

Stratos *Eco* 2405 Condi

inductive Conductivity Measurement

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

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

Connectible sensors

- Many conventional European and American toroidal sensors
- Temperature detector
Pt100, Pt1000,
NTC 100 k Ω

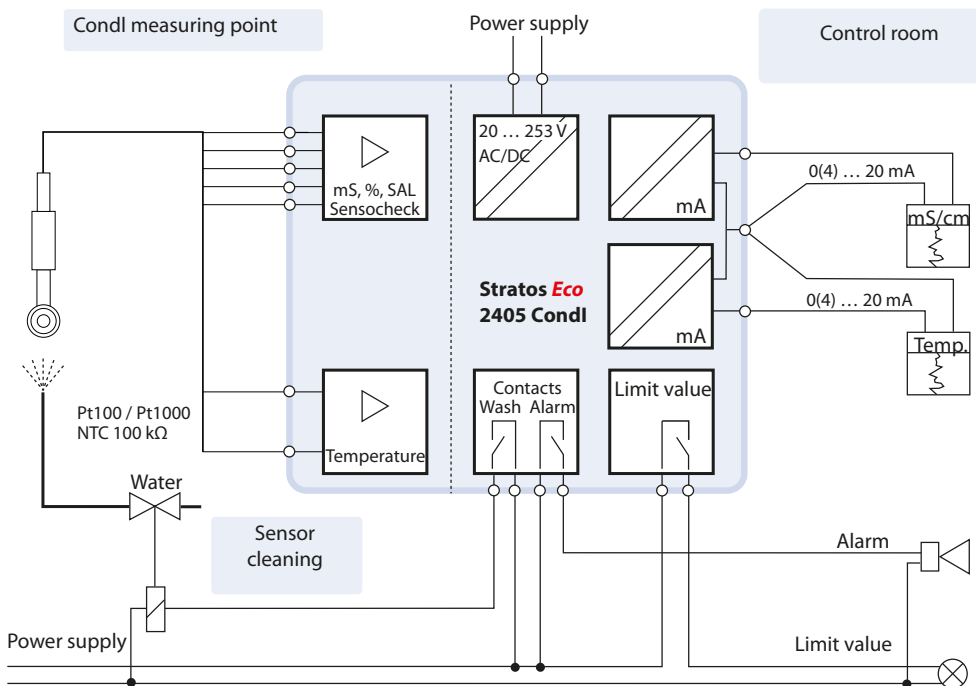


Stratos Eco 2405 Condl

Product Range

		Order No.
Stratos Eco 2405 Condl	Process device for measuring conductivity with toroidal sensors	2405 Condl
Mounting Accessories		
Pipe/post mount kit		ZU 0274
Panel mount kit		ZU 0275
Protective hood		ZU 0276

Wiring



Specifications

Cond input	Input for toroidal conductivity sensors	SE 655, SE 656, SE 660, etc.	
Display ranges	Conductivity	0.000 ... 1,999 mS/cm	
	Concentration	0.00 ... 9.99% by wt	
	Salinity	0.0 ... 45‰ (0 ... 35 °C)	
Measuring ranges	Conductivity	0.000 ... 9.999 mS/cm 0.00 ... 99.99 mS/cm 0.0 ... 999.9 mS/cm 0 ... 1,999 mS/cm 0.000 ... 9.999 S/m 0.00 ... 99.99 S/m	
	Concentration	0.00 ... 9.99% 10.0 ... 100.0%	
	Salinity	0.0 ... 45.0‰ (0 ... 35 °C)	
	Response time (T ₉₀)	approx. 2 s	
	Measurement error ^{1,2,3)}	1% meas. val. + 0.005 mS	
	Temperature compensation ^{*)} (Reference temp 25 °C)	(OFF)	Without
		(LIN)	Linear characteristic 00.00...19.99%/K
		(NLF)	natural waters as per EN 27888 (0 ... 35 °C)
	Concentration determination	[1] NaCl	0.00 ... 9.99 wt% (0 ... 100 °C)
		[2] HCl	0.00 ... 9.99 wt% (-20 ... 50 °C)
		[3] NaOH	0.00 ... 9.99 wt% (0 ... 100 °C)
[4] H ₂ SO ₄		0.00 ... 9.99 wt% (-17 ... 110 °C)	
[5] HNO ₃		0.00 ... 9.99 wt% (-20 ... 50 °C)	
Sensor standardization	– Input of cell factor with simultaneous display of conductivity and temperature		
	– Input of conductivity of calibration solution with simultaneous display of cell factor and temperature		
	– Product calibration		
	– Zero adjustment		
	– Temperature detector adjustment		
	Permissible cell factor	0.100 ... 19.999	
	Permissible transfer ratio	1.00 ... 199.99	
Permissible offset	±0.5 mS/cm		
Sensocheck	– Monitoring of primary and wiring for short circuit		
	– Monitoring of secondary and wiring for open circuit		
Sensoface	Provides information on the sensor condition (evaluation of zero point, Sensocheck)		
Sensor monitor	Sensor monitor for validation of sensor and complete measured-value processing (display: resistance/temperature)		
Temperature input ^{*)}	Pt 100 / Pt 1000 / NTC 100 kΩ, 2-wire connection, adjustable		
Measuring ranges	Pt 100/Pt 1000	-20.0 ... 200.0 °C / -4 ... 392 °F	
	NTC 100 kΩ	-20.0 ... 130.0 °C / -4 ... 266 °F	
	Resolution	0.1 °C/1 °F	
Measurement error ^{1,2,3)}	< 0.5 K (< 1 K for Pt 100; < 1 K for NTC > 100 °C)		

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Specifications

Output 1	0/4 ... 20 mA, max. 10 V, floating	
Process variable*)	Conductivity, concentration, or salinity	(galvanically connected to output 2)
	Overrange*)	22 mA in the case of error messages
	Output filter*) (attenuation)	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
	Minimum span	5% of selected range
Output 2	0/4 ... 20 mA, max. 10 V, floating (galvanically connected to output 1)	
Process variable	Temperature	
	Overrange*)	22 mA in the case of error messages
	Output filter*) (attenuation)	Low-pass, filter time interval 0 ... 120 s
	Measurement error ¹⁾	< 0.3% current value + 0.05 mA
	Start/end of scale*)	-20 ... 300 °C / -4 ... 572 °F
	Permissible span	20 ... 320 K / 36 ... 576 °F
Alarm contact	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*)	As desired within range
	Hysteresis*)	0...50% of range
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 (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 V (-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	
Transport/Storage temperature	Maximum operating height	2,000 m	
		-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	
	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

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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	+	hi	lo	send	lo	hi	RTD	RTD	shield drain	receive
power											do not connect									
contacts											output									

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 DESIGNÉ 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

ENCLOSURE TYPE 2
 Tamb -20 to +55 °C

CE

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Made in Germany