

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 red. inductance Lo [μH]= 1265
max. output current	Io [A]=	0,084		
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	certificate of compliance	Ex marking
Hach	GS2440EX	Gas Sensing Device	ETL22ATEX0113X	<Ex> II 1G Ex ia IIC T4 Ga

max. input voltage	Ui [V]=	30
max. input current	Ii [A]=	0,1
max. input power	Pi [W]=	0,7
max. internal capacity	Ci [nF]=	22
max. internal inductance	Li [μH]=	100

cable + pressure compensation element:

Manufacturer	Type	length [m]
Lapp	Ölflex EB CY 7x0,75	
		2

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

resulting cable capacitance	Cc [nF]=	1,96
resulting cable inductance	Lc [μH]=	7,28

safety-related values of the interconnection:

Zenerbarriere 167		GS2440EX		Intrinsic safety fulfilled
26,25	Uo ≤ Ui	30	V	YES
0,084	Io ≤ Ii	0,1	A	YES
0,549	Po ≤ Pi	0,7	P	YES
24,25	Co ≥ Ci + Cc	23,96	nF / IIC	YES
1265	Lo ≥ Li + Lc	107,28	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

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Release

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2			approved	