

# MUESEN

## PRODUCT



# High accurate temperature DIN transmitter MST 6 Series – HART® MST665



ALIA
MUESEN
SAGE
HYCONTROL
KONICS
WIKA
HBE
서진인스텍
서전발맥
KDI

Pressure Transmitter
MST80
MST80D
MSP101P
Temperature Transmitter
MST 8 series
Head Transmitter
MST 1 series
MST 3 series
MST 5 series
MST 6 series
LED Display
LEDD-01
LEDD-02
Accessories
proHART-100
proUSB-100

## Application

- Linearised temperature measurement with Pt100...Pt1000, Cu50...Cu100, Ni100...Ni1000 or TC sensor (Type B, E, J, K, N, R, S, T)
- Conversion of linear resistance variation to a standard analogue current signal.
- Amplification of a bipolar mV signal to a standard 4...20 mA current signal.

## Your benefits

- ❑ Universal Input (RTD/TC/mV/Ω)
- ❑ Universal setting with HART®-protocol
- ❑ Operation, visualisation and maintenance via PC, e.g. configurationsoftware "HHTemp\_V2.06E"
- ❑ 2 wire technology, 4...20 mA analog output
- ❑ Galvanic isolation (2000V AC)
- ❑ High accuracy in total ambient temperature range: 0.02% of span for Pt100 sensor  
0.1% of span for TC sensor
- ❑ Fault signal on sensor break or short circuit, presettable to NAMUR NE 43
- ❑ Internal temperature sensor for active temperature compensation (for TC sensor)

## Technical data

Input				
Input	Type	Measurement ranges	Min. meas. ranges	
Resistances thermometer (RTD)	Pt100	-200 to 850 °C (-328 to 1562°F)	10 °C	
	Pt500	-200 to 250 °C (-328 to 482°F)	10 °C	
	Pt1000	-200 to 250 °C (-328 to 482°F)	10 °C	
	acc. to IEC 60751 ( a = 0.00385)			
	Cu50	-50 to 150 °C (-58 to 302°F)	10 °C	
	Cu100	-50 to 150 °C (-58 to 302°F)	10 °C	
	Ni100	-60 to 180 °C (-76 to 356°F)	10 °C	
Resistancetransmitter	Ni500	-60 to 180 °C (-76 to 356°F)	10 °C	
	Ni1000	-60 to 150 °C (-76 to 302°F)	10 °C	
	acc. to DIN 43760 ( a =0,006180)			
Resistancetransmitter	Widerstand Ω	0 to 400 Ω	10 Ω	
		0 to 2000 Ω	10 Ω	

Connection type: 2-, 3- or 4-wire connection, Sensor current: < 0.5 mA

Input			
Thermocouples(TC)	B (PtRh30–PtRh6)	0 to +1820 °C (32 to 3308 °F)	500 °C
	E (NiCr–CuNi)	–270 to +1000 °C (–454 to 1832 °F)	50 °C
	J (Fe–CuNi)	–210 to +1200 °C (–346 to 2192 °F)	50 °C
	K (NiCr–Ni)	–270 to +1372 °C (–454 to 2501 °F)	50 °C
	N (NiCrSi–NiSi)	–270 to +1300 °C (–454 to 2372 °F)	50 °C
	R (PtRh13–Pt)	–50 to +1768 °C (–58 to 3214 °F)	500 °C
	S (PtRh10–Pt)	–50 to +1768 °C (–58 to 3214 °F)	500 °C
	T (Cu–CuNi)	–270 to +400 °C (–454 to 752 °F)	50 °C
Voltage transmitters(mV)	(mV)	–10 to 75mV –100 to 100mV –500 to 500mV –1000 to 1000mV	5mV 5mV 10mV 20mV
Connection type: 2–wire connection, Sensor current: < 0.5 mA			
Power supply			
Supply voltage		7.5 to 45V DC	
Output			
Output signal		4 ... 20 mA	
Load		$R_{max} = [(U_{supply} - 7,5) / 0,022] \Omega$	
Signal on alarm		Underranging: Linear drop to 3,8 mA	
		Overranging: linear rise to 20.5 mA	
		Sensor break; sensor open–circuit: 3.6 mA or 22.0 mA	
Linearisation/transmission behaviour		Temperature linear, resistance linear, voltage linear	
Galvanic isolation		U=2000V AC (input/output)	
Performance characteristics			
Response time		0,25 s	
Reference conditions		Calibration temperature: +23°C (73.4K) ± 5 K	
Accuracy	Input	Type	Accuracy
		RTD	Pt100, Ni100 Pt500, Ni500 Pt1000, Ni1000 Cu50 Cu100 0,02% 0,05% 0,3% 0,2% 0,3%
	TC	K, J, T, E N S, B, R	typ. 0.1% typ. 0.1% typ. 0.1%
	$\Omega$	10 to 400 $\Omega$ 10 to 2000 $\Omega$	± 0.1 $\Omega$ or 0.02% ± 1.5 $\Omega$ or 0.03%
	mV	–10 to 75mV –100 to 100mV –100 to 500mV –100 to 2000mV	± 4 $\mu$ V or 0.02% ± 4 $\mu$ V or 0.02% ± 7.5 $\mu$ V or 0.02% ± 7.5 $\mu$ V or 0.02%
Switch on delay		≤ 2 s	
Influence of supply voltage		≤ ± 0.01%/V deviation from 24V	
Influence of ambient temperature (Total temperature drift)		Input temperature drift + Output temperature drift Input 0 to 2000 $\Omega$ , typ. 0,0015% of measured value Output 4 to 20mA, typ. 0,005% of measured value	
Influence of load		± 0,02%/100 $\Omega$ , Values refer to the full scale value	
Influence of cold junction (for TC)		Pt100 DIN IEC 60751 Cl. B	
Long–term stability		≤ 0,1 K/year oder ≤ 0,05%/year The % refer to the set span.	
Self stability configuration		0 to 2%	
Filter configurating		0 to 160 $\mu$ A	
Resolution		0,3 $\mu$ A	
Environment conditions			
Installation instructions		Installation angle: no limit	

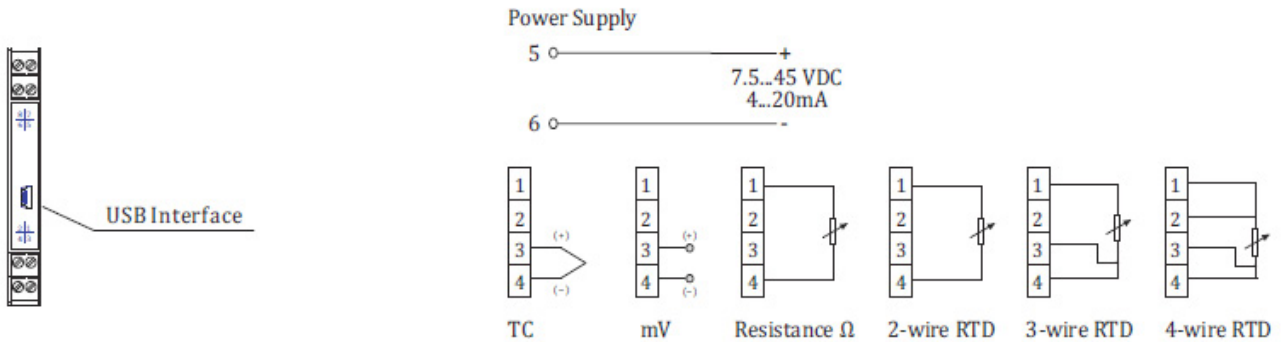
ALIA
MUESEN
SAGE
HYCONTROL
KONICS
WIKA
HBE
서진인스텍
서전발맥
KDI

Pressure Transmitter
MST80
MST80D
MSP101P
Temperature Transmitter
MST 8 series
Head Transmitter
MST 1 series
MST 3 series
MST 5 series
MST 6 series
LED Display
LEDD–01
LEDD–02
Accessories
proHART–100
proUSB–100

Storage temperature	
Ambient temperature limits	-40 to +85°C (-40 to 185°F)
Storage temperature	-40 to +100°C (-40 to 212°F)
Condensation	Allowable
Degree of protection	IP20
Shock and vibration resistance	4g / 2 to 150Hz as per IEC 60068-26
Electromagnetic compatibility (EMC)	Interference immunity and interference emission according to IEC 61326-1 : 2006
Others	
Dimensions	12,6 x 99 x 112,5 mm
Weight	Approx. 80 g
Materials	Housing: PC
Certificate and approvals	
CE-Mark	The device meets the legal requirements of the CE directives, Muesen Technik confirms that the devices has been successfully tested by applying the CE mark.
Other standards and guidelines	IEC 60529: Degree of protection provided by housing (IP-Code) IEC 61010: Safety requirements for electrical measurement, control and laboratory use. IEC 61326: Electromagnetic compatibility (EMC requirements) NAMUR: Standard working group for measurement and control technology in the chemical industry.

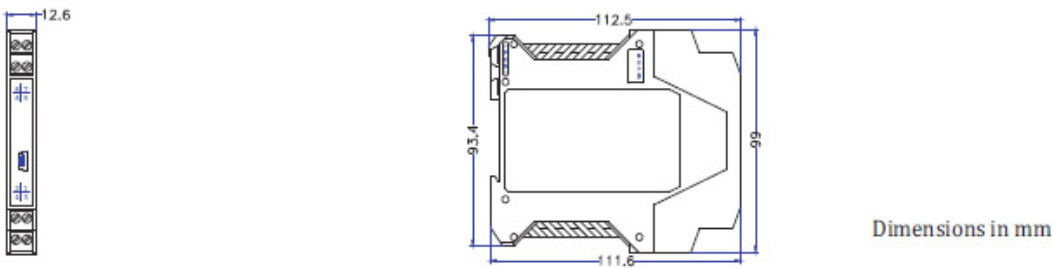
ALIA
MUESEN
SAGE
HYCONTROL
KONICS
WIKA
HBE
서진인스텍
서전발맥
KDI

## Electrical Connection



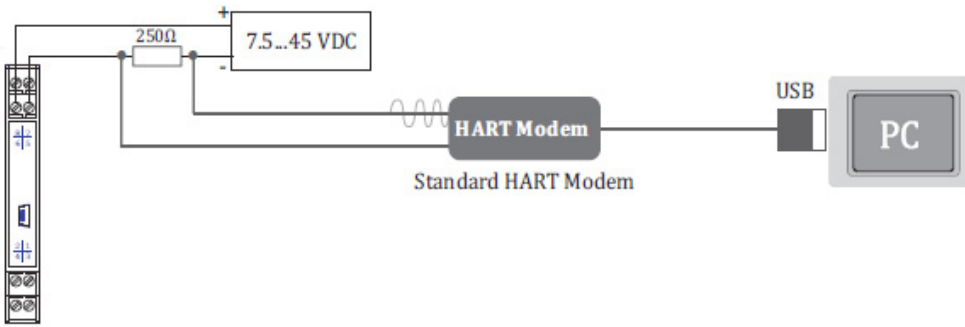
Pressure Transmitter
MST80
MST80D
MSP101P
Temperature Transmitter
MST 8 series
Head Transmitter
MST 1 series
MST 3 series
MST 5 series
MST 6 series
LED Display
LEDD-01
LEDD-02
Accessories
proHART-100
proUSB-100

## Dimensions



# Programming

With HART Modem



# Ordering code

## MST 6 Series

Type				
Programmable Temperature DIN-rail transmitter	MST660			
Programmable Temperature DIN-rail transmitter galvanic isolated	MST663			
HART® Programmable Temperature DIN-rail transmitter galvanic isolated, with HART®-Protocol	MST665			
Input(configurable)				
Factory preset (Pt100, 3-Leiter, 0...100°C)		1	0	0
Configuration according to customer specification		9	9	9
Output				
4...20mA, 2-wire			0	0
Additives				
None				0 0
According to customer specification				9 9

## Inventory

Type	Interface
MST660-100-00-00	USB
MST663-100-00-00	USB
MST665-100-00-00	HART®

ALIA
MUESEN
SAGE
HYCONTROL
KONICS
WIKA
HBE
서진인스텍
서전발맥
KDI

Pressure Transmitter
MST80
MST80D
MSP101P
Temperature Transmitter
MST 8 series
Head Transmitter
MST 1 series
MST 3 series
MST 5 series
MST 6 series
LED Display
LEDD-01
LEDD-02
Accessories
proHART-100
proUSB-100