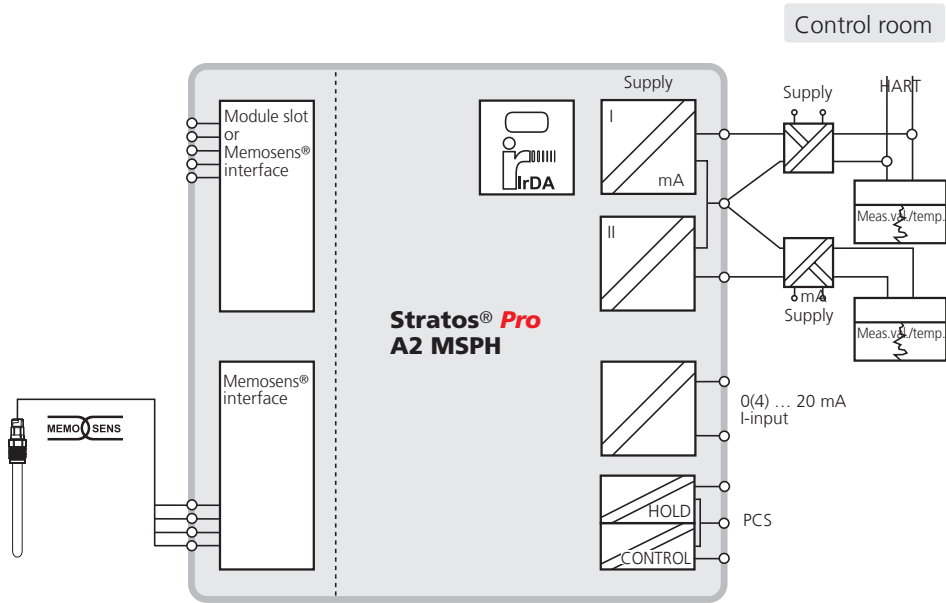


Process Analysis Systems

Stratos® Pro A2 MSPH

Connection

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



Terminal Assignments of Stratos® Pro 2-Wire Devices

18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
N.C.	4 to 20 mA	N.C.	N.C.	CONTROL	N.C.	HOLD	-	+	-	+	⊥	-	+	WHICH	YE	GN	BN
							HART		4 to 20 mA			4 to 20 mA		GND/SHIELD	B	A	3 V
Out 2				Digital-In				HART		Supply/Out 1, 2		I-In		RS 485			

WARNING: DO NOT SEPARATE MODULE WHEN ENERGIZED

Specifications

Inputs

RS 485	digital input for Memosens® pH sensors (glass or ISFET) or Memosens® ORP sensors	
Display range	pH value:	-2.00 ... 16.00
	ORP:	-1999 ... 1999 mV
	temperature:	-20.0 ... +200.0 °C (-4.0 ... +392.0 °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*)	pH or mV value or temperature	
Characteristic	linear or bilinear	
Output filter*)	PT ₁ filter, filter time constant: 0 ... 120 s	

Sensor standardization

Operating modes*)	<ul style="list-style-type: none"> - adoption of calibration data from digital sensors - calibration with Calimatic® automatic buffer recognition - manually, data entry or using the product buffer sets: Knick, Mettler Toledo, Merck/Riedel de Haen, Ciba (94), NIST, HACH, WTW, Hamilton, Reagecon	
ISFET	operating point ±200 mV	
ORP-calibration range*)	-700 ... 700 mV	
Adaptive calibration timer	interval 0000 ... 9999 h	

Temperature compensation

TC of process medium	linear:	-19.99 ... +19.99 %/K, reference temperature 25 °C
	table:	0 ... 100 °C, user-defined in 5-K steps

Process Analysis Systems

Stratos® Pro A2 MSPH

Specifications – continued

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
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Diagnostics/Service

Diagnostics functions	calibration data, device self-test, display test
Sensocheck®	automatic impedance monitoring of glass electrode
Sensoface®	information on the sensor condition (zero/slope, response time, calibration interval, Sensocheck®, wear)
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	display of direct sensor signals (mV/temperature/resistance, ...)
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/2/ABCD/T4 / S/II,III/2/FG/T4, Type 4X C IS/I,II,III/1/ABCDEFGH/T4 / I/O/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/O/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
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 NI/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 nL IIC T4 / DIP A22 TA,T6

Specifications – continued

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 ²

*) user-defined