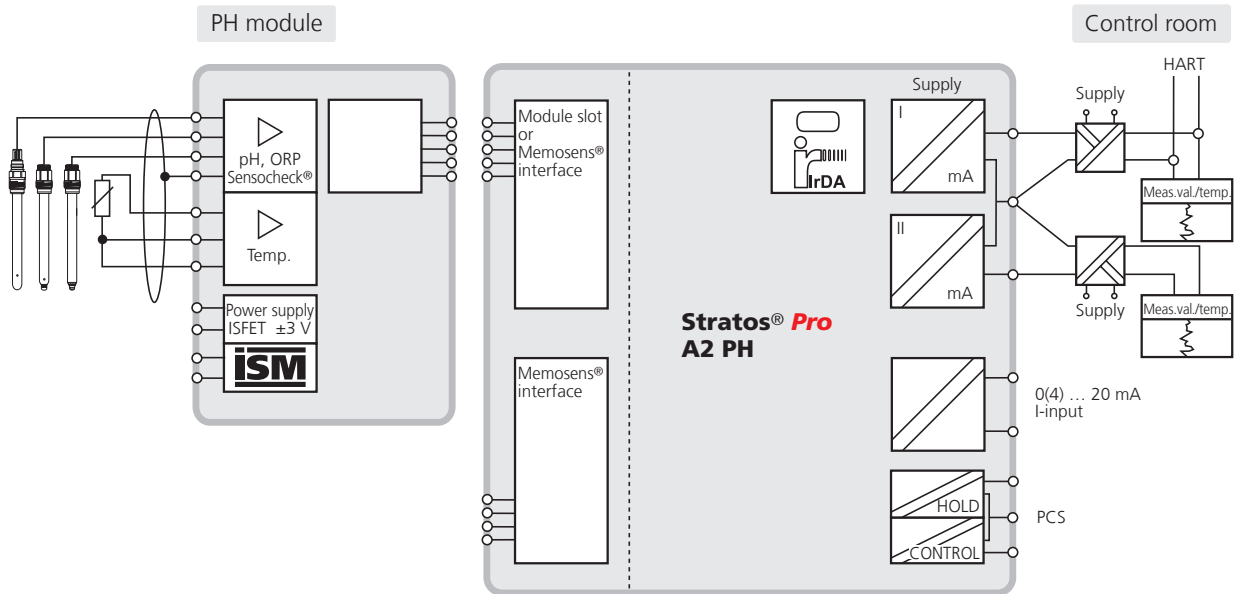


Process Analysis Systems

Stratos® Pro A2 PH

Connection

Connection of the PH with any desired analog sensor or with ISM or ISFET sensors
 Model used: Stratos® Pro A201N-PH-1



Terminal Assignments of Stratos® Pro PH Module

Knick		Module
MK-PH 015 X		PH
No. 0000000		pH / ORP / °C
Stratos Pro A...		
KEMA 08 ATEX 0100		IECEX
IECEX KEM08.0020		
see Control drawing 212.002-110		
		CE
D-14163 Berlin 00000/0000000/0726		0044
pH Sensor		
[Temp]		
SHIELD	RTD	RTD (GND)
K	I	H
		G
		F
		E
		D
		C
		B
		A

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.	N.C.	HOLD			-	+	4 to 20 mA		4 to 20 mA	WH/CL	YE	GN	BN
Out 2				Digital-In						HART		Supply/Out 1,2 HART		I-In		RS 485		

WARNING: DO NOT SEPARATE MODULE WHEN ENERGIZED

Specifications

Inputs

pH/mV	input for pH sensors (glass or ISFET) or ORP sensors		
Display range	pH value: -2.00 ... +16.00 ORP: -1999 ... +1999 mV		
ISM (TAN)	interface for operation with ISM (digital sensors)		
Temperature	Pt 100 / Pt 1000 / NTC 30 kohms		
Display range for temperature	-20.0 ... +150.0 (+200.0) °C (-4.0 ... +302.0 (+392.0) °F)		
Current input (TAN)	analog, 0/4 ... 20 mA for external temperature signal		
HOLD input, digital		0 ... 2 V (AC/DC) 10 ... 30 V (AC/DC)	HOLD inactive HOLD active
CONTROL input, digital	parameter set selection	0 ... 2 V (AC/DC) 10 ... 30 V (AC/DC)	parameter set A 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		
Power output	for operating an ISFET adapter ±3 V/0.5 mA		

Sensor standardization

Operating modes	- 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, user-defined buffer table		
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 PH

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 and reference electrode
Sensoface®	information on the sensor condition (zero/slope, response time, calibration interval, 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	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 T / 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/ABCDEFG/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/ABCDEFG/T4 / I/O/AEx ia IIC T4, Entity, Type 4X
	CSA	US	I/2/AEx nA IIC T4 / 22/AEx tD T85 °C, Type 4X
		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	
	NEPSI	Ex ib[ia] IIC T4 / Ex ia IIC T4 / DIP A20 TA,T6	
GOST	1Exib[ia]IIC T4 / 0ExialICT4 / DIP A20 TA 85 °C / DIP A21 TA 85 °C		
KOSHA	Ex ib[ia] IIC T4		
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/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
	CSA	C	Ex nA II T4 / DIP/II,III/2/FG, 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	2ExnAII T4 / DIP A22 TA 85 °C	

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

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