

MT 400 Datasheet

SINGLE-PARAMETER INSTRUMENT FOR HIGH-PRECISION APPLICATIONS AND GREATER MEASUREMENT ACCURACY

General Information

MT 400 Series systems are advanced controllers designed for high-precision measurement in single-parameter applications.

Featuring reinforced galvanic isolation, MT 400 is ideal for professional water-treatment applications that require accuracy and consistency at every stage.

Graphic display and keypad

MT400 systems each feature a large 128 x 128-pixel high-contrast backlit graphic display that changes colour depending on the working condition of the device, to signal alarm situations or other operating conditions.

Users receive simultaneous flashing values for measurements and temperature readings while graphic icons display analogue and digital output status, washing cycle and alarms.

For instrument calibration procedure and setup configuration, MT400 includes five-key control.

Enclosure box and multi power supply

Wall mounting: IP65-rated ABS plastic with full box protection (144x144x122 mm)

Panel mounting: IP65-rated ABS plastic (front panel) (96x96x42 mm) and IP20-rated rear panel.

Universal power supply: 100÷240 Vac 50/60 Hz

Low power supply: 12÷32 Vdc or 24 Vac

Current outputs and measure insulation

4÷20mA output current through two independent programmable output measures with proportional routine regulation.

Relay outputs

Two independent relays, two set points, alarm remote and probe washing setting by software.

On/Off, Timed and Proportional (PWM) routine function setting.

Solid state relay (SSR)

Two frequency output signal, two independent set points.

Snail lock fixing system

Quick connection for panel mounting version.

Communication features and QR codes

Serial output RS485 Modbus RTU/ASCII

A communication protocol allows the device to be connected to the local network of an existing system and to the SekoWeb smartphone app and online portal. Accessible via QR code, SekoWeb provides the current configuration of the device, including advanced settings and calibration values.

PID regulation

The MT400 series controller provides a PID regulation to allow the user to programme outputs and is used in a wide range of applications for industrial process control.



Applications

- Wastewater treatment
- CIP
- Fish farming
- Drinking water
- Cooling towers
- Boilers
- Reverse osmosis
- Galvanic industry
- Irrigation

Operating Specifications

Power supply:	100÷240 Vac 50-60 Hz or 12÷32 Vdc / 24Vac
Power consumption:	< 5VA (@100÷240Vac) and <3.5W (@12÷32Vdc / 24 Vac 3.6 VA through a linear power supply
Relay outputs:	mechanical 250 VAC/5A, 30 VCC/3 A

Alarm settings:

• Function	Reed logic; Reed delay, Hold signal, Block, Temperature, Service
• Reed logic	Normally closed / Normally open
• Delay time	1÷3659 sec
• Block	Enable / Disable
• Alarm temperature	Notify / Hold

For alarm and probe washing, the N. 2 relay is used with normally open contact. Alarm repetition is limited for the OFA, OverRange and Persistence functions.

SSR (solid state relay)	2-SPST 60 VAC, max 125 mA, Bidirectional, NPN, PNP Frequency Output: 0 to 400 pulse/min Pulse-On Duration: 100 msec Pulse-Off Duration: 50 msec
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Serial port RS485 with Modbus RTU/ASCII Protocol.

HOLD Digital Input:

• Input voltage	12÷32 Vdc
• Power consumption	10mA max

Analogue outputs:

• Outputs	N.2 4-20 mA programmable
• Maximum Load	800 ohm
• NAMUR Alarm Output	3.6 mA or 22 mA
• Hold Alarm Value	YES / NO

TDS function (for CD model only):

Outputs	ppm (parts per million) for cooling tower applications Ohm (resistivity) for reverse osmosis applications
Value range	0.3 to 2.0 ppm/μS

Available measures



Measure	Range	Nominal accuracy
pH	0 – 14 pH	± 0.01 pH
ORP	± 2,000 mV	± 1 mV
Electrical conductivity	0.054 – 200,000 µS	± 2 %
Dissolved oxygen	0 – 20 ppm	± 2 %
Flow rate	0 – 99,999 l/s	± 0.5 Hz
Chlorine	0 – 200 ppm	± 0.01 ppm
Peracetic acid	0 – 99,000 ppm	± 0.01 ppm
Hydrogen peroxide	0 – 99,000 ppm	± 0.01 ppm
Bromine	0 – 10 ppm	± 0.01 ppm
Ozone	0 – 99,000 ppm	± 0.01 ppm
Turbidity	0 – 4,000 NTU	± 2 %
Temperature	-50 – 100°C	± 0.2°C

Technical features

Features	Description	
Single measure	From the above list	Single channel, high precision
Calibration	Single or double point	Wizard calibration routine
Temperature measure	Compensation measure or activation outputs	PT100 sensor or PT1000
Voltage input	Hold function	24 Vac
Reed input	Hold function	Dry contact
Serial port	RS485 protocol	Modbus RTU/ASCII
Two-relay device	Normally open status	5A - 250V (dry contact)
Two solid state relays	Output frequency signal	1 - 400 pulses/minute
Two 4 - 20 mA channel	Output current analogue signal	500 ohm max load
Display	Graphic display with coloured backlight	128 x 128 high-contrast pixels
Power supply	12 - 32 Vdc/24 Vac or 100 - 240 Vac	CE Class II (no earth connection required)
Enclosure box	96 x 96 mm 144 x 144 mm	Panel mounting - IP65 (front) Wall mounting - IP65

Technical Specifications

TECHNICAL SPECIFICATIONS FOR pH MEASURE

Measure range	0.00 ÷ 14.00 pH
Resolution	± 0.01 pH
Accuracy	± 0.10 pH

TECHNICAL SPECIFICATIONS FOR ORP MEASURE

Measure range	± 2.000 mV
Resolution	± 1 mV
Accuracy	± 5 mV

TECHNICAL SPECIFICATIONS FOR FLOWRATE MEASURE

Sensor	Hall, reed or push-pull sensor
Measure range	0.5 Hz at 1500 Hz
Accuracy	± 0.5 Hz

TECHNICAL SPECIFICATIONS FOR INPUT mA MEASURE

Sensor	Current sensor with 2 or 3 wires
Measure Range	0-20 mA or 4-20 mA
Resolution	± 1 µA
Accuracy	± 0.01 ppm

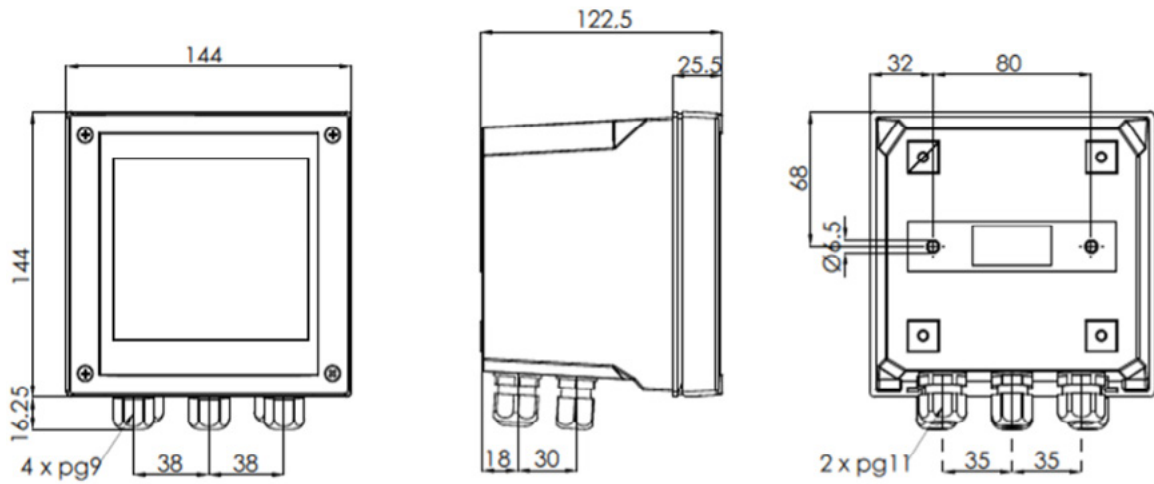
TECHNICAL SPECIFICATIONS FOR TEMPERATURE MEASURE

Sensor	PT100 / PT1000
Measure Range	0 ÷ 100 °C (+32 ÷ +212 °F)
Resolution	± 0.1 °C (°F)
Precision	PT100: ±0.5°C (±0.9°F) – PT1000: ±0.2°C (±0.4°F)

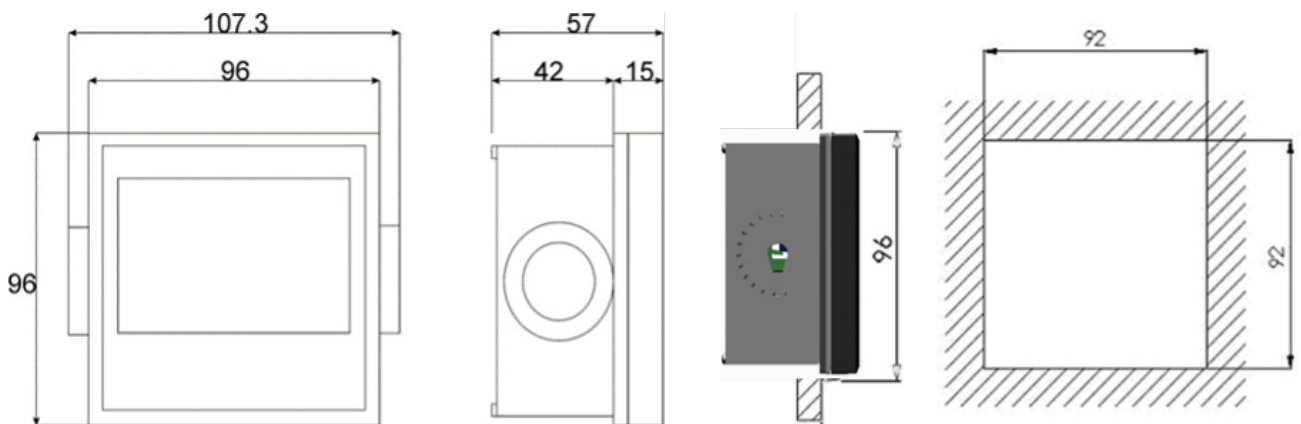
Technical specifications for conductivity measure

Probes	Range
Range with C 0.01 cm-1 / K 100 sensor	0.005 µS/cm to 200 mS/cm (5 KΩ x cm to 200 MΩ x cm)
Range with C 0.10 cm-1 / K 10 sensor	0.05 µS/cm to 2 mS/cm (500 Ω x cm to 20 MΩ x cm)
Range with C 0.20 cm-1 / K 5 sensor	0.1 µS/cm to 4 mS/cm (250 Ω x cm to 10 MΩ x cm)
Range with C 1.00 cm-1 / K 1 sensor	0.5 µS/cm to 20 mS/cm (50 Ω x cm to 2 MΩ x cm)
Range with C 10.0 cm-1 / K 0.1 sensor	5 µS/cm to 200 mS/cm (5 Ω x cm to 200 KΩ x cm)
Range with C 20.0 cm-1 / K 0.05 sensor	10 µS/cm to 400 mS/cm (2,5 Ω x cm to 100 KΩ x cm)
Resolution Cond/Res	0.0001 / 0.001 / 0.01 / 0.1 / 1 (adjustable from menu)
Accuracy.Cond/Res	±2% on the measuring point
Maximum distance of the sensor	up to 50 m (up to 164 ft)
TDS Range	0.3 to 2.0 ppm/ µS

General arrangements drawing



Wall mounting size (144x144x122,5 mm) - Dimensions and footprint for wall-mounted device.



Panel mounting size (96x96x42 mm) - Panel cutout and dimensions for snail Lock System for panel-mounted device.

MT400 series key code

