



Installation Information

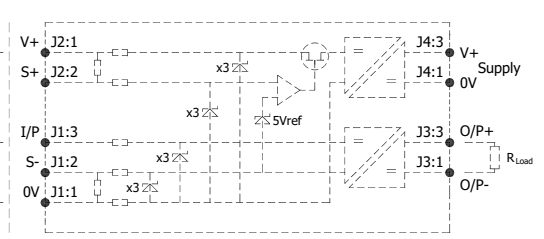
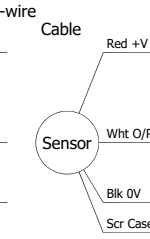
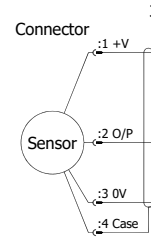
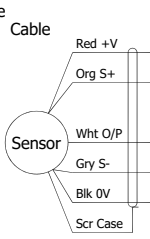
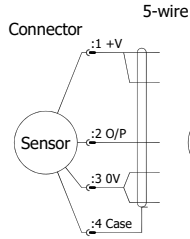
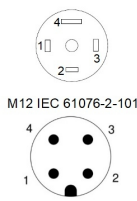
X133 MID STROKE LINEAR POSITION SENSOR

INTRINSICALLY SAFE FOR HAZARDOUS GAS/VAPOUR ATMOSPHERES

For certificate number and safety parameters information for product marked EX04, see next page.

ATEX / IECEx / UKEX Qualified to Intrinsic Safety Standard Certificate numbers SIRA 13ATEX2371X IECEX SIR 13.0154X CSAE 21UKEX2537X		Ex II 1G Ex ia IIC T4 Ga (Ta = -40°C to +80°C)	
Electronics Version	Output Description:	Supply Voltage: Vs (tolerance)	Load resistance:
EX07	0.5 - 4.5V (ratiometric with supply) [Output code 'A']	+5V (4.5 - 5.5V)	5kΩ min

Connector Pin Layout
DIN 43650 C



Putting Into Service: The sensor must be used with a galvanic isolation barrier designed to supply the sensor with a nominal 5V and to transmit the sensor output to a safe area. The barrier parameters must not exceed:-

- Ui = 11.4V** **Ii = 0.20A** **Pi = 0.51W**
- Ci = 1.36µF*** **Li = 860µH*** (Options: 'Ixx', 'IQxx', 'Lxx', 'LQxx', 'Mxx', 'MQxx') *Figures for 1km cable
- Ci = 1.16µF** **Li = 50µH** (Options: 'J', 'K')

The sensor is certified to be used with up to **1000m** of cable, cable characteristics must not exceed:-
 Capacitance: ≤ 200 pF/m or max. total of: 200 nF
 Inductance: ≤ 810 nH/m or max. total of: 810 µH

Approval only applies to specified ambient temperature range and atmospheric conditions in the range: 0.80 to 1.10 Bar, oxygen ≤ 21%.
 The performance of the sensor may be affected by voltage drops associated with long cable lengths; For cable lengths exceeding 10 metres a five wire connection is recommended to eliminate errors introduced by cable resistance and associated temperature coefficients.

Warning - The IEC 60176-2-101 connector may be rotated for purposes of convenient orientation of the connector and cable, however rotating the connector more than one complete revolution is not recommended. **Repeated rotation of the connector will damage the internal wiring!**

Special Condition for Safe Use:
 The apparatus does not meet the 500 V r.m.s dielectric strength test between circuit and frame, in accordance with clause 6.3.13 of IEC 60079-11:2011. This must be taken into consideration on installation.

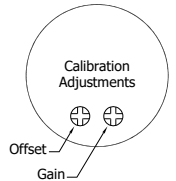
When using a Sensor that has an integral cable in a dust application, the free end of the cable shall be appropriately terminated for the zone of use.
 Under certain extreme circumstances, the non-metallic and isolated metal parts incorporated in the enclosure of this equipment may generate an ignition-capable level of electrostatic charge. Therefore the equipment shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge on such surfaces. This is particularly important if the equipment is installed in a zone 0 location. In addition, the equipment shall only be cleaned with a damp cloth.

Use: The sensor is designed to measure linear displacement and provide an analogue output signal.

Assembly and Dismantling: The unit is not to be serviced or dismantled and re-assembled by the user.

Maintenance: No maintenance is required.

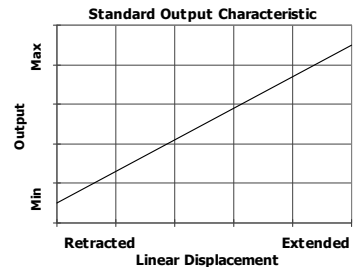
Gain and Offset Adjustment: (Where accessible - Typically ± 10% Min available)
 To adjust the gain or offset use a small potentiometer adjuster or screwdriver 2mm across. Do not apply too much force on the potentiometers.



Mechanical Mounting Options: Depending on options, body can be mounted by flange, rod eye bearings or clamping the sensor body - body clamps are available, if not already ordered. Plunger mounted by M4x0.7 female thread, rod-eye bearing or magnetic tip.

Output Characteristic: Plunger extended, at start of normal travel, from mounting face by:
 Standard body : 42.5 mm*
 Flanged body : 28 mm*

*Note: where dome end option is fitted add 5 mm.
 The output increases as the plunger extends from the sensor body, the calibrated stroke is between 51 mm and 100 mm.



Incorrect Connection Protection levels: Not protected – the sensor is **not** protected against either reverse polarity or over-voltage. The risk of damage should be minimal where the supply current is limited to less than 50mA.



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