



CANopen

SAE
J1939



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1. GENERAL PRECAUTIONS

The system must be used only in accordance with the required protection level.

The sensor must be protected against accidental knocks and used in accordance with the instrument's ambient characteristics and performance levels.

Sensors must be powered with non distributed networks.

2. TRANSMITTERS WITH AMPLIFIED ANALOG OUTPUT

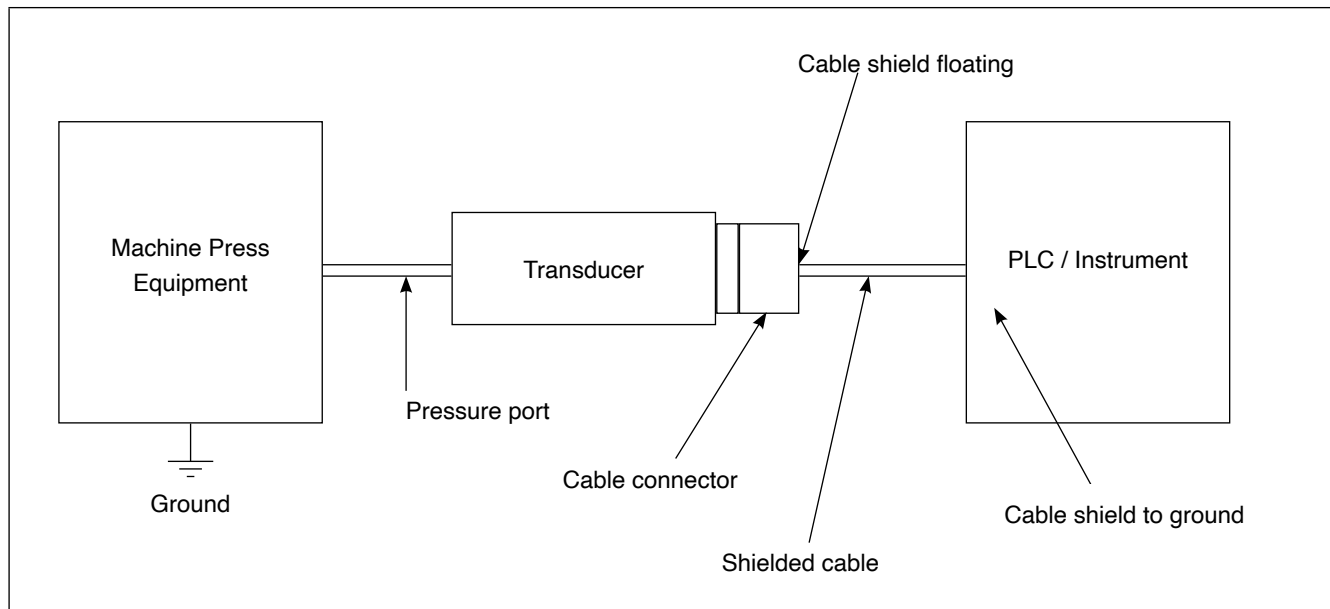
Transducers: KMC series

Outputs: CANopen DS404, J1939.

Installation remarks

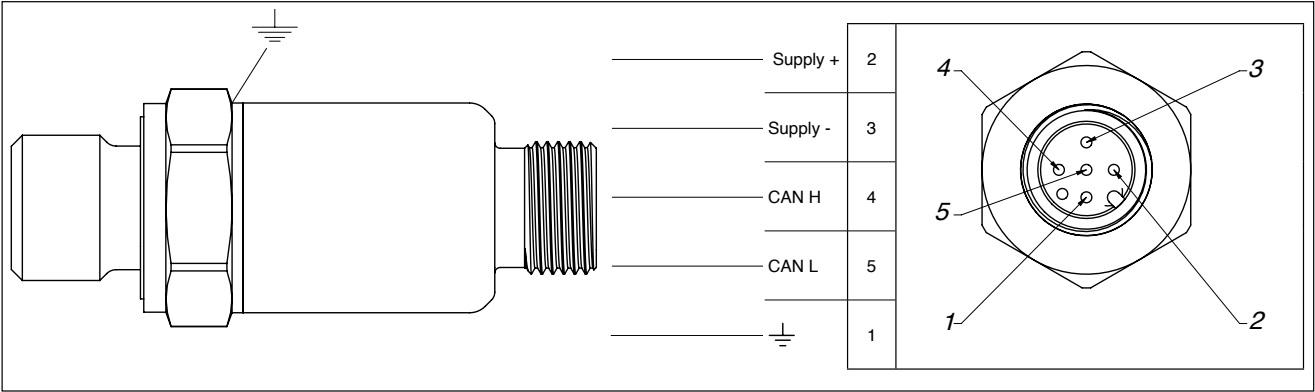
- The transducer must be grounded (normally through the machine body or equipment it is installed on).
- To prevent interference, separate the power cables from the signal cables.

2.1. Standard installation (recommended)

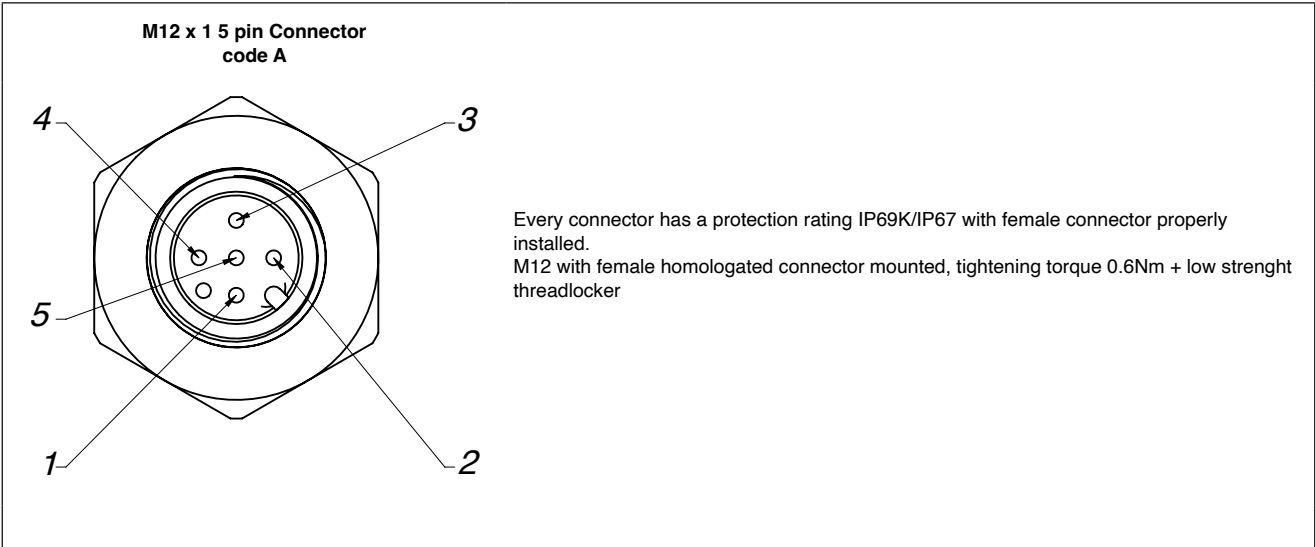


- Shielded cable advised for $L > 30$ m
- In case of use of a shielded cable, the cable shield must be grounded on connector side. Ground connection on the PLC side is optional.

2.2. Electrical connections



2.3. Interfaces with SRP/CS and voltage devices



3. TECHNICAL SPECIFICATIONS

| | |
|---|---|
| Non Linearity (BFSL) | ± 0.15% FS (typ); ± 0.25% FS (max) |
| Hysteresis | + 0.1% FS (typ); + 0.15% FS (max) |
| Repeatability | ± 0.025% FS (typ); ± 0.05% FS (max) |
| Zero offset tolerance | ± 0.15% FS (typ); ± 0.25% FS (max) |
| Span offset tolerance | ± 0.15% FS (typ); ± 0.25% FS (max) |
| Accuracy at room temperature (1) | < ± 0.5% FS |
| Pressure ranges (2) | From 4 bar to 1000 bar (See table) |
| Overvoltage | 36 Vdc continuous 48 Vdc according to ISO7637-2 Pulse 5 |
| Insulation voltage | 500Vdc |
| Overpressure (without degrading performance) | See table |
| Pressure containment (burst test) | See table |
| Pressure Media | Fluids compatible with Stainless Steel AISI 430F and 17-4 PH |
| Housing | Stainless Steel AISI 304 |
| Long term stability (accuracy) | <0,2%FS per year (within compensated temperature range -20...+85 C° and nominal pressure range) |
| Operating temperature range (process) | -40...+125°C (-40...+257°F) |
| Operating temperature range (ambient) | -40...+125°C (-40...+257°F) |
| Compensated temperature range | -20...+85°C (-4...+185°F) |
| Storage temperature range | -40...+125°C (-40...+257°F) |
| Temperature effects over compensated range (zero) | ± 0.01% FS/°C typ (± 0.02% FS/°C max.) |
| Temperature effects over compensated range (span) | ± 0.01% FS/°C typ (± 0.02% FS/°C max.) |
| Frequency measure | 4 KHz |
| Response time (10...90%FS) | < 1 msec. |
| Warm-up time (3) | < 30 sec. |
| Mounting position effects | Negligible |
| Humidity | Up to 100%RH non-condensing |
| Weight | 50 gr. nominal |
| Mechanical shock | 100g 6ms according to IEC 60068-2-27 50g 11ms according to ISO 19014-3 |
| Vibrations | 20g max at 10...2000 Hz according to IEC 60068-2-6 Random ASD 10...2000Hz according to ISO 19014-3 |
| Ingress protection | IP67/IP69K with female homologated connector mounted |
| Output short circuit and reverse polarity protection | YES |

FS = Full scale

- 1) Incl. Non-Linearity, Hysteresis, Repeatability, Zero-offset and Span-offset tolerance (acc. to IEC 62828-2)
- 2) The operating pressure range is intended from 0.5 to 100% FS; sensor is relative, so the 'bar indication is always meant to be barg
- 3) Time within which the rated performance is achieved
- 4) See possible restrictions in the paragraphs "Electrical connections" and "Accessories on request".

| RANGE (Bar) | 4 | 6 | 10 | 16 | 20 | 25 | 40 | 60 | 100 | 160 | 200 | 250 | 400 | 600 | 1000 |
|----------------------------|----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|------------|------------|------------|-------------|
| Overpressure (Bar) | 8 | 12 | 20 | 32 | 40 | 50 | 80 | 120 | 200 | 320 | 400 | 500 | 800 | 1200 | 1200 |
| Burst pressure (Bar) | 16 | 24 | 40 | 64 | 80 | 100 | 160 | 240 | 400 | 640 | 800 | 1000 | 1500 | 1500 | 1500 |

| EMC compliance according to: Standard / Directive / Regulation | Title |
|---|---|
| 2014/30/EU | EMC Directive (Electromagnetic compatibility) |

See further details on Declaration of conformity and User Manual

3.1. EMC Tests performed for industrial applications

Gefran KM products are tested also against industrial standard according to 2014/30/EU Directive (EMC):

- EN 61326-1 “Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1 general requirements”
- EN 61326-2-3 “Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 2-3: Particular requirements - Test configuration, operational conditions and performance criteria for transducers with integrated or remote signal conditioning”

Emission requirements

Product is compliant to class A according to EN 55011

Immunity requirements

| Port | Test name | Basic standard | Test parameter |
|--|-------------------------------|-----------------------|--|
| Enclosure | Electrostatic discharge (ESD) | EN 61000-4-2 | 4/8 kV contact/air |
| | EM field | EN 61000-4-3 | 10 V/m (from 80 MHz to 1 GHz) 3V/m (from 1,4 GHz to 2 GHz) 1 V/m (from 2,0 GHz to 6 GHz) |
| | Magnetic field | EN 61000-4-8 | 30 A/m |
| Power supply VDC | Burst | EN 61000-4-4 | 2 kV (5/50 ns, 5 kHz) |
| | Surge | EN 61000-4-5 | 1 kV/ 2kV |
| | Conducted RF | EN 61000-4-6 | 3 V/m (from 150 kHz to 80 MHz) |
| I/O signal / control (including functional earth lines) | Burst | EN 61000-4-4 | 1 kV (5/50 ns, 5 kHz) |
| | Surge | EN 61000-4-5 | 1 kV |
| | Conducted RF | EN 61000-4-6 | 3 V (from 150 kHz to 80 MHz) |

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