

DATASHEET

Isolating spark gap device ESP ISG Series



A range of isolating spark gap (ISG) devices (to BS EN/ IEC 62561-3) suitable for equipotential bonding of different earthing systems during transient activity. (BS EN/ IEC 62561-3 supercedes BS EN/ IEC 50164-3)

Features & benefits

- Specified in accordance with BS EN/ IEC 62561-3
- Class H is a High Duty product, Classes 1L and 2L are classified as Light Duty
- Repeated protection in lightning intense environments
- Strong, flame retardant ABS housing
- ESP ISG 1L25/** and ESP ISG H100/** types designed for use with and as a complement to Furse earth bars (LK series)
- ESP ISG 2L10/** supplied with 'U' clip and fixings for easy installation
- Simple to install

Application

ISGs can be used to indirectly bond a lightning protection system to other nearby metalwork where a direct bond is not permissible for functional reasons, and where such an installation is allowable under local electrical regulations.



Connection of ESP ISG 2L10/** to two separate earths.
Green/yellow cable connects to protective earth.

Installation

Connect directly between different earthing systems, using the cables provided.

Connect the green/yellow cable to protective earth.



Connection of ESP ISG H100/** (or ESP ISG 1L25/**)
to two separate earths.
Green/yellow cable connects to protective earth.

WARNING: This product is for installation and use only where approved by local standards and electrical codes. Notwithstanding the use of this product in compliance with any local standards and/or electrical codes, Furse recommends that direct bonds be used wherever possible to ensure the integrity of the earthing system is maintained and protection against electrocution and equipment/building damage is maximized. Where various earths in an installation are not interconnected by direct bonds, dangerous potentials exist between the systems during lightning and during electrical faults. This can lead to equipment/building damage and electrocution of personnel.

The user/maintainer/designer/owner of a system is responsible for ensuring electrical safety within his/her facility. The use of this product DOES NOT ELIMINATE the possibility of electrocution of personnel or equipment/building damage within a facility if the electrical earths are not interconnected. Furse makes no warranty that this product, when used for its limited purpose, will protect persons or property from injury or damage. User/maintainers/designers/owners and their advisors working on and with such systems are recommended to analyse and understand the risks above and to fully understand the consequence of not interconnecting earthing systems. Furse disclaims all warranties, expressed or implied, with respect to the installation and use of this product, including without limitation, any implied warranties of merchantability, fitness for use, or fitness for a particular purpose.

ESP ISG Series - Technical specification

Electrical specification	ESP ISG 2L10/350	ESP ISG 2L10/600	ESP ISG 1L25/350	ESP ISG 1L25/600	ESP ISG H100/350	ESP ISG H100/600
ABB order code	7TCA085410R0038	7TCA085410R0039	7TCA085410R0042	7TCA085410R0043	7TCA085410R0040	7TCA085410R0041
Power frequency withstand voltage (RMS) <i>U_w</i> AC	240 V					
DC withstand voltage (RMS) ⁽¹⁾ <i>U_w</i> DC	350 V	600 V	350 V	600 V	350 V	600 V
Rated impulse sparkover voltage ⁽²⁾ <i>U_{r imp}</i>	< 1.5 kV					
Isolating resistance ⁽³⁾	≥ 1 GΩ					
Transient specification	ESP ISG 2L10/350	ESP ISG 2L10/600	ESP ISG 1L25/350	ESP ISG 1L25/600	ESP ISG H100/350	ESP ISG H100/600
Impulse discharge current 10/350 μs <i>i_{imp}</i>	12.5 kA ⁽⁵⁾	12.5 kA ⁽⁵⁾	25 kA	25 kA	100 kA	100 kA
Classification (BS EN/IEC 62561-3)	2L	2L	1L	1L	H	H
8/20 μs discharge current	60 kA	60 kA	100 kA	100 kA	200 kA	200 kA
Mechanical specification	ESP ISG 2L10/350	ESP ISG 2L10/600	ESP ISG 1L25/350	ESP ISG 1L25/600	ESP ISG H100/350	ESP ISG H100/600
Temperature range	-40 to +80 °C					
Connection type	Cable, 500 mm length each side					
Conductor size (stranded)	16 mm ²					
Degree of protection (IEC 60529)	IP66		IP65			
Case material	FR Polymer UL-94 V-0					
Fixings	U clip & screw provided		M8 fixing holes at 210 mm x 70 mm			
Weight: – Unit	0.4 kg		0.75 kg			
– Packaged	0.5 kg		0.8 kg			
Dimensions to DIN 43880	30 mm Ø x 130 mm		250 mm x 90 mm x 80 mm			

- (1) This is a continuous DC rating without operation of the ISG. DC breakdown voltages ~ 33% higher than DC withstand values stated.
- (2) For 99% of values, at 5 kV/μs.
- (3) At 100 Vdc.
- (4) The electrical equipment, external to the unit, may constrain the actual current rating achieved in a particular installation.
- (5) Exceeds category 2L nominal rating of 10kA.

