



MemoTrans

**Ultra compact transmitter for Memosens sensors.
Quick installation and simple operation.**

MemoTrans, the first 2-wire multi-parameter transmitter in a compact housing with direct connection to Memosens sensors.

Multiparameter

One device for all Memosens sensors and parameters:

- pH
- ORP
- Conductivity
- Oxygen

Compact Housing

The slim, compact housing combines functionality and robustness. The space-saving MemoTrans can be used everywhere and with all Knick fittings. Robust and with a high degree of protection (IP 67/68, NEMA 6), MemoTrans is also optimally suited to complex applications.

HART

Configuration, calibration and diagnostics can be carried out via HART FDI package. This enables direct integration in all standard control systems. Also bus operation (multi-drop mode) is implemented. Operation on site is possible with a HART handheld terminal.

Robust and Dependable

The compact housing means MemoTrans can be used flexibly. MemoTrans is the right transmitter for places where a display is no longer required. Space-saving, compact and with direct sensor connection for Memosens sensors.

The inductive connection of Memosens sensors is resistant to

- Moisture
- Dirt
- Corrosion
- Salt bridges
- Interference potentials

MemoTrans is so small and compact that it fits in almost all process fittings.

Condition at a Glance

Integrated green/red LED displays the alarm and fault conditions of the compact transmitter and Memosens sensor. This means personnel can quickly remedy faults on site and return measuring points to operation without long interruptions.

Excellent On-Site Protection

A high degree of protection – IP 67/68, NEMA 6 – ensures unlimited use of the compact transmitter – even outdoors.

Facts and Features

- Operation via HART FDI package
- Compact housing with IP 67/68, NEMA 6
- Multiparameter
- Green/red LEDs for status display

3 year
warranty!

HART
COMMUNICATION PROTOCOL

MemoTrans

Product Range

Device	MemoTrans compact transmitter	☐ ☐ ☐ ☐ ☐ - ☐ - ☐
Type	2-wire / 4 ... 20 mA, HART	MT 2 0 1 ☐ ☐ ☐ ☐
Approvals	General Safety + CSA C/US General Purpose	N ☐ ☐ ☐ ☐
Process variable	Memosens Multiparameter	MSMULTI ☐ ☐ ☐ ☐
Cable length	3 m / 10 ft	3
	7 m / 23 ft	7
	15 m / 49 ft	15

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Approvals	General Safety + CSA C/US General Purpose	N ☐ ☐ ☐ ☐
Process variable	Memosens pH glass sensor: Output pH 0 ... 14	MSPH ☐ ☐ ☐ ☐
	Memosens ORP sensor: Output -1500 ... 1500 mV	MSORP ☐ ☐ ☐ ☐
	Memosens conductivity sensor: Output 0 ... 20 µS/cm	MSCOND1 ☐ ☐ ☐ ☐
	Memosens conductivity sensor: Output 0 ... 500 µS/cm	MSCOND2 ☐ ☐ ☐ ☐
	Memosens conductivity sensor: Output 0 ... 20 mS/cm	MSCOND3 ☐ ☐ ☐ ☐
	Memosens conductivity sensor: Output 0 ... 500 mS/cm	MSCOND4 ☐ ☐ ☐ ☐
	Memosens amp. oxygen sensor: Output 0 ... 200 µg/l	MSOXY1 ☐ ☐ ☐ ☐
	Memosens amp. oxygen sensor: Output 0 ... 20 mg/l	MSOXY2 ☐ ☐ ☐ ☐
Cable length	3 m / 10 ft	3
	7 m / 23 ft	7
	15 m / 49 ft	15
Option	Low limit alarm: 3.6 mA	0



Specifications**MT201N-MSMULTI**

Input	Multiparameter Memosens input for pH, ORP sensors and ISFET, conductivity and amperometric oxygen sensors	
Measured value transmission	4 ... 20 mA HART	
Measuring range	See documentation for connected sensor	
pH, ORP display range ^{*)}	pH value:	–2.00 ... 16.00
	pH raw value:	–2000 ... 2000 mV
	Glass impedance:	0.0 ... 200,000.0 MΩ
	Reference impedance:	0.0 ... 2,000,000.0 Ω
	ORP:	–2000 ... 2000 mV
	ORP %:	–3,000.0 ... 3,000.0 %
	rH:	0.0 ... 70.0 rH
	Temperature:	–50.0 ... 150.0 °C / –58.0 ... 302.0 °F / 223.2 ... 423.2 K
Conductivity display range ^{*)}	Conductivity:	0.000 ... 2,000 mS/cm / 0.000 ... 2,000,000 μS/cm 0.000 ... 2.000 S/cm / 0.000 ... 200,000,000 μS/cm 0.000 ... 20,000 mS/m / 0.000 ... 200.0 S/m
	Resistance:	0.000 ... 200.000.000 Ωcm
	Raw value (uncompensated conductivity):	0.000 ... 2,000 mS/cm / 0.000 ... 2,000,000 μS/cm 0.000 ... 2.000 S/cm / 0.000 ... 200,000,000 μS/cm 0.000 ... 20,000 mS/m / 0.000 ... 200.0 S/m
	Temperature:	0.0 ... 100.0 °C / 32.0 ... 212.0 °F / 223.2 ... 523.2 K
Oxygen display range ^{*)}	Partial pressure:	0.00 ... 400.0 hPa
	Concentration in liquids:	0.00 ... 20.00 mg/l / –20.00 ... 120,000.00 μg/l / –0.02 ... 120.00 ppm / –20.00 ... 120,000.00 ppb
	Concentration in gas phase:	0.00 ... 20.00 %vol, –200.00 ... 2,000,000.00 ppmVol
	Raw value nA:	0.00 ... 12,000.00 nA
	Temperature:	–50.0 ... 250.0 °C / –58.0 ... 482.0 °F / 223.2 ... 523.2 K
pH/ ORP sensor standardization Operating modes	pH calibration:	1-point calibration 2-point calibration Calibration by sampling
	ORP calibration:	1-point calibration (mV) 2-point calibration (%)
pH buffer sets	Endress+Hauser	2.00 / 4.00 / 7.00 / (9.00) / 9.22 / 10.00 / 12.00
	Ingold/Mettler	2.00 / 4.01 / 7.00 / 9.21
	DIN 19266	1.68 / 4.01 / 6.86 / 9.18
	DIN 19267	1.09 / 4.65 / 6.79 / 9.23 / 12.75
	Merck/Riedel	2.00 / 4.01 / 6.98 / 8.95 / 12.00
	Hamilton	1.09 / 1.68 / 2.00 / 3.06 / 4.01 / 5.00 / 6.00 7.00 / 8.00 / 9.21 / 10.01 / 11.00 / 12.00
Conductivity sensor standardization Operating modes	– Cell constant	

^{*)} Display ranges may vary depending on the sensor type. Refer to the documentation for the connected sensor.

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Specifications

Oxygen sensor standardization	– Slope		
Operating modes	– Zero point		
	– Electrolyte		
	– Save electrolyte replacement		
	– Save membrane cap		
Calibration timer	0000 ... 10,000 h (hours)		
Measurement error	± 50 µA	at 20 mA	T = 25 °C / 77 °F
	± 20 µA	at 4 mA	T = 25 °C / 77 °F
	Temperature drift	Max. permitted drift of current output: 1.5 µA/K	
Response time of current output	t ₉₀ = max. 500 ms for a jump from 0 to 20 mA		
Resolution of current output	< 5 µA		
Time	Date and time are only running as long as the device is supplied with power. When power supply is disrupted, the clock will be reset to default:		

Specifications

Rated operating conditions			
Ambient temperature	-20 ... 85 °C / -4 ... 185 °F		
Process temperature	Fitting in meas. position	Tprocess = max. 100 °C / 212 °F, continuous operation Tambient = max. 60 °C / 140 °F, continuous operation	
	Fitting in service position	Tprocess = max. 145 °C / 293 °F, continuous operation Tambient = max. 60 °C / 140 °F, continuous operation	
Relative humidity	5 ... 95 % not condensing		
Max. altitude above MSL	< 2000 m / < 6562 ft. above MSL		
Transport/Storage temperature	-40 ... 85 °C / -40 ... 185 °F		
Output	4 ... 20 mA current loop floating, protected against inverse polarity, HART communication		
Linearization/transmission behavior	Linear		
Supply voltage	12.6 ... 30 V DC	(with fault current > 20 mA)	
	14 ... 30 V DC	(with fault current < 4 mA)	
Surge protection	IEC 61 000-4-4 and IEC 61 000-4-5, ± 1 kV each		
Failure signal	3.6 ... 23 mA		
Connection	2-wire cable	HART/4 ... 20 mA positive: Blue HART/4 ... 20 mA negative: White	
Housing	PEEK	Color: light gray	RAL 7035
Memosens closure	PEEK	Color: black	
Cable	TPE	Color: black	Approx. 5 mm dia.
Optical waveguide	PC	Color: transparent	
Cable length	3 m / 10 ft	7 m / 23 ft	15 m / 49 ft
Impact loads	The product is designed for mechanical impact loads of 1 J (IK06) as per the requirements of EN 61010-1.		
Dimensions	See dimension drawing		
Protection	IP 67, IP 68, NEMA 6		
Weight	MemoTrans	with 3 m / 10 ft cable with 7 m / 23 ft cable with 15 m / 49 ft cable	approx. 190 g (7 oz) approx. 380 g (13 oz) approx. 760 g (27 oz)
Connections	Terminals, conductor cross-section max. 2.5 mm²		
Simulation	Specific parameters can be simulated for test purposes: Current, measured value or temperature		

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Specifications

MT201N-MSPH			
Input	Fixed range Memosens input for pH and ISFET sensors		
Measured value transmission	4 ... 20 mA		
Measuring range	See documentation for connected sensor		
pH display range*)	pH value:0.00 ... 14.00		
MT201N-MSORP			
Input	Fixed range Memosens input for ORP sensors		
Measured value transmission	4 ... 20 mA		
Measuring range	See documentation for connected sensor		
ORP display range*)	ORP1500 ... 1500 mV		
MT201N-MSCOND			
Input	Fixed range Memosens input for conductivity sensors		
Measured value transmission	4 ... 20 mA		
Measuring range	See documentation for connected sensor		
Conductivity display range*)	Conductivity	Type MSCOND1	0 ... 20 µS/cm
		Type MSCOND2	0 ... 500 µS/cm
		Type MSCOND3	0 ... 20 mS/cm
		Type MSCOND4	0 ... 500 mS/cm
MT201N-MSOXY			
Input	Fixed range Memosens input for amperometric oxygen sensors		
Measured value transmission	4 ... 20 mA		
Measuring range	See documentation for connected sensor		
Oxygen display range*)	Concentration	Type MSOXY1	0 ... 200 µg/l
	in liquids:	Type MSOXY2	0 ... 20 mg/l
General data			
Measurement error	± 50 µA	at 20 mA	T = 25 °C / 77 °F
	± 20 µA	at 4 mA	T = 25 °C / 77 °F
	Temperature drift	Max. permitted drift of current output: 1.5 µA/K	
Resolution of current output	< 5 µA		
EMC	EN 61326-1	EN 61326-2-5	EN 301489-17
	EN 61326-2-3	EN 301489-1	NAMUR NE 21
Electrical safety	EN 61010-1		
RoHS conformity	2011/65/E		

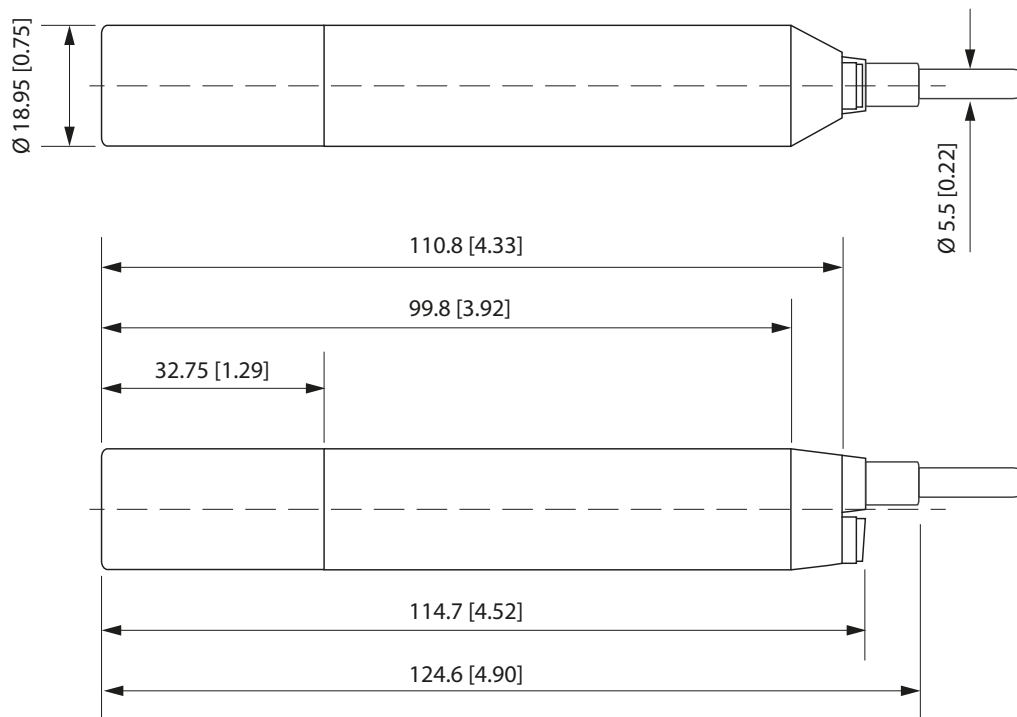
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Connection	2-wire cable	4 ... 20 mA positive: 4 ... 20 mA negative:	Blue White
Housing	PEEK	Color: light gray	RAL 7035
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Dimension Drawing



All dimensions in mm [inches].