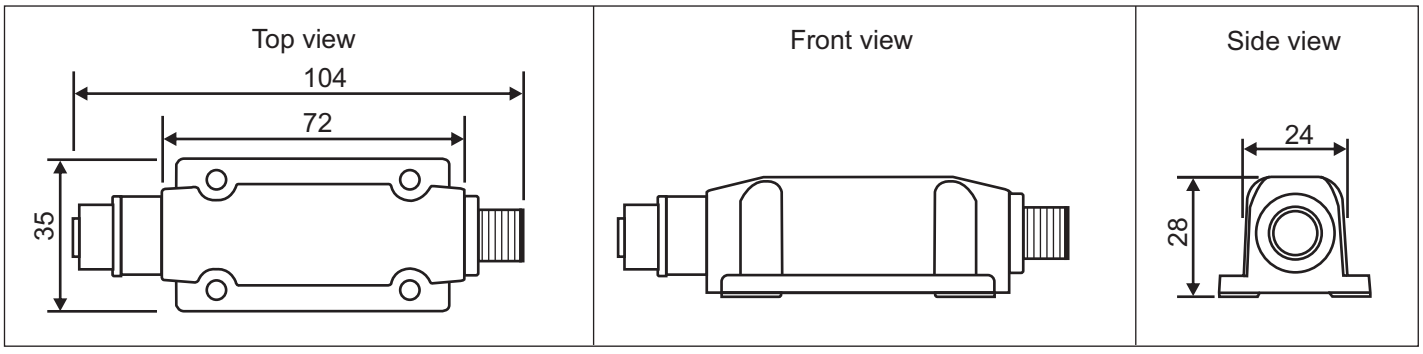
Mechanics

Enclosure:	Material:	PBT GF30
	Colour:	Black (other colours on request)
	Flammability:	UL94 HB
	Dimensions:	72x28x32 mm (without electrical connection)
Electrical connection:	Towards sensor:	M12x1 female, 5-pole, with adaptor / Cable 2 m
	Towards evaluation:	Several plugs, cable
Fitting position:	Any	
Protection of device:	Ingress protection:	At least IP 65 (electronics)
	PCB:	Completely potted
Weight:	60 g	
Dimensions:	Ca. 104x28x32 mm (outlet M12x1 on both sides)	

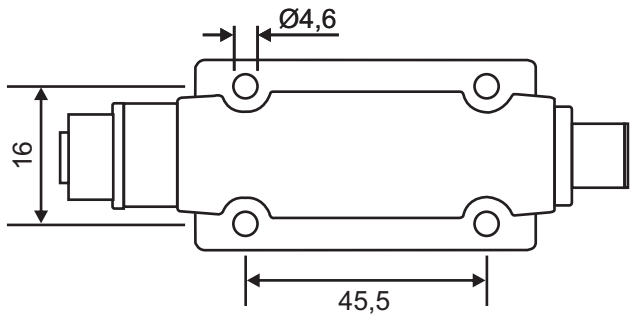
Configurable features

Measuring amplifier: Nominal measuring range start (LRL) / Nominal measuring range end (URL) / Measuring range start (LRV) / Measuring range end (URV) / Filter function / Adjustment output current / Simulation output current / HART address / Linear output signal / 2-point calibration / 10-point calibration (linearization)

Dimensions (in mm)



Mounting dimensions (in mm)



Electrical connection towards sensor

M12x1 (female) 5-pole	Cable 5-pole			
				
Supply+ = 1 Supply- = 3 Signal out+ = 2 Signal out- = 4 Shield = 5	Supply+ = Supply- = Signal out+ = Signal out- = Shield =			

Electrical connection towards evaluation

M12x1 4-pole	M12x1 5-pole	M12x1 8-pole	Super Seal 3-pole	Deutsch DT04 3-pole
				
U+ = 1 U- = 3	U+ = 1 U- = 3	U+ = 1 U- = 3	U+ = 1 U- = 3	U+ = A U- = B

Deutsch DT04 4-pole	Bayonet (DIN) 4-pole	Valve 4-pole	MIL 6-pole	Cable outlet n-pole
				
U+ = 1 U- = 3	U+ = 1 U- = 2	U+ = 1 U- = 2	U+ = A U- = C	U+ = ye U- = wh

Order code

M	J	X	X	X	X	X	X	-	X	X

Input:	1x strain gauge bridge	0
Output:	4...20 mA HART	2
Enclosure:	U-CASE5	5
Supply:	12...40 VDC	2
Electr. connection: (towards sensor)	M12x1, 5-pole, female (standard)	1
	Cable, 2 m	9
Electrical connection: (towards evaluation)	M12x1, 4-pole	1
	M12x1, 5-pole	2
	M12x1, 8-pole	3
	Deutsch DT04, 3-pole	4
	Deutsch DT04, 4-pole	5
	Super Seal 1.5, 3-pole	6
	Bayonet (DIN), 4-pole	7
	Valve plug, 4-pole	8
	Cable, 2 m	9
	MIL, 6-pole	A
Configuration:	Factory setting[1)]	1
Special model:	No	0
	Yes (to specify)	1

1) Configuration: Settings are made according order

HART Communication and configuration

The HART-Tool is a graphical user interface for the ME series with menu-driven program for configuration. It can be used for putting into operation, configuration, analysis of signals, data backup and documentation of the device.
Operating systems: Windows 2000, Windows XP, Windows 7 and 8.1
Connection via HART interface (modem) with USB interface of a PC or hand-held HART communicator

Possible settings are:

- Adjustment of output current
- Limits of nominal measuring range (URL, LRL)
- Limits of measuring range (LRV, URV)
- 10-point calibration (linearization)
- Simulation of output current
- Linear output signal
- 2-point calibration
- Filter function
- HART address

Please note: When using communication via a HART modem, a comunication resistance of 250 Ω has to be taken into account.