

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
max. output current
max. output power
max. external capacity
max. external inductance

Uo [V]=	26,25
Io [A]=	0,084
Po [W]=	0,549
Co [nF]=	48,5
Lo [μH]=	2530

50% rule is to be applied,
as Ci > 1% of Co and/or Li > 1% of Lo

red. capacity Co [nF]= 24,25
red. inductance Lo [μH]= 1265

intrinsically safe equipment:

Manufacturer	Type	Device	EU type examination certificate	ATEX marking
Rosemount	248	Temperature transmitter	Baseefa18ATEX0090X	<Ex> II 1G Ex ia IIC T5/T6 Ga

max. input voltage
max. input current
max. input power
max. internal capacity
max. internal inductance

Ui [V]=	30
Ii [A]=	0,13
Pi [W]=	1
Ci [nF]=	3,6
Li [μH]=	0

cable + pressure compensation element:

Manufacturer	Type	length [m]
Lapp	Ölflex EB CY 7x0,75	21

cable capacitance [nF/m]
cable inductance [μH/m]:

0,98
3,64

resulting cable capacitance
resulting cable inductance

Cc [nF]=	20,58
Lc [μH]=	76,44

safety-related values of the interconnection:

Zenerbarriere 167		248		Intrinsic safety fulfilled
26,25	Uo ≤ Ui	30	V	YES
0,084	Io ≤ Ii	0,13	A	YES
0,549	Po ≤ Pi	1	P	YES
24,25	Co ≥ Ci + Cc	24,18	nF / IIC	YES
1265	Lo ≥ Li + Lc	76,44	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	14.05.2025	AZ	all	building document

Release

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2			approved	