

Proof of intrinsic safety

For intrinsically safe circuits with a supply.

device:

Jellox Pro Analog
Jellox Elite Analog

associated equipment:

Manufacturer	Type	Device	EU type examination certificate	ATEX marking
Microtronics	D012-x1***2***05	Rugged GW Analog	SIQ 24 ATEX 212 X	<Ex> II 2G Ex ib IIB T3 Gb

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

U _o [V]=	25,6
I _o [A]=	0,082
P _o [W]=	0,523
C _o [nF]=	310
L _o [μH]=	1000

50% rule is to be applied,
as C_i > 1% of C_o and/or L_i > 1% of L_o

red. capacity	C _o [nF]=	155
red. inductance	L _o [μH]=	500

intrinsically safe equipment:

Manufacturer	Type	Device	EU type examination certificate	ATEX marking
Endress + Hauser	Cerabar PMC21_PMP21_PMP23	pressure transducer	CSA 70013213	Ex ia IIC T4 Gb

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

U _i [V]=	30
I _i [A]=	0,1
P _i [W]=	0,8
C _i [nF]=	11,62
L _i [μH]=	0

cable + pressure compensation element:

Manufacturer	Type	length [m]
Lapp	Ölflex EB CY 7x0,75	137

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

0,98
3,64

resulting cable capacitance
resulting cable inductance

C _c [nF]=	134,26
L _c [μH]=	498,68

safety-related values of the interconnection:

D012-x1***2***05		Cerabar PMC21_PMP21_PMP		Intrinsic safety fulfilled
25,6	U _o ≤ U _i	30	V	YES
0,082	I _o ≤ I _i	0,1	A	YES
0,523	P _o ≤ P _i	0,8	P	YES
155	C _o ≥ C _i + C _c	145,88	nF / IIC	YES
500	L _o ≥ L _i + L _c	498,68	μH / IIC	YES

For use in EPL
"Gb" (category
2G) and group
IIB

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/jellox-analog/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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