

Proof of intrinsic safety

For intrinsically safe circuits with a supply.

device:

myDatalogEASY IoT ATEX

associated equipment:

Manufacturer	Type	Device	EU type examination certificate	ATEX marking
Microtronics	Zenerbarriere 167	myDatalogEasyIoT ATEX	SIQ 22 ATEX 184 X SIQ 22 ATEX 185 U	<Ex> II 3(1)G Ex ec nC [ia Ga] IIC T4 Gc <Ex> II 3(1)G Ex ec [ia Ga] IIC Gc

max. output voltage	Uo [V]=	26,25	50% rule is to be applied, as Ci > 1% of Co and/or Li > 1% of Lo	red. capacity	Co [nF]=	24,25
max. output current	Io [A]=	0,084		red. inductance	Lo [μH]=	1265
max. output power	Po [W]=	0,549				
max. external capacity	Co [nF]=	48,5				
max. external inductance	Lo [μH]=	2530				

intrinsically safe equipment:

Manufacturer	Type	Device	EU type examination certificate	ATEX marking
Krohne Messtechnik	SMARTSENS PH 8xxx SMARTPAT PH 8xxx	digitaler pH-Sensor	PTB 13 ATEX 2011 X PTB 13 ATEX 2011 X Issue 1	<Ex> II 1G Ex ia IIC T6

max. input voltage	Ui [V]=	30
max. input current	Ii [A]=	0,12
max. input power	Pi [W]=	1
max. internal capacity	Ci [nF]=	5
max. internal inductance	Li [μH]=	10

cable + pressure compensation element:

Manufacturer	Type	length [m]
Lapp	Ölflex EB CY 7x0,75	19

cable capacitance [nF/m]	0,98
cable inductance [μH/m]:	3,64

resulting cable capacitance	Cc [nF]=	18,62
resulting cable inductance	Lc [μH]=	69,16

safety-related values of the interconnection:

Zenerbarriere 167		SMARTSENS PH 8xxxSMARTPAT PH		Intrinsic safety fulfilled
26,25	Uo ≤ Ui	30	V	YES
0,084	Io ≤ Ii	0,12	A	YES
0,549	Po ≤ Pi	1	P	YES
24,25	Co ≥ Ci + Cc	23,62	nF / IIC	YES
1265	Lo ≥ Li + Lc	79,16	μH / IIC	YES

Special conditions in the type examination certificate or in the manual of the associated / intrinsically safe equipment must be observed.

The proof of intrinsic safety is based on the safety-related maximum values. These were taken from the manual or the EC type examination certificates for the equipment.

Configuration recommendation:

Please refer to the table at <https://support.microtronics.com/mydatalogeasy-iot-atex/compatible-sensors> for the configuration recommendation.



The recommendation refers to the configuration of your Jellox product. You can make the settings in the platform.

Document revision

version	date	name	change	reason
01v000	20.09.2023	AZ	all	building document
01v001	14.11.2024	AZ	all	update configuration recommendation

Release

number	date	name	activity	signature
1	14.11.2024	AZ	created	
2			approved	