

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
Siemens AG	SITRANS P320/420	pressure transmitter	BVS 18 ATEX E 049 X	<Ex> II 1/2 G Ex ia/ib IIC T4/T6 Ga/Gb <Ex> II 2G Ex ib IIC T4/T6 Gb

max. input voltage	Ui [V]=	30
max. input current	Ii [A]=	0,101
max. input power	Pi [W]=	0,76
max. internal capacity	Ci [nF]=	3,3
max. internal inductance	Li [µH]=	0,24

cable + pressure compensation element:

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

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

resulting cable capacitance	Cc [nF]=	134,26
resulting cable inductance	Lc [µH]=	498,68

safety-related values of the interconnection:

D012-x1***2***05		SITRANS P320/420		Intrinsic safety fulfilled
25,6	Uo ≤ Ui	30	V	YES
0,082	Io ≤ Ii	0,101	A	YES
0,523	Po ≤ Pi	0,76	P	YES
155	Co ≥ Ci + Cc	137,56	nF / IIB	YES
500	Lo ≥ Li + Lc	498,92	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	05.03.2025	AZ	all	building document

Release

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1	05.03.2025	AZ	created	
2			approved	