

# Process Analysis Systems

Chem

Energy

Pharm

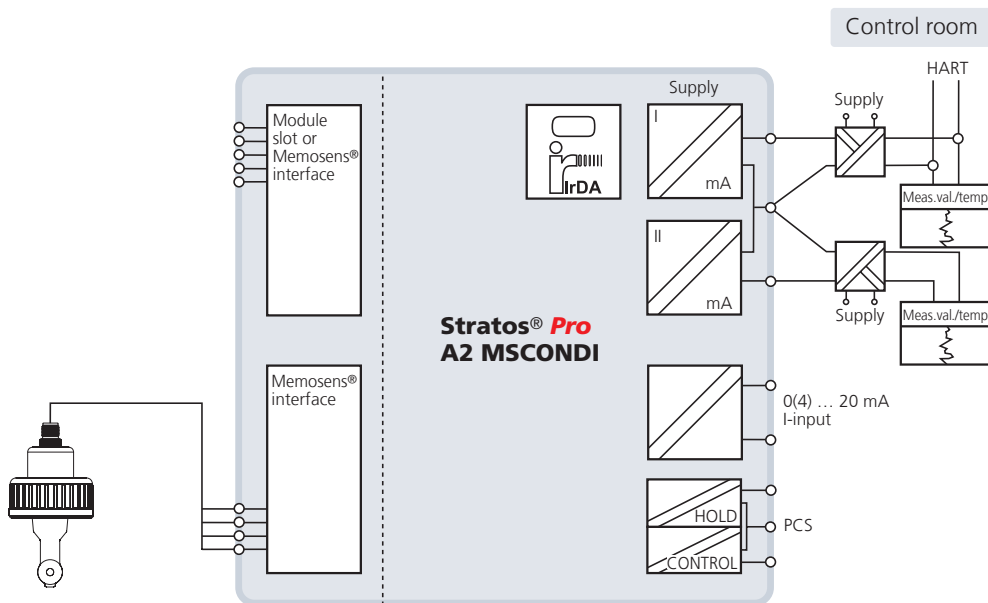
Food

Water

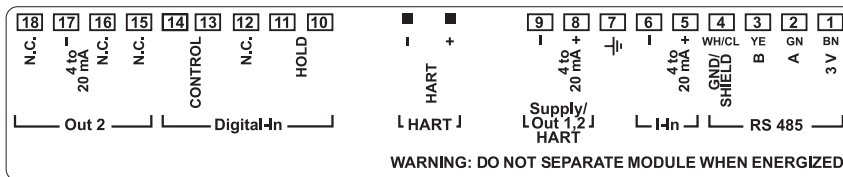
## Stratos® Pro A2 MSCONDI

### Connection

Connection of Memosens® interface of 2-wire device with a digital sensor  
 Model used: Stratos® Pro A201N-MSCONDI-1



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



## Specifications

### Inputs

RS 485 input for digital electrodeless conductivity sensor SE 670 or contactless Memosens® conductivity sensors

Display ranges*)	conductivity	0.00 ... 999.9 mS/cm	0.000 ... 99.99 S/m
	concentration	00.00 ... 9.99 %/10.0 ... 100.0 %	
	salinity	0.0 ... 45.0 ‰ (0 ... 35 °C)	
	temperature	-20 ... +150 °C (-4.0 ... +302.0 °F)	

Temperature compensation\*)  
(reference temperature 25 °C)

none  
linear characteristic 00.00 ... 19.99 %/K (user-defined reference temperature)  
natural waters to EN 27888 (0 ... 120 °C)  
NaCl from 0 (ultrapure water) to 26 % by wt (0 ... 120 °C)

Concentration determination	[01] NaCl	0-26 % by wt (0 °C) ... 0-28 % by wt (100 °C)
	[02] HCl	0-18 % by wt (-20 °C) ... 0-18 % by wt (50 °C)
	[03] NaOH	0-13 % by wt (0 °C) ... 0-24 % by wt (100 °C)
	[04] H <sub>2</sub> SO <sub>4</sub>	0-26 % by wt (-17 °C) ... 0-37 % by wt (110 °C)
	[05] HNO <sub>3</sub>	0-30 % by wt (-20 °C) ... 0-30 % by wt (50 °C)
	[06] H <sub>2</sub> SO <sub>4</sub>	94-99 % by wt (-17 °C) ... 89-99 % by wt (115 °C)
	[07] HCl	22-39 % by wt (-20 °C) ... 22-39 % by wt (50 °C)
	[08] HNO <sub>3</sub>	35-96 % by wt (-20 °C) ... 35-96 % by wt (50 °C)
	[09] H <sub>2</sub> SO <sub>4</sub>	28-88 % by wt (-17 °C) ... 39-88 % by wt (115 °C)
	[10] NaOH	15-50 % by wt (0 °C) ... 35-50 % by wt (100 °C)

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<sub>1</sub> filter, filter time constant: 0 ... 120 s

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### Specifications – continued

#### Sensor standardization

Operating modes	<ul style="list-style-type: none"> <li>– input of cell factor with simultaneous display of selected process variable and temperature</li> <li>– input of conductivity of calibration solution with simultaneous display of cell factor and temperature</li> <li>– product calibration</li> <li>– zero adjustment</li> <li>– temperature probe adjustment</li> </ul>
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#### Communication

HART communication (TAN)	<p>HART version 6</p> <p>digital communication by FSK modulation of output current 1</p> <p>device identification, measured values, status and messages, parameter setting, calibration, records</p>
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#### Diagnostics/Service

Diagnostics functions	calibration data, device self-test, display test
Sensocheck®	monitoring of primary and secondary coils and lines for open circuit and of primary coil and lines for short circuit delay approx. 30 s
Sensoface®	provides information on the sensor condition (zero point, 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	<ul style="list-style-type: none"> <li>– access control by editable passcodes</li> <li>– logbook entry and flag via HART in the case of configuration changes</li> <li>– message and logbook entry when enclosure is opened</li> </ul>
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/II/2/ABCD/T4 / S/II,III/2/FG/T4, Type 4X
	C	IS/I,II,III/1/ABCDEFGH/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/ABCDEFGH/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	

## Specifications – continued

### Approvals – continued

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

### 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 mm <sup>2</sup>

\*) user-defined