

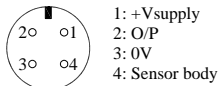
# Installation Information

## LIPS<sup>®</sup> M112 GAUGE HEAD POSITION SENSOR

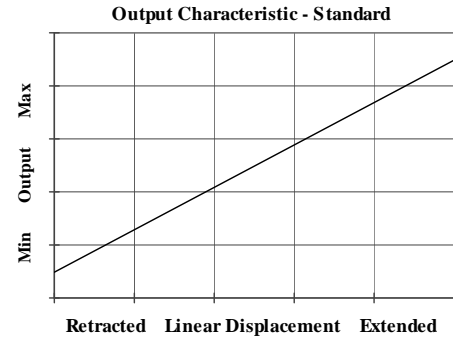
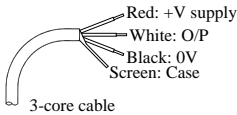
### INTRINSICALLY SAFE FOR HAZARDOUS MINING ENVIRONMENTS

ATEX Qualified to Intrinsic Safety Standard Certificate number Sira 00ATEX2076X			EX I/II M1/1GD EEx ia I/IIC T4 (Ta = -40°C to +80°C) Ex iaD 20 T135°C (Ta = -40°C to +80°C)		
Electronics Option	Output Description:	Supply Voltage: (Vs)	Output:	Load resistance:	Load connected to:
A	Voltage (ratiometric with supply)	5±0.5V	0.5 to 4.5V	2kΩ min	0V

**Connector pin layout:**



**Conductor Identification:**



**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:-

- $U_i = 11.4V$        $I_i = 0.20A$        $P_i = 0.51W$
- $C_i = 1.36\mu F^*$        $L_i = 710\mu H^*$  (Lxx option)
- $C_i = 1.16\mu F$        $L_i = 50\mu H$  (J or K options)

\*Figures for 1km cable where:  $C_i = 200pF/m$  &  $L_i = 660nH/m$

The sensor is certified to be used with up to 1000m of cable, cable characteristics must not exceed:-

- Capacitance:  $\leq 200 pF/m$  for max. total of: 200 nF
- Inductance:  $\leq 660 nH/m$  for max. total of: 660  $\mu H$

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.

**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:** accumulated dust layer must not exceed a depth of 50mm.

**Mechanical Mounting:** Via 1/2"x20 UNF mounting thread, adjust sensor position and lock in place using lock nuts provided. Maximum tightening torque: 10Nm.

**Output Characteristic:** Plunger is extended 3.3 mm from end of body at start of normal travel. The output increases as the plunger extends from the sensor body, the calibrated stroke is between 10 and 50 mm. N.b. sensors supplied with cable, the free end must be appropriately terminated.

**Warning - the connector on 'J' or 'K' coded sensors can 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 lead to damage to the internal wiring.**

**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.