M400 2-wire Transmitter Series for pH/ORP, Oxygen, Conductivity and Dissolved Carbon Dioxide

Versatile, intelligent transmitters for harsh conditions

Technical Data

ISM®

HART COMMUNICATION PROTOCOL

Fieldbus Foundation

PROFIBUS

Ex IECEx

Ex NEPSI

FM APPROVED

Short description

The M400 2-wire transmitter series is the state-of-the-art transmitter for most demanding conditions in hazardous and non-hazardous area applications. The transmitter series features advanced ISM technology and covers pH/ORP, Oxygen, Dissolved Carbon Dioxide and Conductivity measurements. Thanks to the mixed-mode input functionality, the M400 accepts any analog or ISM sensor of your choice. The M400 is a single-channel, multi-parameter unit. The same unit can handle different parameters such as pH/ORP, Oxygen (for measurement of dissolved oxygen or in gas), Ozone, Dissolved Carbon Dioxide or Conductivity, depending on the type you choose.

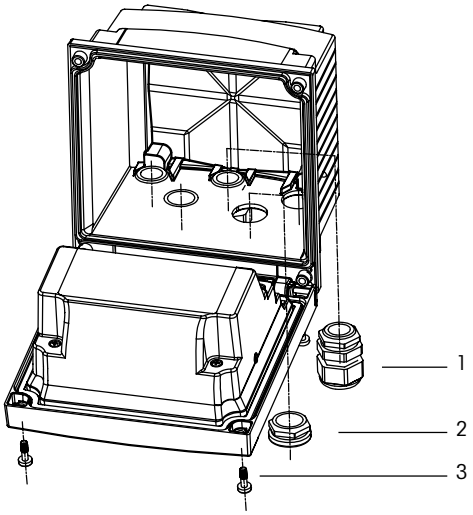
Features

– IECEx/ATEX/FM/NEPSI approved version
– Advanced ISM functionalities
– Mixed-mode input (analog or ISM sensors accepted)
– Communication protocols: 4 to 20 mA (with HART®), FOUNDATION fieldbus®, PROFIBUS PA®
– Multi-parameter unit
– Compatible with optical dissolved oxygen sensors
– Dynamic Lifetime Indication
– Adaptive Calibration Timer
– Time to Maintenance
– Analog 4 to 20 mA input signal (for pressure compensation)
– IP66/NEMA 4X rated
– PID controller
– Quick setup mode
– 8 languages: English, German, French, Italian, Spanish, Portuguese, Russian and Japanese

Contents

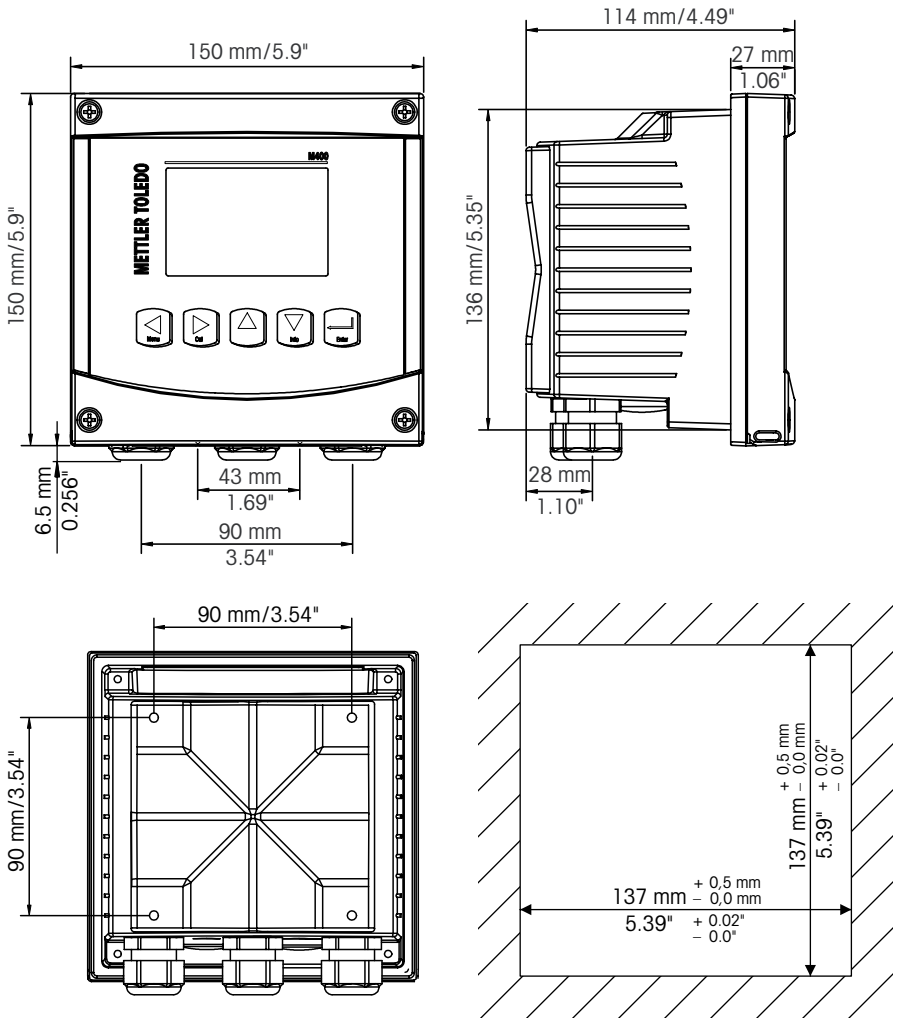
METTLER TOLEDO

Assembly



1 5 pieces M20 × 1.5 cable glands
2 2 pieces plastic plugs
3 3 pieces screws

Dimension drawings



pH/ORP (incl. pH/pNa)

Measurement parameters	pH, mV and temperature
pH display range	−2.00 to + 20.00 pH
pH resolution	Auto/0.001/0.01/0.1/1 (can be selected)
pH accuracy [1]	Analog: ±0.02 pH
mV range	−1500 to +1500 mV
mV resolution	Auto/0.001/0.01/0.1/1 mV (can be selected)
mV accuracy [1]	Analog: ±1 mV
Temperature input [2]	Pt1000/Pt100/NTC30K
Temperature measuring range	−30 to 130 °C (−22 to 266 °F)
Temperature resolution	Auto/0.001/0.01/0.1/1 (can be selected)
Temperature accuracy [1]	Analog: ±0.25 K in the range of −10 to +150 °C (±0.45 °F in the range of +14 to +302 °F)
Temperature repeatability [1]	±0.13 K (±0.23 °F)
Temperature compensation	Automatic/Manual
Max. sensor cable length	• Analog: 10 to 20 m (33 to 65 ft) depending on sensor • ISM: 80 m (260 ft)
Calibration	1-point (offset), 2-point (slope and offset) or Process (offset)

1) ISM input signal causes no additional error.
2) Not required on ISM sensors

Amperometric oxygen

Measurement parameters	• Dissolved oxygen: Saturation or concentration and temperature • Oxygen in gas: Concentration and temperature
Current range	Analog: 0 to −7000 nA
Oxygen measuring ranges, dissolved oygen	• Saturation: 0 to 500 % air, 0 to 200 % O_2 • Concentration: 0 ppb (µg/L) to 50.00 ppm (mg/L)
Oxygen measuring ranges, oxygen in gas	0 to 9999 ppm O_2 gas, 0 to 100 vol % O_2
Oxygen accuracy, dissolved oxgen [1]	• Saturation: ±0.5 % of the measured value or ±0.5 %, depending on which is larger • Concentration at high values: ±0.5 % of the measured value or ±0.050 ppm/±0.050 mg/L, depending on which is larger • Concentration at low values: ±0.5 % of the measured value or ±0.001 ppm/±0.001 mg/L, depending on which is larger • Concentration at traces values: ±0.5 % of the measured value or ±0.100 ppb/±0.1 µg/L, depending on which is larger
Oxygen accuracy, oxygen in gas [1]	• ±0.5 % of the measured value or ±5 ppb, depending on which is larger for ppm O_2 gas • ±0.5 % of the measured value or ±0.01 %, depending on which is larger for vol % O_2
Resolution current [1]	Analog: 6 pA
Polarization voltage	• Analog: −1000 to 0 mV (configurable) • ISM: −550 mV or −674 mV (configurable)
Temperature input	NTC 22 kΩ, Pt1000, Pt100
Temperature compensation	Automatic
Temperature measuring range	−10 to +80 °C (+14 to +176 °F)
Temperature accuracy	±0.25 K in the range of −10 to +80 °C (+14 to +176 °F)
Max. sensor cable length	• Analog: 20 m (65 ft) • ISM: 80 m (260 ft)
Calibration	1-point (slope and offset) or Process (slope and offset)

1) ISM input signal causes no additional error.

Optical dissolved oxygen

Measurement parameters	Dissolved oxygen (DO) saturation or concentration and temperature
DO concentration range	0.1 ppb (µg/L) to 50.00 ppm (mg/L)
DO saturation range	0 to 500 % air, 0 to 100 % O_2
DO resolution	Auto/0.001/0.01/0.1/1 (can be selected)
DO accuracy	±1 digit
Temperature measuring range	−30 to +150 °C (−22 to +302 °F)
Temperature resolution	Auto/0.001/0.01/0.1/1 (can be selected)
Temperature accuracy	±1 digit
Temperature repeatability	±1 digit
Temperature compensation	Automatic
Max. sensor cable length	15 m (50 ft)
Calibration	1-point (depending on sensor model), 2-point or Process

Dissolved carbon dioxide (CO_2 low)

Measurement parameters	Dissolved carbon dioxide and temperature
CO_2 measuring ranges	• 0 to 5000 mg/L • 0 to 200 %sat • 0 to 1500 mm Hg • 0 to 2000 mbar • 0 to 2000 hPa
CO_2 accuracy	±1 digit
CO_2 resolution	Auto/0.001/0.01/0.1/1 (can be selected)
mV range	−1500 to +1500 mV
mV resolution	Auto/0.01/0.1/1 mV
mV accuracy	±1 digit
Total pressure range (TotPres)	0 to 4000 mbar
Temperature input	Pt1000/NTC22K
Temperature measuring range	0 to +60 °C (+32 to +140 °F)
Temperature resolution	Auto/0.001/0.01/0.1/1, (can be selected)
Temperature accuracy	±1 digit
Temperature repeatability	±1 digit
Max. sensor cable length	80 m (260 ft)
Calibration	1-point (offset), 2-point (slope and offset) or Process (offset)

Thermal conductivity CO_2 hi (InPro 5500 i) (PROFIBUS PA® only)

CO_2 measuring ranges	• 0 to 10 bar p (CO_2)/0 to 145 psi p (CO_2) • 0 to 15 g/L • 0 to 7 V/V CO_2
Accuracy in fluids [1)]	• ±1 % of reading (within ± 5 % of calibration temperature) • ±2 % of reading over temperature range 0 to +50 °C (+32 to +122 °F)

1) Complete loop of sensor and transmitter

Dissolved ozone (PROFIBUS PA® only)

Measurement parameters	Concentration and temperature
Display range for current	0 to −900 nA
Ozone measuring range	Concentration 0.1 ppb (µg/L) to 5.00 ppm (mg/L) O_3
Ozone accuracy	±1 digit
Resolution current	±1 digit
Temperature compensation	Automatic
Temperature measuring range	0 to +50 °C (+32 to +122 °F)
Temperature resolution	Auto/0.001/0.01/0.1/1 (can be selected)
Temperature accuracy	±1 digit
Max. sensor cable length	80 m
Calibration	1-point ZeroPt or Process (ZeroPt and slope)

Conductivity 2-e/4-e

Measurement parameters	Conductivity/resistivity and temperature	
Conductivity ranges		0.02 to 2,000 µS/cm (500 Ω × cm to 50 MΩ × cm)
2-electrode sensor	C = 0.01	0.002 to 200 µS/cm (5000 Ω × cm to 500 MΩ × cm)
	C = 0.1	0.02 to 2000 µS/cm (500 Ω × cm to 50 MΩ × cm)
	C = 1	15 to 4000 µS/cm
	C = 3	15 to 12,000 µS/cm
	C = 10	10 to 40,000 µS/cm (25 Ω × cm to 100 kΩ × cm)
Conductivity ranges 4-electrode sensor	0.01 to 650 mS/cm (1.54 Ω × cm to 0.1 MΩ × cm)	
Display range for 2-e sensor	0 to 40,000 mS/cm (25 Ω × cm to 100 MΩ × cm)	
Display range for 4-e sensor	0.01 to 650 mS/cm (1.54 Ω × cm to 0.1 MΩ × cm)	
Chemical concentration curves	NaCl: 0−26 %@0 °C to 0 − 28 %@+100 °C NaOH: 0−12 %@0 °C to 0−16 %@+ 40 °C to 0−6 %@+100 °C HCl: 0−18 %@−20 °C to 0−18 %@0 °C to 0−5 %@+50 °C HNO_3: 0−30 %@−20 °C to 0−30 %@0 °C to 0−8 %@+50 °C H_2SO_4: 0−26 %@−12 °C to 0−26 %@+5 °C to 0−9 %@+100 °C H_3PO_4: 0−35 %@+ 5 °C to +80 °C User-defined concentration table (5 × 5 matrix)	
TDS ranges	NaCl, $CaCO_3$	
Cond/Res accuracy [1]	Analog: ±0.5 % of reading or 0.25 Ω, whichever is greater, up to 10 MΩ-cm	
Cond/Res repeatability [1]	Analog: ±0.25% of reading or 0.25 Ω, whichever is greater	
Cond/Res resolution	Auto/0.001/0.01/0.1/1 (can be selected)	
Temperature input	Pt1000/Pt100/NTC22K	
Temperature measuring range	−40 to +200 °C (−40 to +392 °F)	
Temperature resolution	Auto/0.001/0.01/0.1/1 (can be selected)	
Temperature accuracy	• ISM: ±1 digit • Analog: ±0.25 K (±0.45 °F) within −30 to +150 °C (−22 to +302 °F); ±0.50 K (±0.90 °F) outside	
Temperature repeatability [1]	±0.13 K (±0.23 °F)	
Max. sensor cable length	• ISM: 80 m (260 ft) • Analog: 61 m (200 ft); with 4-e sensors:15 m (50 ft)	
Calibration	1-point, 2-point or Process	

1) ISM input signal causes no additional error.

Inductive Conductivity (M400 Cond Ind tansmitter only)

Measurement parameters	Conductivity and temperature
Display range	0 to 2,000 mS/cm
Chemical concentration curves	NaCl: 0 – 26 % @ 0 °C to 0 – 28 % @ +100 °C NaOH-1: 0 – 13 % @ 0 °C to 0 – 24% @ +100 °C NaOH-3: 15 – 50 % @ 0 °C to 35 – 50 % @ +100 °C HCl-1: 0 – 18 % @ – 20 °C to +50 °C HCl-2: 22 – 39 % @ – 20 °C to +50 °C HNO_3-1: 0 – 30 % @ – 20 °C to +50 °C HNO_3-2: 35 – 96 % @ – 20 °C to +50 °C H_2SO_4-1: 0 – 26 % @ – 12 °C to 0 – 37 % @ +100 °C H_2SO_4-2: 28 – 88 % @ 0 °C to 39 – 88 % @ +95 °C H_2SO_4-3: 94 – 99 % @ – 12 °C to 89 – 99 % @ +95 °C H_3PO_4: 0 – 35 % @ + 5 °C to + 80 °C User-defined concentration table (5 × 5 matrix)
TDS ranges	NaCl, $CaCO_3$
Conductivity accuracy	± 1.0 % of reading or ± 0.005 mS/cm
Conductivity repeatability	± 1.0 % of reading or ± 0.005 mS/cm
Conductivity resolution	Auto/0.001/0.01/0.1/1 (can be selected)
Temperature input	Pt1000/Pt100/NTC22K
Temperature measuring range	– 40 to + 200 °C (– 40 to + 392 °F)
Temperature resolution	Auto/0.001/0.01/0.1/1 (can be selected)
Temperature accuracy	± 0.25 K (± 0.45 °F) within – 30 to + 150 °C (– 22 to + 302 °F); ± 0.50 K (± 0.90 °F) outside
Temperature repeatability	± 0.13 K (± 0.23 °F)
Max. sensor cable length	10 m (32.8 ft)
Calibration	1-point, Zero point or Process

General electrical specifications

Display	Backlit LCD, 4 lines
Running capacity	Ca. 4 days
Keypad	5 tactile feedback keys
Languages	8 (English, German, French, Italian, Spanish, Portuguese, Russian and Japanese)
Connection terminals	Spring cage terminals, appropriate for wire cross section 0.2 to 1.5 mm2 (AWG 16 – 24)
Analog input	4 to 20 mA (for pressure compensation)

Specification for 4 to 20 mA (with HART ®)

Supply voltage	14 to 30 V DC
Number of outputs (analog)	2
Current outputs	Loop current 4 … 20 mA, galvanically isolated up to 60 V from input and from earth/ground, protected against wrong polarity, feeding voltage14 to 30 V DC
Measurement error through analog outputs	< ± 0.05 mA over 1 to 20 mA range
Analog output configuration	Linear
PID process controller	Pulse length, pulse frequency
Hold input/Alarm contact	Yes/Yes (alarm delay 0 to 999 s)
Digital outputs	2 open collector (OC), 30 V DC, 100 mA, 0.9 W
Digital input	• M400/2H, M400/2XH, M400G/2H, M400G/2XH: 2 • M400/2XH Cond Ind: 1 • Galvanically isolated up to 60 V from output, analog input and ground/earth with switching limits 0.00 V DC to 1.00 V DC inactive 2.30 V DC to 30.00 V DC active
Alarm output delay	0 to 999 s

Specification for FOUNDATION fieldbus®

Supply voltage	• Non hazardous area (Non-IS): 9 to 32 V DC • Linear Barrier: 9 to 24 V DC • FISCO: 9 to 17.5 V DC
Current	22 mA
Max. current in case of fault (FDE)	< 28 mA
Number of current inputs	1 for pressure compensation
Physical interface	According to IEC 61158-2
Transfer rate	31.25 kbit/s
Profile	FF_H1 (Foundation fieldbus)
Communication protocol	FF-816
ITK version	6.0.1
Manufacturer ID (DEV_TYPE)	0x465255
FF Type (DEV_REV)	1
FF communication model	• 1 Resource Block • 1 Physical Block • 2 Transducer Blocks (General and Sensor) • 4 Analog Input Blocks • 1 Analog Output Block • 2 Descrete Input Blocks • 2 Descrete Output Blocks

PROFIBUS PA® specifications

Supply voltage	Non hazardous area (Non-IS): 9 to 32 V DC Linear Barrier: 9 to 24 V DC FISCO: 9 to 17.5 V DC
Current consumption	22 mA
Current consumption on error	< 28 mA
Number of current inputs	1 for pressure compensation
Profile	PROFIBUS PA 3.02
PA communication model	• 1 Resource Block • 1 Physical Block • 1 Analyser Transducer Block (Sensor Block) • 4 Analog Input Blocks • 1 Analog Output Block • 2 Descrete Input Blocks • 2 Descrete Output Blocks

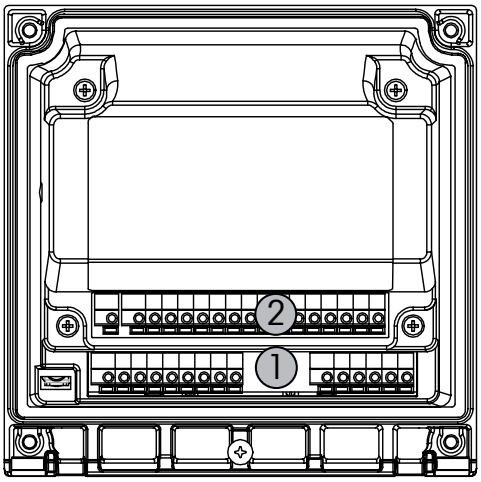
Environmental specifications

Storage temperature	−40 to +70 °C (−40 to +158 °F)
Ambient temperature operating range	−20 to +60 °C (−4 to +140 °F)
Relative humidity	0 to 95 % non-condensing
EMC	According to EN 61326-1 (general requirements) Emission: Class B, Immunity: Class A
Certificates and approvals	M400/2H • cFMus Class I, Division 2, Groups A, B, C, D T4A • cFMus Class I, Zone 2, Groups IIC T4
	M400/2XH, M400G/2XH, M400/2XH Cond Ind • ATEX/IECEx Zone 1 Ex ib [ia Ga] IIC T4 Gb • ATEX/IECEx Zone 21 Ex ib [ia Da] IIIC T80°C Db IP66 • cFMus Class I, Division 1, Groups A, B, C, D T4 • cFMus Class II, Division 1, Groups E, F, G • cFMus Class III • cFMus Class I, Zone 0, AEx ia IIC T4 Ga • NEPSI EX Zone
	M400FF • ATEX/IECEx Zone 1 Ex ib [ia Ga] IIC T4 Gb • cFMus Class I, Division 1, Groups A, B, C, D T4A • NEPSI EX Zone
	M400PA • ATEX/IECEx Zone 1 Ex ib [ia Ga] IIC T4 Gb • cFMus Class I, Division 1, Groups A, B, C, D T4A • NEPSI EX Zone
CE mark	The measuring system is in conformity with the statutory requirements of the EC Directives. METTLER TOLEDO confirms successful testing of the device by affixing to it the CE mark.

Mechanical specifications

Dimensions	Housing – Height × Width × Depth	144 × 144 × 116 mm (5.7 × 5.7 × 4.6 inch)
	Front bezel – Height × Width	150 × 150 mm (5.9 × 5.9 inch)
	Max. depth – panel mounted	87 mm (excludes plug-in connectors)
Weight		1.50 kg (3.3 lb)
Material		Aluminum die cast
Enclosure rating		IP 66/NEMA4X

Terminal block (TB) definitions



1 TB1 – Input and output analog signal
2 TB2 – Sensor signal

TB1 terminal definition

4 to 20 mA (with HART®)

Terminal	Description
1	DI1+
2	DI1–
3	DI2+
4	DI2–
5	Not used
6	OC1+
7	OC1–
8	OC2+
9	OC2–
10	AO1+/HART
11	AO1–/HART
12	AO2+
13	AO2–
14	not used
15	⏚

Foundation fieldbus®

Terminal	Description
1	Not available
2	Not available
3	Not available
4	Not available
5	Not available
6	Not available
7	Not available
8	Not available
9	Not available
10	+FF-H1
11	–FF-H1
12	+FF-H1
13	–FF-H1
14	not used
15	⏚

PROFIBUS PA®

Terminal	Description
1	Not available
2	Not available
3	Not available
4	Not available
5	Not available
6	Not available
7	Not available
8	Not available
9	Not available
10	+PA
11	–PA
12	+PA
13	–PA
14	not used
15	⏚

TB2 terminal definition – Analog sensors (except M400 Cond Ind transmitter)

Conductivity 2-e/4-e

Terminal	Function	Color
A	Cnd inner1 [1]	White
B	Cnd outer1 [1]	White/blue
C	Cnd outer1	–
D	Not used	–
E	Cnd outer2	–
F	Cnd inner2 [2]	Blue
G	Cnd outer2 (GND) [2]	Black
H	Not used	–
I	RTD ret/GND	Bare shield
J	RTD sense	Red
K	RTD	Green
L	Not used	–
M	Not used	–
N	Not used	–
O	Not used	–
P	Not used	–
Q	Not used	–

1) For third party Conductivity 2-e sensors a jumper between A and B may be required.
2) For third party Conductivity 2-e sensors a jumper between F and G may be required.

pH/ORP

	pH		Redox (ORP)	
Terminal	Function	Color [1]	Function	Color
A	Glass	Transparent	Platinum	Transparent
B	Not used	–	–	–
C	Not used	–	–	–
D	Not used	–	–	–
E	Reference	Red	Reference	Red
F	Reference [2]	–	Reference [2]	–
G	Solution GND [2]	Blue [3]	Solution GND [2]	–
H	Not used	–	–	–
I	RTD ret/GND	White	–	–
J	RTD sense	–	–	–
K	RTD	Green	–	–
L	Not used	–	–	–
M	Shield (GND)	Green/yellow	Shield (GND)	Green/yellow
N	Not used	–	–	–
O	Not used	–	–	–
P	Not used	–	–	–
Q	Not used	–	–	–

1) Grey wire not used.
2) Install jumper between F and G for ORP sensors and pH electrodes without SG.
3) Blue wire for electrode with SG.

TB2 terminal definition – Analog sensors (continuation) (except M400 Cond Ind transmitter)

Amperometric oxygen

		InPro 6800(G)	InPro 6900	InPro 6950
Terminal	**Function**	**Color**	**Color**	**Color**
A	Not used	–	–	–
B	Anode	Red	Red	Red
C	Anode	– [1)]	– [1)]	–
D	Reference	– [1)]	– [1)]	Blue
E	Not used	–	–	–
F	Not used	–	–	–
G	Guard	–	Grey	Grey
H	Cathode	Transparent	Transparent	Transparent
I	NTC ret (GND)	White	White	White
J	Not used	–	–	–
K	NTC	Green	Green	Green
L	Not used	–	–	–
M	Shield (GND)	Green/yellow	Green/yellow	Green/yellow
N	Not used	–	–	–
O	Not used	–	–	–
P	+Ain [2)]	–	–	–
Q	–Ain [2)]	–	–	–

1) Install jumper between C and D for InPro 6800(G) and InPro 6900.
2) 4 to 20 mA signal for pressure compensation

TB2 terminal definition – Analog sensors (M400 Cond Ind transmitter only)

Inductive conductivity

Terminal	Function	Color	
		InPro 7259 ST, InPro 7250 PFA	**InPro 7250 HT**
A	Not used	–	–
B	Not used	–	–
C	Not used	–	–
D	Send High	Blue	Black or Transparent
E	Send Low	Brown	Violet
F	Shield (GND)	Green-Yellow	Green-Yellow
G	Receive Low	Red	Yellow
H	Receive High	Black or Transparent	Red
I	RTD	White	White
J	RTD sense	Grey	Grey
K	RTD	Green	Green
L – Q	Not used	–	–

TB2 terminal definition – ISM sensors (except M400 Cond Ind transmitter)

pH, Amperometric oxygen, Ozone[1], Conductivity 4-e, Dissolved CO_2 low

Terminal	Function	Color
A	Not used	–
B	Not used	–
C	Not used	–
D	Not used	–
E	Not used	–
F	Not used	–
G	Not used	–
H	Not used	–
I	Not used	–
J	Not used	–
K	Not used	–
L	1-wire	Transparent (cable core)
M	GND	Red (shield)
N	RS485-B	–
O	RS485-A	–
P	+Ain [2]	–
Q	–Ain [2]	–

1) PROFIBUS PA® only
2) Only for Oxygen sensors: 4 to 20 mA signal for pressure compensation

Optical dissolved oxygen, CO_2 hi (InPro 5500 i) [1]

	Optical dissolved oxygen with VP8 cable [2]		Optical dissolved oxygen with other cables [3] CO_2 hi (InPro 5500 i) [1]	
Terminal	Function	Color	Function	Color
A	Not used	–	Not used	–
B	Not used	–	Not used	–
C	Not used	–	Not used	–
D	Not used	–	Not used	–
E	Not used	–	Not used	–
F	Not used	–	Not used	–
G	Not used	–	Not used	–
H	Not used	–	Not used	–
I	Not used	–	D_GND (shield)	Yellow
J	Not used	–	Not used	–
K	Not used	–	Not used	–
L	Not used	–	Not used	–
M	D_GND (shield)	Green/yellow	D_GND (shield)	Grey
N	RS485-B	Brown	RS485-B	Blue
O	RS485-A	Pink	RS485-A	White
P	+Ain [4]	–	+Ain [4]	–
Q	–Ain [4]	–	–Ain [4]	–

1) PROFIBUS PA® only
2) Connect the grey +24 DC wire and the blue GND_24 V wire of the sensor separately to an external power supply.
3) Connect the brown +24 DC wire and the black GND_24 V wire of the sensor separately.
4) 4 to 20 mA signal for pressure compensation

Ordering information

Transmitter	Order no.	Description
M400/2H, 1-channel multi-parameter	30 025 514	4 to 20 mA (with HART®), Non-Ex version
M400/2XH, 1-channel multi-parameter	30 025 515	4 to 20 mA (with HART®), Ex version
M400G/2XH, 1-channel multi-parameter	30 025 516	4 to 20 mA (with HART®), for gas appications, Ex version
M400/2XH Cond Ind, 1-channel	30 256 307	4 to 20 mA (with HART®), for analog inductive conductivity sensors, Ex version
M400FF, 1-channel multi-parameter	30 026 616	FOUNDATION fieldbus®, Ex version
M400PA, 1-channel multi-parameter	30 026 617	PROFIBUS PA®, Ex version

M400/2H, M400/2XH, M400G/2XH parameter fit guide

	Analog	ISM	Analog	ISM
pH/ORP	•	•	•	•
pH/pNa	–	•	–	•
Conductivity 2-e	•	–	•	–
Conductivity 4-e	•	•	•	•
Amp. dissolved oxygen ppm/ppb/trace	•/•/•	•/•/•	•/•/•	•/•/•
Amp. oxygen gas	–	–	•	•
Optical dissolved oxygen ppm/ppb	–	•/•	–	•/•
Dissolved carbon dioxide (CO_2 low)	–	•	–	•

M400FF, M400PA parameter fit guide

	Analog	ISM	Analog	ISM
pH/ORP	•	•	•	•
pH/pNa	–	•	–	•
Conductivity 2-e	•	–	•	–
Conductivity 4-e	•	•	•	•
Amp. dissolved oxygen ppm/ppb/trace	•/•/•	•/•/•	•/•/•	•/•/•
Amp. oxygen gas	•	•	•	•
Optical dissolved oxygen ppm/ppb	–	•/•	–	•/•
Ozone	–	–	–	•
Dissolved carbon dioxide (CO_2 low)	–	•	–	•
Thermal conductivity (CO_2 hi) (InPro 5500 i)	–	–	–	•

M400/2XH Cond Ind parameter fit guide

	Analog
Cond Ind (Inductive Conductivity) [1)]	•

1) InPro 7250 ST, InPro 7250 PFA. InPro 7250 HT

Accessories

Description	Order no.
Pipe Mount Kit for ½DIN models	52 500 212
Panel Mount Kit for ½DIN models	52 500 213
Wall Mount Kit for ½DIN models	30 300 482
Protective Hood	52 500 214

METTLER TOLEDO Market Organizations

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