

## Stratos® Eco 2405 pH

### pH Measurement

Simultaneous display of pH value/ORP and temperature; unit symbol as plain text.

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



### Suitable sensors

- all customary pH sensors with nominal zero point at pH 7
- combination electrodes or separate glass and reference electrodes
- a broad selection of temperature sensors (Pt 100, Pt 1000, NTC 30 kohms, NTC 8.55 kohms, or Balco 3 kohms)
- common metallic ORP electrodes (gold, platinum)

### Recommended Installation Sets

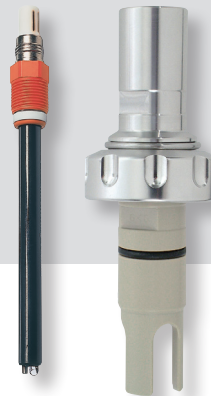
#### • Flow

SE 531 ARF 201  
ZU 0323



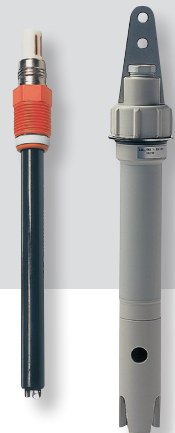
#### • Inline

SE 531 ARI 106



#### • Immersion

SE 531 ARD 230



**Product Line**

Order No.

**Stratos® Eco 2405 pH** process analyzer for measuring pH values

**2405 pH**

**Mounting Accessories** (see page 542)

Order No.

Pipe-mount kit

**ZU 0274**

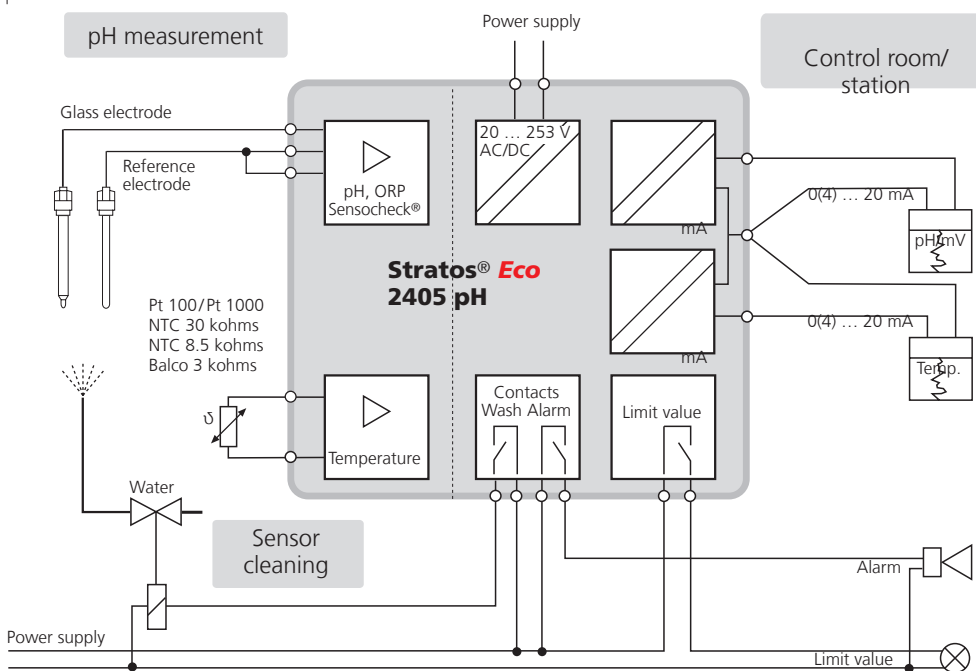
Panel-mount kit

**ZU 0275**

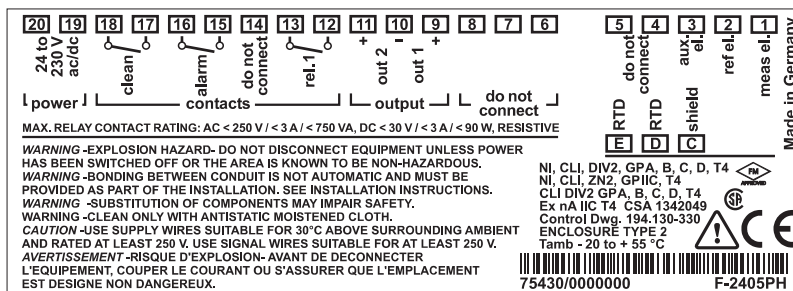
Protective hood

**ZU 0276**

**Connection**



**Terminal Assignments**



## Stratos® Eco 2405 pH

### Specifications

<b>pH/mV input</b>	input for pH or ORP sensors	
Measuring range	-1500 ... 1500 mV	
Display range	pH value: -2.00 ... 16.00    ORP: -1999 ... 1999 mV	
Glass electrode input <sup>1)</sup>	input resistance	> 0.5 x 10 <sup>12</sup> ohms
	input current	< 2 x 10 <sup>-12</sup> A
Reference electrode input <sup>1)</sup>	input resistance	> 1 x 10 <sup>10</sup> ohms
	input current	< 1 x 10 <sup>-10</sup> A
Measurement error <sup>1,2,3)</sup>	pH value: < 0.02	TC: 0.002 pH/K (display)
	mV value: < 1 mV	TC: 0.1 mV/K
<b>pH sensor standardization*</b>	pH calibration	
Operating modes	BUF    calibration with Calimatic® automatic buffer recognition: Buffer sets: -00- Knick                           2.00/4.01/7.00/9.21 -01- Mettler Toledo               2.00/4.01/7.00/9.21 -02- Merck/Riedel de Haen       2.00/4.00/7.00/9.00/12.00 -03- Ciba (94)                       2.06/4.00/7.00/10.00 -04- NIST technical                1.68/4.00/7.00/10.01/12.46 -05- NIST standard                1.679/4.006/6.865/9.180 -06- HACH                            4.00/7.00/10.18 -07- WTW technical buffers       2.00/4.01/7.00/10.00 MAN    manual calibration with input of individual buffer values DAT    data entry of pre-measured electrodes	
Max. calibration range	asymmetry potential: ±60 mV; slope: 80 ... 103 % (47.5 ... 61 mV/pH)	
<b>ORP sensor standardization*</b>	ORP calibration	
	max. calibration range	Δ: -700 ... 700 mV
<b>Calibration timer</b>	0000 ... 9999 h	
<b>Sensocheck®</b>	automatic monitoring of glass electrode (can be disabled)	
<b>Sensoface®</b>	provides information on the sensor condition, evaluation of zero/slope, response time, calibration interval, Sensocheck®	
<b>Temperature input*</b>	Pt 100 / Pt 1000 / NTC 30 kohms / NTC 8.55 kohms/Balco 3 kohms; 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)
Adjustment range	10 K	
Resolution	0.1 °C/1 °F	
Measurement error <sup>1,2,3)</sup>	< 0.5 K (< 1 K for Pt 100; < 1 K for NTC > 100 °C)	
Temperature compensation of process medium	linear -19.99 ... +19.9 %/K (reference temp. 25 °C)	

### Specifications – continued

<b>Output 1</b>	0/4 ... 20 mA, max. 10 V, floating (galvanically connected to output 2)
Process variable*)	pH or mV value
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*)	configurable within the measuring range for pH or mV
Span allowed	pH 2.00 ... 18.00/200 ... 3000 mV
<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 ... 200 °C/-4 ... +392 °F
Span allowed	20 ... 220 K (36 ... 396 °F)
<b>Alarm contact</b>	"alarm" 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>Limit contact</b>	"R1" relay contact, floating 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
Setpoints*)	as desired within range
Hysteresis*)	0.00 ... 5.00 pH/0 ... 500 mV
<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 pH

### 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
<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 temp	-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)