

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	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	
max. output current	Io [A]=	0,082			red. inductance	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
VEGA	Vegawell 51/52/72	Submersible pressure transmitter	TÜV 06 ATEX 553449 X 3.Ergänzung	<Ex> II 1G, 1/2G Ex ia IIC T6 Ga, Gb

max. input voltage	Ui [V]=	30
max. input current	Ii [A]=	0,131
max. input power	Pi [W]=	0,983
max. internal capacity	Ci [nF]=	3,9
max. internal inductance	Li [µH]=	51

cable + pressure compensation element:

Manufacturer	Type	length [m]
		250

permanently mounted on intrinsically safe equipment

cable capacitance [nF/m]	0,348
cable inductance [µH/m]:	0,6

resulting cable capacitance	Cc [nF]=	87
resulting cable inductance	Lc [µH]=	150

safety-related values of the interconnection:

D012-x1***2***05		Vegawell 51/52/72		Intrinsic safety fulfilled
25,6	Uo ≤ Ui	30	V	YES
0,082	Io ≤ Ii	0,131	A	YES
0,523	Po ≤ Pi	0,983	P	YES
155	Co ≥ Ci + Cc	90,9	nF / IIC	YES
500	Lo ≥ Li + Lc	201	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

version	date	name	change	reason
01v001	20.06.2024	AZ	all	update EU-Type examination certificate
01v002	09.10.2024	AZ	all	update configuration recommendation

Release

number	date	name	activity	signature
1	09.10.2024	AZ	created	AZ
2			approved	