

Proof of intrinsic safety

For intrinsically safe circuits with a supply.

device:

Jellox Pro Analog Jellox Elite Analog
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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 red. inductance	Co [nF]=	155
max. output current	Io [A]=	0,082			Lo [µH]=	500
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
CS Instruments	FA515 Ex	dew point sensor	PTZ 17ATEX0003X	<Ex> II 2G Ex ib IIC T4 Gb

max. input voltage	Ui [V]=	28
max. input current	Ii [A]=	0,095
max. input power	Pi [W]=	0,65
max. internal capacity	Ci [nF]=	47
max. internal inductance	Li [µH]=	0

cable + pressure compensation element:

Manufacturer	Type	length [m]
Lapp	Ölflex EB CY 7x0,75	110

Kabelkapazität [nF/m]	0,98
Kabelinduktivität [µH/m]:	3,64

resulting cable capacitance	Cc [nF]=	107,8
resulting cable inductance	Lc [µH]=	400,4

safety-related values of the interconnection:

D012-x1***2***05		FA515 Ex		Intrinsic safety fulfilled
25,6	Uo ≤ Ui	28	V	YES
0,082	Io ≤ Ii	0,095	A	YES
0,523	Po ≤ Pi	0,65	P	YES
155	Co ≥ Ci + Cc	154,8	nF / IIB	YES
500	Lo ≥ Li + Lc	400,4	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.



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Document revision

version	date	name	change	reason
01v000	13.11.2024	AZ	all	building document

Release

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1	13.11.2024	AZ	created	
2			approved	