

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



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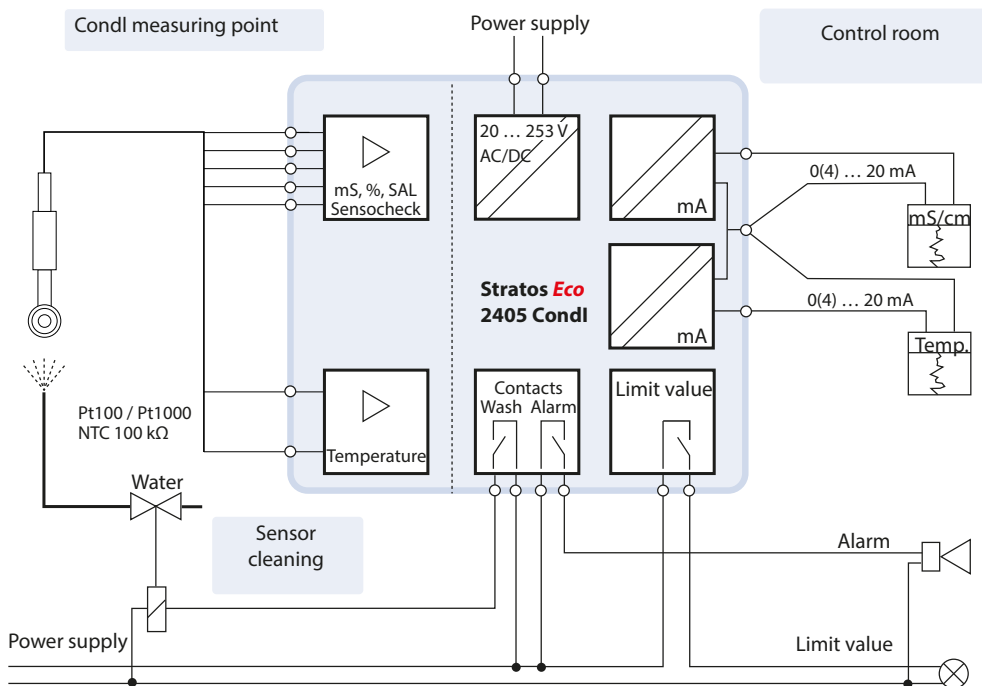
Product Range

		Order No.
Stratos Eco 2405 Condi	Process device for measuring conductivity with toroidal sensors	2405 Condi

Mounting Accessories

	Order No.
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)
	Parameters and calibration data > 10 years (EEPROM)	
Data retention	Protective separation of all extra-low-voltage circuits against mains by double insulation as per EN 61010-1	
Protection against electric shock		
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
	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
	Molded enclosure made of PBT (polybutylene terephthalate), glass bead reinforced	
Housing	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

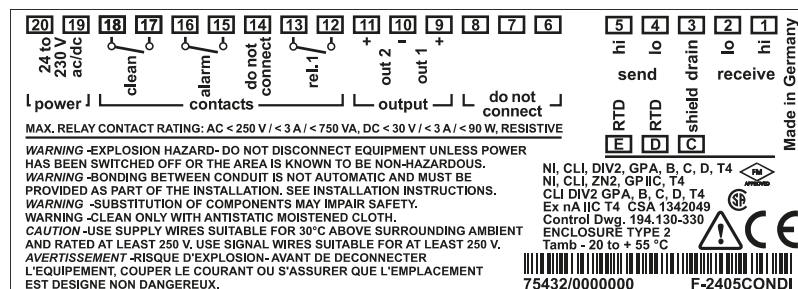
1) At nominal operating conditions

2) ±1 digit

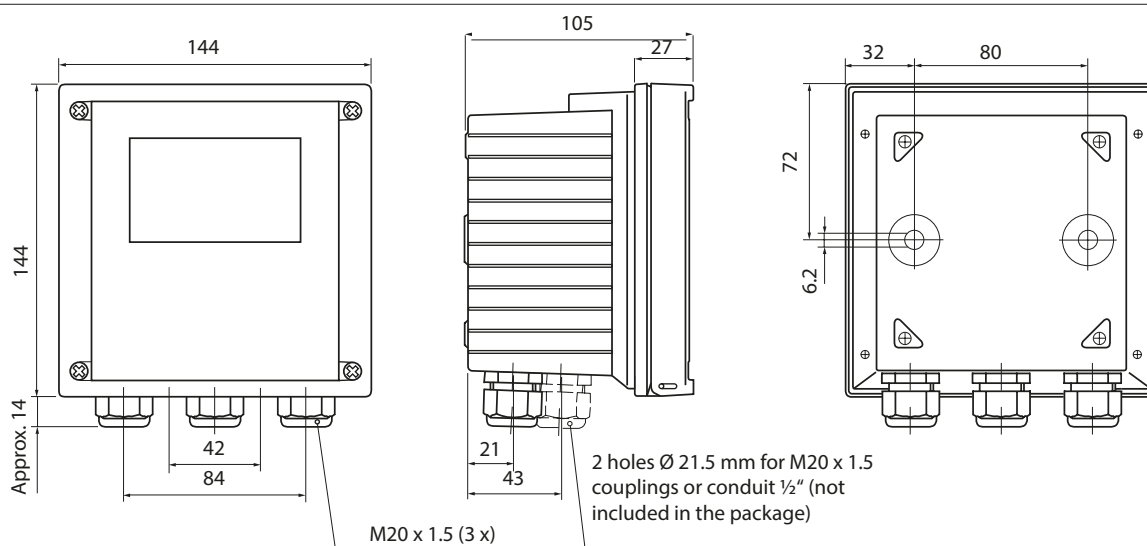
3) Plus sensor error

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Terminal Assignments



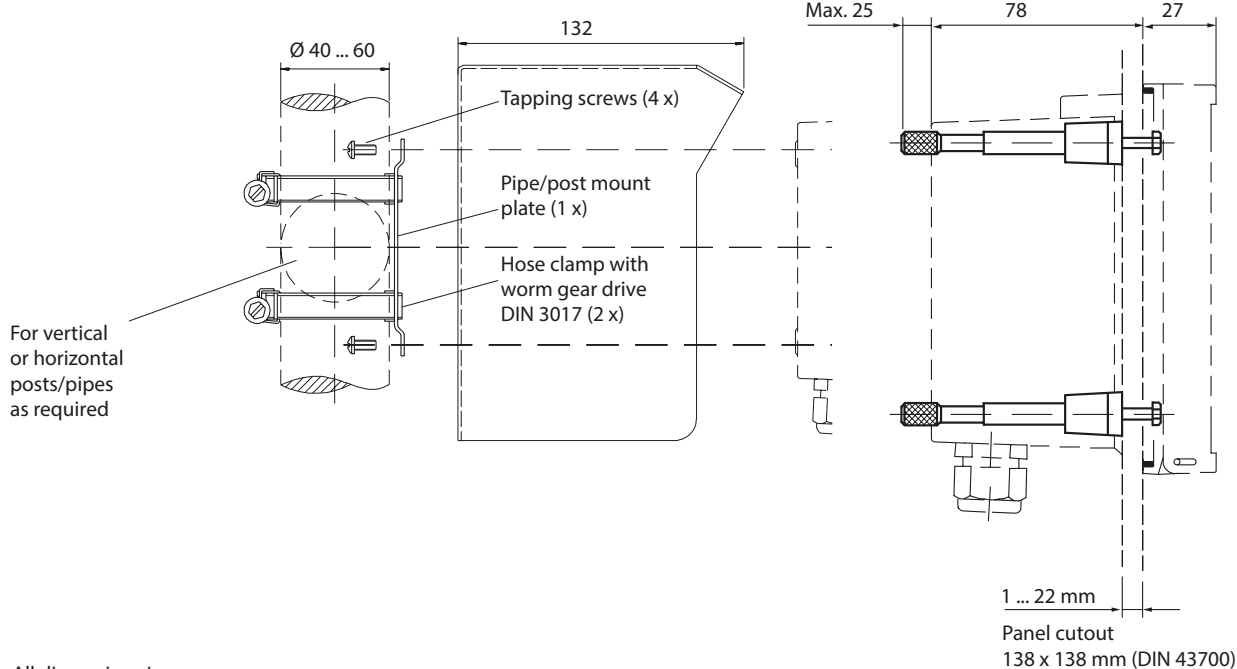
Dimension Drawing



Pipe/post mount kit ZU 0274

Protective hood ZU 0276

Panel mount kit ZU 0275



All dimensions in mm.