


## ● Characteristics

1 - NiCr-Ni - MODULAR - ECONOMIC

	- Input:	thermocouple type K (-50...+200 °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:	-40...+85 °C (ambient)
	- Limit value contacts:	2 electronically (NPN / PNP)
	- Adjustment:	keys / software
	- Material:	stainless steel 1.5471 (medium contact)
- Protection:	at least IP65	

## ● Technical data

### Input

Thermocouple: type K, NiCr-Ni (-50...200 °C, minimum range: 50°C)

### Output

Current signal: 4...20 mA with superimposed communication signal (HART), 2-wire current loop  
 Current range: 3,8...20,8 mA  
 Signal on error: 3,8 mA (sensor break, sensor open circuit)

### Performance

Sensor:	Type K:	±1,5°C (according DIN EN 60584-2 class 1)
Measuring amplifier:	Accuracy:	0,5K or 0,08% of range
	Resolution:	16 Bit / 0,3 µA
	Long term stability:	0,05% / year
	Filter setting:	yes
	Transmission behaviour:	temperature linear
Indicator / limit values:	Turn-on delay time:	<5 s
	Response time:	1 s
	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
	Operation:	according VDMA 24574-1 up to 24574-4

### Programmable features

Measuring amplifier: measuring range start / measuring range end /  
 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:	$R = (U_B - 12 \text{ V}) / 22 \text{ mA}$
Reverse battery protection:	available (no function, no damage)

### Ambient conditions

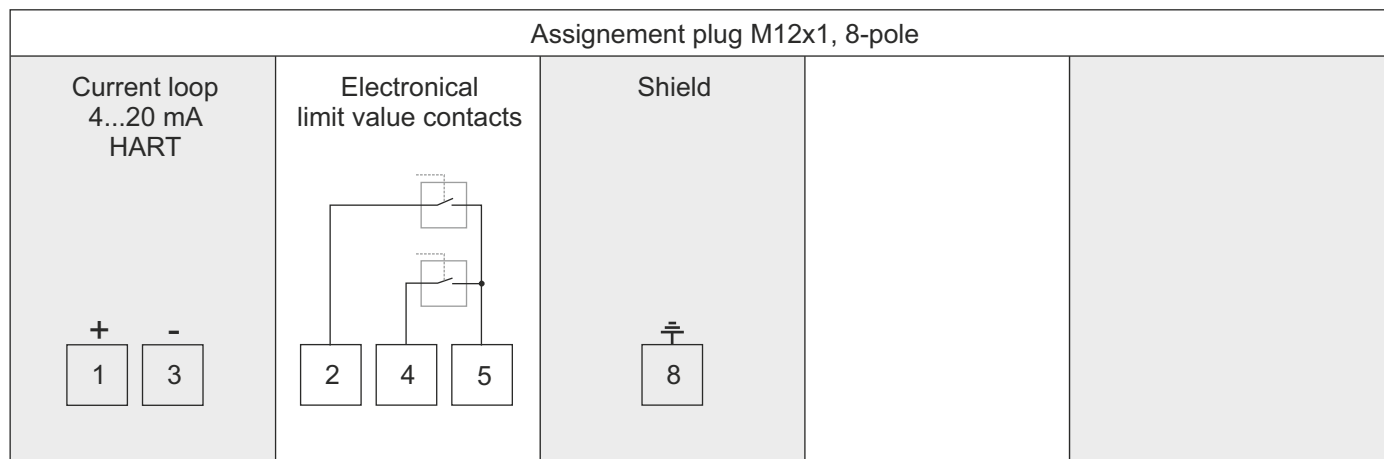
Temperature:	Operating range:	-40...+85 °C
	Medium:	-50...+200 °C
	Storing:	-40...+100 °C
Condensation:	uncritical	

### 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 M12-plug (example)

Assignment plug M12x1, 8-pole



● **Electrical connection**

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

Connection	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	
Limit value (LV)										
1 electronical LV	X	X	X	X	X			X	X	
2 electronical LV		X	X						X	

● **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

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
  - HART TAG number
  - 6-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 communication resistance of 250 Ω has to be taken into account.

● **Dimensions (in mm)**

