Screw-in Resistance Temperature Sensor METS-WS-GMS01

Characteristics

1500 - RTD - THERMOMETER - MODULAR - ECONOMIC

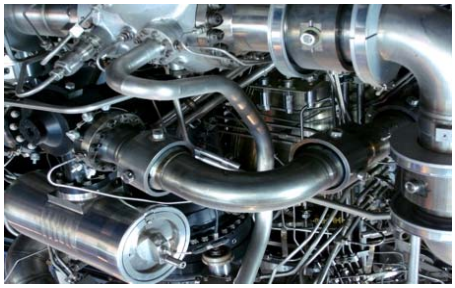
- Input:	RTD Pt100 (maximum range -50...+250 °C)
- Output:	4...20 mA current loop HART (2-wire)
- Voltage supply:	out of current loop (12...40 VDC)
- Accuracy:	see technical details
- Process connection:	several options
- Electrical connection:	several plugs
- Temperature range:	-20...+80 °C (ambient)
- Limit value contacts:	2 electronically (NPN / PNP)
- Adjustment:	keys / software
- Material:	stainless steel 1.4571 (medium contact)
- Protection:	at least IP65

Technical Data

Input		
Sensor RTD Pt100:	-50...250 °C (minimum range: 50°C), 4-wire	
Output		
Current signal:	4...20 mA with superimposed communication signal (HART), 2-wire current loop	
Current range:	3,8...20,5 mA	
Signal on error:	3,6 mA (sensor short circuit, underflow)	
	21 mA (sensor break, sensor open circuit, overflow)	
Performance		
Sensor:	RTD Pt100:	Class A / Class B / Class AA (B1/3 DIN)
Measuring amplifier:	Accuracy:	0,3% of range
	Resolution:	16 Bit
	Filter setting:	0...99 s
	Measuring rate:	10 measurements/s
	Configuration:	Keys on display / via software (HART communication)
	Transmission behaviour:	temperature linear
	Turn-on delay time:	<5 s
	Respons time:	20 ms
Indicator / limit values:	Resolution:	-9999...9999 digit
	Error of measurement:	±0,2% of range, ±1 digit
	Temperature drift:	100 ppm/K
	Features, Operation:	according VDMA 24574-1 up to 24574-4
Programmable Features		
Measuring amplifier:	Measuring range start (LRV) / Measuring range end (URV) / Adjustment, simulation of output current / Filter function Linear output signal / HART address / 2-point calibration	
Display:	range of indication / time of indication / decimal point / units / stabilisation of zero point / locking of programming / calibration points / TAG number	
Limit value contacts:	limit value 1 and 2 / hysteresis 1 and 2 / delay times 1 and 2	

Applications

For use in climating, ventilating and heating installations and the whole range of industrial application. With it's two configurable limit value contacts, the integrated display and the numerous electrical connections, the temperature sensor is also suitable for applications with higher requirements.



Technical Data (Continued)

Indication	
Display:	7 segment, 8,5 mm, red, 4 digits, representation mirror-inverted 180° possible
Head of display:	rotatable approx. 330°
Memory:	minimum / maximum values
Indication:	- measuring value - unit of measurement - control menu
Decimal point:	automatically or manually, dependent on measuring range / unit Representation: xxxx / xxx.x / xx.xx / x.xxx
Limit Contacts	
Electronically:	2x PNP or NPN (30 VDC, 200 mA) Option: 2x PNP or NPN (30 VDC, 1000 mA)
Indication:	1 LED red for each limit value
Voltage across:	<1 V
Settings:	with 3 keys (TouchM-Technology)
Setting range:	switch point and hysteresis: any value within measuring range
Switching delay:	0,0...999,9 s
Failsafe function:	adjustable
Galvanical insulation:	switching outputs are separated from measuring amplifier
Supply	
Voltage:	HART current loop: 12...40 VDC VDC
Load:	R = (U_B-12 V) / 21 mA
Reverse battery protection:	available (no function, no damage)
Environmental Conditions	
Temperature:	Operating range: -20...+80 °C Medium: -50...+250 °C Storing: -40...+100 °C
Condensation:	uncritical
Mechanics	
Dimensions:	see page 3
Process connection:	1/4" /3/8" / 1/2" / 3/4" / 1" / 1/4NPT / 3/8NPT / 1/2NPT
Extension:	100 mm (option)
Electrical connection:	see page 3
Material:	Protecting tube: stainless steel 1.4571 (standard 6x0,5 mm) Extension: stainless steel 1.4571 Process connection: stainless steel 1.4571 Body: PBT GF30 Head of display: polycarbonate (makrolon)
Weight:	approx.150 g (70 mm, 1/2", M12)
Fitting position:	any
System pressure:	PN 25
Protection of device:	Ingress protection: at least IP 65 (electronics) PCB: potted

Connection M12x1-Plug (Example)

Assignment plug M12x1, 8-pole

Current loop 4...20 mA HART	Electronical limit value contacts	Shielding		
+ -				
1 3	2 4 5	8		

Electrical Connection

M12x1	Super Seal	Deutsch	Deutsch	Bayonet	Valve	MIL	Cable
							
4-, 5-, 8-pole	3-pole	3-pole	4-pole	4-pole	4-pole	6-pole	6-pole

Connection / Limit value (LV)	M12 4-pole	M12 5-pole	M12 8-pole	Bayonet 4-pole	Deutsch 4-pole	Deutsch 3-pole	Super Seal 3-pole	Valve 4-pole	MIL 6-pole	Cable 6-pole
1 electronical LV	X	X	X	X	X			X	X	X
2 electronical LV	X	X						X	X	

HART Communication

The HART-Tool is a graphical user interface for the ME series with menu-driven progam 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, 8.1 and 10.
Connection via HART interface (modem) with USB interface of a PC or hand-held HART communicator

Settings:
- Adjustment of output current
- Limits of measuring range
- 2-point calibration
- Simulation of output current
- Linear output signal
- 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.

Dimensions (in mm)