Stratos *Eco* 2405 Oxy

Oxygen Measurement

Simultaneous temperature and measured value display; unit symbol as plain text.

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

Connectible Sensors
– Conventional amperometric sensors with (e.g., -675 mV) or without polarization voltage
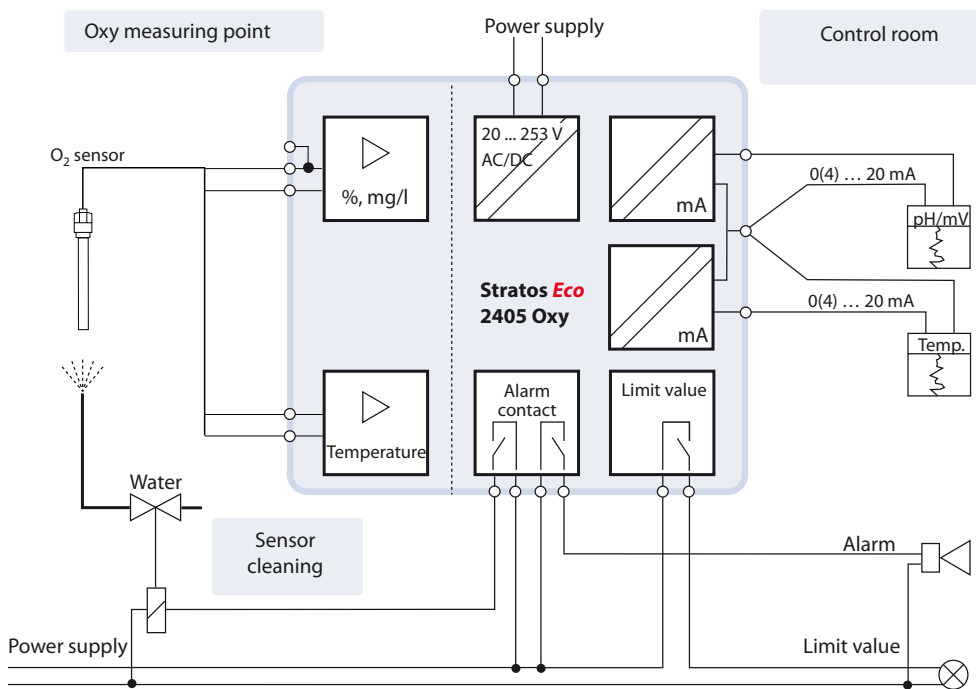– Temperature detector NTC 22 kΩ, NTC 30 kΩ

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Product Range

		Order No.
Stratos *Eco* 2405 Oxy	Process device for measuring dissolved oxygen	**2405 Oxy**

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

Wiring

Oxy measuring point

Power supply

Control room

O_2 sensor

%, mg/l

20 ... 253 V
AC/DC

mA

0(4) … 20 mA

pH/mV

**Stratos *Eco*
2405 Oxy**

mA

0(4) … 20 mA

Temp.

Temperature

Alarm
contact

Limit value

Water

Sensor
cleaning

Alarm

Power supply

Limit value

Specifications

O₂ input	Measuring current	-2 ... 1800 nA
	Resolution (at $U_{pol} \leq 800$ mV and $U_{ref} \leq 200$ mV)	0.05 nA
	Saturation (-10 ... 80 °C)	0 … 200%
	Measurement error[1,2,3]	0.5% meas.val. + 0.5%
	Concentration (-10 ... 80 °C)	0.00 … 20.00 mg/l 0.00 … 20.00 ppm
	Measurement error[1,2,3]	0.5% meas.val. + 0.05 mg/l or 0.05 ppm
	Permissible guard current	≤ 20 µA
	Polarization voltage*)	0 … 1000 mV -1000 … 0 mV
	Process pressure*)	0.000 … 9.999 bar (… 999.9 kPa / … 145.0 PSI)
	Salinity correction*)	00.00 … 45.00 g/kg
Sensor standardization	Operating modes	O₂ concentration (automatic) O₂ saturation (automatic) Product calibration, zero point calibration
	Calibration range	Zero point ±2 nA Slope 25 ... 130 nA (at 25 °C, 1013 mbar)
	Calibration timer*)	0000 ... 9999 h
	Pressure correction*)	0.000 ... 9.999 bar / 999.9 kPa / 145.0 PSI
Sensocheck	Monitoring for short circuits or open circuits (can be disabled)	
Sensoface	Provides information on sensor condition (evaluation of zero point/slope, response time, calibration interval, Sensocheck)	
Temperature input*)	NTC 22 kΩ/NTC 30 kΩ	2-wire connection, adjustable
	Measuring range	-20.0 … 150.0 °C / -4 … 302 °F
	Adjustment range	10 K
	Resolution	0.1 °C/1 °F
	Measurement error[1,2,3]	< 0.5 K (< 1 K at > 100 °C)

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Specifications

Output 1	0/4 … 20 mA, max. 10 V, floating (galvanically connected to output 2)	
	Process variable*)	O_2 saturation / O_2 concentration
	Overrange*)	22 mA in the case of error messages
	Output filter*)	Low-pass, filter time interval 0 ... 120 s
	Measurement error[1]	< 0.3% current value + 0.05 mA
	Start/end of scale	As desired within range
	Permissible span	5 … 200% / 0.5 … 50 mg/l (ppm)
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 … 150 °C / -4 … 302 °F
	Permissible span	20 … 170 K / 36 ... 306 °F
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)
	Response delay	10 s
Limit contact	"R1" relay contact, floating	
	Contact ratings	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 selected range
	Hysteresis*)	0.00 … 5.00 pH/0 … 500 mV
Cleaning contact	"Clean" 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 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 (sensor)
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 terephtalate), 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

Terminal Assignments

| 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | | 5 | 4 | 3 | 2 | 1 |

24 to 230 V ac/dc | clean | alarm | do not connect | rel.1 | + out 2 − | out 1 + | do not connect

power — contacts — output — do not connect

RTD | do not connect | RTD | shield | aux. el. | ref el. | meas el.

E | D | C

Made in Germany

MAX. RELAY CONTACT RATING: AC < 250 V / < 3 A / < 750 VA, DC < 30 V / < 3 A / < 90 W, RESISTIVE

WARNING -EXPLOSION HAZARD- DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NON-HAZARDOUS.
WARNING -BONDING BETWEEN CONDUIT IS NOT AUTOMATIC AND MUST BE PROVIDED AS PART OF THE INSTALLATION. SEE INSTALLATION INSTRUCTIONS.
WARNING -SUBSTITUTION OF COMPONENTS MAY IMPAIR SAFETY.
WARNING -CLEAN ONLY WITH ANTISTATIC MOISTENED CLOTH.
CAUTION -USE SUPPLY WIRES SUITABLE FOR 30°C ABOVE SURROUNDING AMBIENT AND RATED AT LEAST 250 V. USE SIGNAL WIRES SUITABLE FOR AT LEAST 250 V.
AVERTISSEMENT -RISQUE D'EXPLOSION- AVANT DE DECONNECTER L'EQUIPEMENT, COUPER LE COURANT OU S'ASSURER QUE L'EMPLACEMENT EST DESIGNE NON DANGEREUX.

NI, CLI, DIV2, GPA, B, C, D, T4
NI, CLI, ZN2, GPIIC, T4
CLI DIV2 GPA, B, C, D, T4
Ex nA IIC T4

FM APPROVED

ENCLOSURE TYPE 2
Tamb - 20 to + 55 °C

CE

75430/0000000   F-2405PH