

COND 3400 (X)-041 Module Specifications

Cond input*)	Operation with 2-electrode or 4-electrode sensors	
Conductivity	0.000 $\mu\text{S}/\text{cm}$... 1999 mS/cm	
Resistivity Resistance	0.5 $\Omega \cdot \text{cm}$... 999 $\text{M}\Omega \cdot \text{cm}$	
Concentration	0.0 ... 100.0 wt%	
Salinity	0.0 ... 45.0 g/kg (0 ... 35 °C)	
Measuring range	4-electrode sensors:	0.1 $\mu\text{S} \times \text{c}$... 2000 $\text{mS} \times \text{c}^2$
	2-electrode sensors:	0.1 $\mu\text{S} \times \text{c}$... 200 $\text{mS} \times \text{c}^2$
Display ranges	Resolution is determined by cell constant	
	Cell constant	Resistivity conductivity
	< 0.1200 cm^{-1}	0.000 $\mu\text{S}/\text{cm}$
	< 1.200 cm^{-1}	00.00 $\mu\text{S}/\text{cm}$
	< 12.00 cm^{-1}	000.0 $\mu\text{S}/\text{cm}$
	< 120.0 cm^{-1}	0.000 mS/cm
	$\geq 120.0 \text{ cm}^{-1}$	00.00 mS/cm
Response time (T_{90})	Approx. 1 s	
Measurement error ¹⁾	0.2 % of measured value + 0.5 K	
Temperature compensation*)	<ul style="list-style-type: none"> – None – Linear characteristic 00.00 ... 19.99 %/K (adjustable reference temperature) – NLF Natural waters acc. to EN 27888 – Ultrapure water with NaCl traces (0 ... 120 °C / 32 ... 248 °F) – Ultrapure water with HCl traces (0 ... 120 °C / 32 ... 248 °F) – Ultrapure water with NH₃ traces (0 ... 120 °C / 32 ... 248 °F) – Ultrapure water with NaOH traces (0 ... 120 °C / 32 ... 248 °F) 	
	For all waters: Reference temperature 25 °C / 77 °F	
Temperature input*)	Temperature detector	Pt 100 / Pt 1000 / Ni 100 / NTC 30 k Ω *)
		3-wire connection, adjustable
	Measuring range	Pt 100 / Pt 1000: -50 ... +250 °C
		NTC 30 k Ω : -10 ... +150 °C
		Ni 100: -50 ... +180 °C
	Resolution	0.1 °C / °F
	Measurement error ¹⁾	0.2 % of measured value + 0.5 K
Concentration determination*) (SW3400-009/FW4400-009)	For substances:	
	HNO ₃	0 ... 30 wt% -20 ... 50 °C / -4 ... 122 °F
		35 ... 96 wt% -20 ... 50 °C / -4 ... 122 °F
	HCl	0 ... 18 wt% -20 ... 50 °C / -4 ... 122 °F
		22 ... 39 wt% -20 ... 50 °C / -4 ... 122 °F
	H ₂ SO ₄	0 ... 37 wt% -17.8 ... 110 °C / -0.04 ... 230 °F
		28 ... 88 wt% -17.8 ... 115.6 °C / -0.04 ... 240.08 °F
		89 ... 99 wt% 17.8 ... 115.6 °C / -0.04 ... 240.08 °F
	NaOH	0 ... 24 wt% 0 ... 100 °C / 32 ... 212 °F
		15 ... 50 wt% 0 ... 100 °C / 32 ... 212 °F
	NaCl	0 ... 28 wt% 0 ... 100 °C / 32 ... 212 °F
	H ₂ SO ₄ •SO ₃ (Oleum)	12 ... 45 wt% 0 ... 120 °C / 32 ... 248 °F

Protos 3400 (X), Protos II 4400 (X)

COND 3400 (X)-041 Module Specifications - Continued

Sensor monitoring ^{*)}	Specifiable concentration table (5x5 values)		
Sensoface	Sensocheck; polarization detection and monitoring of cable capacitance		
Sensor adjustment ^{*)}	Provides information on the condition of the sensor		
	Operating modes:		
	– Automatic with NaCl or KCl solution		
	– Manual: Specification of conductivity		
	– Product calibration/vessel adjustment (fitting)		
	– Input of cell constant with simultaneous display of conductivity value and temperature		
Calibration record	Permissible cell constant	0.0050 ... 199.99 cm ⁻¹	
	Recording of:	Cell constant, calibration procedure with date and time	
Output curve ^{*)}	– Linear		
	– Trilinear		
	– Function		
	– As desired via table		
USP Function	Water monitoring in the pharmaceutical industry (USP) with additionally specifiable limit (%), output possible via relay contact (K1 ... K3, BASE). The USP value is configured as a process variable USP % (adjustable for display, current output, limits, measurement recorder)		
Explosion protection	See Ex Certificates and EU Declaration of Conformity or www.knick.de		
RoHS conformity	According to EU directive 2011/65/EU		
EMC	NAMUR NE 21 and EN 61326-1, EN 61326-2-3		
	Emitted interference	Industrial applications ³⁾ (EN 55011 Group 1 Class A)	
	Immunity to interference	Industrial applications	
Lightning protection	to EN 61000-4-5, Installation class 2		
Rated operating conditions	Ambient temperature:	Safe area:	–20 ... 55 °C / –4 ... 131 °F
		Ex:	–20 ... 50 °C / –4 ... 122 °F
	Relative humidity:	5 ... 95 %	
	Climatic class	3K5 according to EN 60721-3-3	
	Location class	C1 according to EN 60654-1	
	Transport / storage temperature	–20 ... 70 °C / –4 ... 158 °F	
Housing	Module enclosure	PC/ABS blend	
	Color	Black	
	Degree of protection	IP 20	
	Dimensions (mm)	W x L x H 118 x 91 x 21	
	Terminals	Screw clamp connector, single and stranded wires up to 2.5 mm ²	

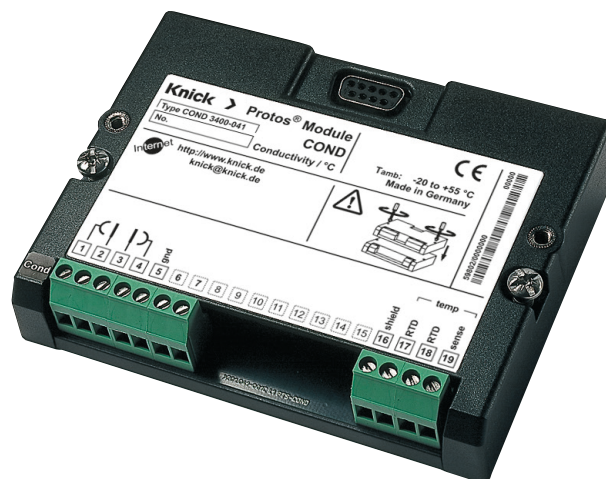
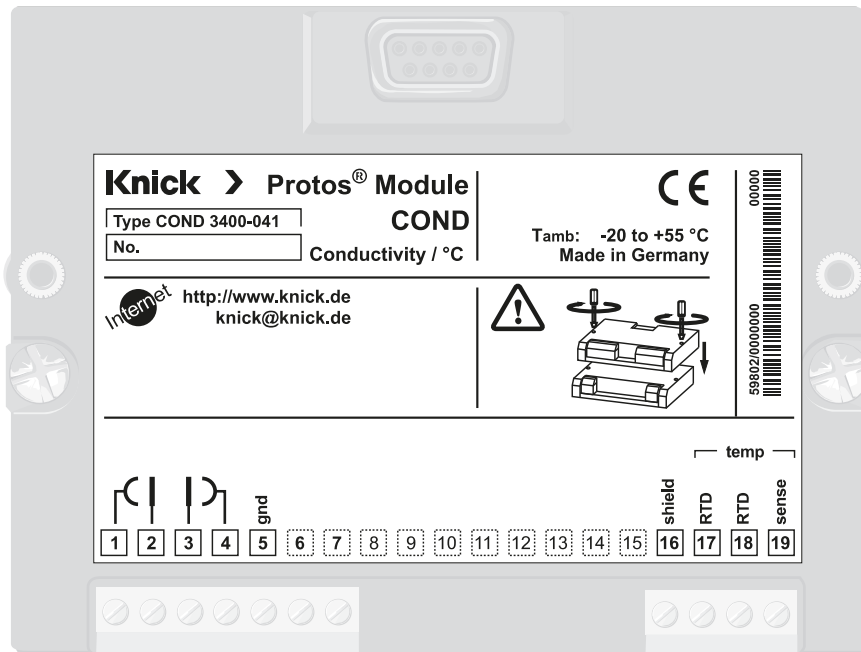
¹⁾ At rated operating conditions, ± 1 count, plus sensor error

²⁾ c = 0.0050 ... 199.99 ccm⁻¹

³⁾ This equipment is not designed for domestic use, and is unable to guarantee adequate protection of the radio reception in such environments.

*) Adjustable

COND 3400 (X)-041 Module Terminal Assignments



Protos 3400 (X)