

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 | U _o [V]= | 25,6 |
| max. output current | I _o [A]= | 0,082 |
| max. output power | P _o [W]= | 0,523 |
| max. external capacity | C _o [nF]= | 310 |
| max. external inductance | L _o [µH]= | 1000 |

intrinsically safe equipment:

| Manufacturer | Type | Device | EU type examination certificate | ATEX marking |
|--------------|-------------|-------------------|---------------------------------|------------------------------------|
| VEGA | VEGASON S61 | ultrasonic sensor | KEMA 06ATEX0232 X Ausgabe Nr.1 | <Ex> II 1G, 1/2G, 2G EEx ia IIC T6 |

| | | | |
|--------------------------|----------------------|-------|------|
| max. input voltage | U _i [V]= | 30 | |
| max. input current | I _i [A]= | 0,131 | |
| max. input power | P _i [W]= | 0,983 | |
| max. internal capacity | C _i [nF]= | 0 | n.A. |
| max. internal inductance | L _i [µH]= | 0 | n.A. |

cable + pressure compensation element:

| Manufacturer | Type | length [m] |
|--------------|---------------------|------------|
| Lapp | Ölflex EB CY 7x0,75 | |
| | | 250 |

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

| | | |
|-----------------------------|----------------------|-----|
| resulting cable capacitance | C _c [nF]= | 245 |
| resulting cable inductance | L _c [µH]= | 910 |

safety-related values of the interconnection:

| D012-x1***2***05 | | VEGASON S61 | | Intrinsic safety fulfilled |
|------------------|--|-------------|----------|----------------------------|
| 25,6 | U _o ≤ U _i | 30 | V | YES |
| 0,082 | I _o ≤ I _i | 0,131 | A | YES |
| 0,523 | P _o ≤ P _i | 0,983 | P | YES |
| 310 | C _o ≥ C _i + C _c | 245 | nF / IIC | YES |
| 1000 | L _o ≥ L _i + L _c | 910 | µH / IIC | YES |

For use in EPL
"Gc" (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 | |