

## Stratos® Eco 2405 Cond

### Conductivity Measurement

Simultaneous display of conductivity/resistance/salinity and temperature; large measurement symbols.

Icons supply operating messages and signal unusual operating states. Mode indicators show the current operating mode.



### Suitable sensors:

- all common types of 2-electrode sensors
- all known types of 4-electrode sensors
- cell constant selectable from 0.005 to 20 cm<sup>-1</sup>
- selectable temperature sensors Pt 100, Pt 1000, NTC 30 kohms, NTC 8.55 kohms

### Recommended Installation Sets

#### • Flow

SE 610

ARF 220



**Product Line**

Order No.

**Stratos® Eco 2405 Cond** process analyzer for measuring conductivity using 2- and 4-electrode sensors

**2405 Cond**

**Mounting Accessories** (see page 542)

Order No.

Pipe-mount kit

**ZU 0274**

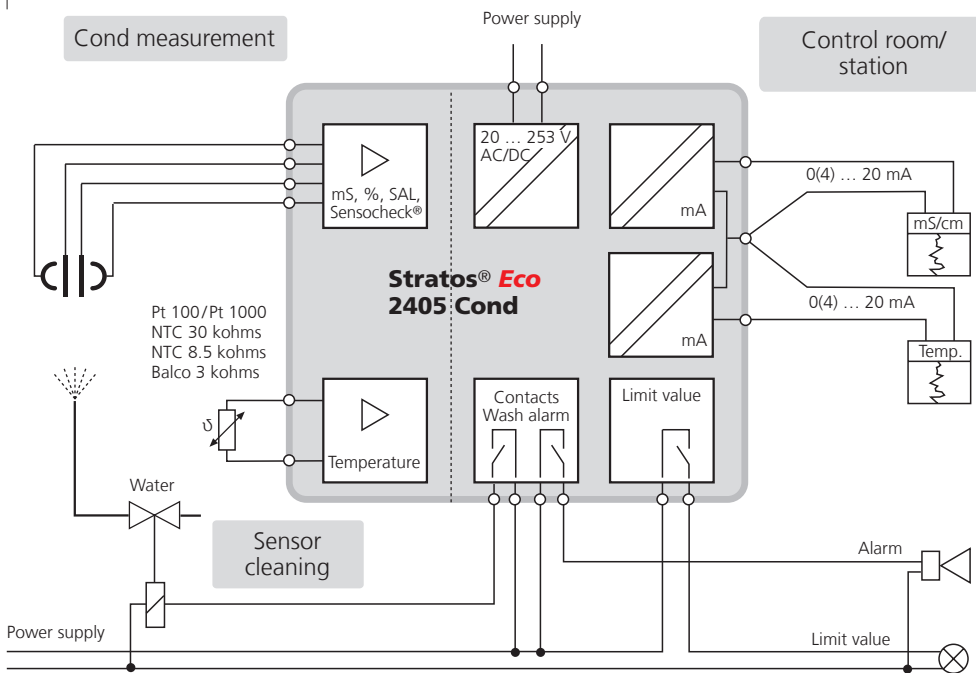
Panel-mount kit

**ZU 0275**

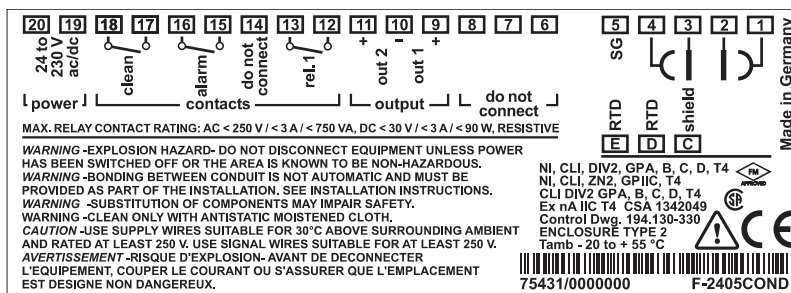
Protective hood

**ZU 0276**

**Connection**



**Terminal Assignments**



# Process Analysis Systems

## Stratos® Eco 2405 Cond

### Specifications

<b>Conductivity input</b>	input for 2-electrode or 4-electrode sensors		
Effective ranges	0.2 $\mu\text{S} \cdot \text{cm}$ ... 1000 $\text{mS} \cdot \text{cm}$		
Ranges*)	conductivity	0.000 ... 9.999 $\mu\text{S}/\text{cm}$ 0.00 ... 99.99 $\mu\text{S}/\text{cm}$ 0.0 ... 999.9 $\mu\text{S}/\text{cm}$ 0 ... 9999 $\mu\text{S}/\text{cm}$ 0.000 ... 9.999 $\text{mS}/\text{cm}$ 0.00 ... 99.99 $\text{mS}/\text{cm}$ 0.0 ... 999.9 $\text{mS}/\text{cm}$ 0.000 ... 9.999 $\text{S}/\text{m}$ 0.00 ... 99.99 $\text{S}/\text{m}$	
	resistivity	0.00 ... 99.99 Mohms $\cdot \text{cm}$	
	concentration	0.00 ... 9.99 %	
	salinity	0.0 ... 45.0 ‰ (0 ... 35 °C)	
Response ( $T_{90}$ )	< 1 s (Sensocheck® off)	< 3 s (Sensocheck® on)	
Measurement error <sup>1,2,3)</sup>	< 1% meas. val. + 0.4 $\mu\text{S} \cdot \text{cm}$		
<b>Concentration determination</b>	1	NaCl	0.00 ... 9.99 % by wt (0 ... 100 °C)
	2	HCl	0.00 ... 9.99 % by wt (-20 ... +50 °C)
	3	NaOH	0.00 ... 9.99 % by wt (0 ... 100 °C)
	4	H <sub>2</sub> SO <sub>4</sub>	0.00 ... 9.99 % by wt (-17 ... +110 °C)
	5	HNO <sub>3</sub>	0.00 ... 9.99 % by wt (-17 ... +50 °C)
<b>Sensor standardization</b>	<ul style="list-style-type: none"> <li>- input of cell constant with simultaneous display of conductivity and temperature</li> <li>- input of conductivity of calibration solution with simultaneous display of cell constant and temperature</li> <li>- product calibration</li> <li>- temperature probe adjustment</li> </ul>		
Permissible cell constant	0.0050 ... 19.9999 $\text{cm}^{-1}$		
<b>Sensocheck®</b>	polarization detection and monitoring of cable capacitance		
<b>Sensoface®</b>	provides information on the sensor condition (Sensocheck®)		
<b>Sensor monitor</b>	direct display of measured values from sensor for validation (resistance/temperature)		
<b>Temperature input*)</b>	Pt 100 / Pt 1000 / NTC 30 kohms / NTC 8.55 kohms (Betatherm), 2-wire connection, adjustable		
Measuring range	Pt 100 / Pt 1000	-20.0 ... +200.0 °C	(-4 ... +392 °F)
	NTC 30 kohms	-20.0 ... +150.0 °C	(-4 ... +302 °F)
	NTC 8.55 kohms	-10.0 ... +130.0 °C	(14 ... 266 °F)
Resolution	0.1 °C/1 °F		
Measurement error <sup>1,2,3)</sup>	< 0.5 K (< 1 K bei Pt 100; < 1 K bei NTC > 100°C)		
Temperature compensation*) (ref. temperature 25 °C)	(OFF)	without	
	(LIN)	linear characteristic 00.00 ... 19.99 %/K	
	(NLF)	natural waters to EN 27888	
	(NaCl)	ultrapure water with NaCl traces (0 ... 120 °C)	
	(HCl)	ultrapure water with HCl traces (0 ... 120 °C)	
	(NH <sub>3</sub> )	ultrapure water with NH <sub>3</sub> traces (0 ... 120 °C)	

**Specifications – continued**

<b>Output 1</b>	0/4 ... 20 mA, max. 10 V, floating (galvanically connected to output 2)
Process variable*)	conductivity, resistivity, concentration, salinity
Overrange*)	22 mA in the case of error messages
Output filter*)	low-pass, filter time constant 0 ... 120 s
Measurement error <sup>1)</sup>	< 0.3 % current value + 0.05 mA
Start/end of scale*)	as desired within range
Minimum span	5 % of selected range
<b>Output 2</b>	0/4 ... 20 mA, max. 10 V, floating (galvanically connected to output 1)
Measured variable	temperature
Overrange*)	22 mA in case of temp error messages
Output filter*)	low-pass, filter time constant 0 ... 120 s
Measurement error <sup>1)</sup>	< 0.3 % current value + 0.05 mA
Start/end of scale*)	-20 ... +300 °C/-4 ... +572 °F
Span allowed	20 ... 320 K/36 ... 576 °F
<b>Alarm contact</b>	relay contact, floating AC < 250 V/< 3 A/< 750 VA      DC < 30 V/< 3 A/< 90 W
Contact response	N/C (fail-safe type)
Alarm delay*)	10 s
<b>Grenzwertkontakt</b>	relay contact, floating AC < 250 V/< 3 A/< 750 VA      DC < 30 V/< 3 A/< 90 W
Contact response*)	N/O or N/C
Delay*)	0000 ... 9999 s
Setpoints*)	as desired within range
Hysteresis*)	0 ... 50 % full scale
<b>Cleaning contact</b>	"clean" relay contact AC < 250 V/< 3 A/< 750 VA      DC < 30 V/< 3 A/< 90 W
Contact response*)	N/C or N/O
Rinsing interval*)	000.0 ... 999.9 h (000.0 h = cleaning function switched off)
Rinse duration*)	0000 ... 1999 s

# Process Analysis Systems

## Stratos® Eco 2405 Cond

### Specifications – continued

<b>Display</b>	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 face)
Mode indication	4 mode indicators "meas", "cal", "alarm", "config" further icons for configuration and messages
Alarm indication	red LED in case of alarm
<b>Keypad</b>	5 keys: [cal] [conf] [▶] [▲] [enter]
<b>Service functions</b>	
Current source	current specifiable for output 1 and 2 (00.00 ... 22.00 mA)
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)
<b>Data retention</b>	parameters and calibration data > 10 years (EEPROM)
<b>Protection against electric shock</b>	protective separation of all low-voltage circuits against mains by double insulation to EN 61010-1
<b>Power supply</b>	24 (-15 %) ... 230 (+10 %) V AC/DC approx. 5 VA/2.5 W AC: 45 ... 65 Hz overvoltage category II, Class II
<b>Nominal operating conditions</b>	
Ambient temperature	-20 ... +55 °C
Transport/Storage temperature	-20 ... +70 °C
Relative humidity	10 ... 95 %, not condensing
<b>EMC</b>	EN 61326-1, EN 61326-2-3 emitted interference: Class B (residential area) Class A: for mains > 60 V DC immunity to interference: Industry
<b>Explosion protection</b>	FM NI, Class I Div 2, Groups A, B, C & D T4, T <sub>a</sub> = 55 °C; Type 2 NI, Class I Zone 2, Group IIC T4, T <sub>a</sub> = 55 °C; Type 2 CSA Class I Div 2, Groups A, B, C and D, T4 Ex nA IIC T4

**Specifications** – *continued*

Enclosure	molded enclosure made from PBT (polybutylene terephthalate)
Color	bluish gray, RAL 7031
Assembly	– wall mounting – pipe mounting ZU 0274, Ø 40 ... 60 mm, □ 30 ... 45 mm – panel mounting ZU 0275 cutout to DIN 43 700, sealed against panel
Dimensions (mm)	H x W x D: 144 x 144 x 105
Ingress protection	IP 65/NEMA 4X
Cable glands	3 knockouts for cable glands M20 x 1.5 2 knockouts for 1/2" NPT or rigid metallic conduit
Weight	approx. 1 kg

\*) user-defined

<sup>1)</sup> to IEC 746 Part 1, at nominal operating conditions

<sup>2)</sup> ±1 count

<sup>3)</sup> plus sensor error

**New England - ETA Process Instrumentation**

119 Foster Street, Bldg #6  
Peabody, MA 01960  
Tel: (978) 532-1330  
[www.etapii.com](http://www.etapii.com)  
[sales@etapii.com](mailto:sales@etapii.com)

**Upstate NY - Martech Controls**

2000 Teall Avenue  
Syracuse, NY 13026  
Tel: (315) 876-9120  
[www.martechcontrols.com](http://www.martechcontrols.com)  
[sales@martechcontrols.com](mailto:sales@martechcontrols.com)