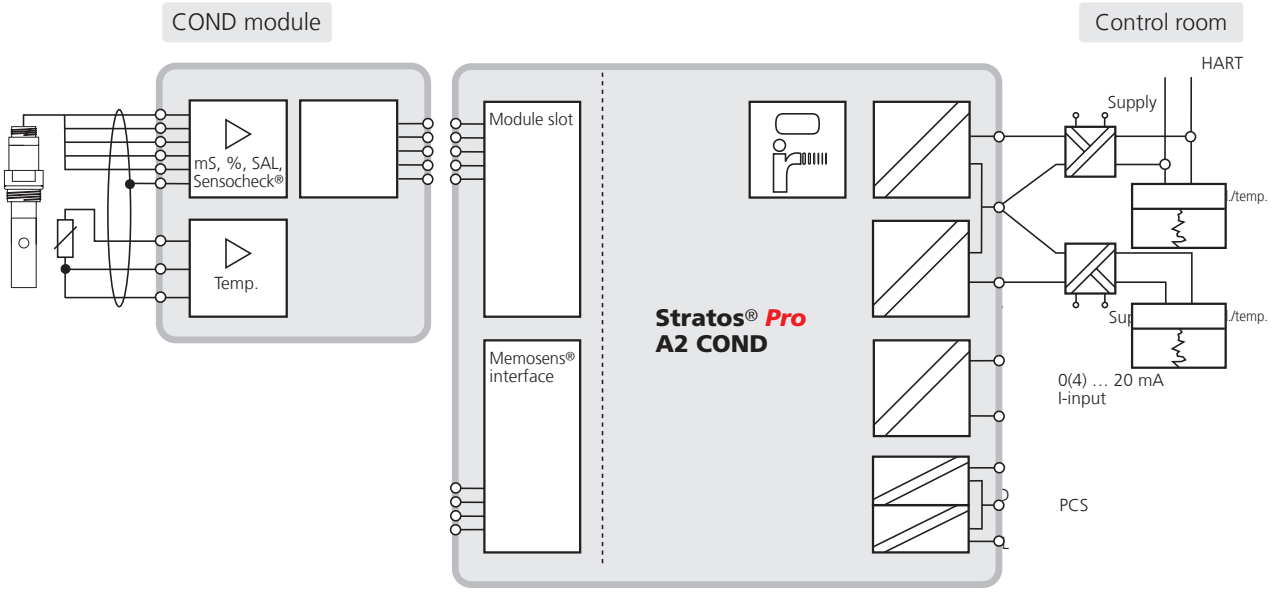
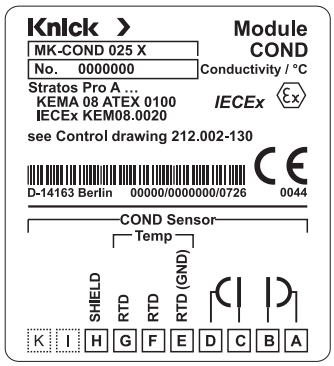
Stratos® *Pro* A2 COND

Connection

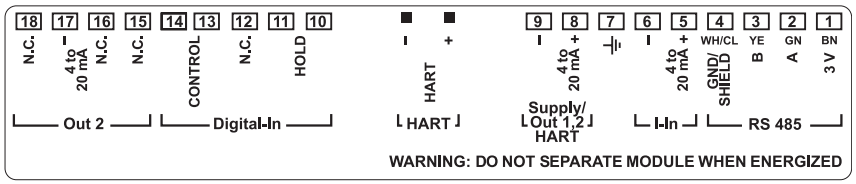
Connection of COND module with 2- or 4-electrode sensors
Model used: Stratos® *Pro* A401N–COND/0



Terminal Assignments of Stratos® *Pro* COND Module



Terminal Assignments of Stratos® *Pro* 2-Wire Devices



M4Knick

Specifications

Inputs

Conductivity	input for 2-electrode and 4-electrode sensors		
Effective ranges	2-electrode sensors	0.2 µS · c … 200 mS · c	
	4-electrode sensors	0.2 µS · c … 1000 mS · c	
Measuring ranges*)	conductivity	0.000 µS/cm … 999.9 mS/cm	0.000 … 99.99 S/m
	resistivity	00.00 … 99.99 Mohms · cm	
	concentration	00.00 … 9.99 %	
	salinity	0.0 … 45.0 ‰ (0 … 35 °C)	
Temperature compensation*) (reference temperature 25 °C)	linear 00.00 … 19.99 %/K (user-defined reference temperature) natural waters to EN 27888 NaCl from 0 (ultrapure water) to 26 % by wt (0 … 120 °C) ultrapure water with traces of NaCl, HCl, or NH_3		
Concentration determination	NaCl	0.00 … 9.99 % by wt	(0 … 100 °C)
	HCl	0.00 … 9.99 % by wt	(–20 … +50 °C)
	NaOH	0.00 … 9.99 % by wt	(0 … 100 °C)
	H_2SO_4	0.00 … 9.99 % by wt	(–17 … +110 °C)
	HNO_3	0.00 … 9.99 % by wt	(–17 … +50 °C)
Temperature	Pt 100 / Pt 1000 / NTC 30 kohms / NTC 8.55 kohms (Betatherm) / Ni 100		
Measuring range	Pt:	–50.0 … +250.0 °C	(–58.0 … +482.0 °F)
	NTC:	–20.0 … +150.0 °C	(–4.0 … +302.0 °F)
	Ni 100:	–50.0 … +180.0 °C	(–58.0 .. +356.0 °F)
Current input (TAN)	analog, 0/4 … 20 mA for external temperature signal		
HOLD input, digital		0 … 2 V (AC/DC)	HOLD inactive
		10 … 30 V (AC/DC)	HOLD active
CONTROL input, digital	parameter set selection	0 … 2 V (AC/DC)	parameter set A
		10 … 30 V (AC/DC)	parameter set B
	flow	pulse amplitude 10 … 30 V DC pulse input for flow measurement 0 … 100 pulses/s display: 00.00 … 99.99 l/h message via 22 mA, alarm contact or limit contacts	

Outputs

Output 1, Output 2	4 … 20 mA current loops, 22 mA for error message, HART communication (TAN) at output 1, supply voltage 14 … 30 V
Process variable*)	conductivity, resistivity, concentration, salinity, or temperature
Characteristic	linear, bilinear, or logarithmic
Output filter*)	PT_1 filter, filter time constant: 0 … 120 s
USP function	water monitoring in the pharmaceutical industry (USP) with additional user-defined limit value (%), output via 22 mA and HART (TAN)

Stratos® *Pro* A2 COND

Specifications – *continued*

Sensor standardization

Operating modes	– input of cell constant with simultaneous display of selected process variable and temperature – input of conductivity of calibration solution with simultaneous display of cell constant and temperature – product calibration – temperature probe adjustment

Communication

HART communication (TAN)	HART version 6 digital communication by FSK modulation of output current 1 device identification, measured values, status and messages, parameter setting, calibration, records

Diagnostics/Service

Diagnostics functions	calibration data, device self-test, display test
Sensocheck®	polarization detection and monitoring of cable capacitance
Sensoface®	provides information on the sensor condition, Sensocheck®
Logbook (TAN)	100 events with date and time
Extended logbook (TAN)	Audit Trail: 200 events with date and time
FDA CFR 21 Part 11	– access control by editable passcodes – logbook entry and flag via HART in the case of configuration changes – message and logbook entry when enclosure is opened
Service functions	current source
Sensor monitor	direct display of measured values from sensor for validation: resistance/temperature
IrDA interface	infrared service interface for firmware updates

Approvals

Explosion protection (A2xxX)	IECEx	Ex ib[ia] IIC T4 / zone 0 Ex ia IIC T4 / Ex iaD 20 IP 6X T 85 °C
	ATEX	II 2(1) G Ex ib[ia] IIC T4 / II 1 G Ex ia IIC T4
		II 1 D Ex iaD 20 IP6x T85°C / II 2 D Ex iaD 21 IP6x T85°C
	FM	C/US NI/I/2/ABCD/T4 / S/II,III/2/FG/T4, Type 4X
		C IS/I,II,III/1/ABCDEFG/T4 / I/0/Ex ia IIC T4, Entity, Type 4X
		C I/2/Ex nA IIC T4 / 22/Ex tD T85°C; Type 4X
		US IS/I,II,III/1/ABCDEFG/T4 / I/0/AEx ia IIC T4, Entity, Type 4X
		US I/2/AEx nA IIC T4 / 22/AEx tD T85°C, Type 4X
	CSA	IS, Class I,II,III Div 1, GP A,B,C,D,E,F,G T4, Entity, Type 4X
		AIS Class I,II,III Div 1, GP A,B,C,D,E,F,G T4, Entity, Type 4X
		Class I, Zone 1, AEx ia IIC T4, Entity, Type 4X
	NEPSI	Ex ib[ia] IIC T4 / Ex ia IIC T4 / DIP A20 TA,T6
	GOST	1Exib[ia]IICT4 / 0ExiaIICT4 / DIP A20 TA 85°C / DIP A21 TA 85°C

Specifications – *continued*

Approvals – *continued*

Explosion protection (A2xxB)	IECEx		Ex nA II T4 / Ex tD A22 IP5X T 85 °C
	ATEX		II 3 G Ex nA II T4 / II 3 D Ex tD A22 IP5X T85 °C
	FM	C/US	NI/I/2/ABCD/T4 / S/II,III/2/FG/T4, Type 4X
		C	I/2/Ex nA IIC T4 / 22/Ex tD T85°C, Type 4X
		US	I/2/AEx nA IIC T4 / 22/AEx tD T85°C, Type 4X
	CSA	C/US	Class I,II,III Div 2, GP A,B,C,D,E,F,G T4, Type 4X
		C	Ex nA II T4 / DIP/II,III/2/EFG, Type 4X
		US	AEx nA II T4 / II, III/22/AEx tD 22, T85°C, Type 4X
	NEPSI		Ex nA II T4 / DIP A22 TA,T6
	GOST		2ExnAIIT4 / DIP A22 TA 85°C

Device data

Display	LC display with colored backlighting, main display, secondary display, plain-text ticker line, icons, Sensoface®, status indication, alarm indication
Keypad	keys: meas, info, 4 cursor keys, enter
Power supply	see Outputs 1/2
Real-time clock	different time and date formats selectable power reserve > 5 days
EMC	EN 61326-1 (general requirements) emitted interference: class B (residential area) immunity to interference: industry EN 61326-2-3

Nominal operating conditions

Ambient temperature	–20 … +65 °C
Transport/Storage temperature	–20 … +70 °C
Relative humidity	10 … 95 %, not condensing
Enclosure	molded enclosure, PBT/PC, glass-reinforced
Assembly	– wall mounting – pipe mounting: Ø 40 … 60 mm, □ 30 … 45 mm – panel mounting
Dimensions (mm)	H x W x D: 148 x 148 x 117
Cable glands	3 knockouts for cable glands M20 x 1.5 2 knockouts for 1/2" NPT or rigid metallic conduit
Control panel cutout	138 mm x 138 mm to DIN 43700
Ingress protection	IP 67/NEMA 4X outdoor
Weight	approx. 1.2 kg (1.6 kg incl. accessories and packaging)
Connections	terminals, conductor cross section max. 2.5 mm²

*) user-defined