

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
HYDAC Electronics GmbH	HDA 4xx	Druckmessumformer	DEKRA 13ATEX0031X (issue 2)	<Ex> II 1/2G Ex ia IIC T5, T6 Ga/Gb

max. input voltage	Ui [V]=	28
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]=	0

cable + pressure compensation element:

Manufacturer	Type	length [m]
HYDAC	ZBE 08S	10

cable capacitance [nF/m]	0,48	from DS
cable inductance [μH/m]:	2	assumption according to typ. values

resulting cable capacitance	Cc [nF]=	4,8
resulting cable inductance	Lc [μH]=	20

safety-related values of the interconnection:

D012-x1***2***05		HDA 4xx		Intrinsic safety fulfilled
25,6	Uo ≤ Ui	28	V	YES
0,082	Io ≤ Ii	0,1	A	YES
0,523	Po ≤ Pi	0,7	P	YES
155	Co ≥ Ci + Cc	26,8	nF / IIB	YES
500	Lo ≥ Li + Lc	20	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:

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	29.08.2024	AZ	all	building document
01v001	09.10.2024	AZ	all	update configuration recommendation

Release

number	date	name	activity	signature
1	09.10.2024	AZ	created	
2			approved	