

Stratos *Eco* 2405 pH

pH Measurement

Simultaneous display of pH/ORP and temperature; unit symbols as text.

Icons provide operating notes and signal unusual operating states; status displays provide information on the current operating mode.

Connectible Sensors

- All customary pH sensors with nominal zero points of pH 7
- Combination electrodes or separate glass and reference electrodes
- Wide selection of temperature detectors (Pt100, Pt1000, NTC 30 k Ω , NTC 8.55 k Ω and Balco 3 k Ω)
- Typical metallic ORP electrodes (gold, platinum)



Stratos Eco 2405 pH

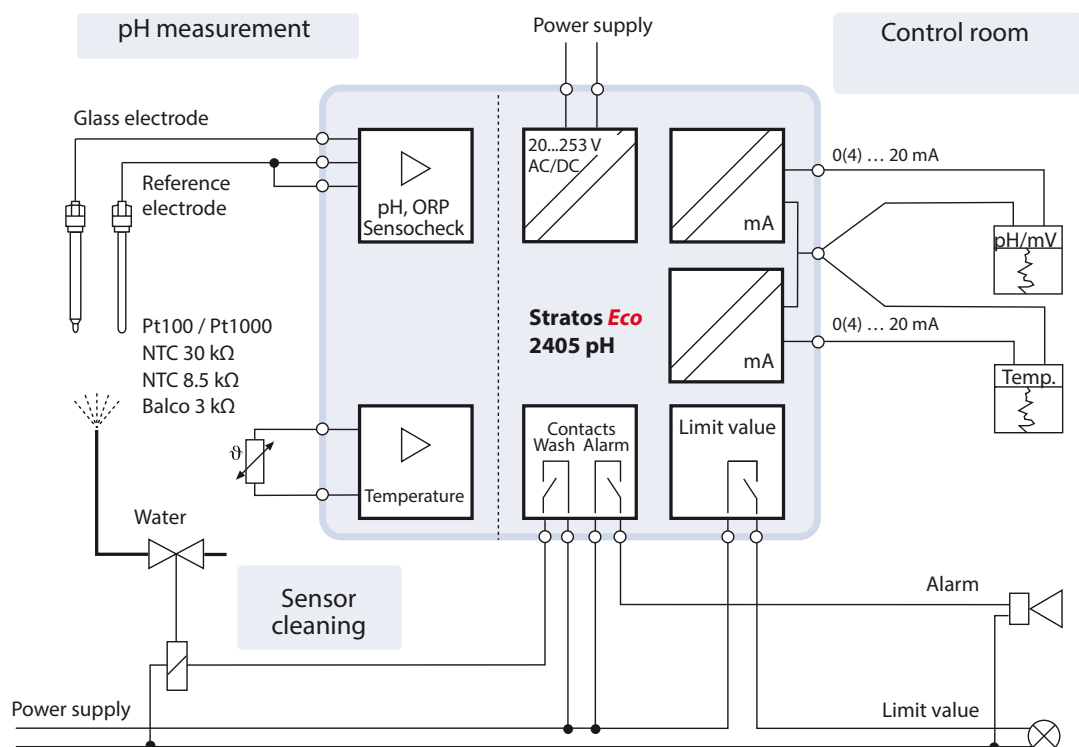
Product Range

		Order No.
Stratos Eco 2405 pH	Process device for pH measurement	2405 pH

Mounting Accessories

	Order No.
Pipe/post mount kit	ZU 0274
Panel mount kit	ZU 0275
Protective hood	ZU 0276

Wiring



Specifications

pH/mV input

Input for pH or ORP sensors

Measuring range -1500 ... 1500 mV

Display range
pH value: -2.00 ... 16.00
ORP: -1999 ... 1999 mVGlass electrode input¹⁾
Input resistance > 0.5 x 10¹² Ω
Input current < 2 x 10⁻¹² AReference electrode input¹⁾
Input resistance > 1 x 10¹⁰ Ω
Input current < 1 x 10⁻¹⁰ AMeasurement error^{1,2,3)}
pH value: < 0.02
TC: 0.002 pH/K (display)
mV value: < 1 mV TC: 0.1 mV/K

pH sensor standardization*)

Operating modes

pH calibration

BUF Calibration with automatic
buffer recognition Calimatic:

Buffer sets:

-00- Knick	2.00/4.01/7.00/9.21
-01- MettlerToledo	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 input of premeasured electrodes

Max. calibration range
Asymmetry potential: ±60 mV
Slope: 80 ... 103% (47.5 ... 61 mV/pH)

ORP sensor standardization*)

ORP calibration

Max. calibration range Δ: -700 ... 700 mV

Calibration timer 0000 ... 9999 h

Sensocheck Automatic glass electrode monitoring
(can be disabled)Sensoface Provides information on sensor condition,
zero point/slope evaluation, response time,
calibration interval, SensocheckTemperature input*)
Pt100 / Pt1000 / NTC 30 kΩ
NTC 8.55 kΩ / Balco 3 kΩ
2-wire connection, adjustable

Measuring range

Pt100 / Pt1000	-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

Measurement error^{1,2,3)}
< 0.5 K (< 1 K for Pt100
< 1 K for NTC > 100 °C)Temperature compensation
of process medium Linear -19.99 ... 19.9%/K
(reference temp. 25 °C)

Stratos *Eco* 2405 pH

Specifications

Output 1	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 interval: 0 ... 120 s
	Measurement error	< 0.3% current value + 0.05 mA
	Start/end of scale ^{*)}	Configurable within the measuring range for pH or mV
	Permissible span	pH 2.00 ... 18.00/200 ... 3,000 mV
Output 2	0/4 ... 20 mA, max. 10 V, floating (galvanically connected to output 1)	
	Process variable	Temperature
	Overrange ^{*)}	22 mA for temperature error reports
	Output filter ^{*)}	Low-pass, filter time interval: 0 ... 120 s
	Measurement error ¹⁾	< 0.3% current value + 0.05 mA
	Start/end of scale ^{*)}	20 ... 200 °C / -4 ... 392 °F
	Permissible span	20 ... +200 K / 36 ... 396 °F
Alarm contact	"Alarm" 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
Limit contact	"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 ^{*)}	Within range
	Hysteresis ^{*)}	0.00 ... 5.00 pH/0 ... 500 mV
Cleaning contact	"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 disabled)
	Rinse duration ^{*)}	0000 ... 1,999 s
Display	LC display, 7-segment with icons	
	Primary display	Character height 17 mm, unit symbols 10 mm
	Secondary display	Character height 10 mm, unit symbols 7 mm
	Sensoface	3 status icons (friendly, neutral, sad)
	Status display	4 status bars "meas," "cal," "Alarm," "config" More icons for configuration and reports
	Alarm indication	Red LED in case of alarm
Keypad	5 keys: [cal] [conf] [▶] [▲] [enter]	

Specifications

Service functions

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
Data retention	Parameters and calibration data > 10 years (EEPROM)

Protection against electric shock

Protective separation of all extra-low-voltage circuits against mains by double insulation as per EN 61010-1

Power supply

24 (-15%) ... 230 (+10%) V AC/DC	Approx. 5 VA/2.5 W AC: 45 ... 65 Hz Overvoltage category II, protection class II
----------------------------------	--

Nominal operating conditions

Ambient temperature	-20 ... 55 °C / -4 ... 131 °F
Relative humidity	10 ... 95%, non-condensing
Maximum operating height	2,000 m

Transport/Storage temperature

-20 ... 70 °C / -4 ... 158 °F

EMC

EN 61326-1, EN 61326-2-3	
Emitted interference	Class B (residential environment) Class A: for mains > 60 V DC
Immunity to interference	Industrial applications

Explosion protection

FM	NI, Class I Div 2, Groups A, B, C & D T4, T _a = 55 °C; Type 2 NI, Class I Zone 2, Group IIC T4, T _a = 55 °C; Type 2
CSA	Class I Div 2, Groups A, B, C and D, T4 Ex nA IIC T4

Housing

Molded enclosure made of PBT (polybutylene terephthalate), glass bead reinforced	
Color	Black
Mounting	– Wall mounting – Post/pipe mounting ZU 0274 Ø 40 ... 60 mm □ 30 ... 45 mm – Panel installation ZU 0275 Cutout as per DIN 43 700, sealed against panel
Dimensions (mm)	H x W x D 144 x 144 x 105
Protection	IP 65/NEMA 4X
Cable glands	3 knockouts for M20 x 1.5 cable glands 2 knockouts for NPT ½; or rigid metallic conduit
Weight	Approx. 1 kg

*) User-defined

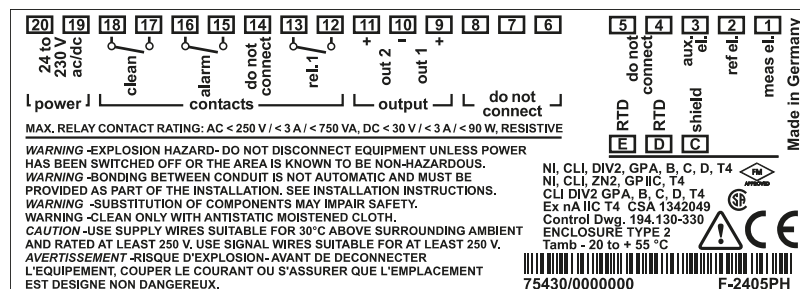
¹⁾ At nominal operating conditions

²⁾ ±1 digit

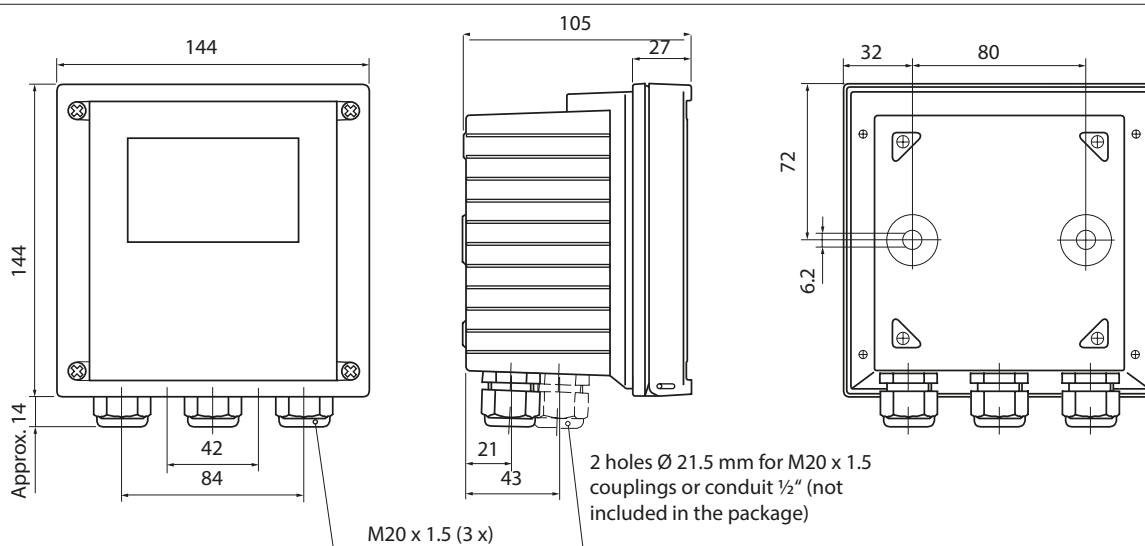
³⁾ Plus sensor error

Stratos Eco 2405 pH

Terminal Assignments



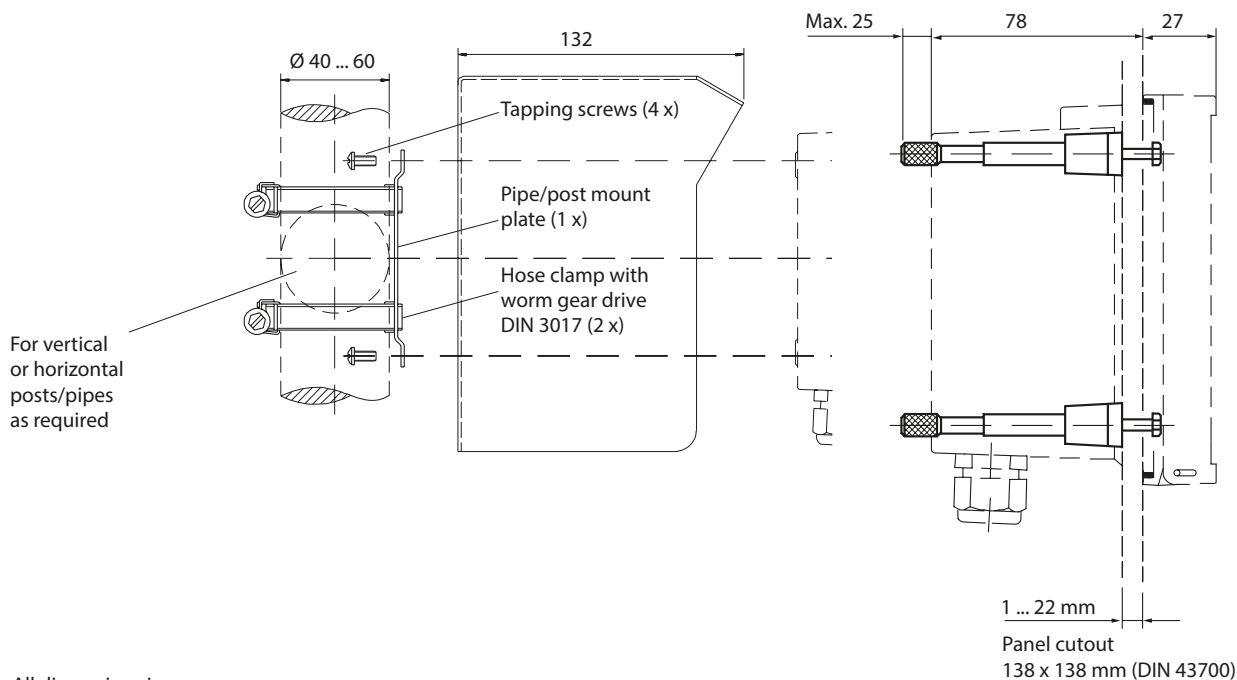
Dimension Drawing



Pipe/post mount kit ZU 0274

Protective hood ZU 0276

Panel mount kit ZU 0275



All dimensions in mm.