

Transmitter x100e Series for pH, Dissolved Oxygen and Conductivity

Advanced transmitters for reliable measurements and for harsh conditions

Technical Data



Short description

The cost-effective Transmitter X100 Series are suitable designed for highly reliable and accurate measurements in a wide range of industrial applications. The instruments are easy to operate and the large-size LCD provides substantial all essential information. The measurement values are displayed in large characters and additional pictographs explain the function operation and advise any signal or functional irregularities.

Features

- Two 0/4...20 mA current outputs
- Two limit contacts
- Alarm & wash contact
- Continuous monitoring of sensor and transmitter performance
- Sensor diagnostics
- Easy operation with help of pictographs
- PID controller
- Communication with EasyClean, the METTLER TOLEDO cleaning

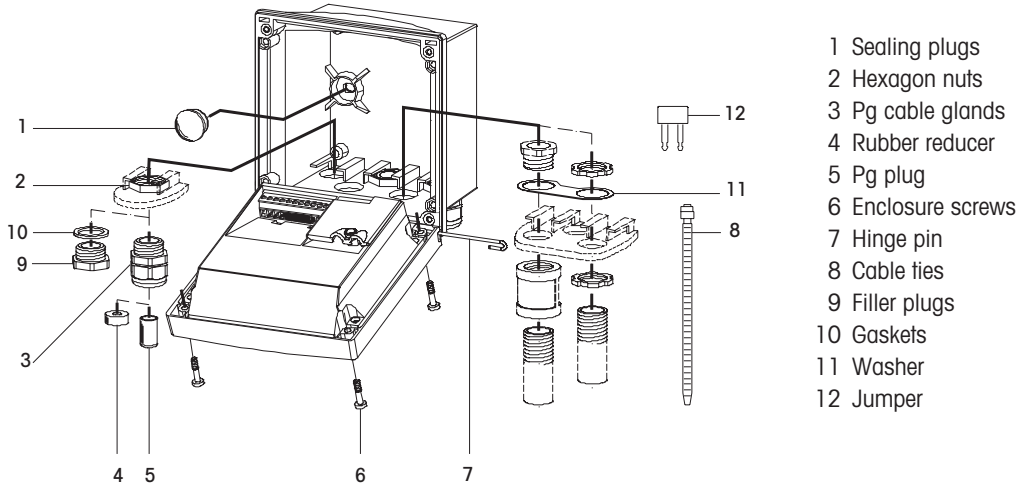
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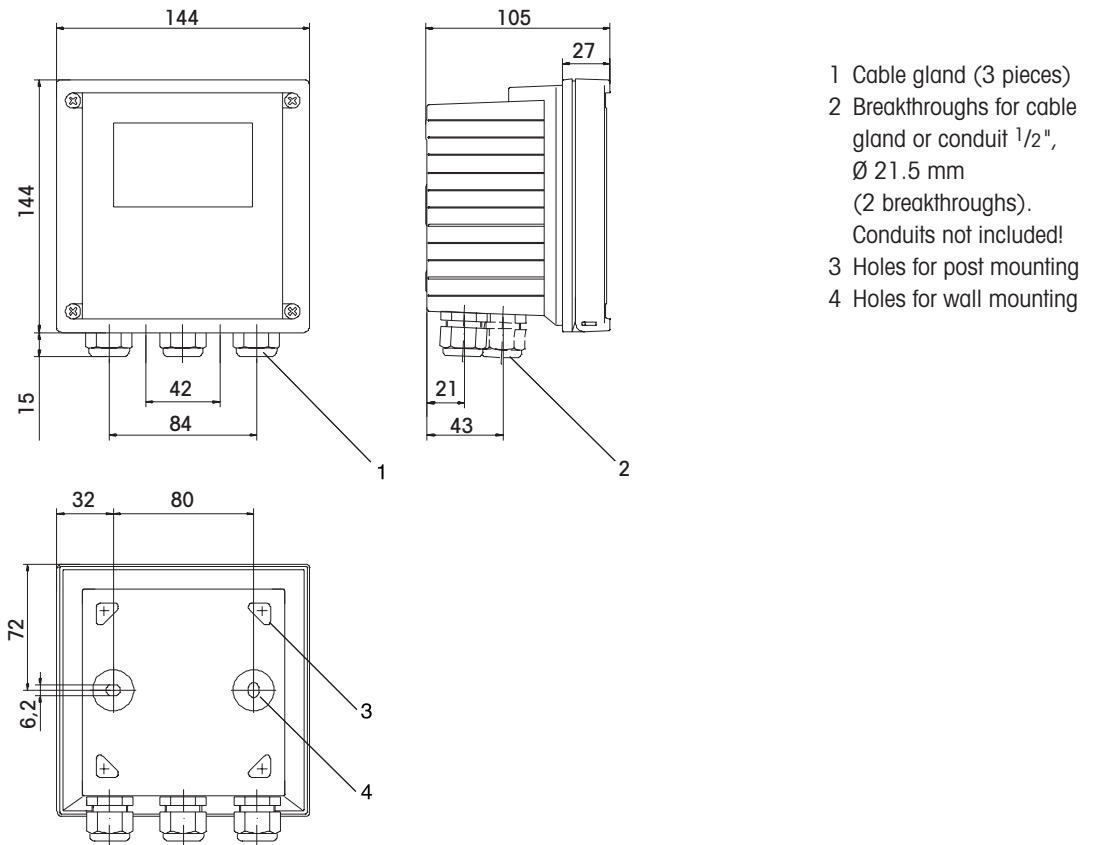
METTLER TOLEDO

Drawings

Assembly

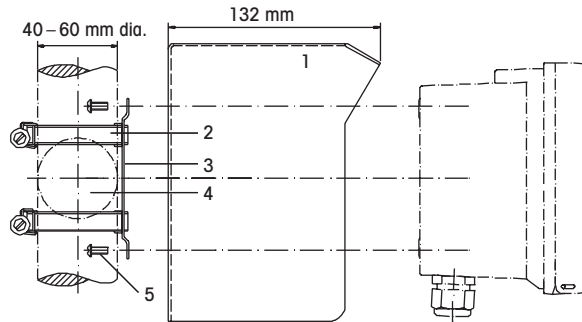


Mounting



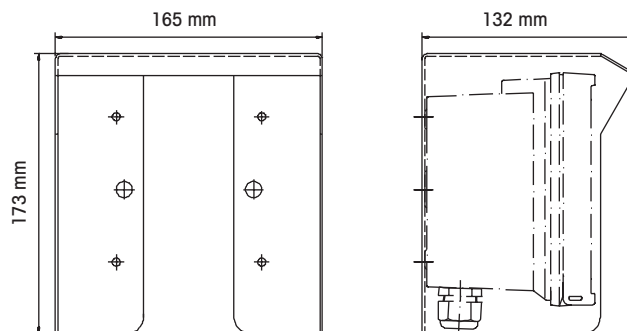
Drawings

Pipe mounting with ZU 0274 bracket kit

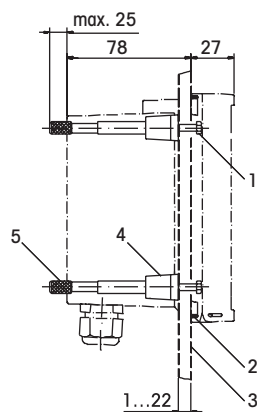


- 1 Protected hood (if required)
- 2 Hose clamps with worm gear drive to DIN 3017 (2 pieces)
- 3 Postmounting plate
- 4 For vertical or horizontal post/pipe mounting
- 5 Self-tapping screws

Protective hood ZU 0276 for wall and pipe mounting



Panel-mount kit ZU 0275



- 1 Screws
- 2 Seal
- 3 Control panel
- 4 Span pieces
- 5 Threaded sleeves

| | |
|--------------------------------------|--|
| pH/mV input | <p>Input for pH, ORP electrodes or ISFET</p> <p>Measurement range -1500...+1500 mV</p> <p>Display range pH value -2.00...16.00</p> <p>ORP -1999...+1999 mV</p> <p>Glass electrode input¹⁾</p> <p>Input resistance > 0.5 x 10¹² Ω</p> <p>Input current < 2 x 10⁻¹² A</p> <p>Reference electrode input¹⁾</p> <p>Input resistance > 1 x 10¹⁰ Ω</p> <p>Input current < 1 x 10⁻¹⁰ A</p> <p>Meas. error^{1,2,3)}</p> <p>pH value < 0.02</p> <p>mV value < 1 mV</p> |
| Electrode standardization pH* | |
| Operating modes | <p>-BUF Calibration with automatic buffer recognition Calimatic:</p> <p>Buffer sets -01- Mettler-Toledo 2.00/4.01/7.00/9.21</p> <p>-02- Merck/Riedel de Haen 2.00/4.00/7.00/9.00/12.00</p> <p>-03- Ciba (94) 2.06/4.00/7.00/10.00</p> <p>-04- NIST technical 1.68/4.00/7.00/10.01/12.46</p> <p>-05- NIST standard 1.679/4.006/6.865/9.180</p> <p>-06- HACH 4.00/7.00/10.18</p> <p>-07- WTW technical buffers 2.00/4.01/7.00/10.00</p> <p>-PRD Product Calibration</p> <p>-MAN Calibration with manual entry of individual buffer values</p> <p>-DAT Data entry of premeasured electrodes</p> |
| Zero point adjustment | ±200 mV |
| Max. calibration range | Asymmetry potential: ±60 mV Slope: 80...103 % (47.5...61 mV/pH) |
| Sensor standardization | |
| ORP* | ORP calibration |
| Max. calibration range | -700...+700 Δ mV |
| Cal timer | 0000...9999 h |
| Sensocheck | automatic monitoring of glass and reference electrode (can be disabled) |
| Sensoface | provides information on the electrode condition. Evaluation of zero/slope, response, calibration interval, Sensocheck |

| | |
|---|--|
| Temperature input* | Pt 100/Pt 1000/NTC 30 kΩ/NTC 8,55 kΩ 2-wire connection, adjustable |
| Measurement range | Pt 100/Pt 1000: -20.0...+200.0 °C/-4...+392 °F NTC 30 kΩ -20.0...+150.0 °C/-4...+302 °F NTC 8.55 kΩ -10.0...+130.0 °C/+14...+266 °F |
| Adjustment range | 10 K |
| Resolution | 0.1 °C/1 °F |
| Meas. error ^{1,2,3)} | < 0.5 K (< 1 K for Pt100; <1K for NTC >100 °C) |
| Temp. compensation of process medium | Linear -19.99...+19.99%/K (reference temp. 25 °C) |
| Power output | for operating an ISFET adapter +3 V/0.5 mA -3 V/0.5 mA |

* User-defined
¹⁾ To IEC 746 Part 1, at nominal operating conditions
²⁾ ± 1 count
³⁾ Plus sensor error

Dissolved oxygen input

| | |
|-------------------------------|--|
| Sensor type A: | InPro6000...6800 |
| Sensor type B: | InPro6900 |
| Measuring current | -2...1800 nA |
| Resolution | 0.05 nA (with V _{pol} ≤ 800 mV and V _{ref} ≤ 200 mV) |
| Saturation (-10...80 °C) | 0...500 % |
| Meas. error ^{1,2,3)} | 0.5 % of meas. val. +0.5 % |
| Concentration (-10...80 °C) | 0.00...50.00 mg/l 0.00...50.00 ppm |
| Meas. error ^{1,2,3)} | 0.5 % of meas. val. + 0.05 mg/l or 0.05 ppm |
| Adm. guard current | 20 µA |
| Polarization voltage * | 0...1000 mV |
| Process pressure* | 0.000...9.999 bar (...999.9 kPa/...145.0 psi) |
| Salt correction * | 00.00...45.00 g/kg |

Sensor standardization

| | | |
|------------------------------------|--|--|
| Operating modes * | DO saturation (automatic) DO concentration (automatic) Product calibration Zero point calibration | |
| Calibration range Sensor type A | Zero point Slope | ± 2 nA 25...130 nA (at 25 °C, 1013 mbars) |
| Calibration range Sensor type B | Zero point Slope | ± 2 nA 200...550 nA (at 25 °C, 1013 mbars) |
| Calibration timer* | 0000...9999 h | |
| Pressure correction * | 0.000...9.999 bars/999.9 kPa/145.0 psi | |

Sensocheck Monitoring for short circuits/open circuits (can be disabled)

Sensoface Provides information on the sensor condition
Evaluation of zero/slope, response, calibration interval, Sensocheck

Temperature input * NTC 22 kΩ/NTC 30 kΩ*
2-wire connection, adjustable

| | |
|-------------------------------|---------------------------------|
| Measurement range | -20.0...+150.0 °C/-4...+ 302 °F |
| Adjustment range | 10 K |
| Resolution | 0.1 °C/1 °F |
| Meas. error ^{1,2,3)} | < 0.5 K (< 1 K at >100 °C) |

* User-defined

¹⁾ To IEC 746 Part 1, at nominal operating conditions

²⁾ ± 1 count

³⁾ Plus sensor error

Dissolved oxygen input

| | |
|-------------------------------|--|
| Sensor type A: | InPro 6000...6800 |
| Sensor type B: | InPro 6900 |
| Measuring current | -2...600 nA |
| Resolution | 0.01 nA (with V _{pol} ≤ 500 mV and V _{ref} ≤ 200 mV) |
| Saturation (-10...80 °C) | 0.0...120.0 % |
| Meas. error ^{1,2,3)} | 0.5 % of meas. val. +0.1 % |
| Concentration (-10...80 °C) | 0000...9999 µg/l 0000...9999 ppb 0.0000...9.999 mg/l 0.0000...9.999 ppm |
| Meas. error ^{1,2,3)} | 0.5 % of meas. val. +0.005 mg/l or 0.005 ppm |
| Adm. guard current | 20 µA |
| Polarization voltage* | 0...1000 mV |
| Process pressure* | 0.000...9.999 bars (to 999.9 kPa/...145.0 psi) |
| Salt correction* | 00.00...45.00 g/kg |

Sensor standardization

| | | |
|------------------------------------|--|--|
| Operating modes * | DO saturation (automatic) DO concentration (automatic) Product calibration Zero point calibration | |
| Calibration range Sensor type A | Zero point Slope | ± 2 nA 25...130 nA (at 25 °C, 1013 mbars) |
| Calibration range Sensor type B | Zero point Slope | ± 2 nA 200...550 nA (at 25 °C, 1013 mbars) |
| Calibration timer * | 0000...9999 h | |
| Pressure correction * | 0.000...9.999 bars/999.9 kPa/145.0 psi | |

Sensocheck Monitoring for short circuits/open circuits (can be disabled)

Sensoface Provides information on the sensor condition
Evaluation of zero/slope, response, calibration interval, Sensocheck

| | |
|-------------------------------|---|
| Temperature input * | NTC 22 kΩ/NTC 30 kΩ* 2-wire connection, adjustable |
| Measurement range | -20.0...+150.0 °C/-4...+302 °F |
| Adjustment range | 10 K |
| Resolution | 0.1 °C/1 °F |
| Meas. error ^{1,2,3)} | < 0.5 K (< 1 K at >100 °C) |

* User-defined
¹⁾ To IEC 746 Part 1, at nominal operating conditions
²⁾ ± 1 count
³⁾ Plus sensor error

| | | | |
|-------------------------------------|---|---|-------------------------------------|
| Conductivity input | Input for 2-e or 4-e conductivity sensors | | |
| Working range | 4-electrode sensor: | 0.2 $\mu\text{S} * c \dots 1000 \text{ mS} * c$ | (c = cell constant) |
| | 2-electrode sensor: | 0.2 $\mu\text{S} * c \dots 200 \text{ mS} * c$ | |
| | (the actual range is very much depending on the sensor used, display limited to 3500 mS) | | |
| Effective ranges | Conductivity | 0.000...9.999 $\mu\text{S}/\text{cm}$ | |
| | | 00.00...99.99 $\mu\text{S}/\text{cm}$ | |
| | | 000.0...999.9 $\mu\text{S}/\text{cm}$ | |
| | | 0000...9999 $\mu\text{S}/\text{cm}$ | |
| | | 0.000...9.999 mS/cm | |
| | | 00.00...99.99 mS/cm | |
| | | 000.0...999.9 mS/cm | |
| | | 0.000...9.999 S/m | |
| | | 00.00...99.99 S/m | |
| | | | Resistivity |
| | Concentration | 0.00...9.99 % by wt. | |
| | Salinity | 0.0...45.0 ‰ (0...35 °C) | |
| Measurement error ^{1,2,3)} | < 1% of measured value +0.4 $\mu\text{S} * c$ | | |
| Conc. measurements | -01- | NaCl | 0.00...9.99 % by wt. (0 ...60°C) |
| | -02- | HCl | 0.00...9.99 % by wt. (-20...50 °C) |
| | -03- | NaOH | 0.00...9.99 % by wt. (0...100 °C) |
| | -04- | H ₂ SO ₄ | 0.00...9.99 % by wt. (-17...110 °C) |
| | -05- | HNO ₃ | 0.00...9.99 % by wt. (-17...50 °C) |
| Sensor standardization | Input of cell constant with simultaneous display of conductivity value and temperature | | |
| | Input of conductivity value with simultaneous display of cell constant and temperature | | |
| | Product calibration | | |
| | Temperature probe adjustment | | |
| Permissible cell constant | 00.0050...19.9999 cm^{-1} | | |
| Sensocheck | Monitoring of sensor polarization and cable capacitance (can be disabled) | | |
| Sensoface | Provides information on the sensor condition (Sensocheck) | | |
| Sensor monitor | Display of direct measurement values for validation purpose (resistance/temperature) | | |
| USP-Function | Monitoring of conductivity of water for pharmaceutical applications to USP (USP <645>) with adjustable limit values (10...100 % of USP value) | | |

| | | |
|---|---|-------------------------------|
| Temperature input²⁾ | Pt100/Pt1000/NTC 30 kΩ/NTC 8.55 kΩ 2-wire connection, adjustable | |
| Measuring range | Pt100/Pt1000 | -20...+200 °C / -4...+392 °F |
| | NTC 30 kΩ | -20...+150 °C / -4...+302 °F |
| | NTC 8.55 kΩ | -10...+130 °C / +14...+266 °F |
| Resolution | 0.1 °C / 1 °F | |
| Error ^{1,2,3)} | 0.5 K (< 1 K with Pt100; < 1 K with NTC > 100 °C) | |
| Temperature compensation (OFF) (ref. temp. 25 °C) | not compensated | |
| | (Lin) linear, 0.00...19.99 %/K, | -20...130 °C |
| | (NLF) natural waters to EN 27888, | 0...36 °C |
| | (nACL) ultrapure water with NaCl traces, | 0...120 °C |
| | (HCL) ultrapure water with HCl traces, | 0...120 °C |
| | (nH3) ultrapure water with NH ₃ traces, | 0...120 °C |

* User-defined

1) To IEC 746 Part 1, at nominal operating conditions

2) ± 1 count

3) Plus sensor error

| | | | | |
|-------------------------------------|---|----------------------------------|----------------|----------------|
| Conductivity input | Input for inductive sensors | | | |
| Working range | Conductivity | 0.000...1999 mS/cm | | |
| | Concentration | 0.00...100 % by wt. | | |
| | Salinity | 0.0...45.0 ‰ (0...35 °C) | | |
| Effective ranges | Conductivity | 0.000...9.999 mS/cm | | |
| | | 00.00...99.99 mS/cm | | |
| | | 000.0...999.9 mS/cm | | |
| | | 0000...1999 mS/cm | | |
| | | 0.000...9.999 S/m | | |
| | | 00.00...99.99 S/m | | |
| | | Concentration | 0.00...99.99 % | |
| Measurement error ^{1,2,3)} | Salinity | 0.0...45.0 ‰ (0...35 °C) | | |
| | | < 1% of measured value +0.005 mS | | |
| Conc. measurements | -01- | NaCl | 0...26 % | (0...60 °C) |
| | -02- | HCl | 0...18 % | (-20...50 °C) |
| | -03- | NaOH | 0...14 % | (0...100 °C) |
| | -04- | H ₂ SO ₄ | 0...30 % | (-17...110 °C) |
| | -05- | HNO ₃ | 0...30 % | (-20...50 °C) |
| | -06- | H ₂ SO ₄ | 92...99 % | (-17...115 °C) |
| | -07- | HCl | 22...39 % | (-20...50 °C) |
| | -08- | HNO ₃ | 35...96 % | (-20...50 °C) |
| | -09- | H ₂ SO ₄ | 32...84 % | (-17...115 °C) |
| | -10- | NaOH | 18...50 % | (0...100 °C) |
| Sensor standardization | Input of cell factor with simultaneous display of conductivity value and temperature | | | |
| | Input of conductivity value with simultaneous display of cell factor and temperature | | | |
| | Product calibration | | | |
| | Zero point calibration | | | |
| | Temperature probe adjustment | | | |
| Permissible cell factor | 00.100...19.999 | | | |
| Permissible transfer ratio | 01.00...199.99 | | | |
| Permissible zero point deviation | ± 0.5 mS/cm | | | |
| Sensocheck | Monitoring of sender coil and leads for short circuiting, and of the receiver coil for disruption (can be disabled) | | | |
| Sensoface | Indicates sensor status (zero point, sensocheck) | | | |
| Sensor monitor | Display of direct measurement values for validation purpose (resistance /temperature) | | | |

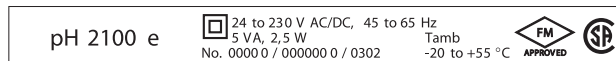
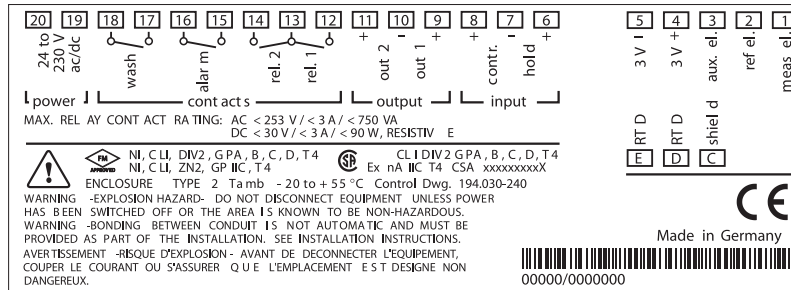
| | |
|---|---|
| Temperature input* | Pt100/Pt1000/NTC 100 kΩ 2-wire connection, adjustable |
| Measuring range | Pt100/Pt1000 -20...+200 °C / -4... +392 °F NTC -20...+130 °C / -4... +266 °F |
| Resolution | 0.1 °C / 1 °F |
| Error ^{1,2,3)} | 0.5 K (< 1 K with Pt100; < 1 K with NTC > 100 °C) |
| Temperature compensation (OFF) (ref. temp. 25 °C) | not compensated (LIN) linear, 0.00...19.99 %/K (NLF) natural waters to EN 27888 (0...35 °C) |

* User-defined
 1) To IEC 746 Part 1, at nominal operating conditions
 2) ± 1 count
 3) Plus sensor error

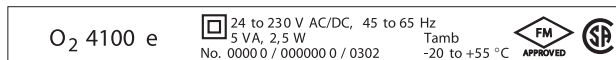
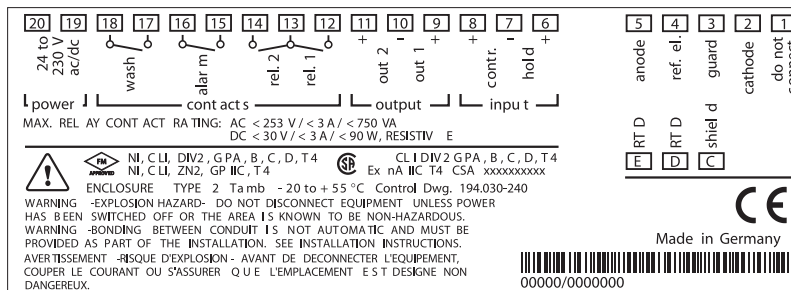
Terminal assignment

«Advanced Line» transmitters

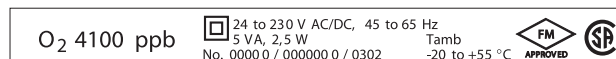
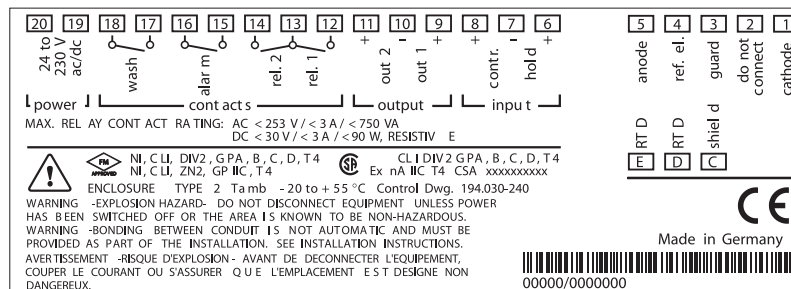
Transmitter pH 2100 e



Transmitter O₂ 4100 e



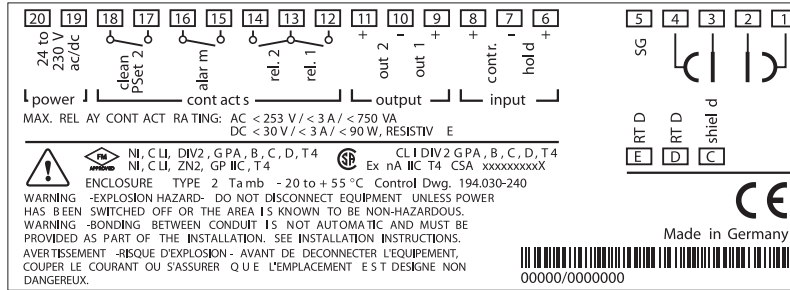
Transmitter O₂ 4100 ppb



Terminal assignment

«Advanced Line» transmitters

Transmitter Cond 7100e



Cond 7100 e

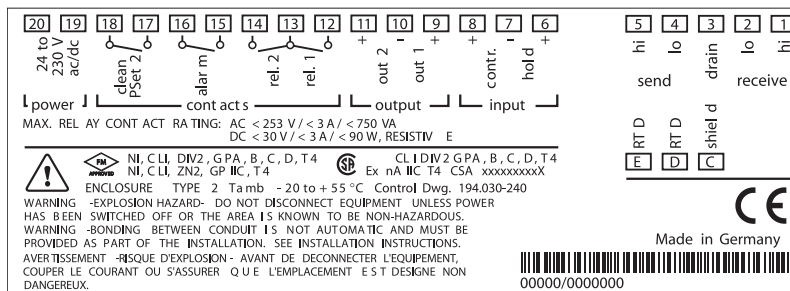
24 to 230 V AC/DC, 45 to 65 Hz
5 VA, 2,5 W
No. 00000 / 000000 0 / 0302

Tamb
-20 to +55 °C

FM APPROVED

SP

Transmitter Cond Ind 7100e



Cond Ind 7100 e

24 to 230 V AC/DC, 45 to 65 Hz
5 VA, 2,5 W
No. 00000 / 000000 0 / 0302

Tamb
-20 to +55 °C

FM APPROVED

SP

| | |
|--|--|
| HOLD input | Galv. separated (OPTO coupler) |
| Function | Switches device to HOLD state |
| Switching voltage | 0...2 V (AC/DC) hold inactive 10...30 V (AC/DC) hold active |
| <hr/> | |
| CONTROL input pH/O₂) | Galv. separated (OPTO coupler) |
| Function | Control input for automatic cleaning/calibration system |
| Switching voltage | 0...2 V (AC/DC) inactive 10...30 V (AC/DC) active |
| <hr/> | |
| CONTROL input (Cond) | Galv. separated (OPTO coupler) |
| Function | Switches between two parameter sets |
| Switching voltage | 0...2 V (AC/DC) set #1 active 10...30 V (AC/DC) set #2 active |
| <hr/> | |
| Output 1 | 0/4...20 mA, max. 10 V, floating (galv. connected to output 2) |
| Process variable* | pH 2100 e pH/mV O ₂ 4100e %, mg/l O ₂ 4100 ppb %, mg/l Cond 7100e conductivity, resistivity, concentration, salinity Cond Ind 7100e conductivity, concentration, salinity |
| Current characteristics* | linear or logarithmic (depends on transmitter) |
| Overrange* | 22 mA in the case of error message |
| Output filter* | Low-pass, filter time constant 0...120 s |
| Meas. error ¹⁾ | < 0.3 % of current value +0.05 mA |
| Start/end of scale | As desired within measuring range |
| Adm. span | pH 2100e 2.00...18.00/200...3000 mV O ₂ 4100e 5...500 %, 0.5...50 mg/l O ₂ 4100 ppb 2...200 %, 0.2...10 mg/l Cond 7100e LIN 5 % of selected measuring range LOG 1 decade Cond Ind 7100e LIN 5 % of selected measuring range LOG 1 decade |
| <hr/> | |
| Output 2 | 0/4...20 mA, max. 10 V, floating (galv. connected to output 1) |
| Process variable | Temperature |
| Overrange* | 22 mA in the case of temp error messages |
| Output filter* | Low-pass, filter time constant 0...120 s |
| Meas. error ¹⁾ | < 0.3 % of current value + 0.05 mA |
| Start/end of scale* | pH, Cond: -20...+200 °C/-4...+392 °F, O ₂ : -20...+150 °C/-4...+302 °F |
| Adm. span | pH, Cond: 20...320 K, O ₂ : 20...170 K |
| <hr/> | |
| Alarm contact | Relay contact, floating |
| Contact ratings | AC < 250 V/< 3 A/< 750 VA DC < 30 V/< 3 A/< 90 W |
| Contact response | N/C (fail-safe type) |
| Alarm delay | 0000...0600 s |

| | |
|--|--|
| Limit values | Output via relay contacts R1, R2 |
| Contact ratings | Contacts R1, R2 floating, but inter-connected AC < 250 V/< 3 A/< 750 VA DC < 30 V/< 3 A/< 90 W |
| Contact response* | N/C or N/O |
| Delay* | 0000...9999 s |
| Switching points* | As desired within measuring range |
| Hysteresis* | pH 2100e 0...5.00 pH/0...500 mV O ₂ 4100e 0...50 %/0...5.00 mg/l (ppm) O ₂ 4100ppb 0...50 %/0...5.00 mg/l (ppm) Cond 7100e 0...50 % of measuring range Cond Ind 7100e 0...50 % of measuring range |
| PID process controller | Output via relay contacts R1, R2 (see limit values) |
| Setpoint specification* | pH 2100e -02.00...16.00/-1500...+1500 mV O ₂ 4100e 0...500 % / 0...50 mg/l O ₂ 4100ppb 0...120% / 0...9.999 mg/l Cond 7100e within selected measuring range Cond Ind 7100e within selected measuring range |
| Neutral zone* | pH 2100e 0...5.00 pH / 0...+500 mV O ₂ 4100e 0...50 % / 0...5 mg/l O ₂ 4100ppb 0...50 % / 0...5 mg/l (ppm) Cond 7100e within selected measuring range Cond Ind 7100e max. 50 % of selected measuring range |
| P-action* | Controller gain K _R : 0010...9999 % |
| I-action component* | Reset time Tr: 0000...9999 s (0000 s = no integral action) |
| D-action component* | Derivative-action time Td: 0000...9999 s (0000 s = no derivative action) |
| Controller type* | Pulse length controller or pulse frequency controller |
| Pulse period* | 0001...0600 s, min. ON time 0.5 s (pulse length controller) |
| Max. pulse frequency* | 0001...0180 min ⁻¹ (pulse frequency controller) |
| Cleaning function/ 2nd parameter set | Relay contact, floating for controlling a simple rinsing system or an automatic cleaning system or to show that 2 nd parameter set is active |
| Contact ratings | AC < 250 V/< 3 A/< 750 VA DC < 30 V/< 3 A/< 90 W |
| Contact response* | N/C or N/O (cleaning function) N/O (2 nd parameter set) |
| Rinsing interval* | 000.0...999.9 h (000.0 h = cleaning function switched off) |
| Cleaning time* | 0000...1999 s |
| Calibration interval* | 000.0...999.9 h |
| Cleaning interval* | 000.0...999.9 h |

* User-defined

1) To IEC 746 Part 1, at nominal operating conditions

2) ± 1 count

3) Plus sensor error

| | |
|--|--|
| Display | LC display, 7-segment with icons |
| Main display | Character height 17 mm, unit symbols 10 mm |
| Secondary display | Character height 10 mm, unit symbols 7 mm |
| Sensoface | 3 status indicators (friendly, neutral, sad smiley) |
| Mode indicators | 5 status bars: «meas», «cal», «alarm», «cleaning», «config» |
| Alarm indication | 18 further icons for configuration and messages Red LED in case of alarm or HOLD, user defined |
| Keypad | 5 keys: [cal] [conf] [▲] [▶] [enter] |
| Service functions | |
| Current source | Current specifiable for output 1 and 2 (00.00...22.00mA) |
| Manual controller | Controller output entered directly (start of control process) |
| Device self-test | Automatic memory test (RAM, FLASH, EEPROM) |
| Display test | Display of all segments |
| Last Error | Display of last error occurred |
| Sensor monitor | Display of direct, uncorrected sensor signal (electrode/sensor) |
| Relay test | Manual control of the four switching contacts |
| Parameter sets* | Two selectable parameter sets for different applications |
| Data retention | Parameters and calibration data > 10 years (EEPROM) |
| EMC | EN 61326 EN 61326/A1 |
| Lightning protection | EN 61000-4-5, Installation Class 2 |
| Protection against electrical shock | Protective separation of all extra-low-voltage circuits against mains as per EN 61010 |
| FM/CSA | NI, Class 1, Div 2, Group A, B, C, D, T4 |
| Power supply | 24 (-15%)...230 (+10%) V AC/DC; approx. 5 VA, 2.5 W AC: 45...65 Hz Overvoltage category II, Class II |
| Nominal operating conditions | |
| Ambient temperature | -20...+55 °C / -4...+131 °F |
| Transport/Storage temp | -20...+70 °C / -4...+158 °F |
| Relative humidity | 10...95 % non condensing |
| Power supply | 24 (-15%)...230 (+ 10 %) V AC/DC |
| Frequency for AC | 45...65 Hz |

| | |
|--------------------|--|
| Enclosure | molded enclosure made of PBT (polybutylene terephthalate) |
| Color | Bluish gray RAL 7031 |
| Assembly | <ul style="list-style-type: none"> • Wall mounting • Pipe mounting: Ø 40...60 mm, Ø 30...45 mm • Panel mounting, cutout to DIN 43 700, sealed against panel |
| Dimensions | H x W x L: 144 x 144 x 105 mm (5.67 x 5.67 x 4.13") |
| Ingress protection | IP 65/NEMA 4X |
| Cable glands | 3 breakthroughs for cable glands M20 x 1.5 2 breakthroughs for NPT 1/2" or Rigid Metallic Conduit |
| Weight | approx. 1 kg |

- * User-defined
 1) To IEC 746 Part 1, at nominal operating conditions
 2) ± 1 count
 3) Plus sensor error

Ordering information

| Description | Designation | Order number |
|--|------------------------|--------------|
| 4-wire instruments (20...253 V AC/DC) | | |
| Transmitter pH 2100e | pH 2100e | 52 121 102 |
| Transmitter O ₂ 4100e | O ₂ 4100e | 52 121 103 |
| Transmitter O ₂ 4100ppb | O ₂ 4100ppb | 52 121 104 |
| Transmitter Cond 7100e | Cond 7100e | 52 121 126 |
| Transmitter Cond Ind 7100e | Cond Ind 7100e | 52 121 127 |
| Installation accessories | | |
| Bracket kit | ZU 0274 | 52 120 741 |
| Panel-mount kit | ZU 0275 | 52 120 740 |
| Protective hood | ZU 0276 | 52 120 739 |

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