SIPATEC SW.Ex Intelligent Sensor System User Manual

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SW.Ex

SIPATEC SW.Ex Intelligent Sensor System

INSTRUCTION

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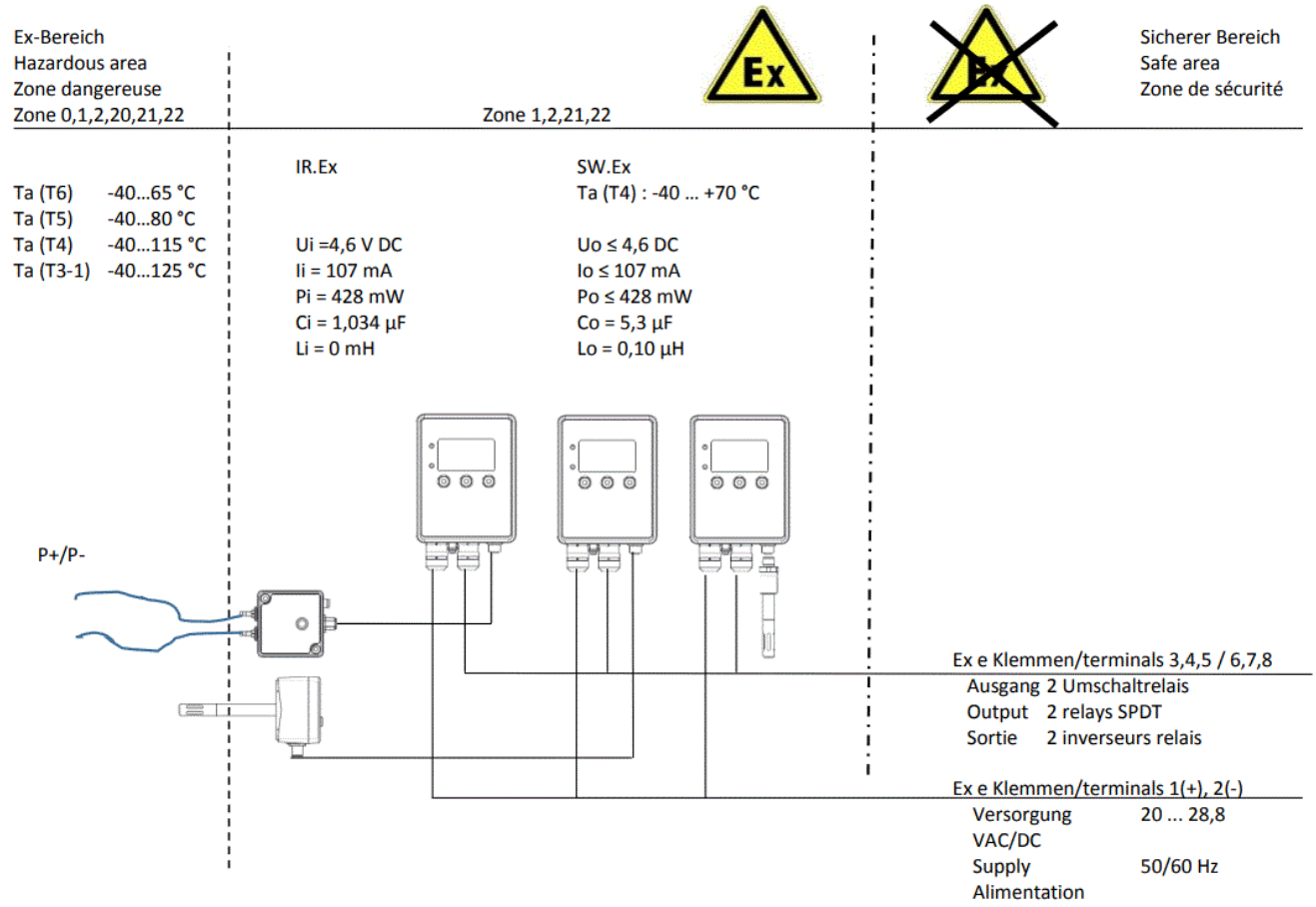


- Install in accordance with manufacturer’s instructions and valid standards and rules.
- Unlocking the device or open the terminal box is only permitted with the power off.
- When installing the unit, make sure that the housing IP66 degree of protection is maintained in accordance with EN 60529.
- This equipment can be used according to manufacturers’ instructions in Zone 1, 21 (II 2 GD) and 22. (II 3GD).
- The sensor circuit can be introduced into the zone 0 (II 1G). Corresponds to the designation II 2 (1) G.
- The device may only be used in such conditions, against which the process-contacting materials are resistant.
- The unit must be connected to the potential equalization (PA), an internal and external terminal is available.
- The unit must be protected against mechanical impact and UV light.

General

The manual is included in the delivery and serves to ensure proper handling and optimum functioning of the device. The manufacturer is not responsible for this publication nor guarantee and improper handling of the products described any liability. For this reason, read the manual before operation. In addition, the manual is for all personnel who are involved in the transport, setup, operation, maintenance and repair to bring in knowledge. This manual may not, without the prior written consent of the manufacturer used for competition purposes and will not be passed on to third parties. Copies for personal use are permitted. This documentation may contain technical inaccuracies or typographical errors. The information shall be revised periodically and are subject to modifications. The manufacturer reserves the right to modify or alter the product described at any time.

Safety notes.

Safety notes must be followed. Failure to observe personal injury or property damage may result. The manufacturer assumes no liability.

SAFETY NOTES

Installation, electrical connection, maintenance and commissioning may only be performed by trained specialist. Avoid excessive mechanical stress and improper use. Switch off power when mounting and dismounting The display loses contrast and brightness in the cold conditions. Regenerates when the temperature rises to its original state.

Product Description

A basic unit SW.Ex and various sensors of the series IR.Ex solve a variety of measurement tasks. The sensors are available for multi-functionality, high accuracy and simple assembly.

The following sensors are available:

- Temperature
- Temperature and humidity, dew point
- Differential pressure
- Special sensors on request

In addition, allow the button a suburb commissioning and the LCD display is used as a suburb of measured values. The integrated terminal box of protection Ex e guarantees a direct electrical connection in the hazardous area. Due to the modular concept of separation of electronics and mounting plate a simple, easy installation and

commissioning is guaranteed. Options such as different sensor cable for difficult installation conditions supplement the product portfolio. Calibration of the measuring chain are made possible by the design of the device in the easiest way.

MEASUREMENT PRINCIPLE

The physical unit is detected in the series sensors IR.Ex. The measured value is digitally processed. The transfer to the switching relay SW.Ex done by an intelligent protocol that enables easy-to-change sensors and is open for future sensors. The robust, interference-free signal from the sensor to transmitter allows even in harsh industrial environments to transfer up to 100 m. In the SW.Ex module, the sensor signal is converted into freely scalable switching outputs. You can choose upper, lower limit and hysteresis which can be set by software menu.

Technical Data

SW.Ex SWITCHING RELAY

SUPPLY			
Voltage	20 – 28,8		V AC/DC
Frequency	50 – 60		Hz
Power consumption	3 / 5		W / VA
OUTPUTS			
2 Relays with changeover contact (SPDT), hysteresis adjustable	Potential free		
Relay max	30 / 2		V DC / A
Relay min.	5 / 0,1		V DC / A
Hysteresis adjustable	0,5-100		% FS
DISPLAY / BUTTON / LED			
LCD, backlight	128 x 64		pixel
Micro push button	> 1 Mio.		cycles
LED red / green	Status indication		
HOUSING			
High Tech Polymer	halogen-, silicon-, PVC		free
Surface conductivity	< 10^9		Ohm
Corrosion resistance	On- and Offshore		With high salinity
IP protection	IP66		
GENERAL			
Terminal square	0,08 – 2,5	mm	without end sleeve
ATEX/IECEx Ex e	0,25 – 1,5	mm	with end sleeve
Cable glands M20x1,5 ATEX/IECEx Ex e	6 - 13		Ø mm
Dimensions H x B x T	175 x 110 x 56		mm
Weight	800		g
MATERIALS			
Housing	High Tech Polymer		electrostatically conductive
Front plate, srews	Stainless steel		
Seals	EPDM		
Cable glands	brass plated		
Sensor connection M12	brass plated		
APPLICATION			
Ambient- and storage temperature	-40 ... +70		°C
Humidity, without condensation	0 ... 100		%rH
Mountion position	Any, recommended vertical		

IR.Ex -P/-V-… DIFFERENTIAL PRESSURE / AIR VOLUME / AIR FLOW

TYPES AND MEASUREMENT RANGE			
IR.Ex-P-100		-100 – 100	Pa
IR.Ex-P-250		-250 – 250	Pa
IR.Ex-P-600		-600 – 600	Pa
IR.Ex-P-1000		-1000 – 1000	Pa
IR.Ex-P-2500		-2500 – 2500	Pa
ACCURACY			
Accuracy „total“ 100 / 250 / 600 / 1.000 / 2.500 Pa		2,0 / 2,0 / 1,5 / 1,0 / 1,0	% FS
Accuracy „typical“		< 0,5	% FS
Long term stability 1.000 h / 25 °C		0,5	%
MTTF (Sensor)		4.611.965	h
SUPPLY EX I			
Voltage	Ui	4,6	V
Current	Ii	0,107	A
Power	Pi	0,428	W
Capacitance	Ci	1,034	µF
Inductance	Li	0	µH
HOUSING			
High Tech Polymer		halogene-, silicon-, PVC	free
Surface conductivity		< 10^9	Ohm
Corrosion resistance		On- and Offshore	With high salinity
MATERIALS			
Housing		High Tech Polymer	electrostatically conductive
Front plate, Srews		Stainless steel	
Seals		EPDM	
tube connection		brass plated	

IR.Ex -RT / RH-… TEMPERATURE / HUMIDITY (ROOM)

TYPES AND MEASUREMENT RANGE			
IR.Ex-RT	Room Temperature Probe	-40 … +125	°C
IR.Ex-RH	Room Humidity Probe	0 … 100	°C / %rF
ACCURACY			
Accuracy temperature @.0 … 60 °C		< 0,5	°C
Accuracy temperature @.-40 … 0, @ 60 … 125 °C		< 0,5 °C + 0,03°C/K	°C/K
Accuracy humidity		2,0	% FS
Hysteresis		1,0	%
Long term stability 1.000 h / 25 °C		0,5	%
MTTF (Sensor)		9.312.507	h
SUPPLY EX I			
Voltage	Ui	4,6	V
Current	Ii	0,107	A
Power	Pi	0,107	W
Capacitance	Ci	0,33	µF
Inductance	Li	0	µH
MATERIALS			
Thermowell, end cap		Stainless Steel	
Seals		EPDM	
Sensor connection M12		brass plated	
APPLICATION			
Ambient-, storage temperature		-40 … +125	°C
Humidity, without condensation		0 … 100	%rH
Mounting position		Any, recommended vertical	

IR.Ex -DT / DH-… TEMPERATURE / HUMIDITY (DUCT)

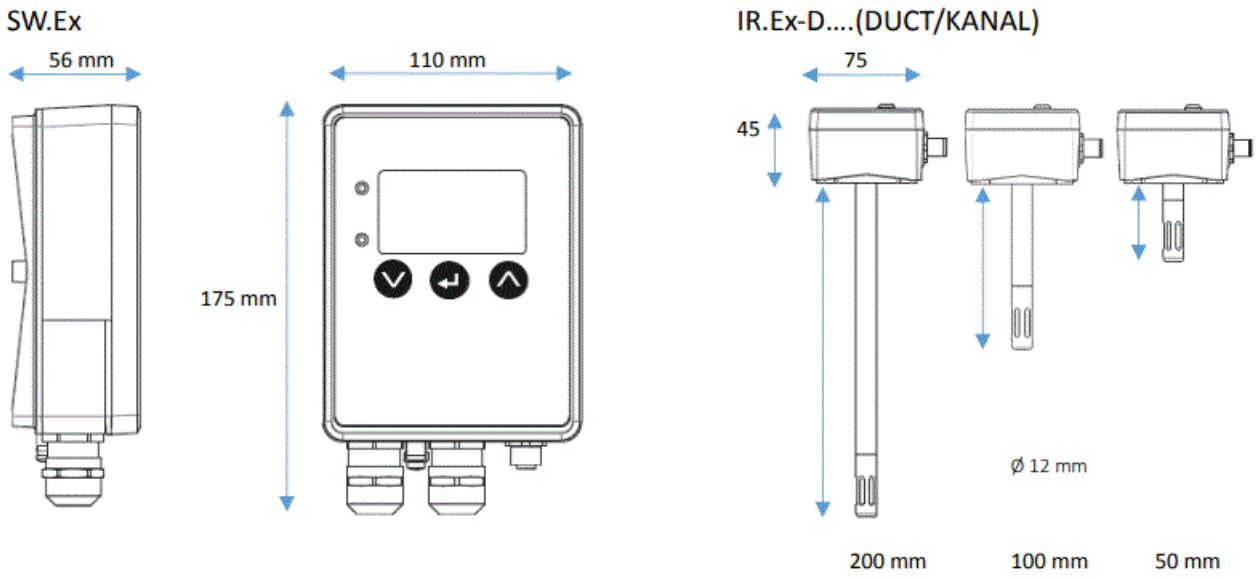
TYPES AND MEASUREMENT RANGE			
IR.Ex-DT-50	Duct Temperature Probe 50 mm	-40 ... + 125	°C
IR.Ex-DT-100	Duct Temperature Probe 100 mm	-40 ... + 125	°C
IR.Ex-DT-200	Duct Temperature Probe 200 mm	-40 ... + 125	°C
IR.Ex-DH-50	Duct Humidity Probe 50 mm	0 ... 100	%rH
IR.Ex-DH-100	Duct Humidity Probe 100 mm	0 ... 100	%rH
IR.Ex-DH-200	Duct Humidity Probe 200 mm	0 ... 100	%rH
ACCURACY			
Accuracy temperature @.0 ... 60 °C		< 0,5	°C
Accuracy temperature @.-40 ... 0, @ 60 ... 125 °C		< 0,5 °C + 0,03°C/K	°C/K
Accuracy humidity		2,0	% FS
Hysteresis		1,0	%
Long term stability 1.000 h / 25 °C		0,5	%
MTTF (Sensor)		9.312.507	h
SUPPLY EX I			
Voltage	Ui	4,6	V
Current	Ii	0,107	A
Power	Pi	0,428	W
Capacitance	Ci	1,034	µF
Inductance	Li	0	µH
MATERIALS			
Front plate		Stainless Steel	
Screws		Stainless Steel	
Seals		EPDM	
Sensor connection M12		brass nickel plated	
APPLICATION			
Ambient-, storage temperature		-40 ... +125	°C
Humidity, without condensation		0 ... 100	%rH
Mounting position		Any, recommended vertical	

CERTIFICATES

CERTIFICATES

SW.Ex	ATEX	EPS 15 ATEX 1 107 X	II2(1)G Ex eb mb ib [ia Ga] IIC T4 Gb
	IECEx	IECEx EPS 15.0083 X	II2(1)D Ex tb [ia Da] IIIC T130 °C Db
IR.Ex	ATEX	EPS 15 ATEX 1 107 X	II1/2G Ex ia IIC T6/T5/T4 Ga/Gb
	IECEx	IECEx EPS 15.0083 X	II1/2D Ex ia IIIC T130 °C Da/Db

Dimension



Documents / Resources

	SIPATEC SW.Ex Intelligent Sensor System [pdf] User Manual SW.Ex, Intelligent Sensor System, SW.Ex Intelligent Sensor System

References

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