

Proof of intrinsic safety

For intrinsically safe circuits with a supply.

device:

Jellox Analog xx

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	Uo [V]=	25,6	50% rule is to be applied, as Ci > 1% of Co and/or Li > 1% of Lo	red. capacity Co [nF]= 155 red. inductance Lo [µH]= 500
max. output current	Io [A]=	0,082		
max. output power	Po [W]=	0,523		
max. external capacity	Co [nF]=	310		
max. external inductance	Lo [µH]=	1000		

intrinsically safe equipment:

Manufacturer	Type	Device	EU type examination certificate	ATEX marking
Endress + Hauser	Cerabar S PMC71 / PMP71 / PMP75	Pressure transmitter	KEMA 04ATEX1100X Issue6	<Ex> II 1G Ex ia IIC T6...T3 Ga

max. input voltage	Ui [V]=	30
max. input current	Ii [A]=	0,3
max. input power	Pi [W]=	1
max. internal capacity	Ci [nF]=	11,8
max. internal inductance	Li [µH]=	225

cable + pressure compensation element:

Manufacturer	Type	length [m]
		75

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

resulting cable capacitance	Cc [nF]=	73,5
resulting cable inductance	Lc [µH]=	273

safety-related values of the interconnection:

D012-x1***2***05		Cerabar S PMC71 / PMP71 / PMP75		Intrinsic safety fulfilled
25,6	Uo <= Ui	30	V	YES
0,082	Io <= Ii	0,3	A	YES
0,523	Po <= Pi	1	P	YES
155	Co >= Ci + Cc	85,3	nF / IIB	YES
500	Lo >= Li + Lc	498	µH / IIB	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:

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

version	date	name	change	reason
01v000	24.03.2025	AZ	all	building document

Release

number	date	name	activity	signature
1	24.03.2025	AZ	created	
2			approved	