POSITEK LIMITED

Installation Information
G005 Galvanic Isolation Amplifier
INTRINSICALLY SAFE FOR HAZARDOUS ATMOSPHERES

CSA Qualified Associate Apparatus for Category 'ia' Certificate number CSA 12.2534055				[Ex ia IIC] Ta = -20°C ≤Ta ≤+60°C [AEx ia IIC] Ta = -20°C ≤Ta ≤+60°C [AEx ia D IIIC] Ta = -20°C ≤Ta ≤+60°C	
Base Part N°	**Module Supply Voltage:**	**Module Supply Current:**	**Sensor Supply Voltage**	**Sensor Supply Current**	**Conductor Resistance Compensation**
G005-	24V Nom. (12-30V)	200mA Max. 50mA Voltage O/P (Nom.) 70mA Current O/P (Nom.)	5V nom.	15mA max.	15Ω five wire mode
Option Code	**Output Signal**	**Calibration**	**Comments**		
545	0.5 to 9.5V	Standard Output	For Positek Z000 coded sensors		
546	9.5 to 0.5V	Reverse Output			
425	4 to 20mA	Standard Output			
426	20 to 4mA	Reverse Output			
010	0.5 to 9.5V	Standard Output	For Positek sensors previously manufactured for use with BX002 i.e. Z010 Note: X005 does not have the same pin connections as BX002		
420	4 to 20mA	Standard Output	For Positek sensors previously manufactured for use with BX003 i.e. Z420 Note: X005 does not have the same pin connections as BX003		
001	0.5 to 9.5V	Standard Output	For Potentiometers		
002	9.5 to 0.5V	Reverse Output			
003	4 to 20mA	Standard Output			
004	20 to 4mA	Reverse Output			

Putting Into Service: This module must only be installed, operated and maintained by competent and suitably trained personnel. The installation and maintenance must be carried out in accordance with all appropriate international, national and local standard codes of practice and site regulations for intrinsically safe apparatus.

Safety parameters:-

Um	**=**	**253V**		connector J4 pin 3 with respect to pin1
Uo	**=**	**10.66V**		connectors J1 and J2 pins 1 and 2 with respect to J1 pin 1
Io	**=**	**50.5mA**		
Po	**=**	**121mW**		
Group		**IIC**	**IIB**	**IIA**
Co	**=**	**2.23µF**	**15.6µF**	**69.0µF**
Lo	**=**	**14mH**	**53mH**	**112mH**
or **L/R Ratio**	**=**	**295µH/Ω**	**1178µH/Ω**	**2357µH/Ω**
Ci	**=**	**0µF**		
Li	**=**	**0mH**		

Use: The G005 Galvanic Isolation Amplifier is designed to supply a sensor, operating in hazardous environment, with an isolated and resistively limited dc supply and also isolate and amplify the sensor output for transmission in the safe area.
This module has been designed to meet the requirements of Associate Apparatus for Category 'ia'.

Maintenance: This module **must not** be installed in a position where;
It may be exposed to excessive accumulation of dust.
It may be attacked by aggressive substances.
It may be subjected to mechanical or thermal stresses in excess of those permitted in the certification documentation.
Access to the circuitry **must not** be made during operation.
This module **cannot** be repaired by the user and **must** be replaced by another suitably certified part. Repairs can only be carried out by the manufacturer or approved repairer.

Mechanical Mounting: The housing is designed to mounted on 35x7.5 mm top-hat rail (DIN 46277-3). It is recommended that this module is mounted inside a suitable enclosure.
This module **must not** be installed in the hazardous area **without** the further provision of certified hazardous area protection.

Electrical Connections: The screw terminal connector blocks can be removed to simplify panel wiring or replacement of a damaged module. The connector blocks are key coded to reduce the chance of cross connection and can accommodate conductors with a cross section of 0.2 to 2.5mm^2 (26-12 AWG).

For further information please contact:
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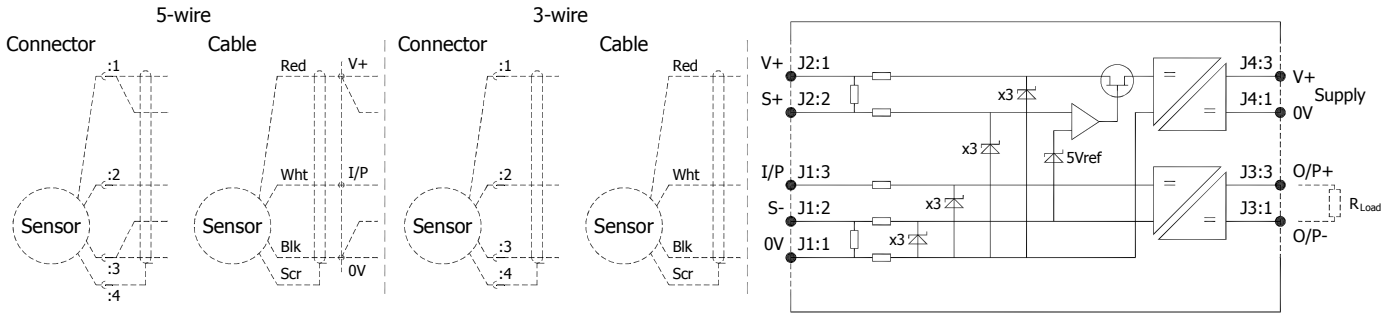
This module has been designed to drive a sensor, or potentiometer, in either three or five wire mode.

In three wire mode conductor resistance is not compensated, which can result in perceived inaccuracies due to volts drop down the cable. Increasing conductor cross section reduces some of the effects of conductor resistance.

In five wire mode up to 15Ω resistance in each conductor can be compensated for, while providing the sensor with a current of 15mA. This mode is recommended for all applications requiring high degrees of accuracy and / or where the cable length between module and sensor is greater than 10 metres.



To ensure correct operation of both Amplifier and sensor, the following restrictions on conductor cross section and cable length limits are set out below (figures are based on copper conductors);

Cross Section (mm^2)	Cable Length (metres)
0.25	Up to 150
0.5	150 to 300
0.75	300 to 450
1.0	450 to 600
1.5	600 to 900
2.0	900 to 1000

Output Characteristic: The safe area output changes with respect to the hazardous area input, direction is dependant on selected version. Voltage or 4-20mA loop output options are available.

Incorrect Connection Protection Levels: Safe area connections are reverse polarity protected.

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