

SIS Solo-E Short Installation Guide

For street lights and illuminated signs requiring electrical disconnection under BS EN 12767, the SIS SOLO-E disconnection system will provide complete isolation in under 0.2 seconds.

Overview

The SIS SOLO-E is an economic underground system designed to provide localised electrical isolation under impact. The SOLO-E unit is supplied in an IP67 polycarbonate enclosure with a clear lid, it is fitted with a DP 10A circuit breaker. It will be connected to the protected structure by 5m of flexible cables, incoming SWA cables will be terminated into the enclosure using pre-fitted IP68 double seal brass cable glands. If required the unit is also supplied with in line IP68 snatch plugs to be fitted by the installer. The fitting of this system allows local electrical isolation. By disconnecting the sensor the structure is isolated and cannot be accidentally switched back on.

Monitoring Units

The monitor unit is a custom made unit filled with resin and specifically designed for this purpose; it monitors one circuit or structure.

Once the unit has seen a failure it will operate the shunt trip operating the attached isolation device. When this has occurred manual intervention is required to reset the unit, upon operation of a reset the unit will first check to see if the fault has cleared. If it has not the unit will still show as being tripped, and the isolation device cannot be reset. As the device is connected to the outgoing supply it will also disconnect the supply to the sensor to ensure that absolutely no voltage is present. Any attempt to reset the MCB will momentarily illuminate the SOLO-E led confirming the sensor is open circuit.

In the unlikely event of a structure being struck during a general power failure, the system will start up and isolate any damaged structure in less than >0.1 seconds.

Impact Sensor

The impact sensor is a mechanical device, which is to be mounted vertically within the structure. There are a number of different options for mounting the impact sensor, please contact NAL if you have a special requirement.

Isolation Device

The devices used are standard circuit breakers with the addition of a shunt trip; these units are normally supplied rated at 10amps (curve C, 10Kva) but can be supplied at most current ratings. These units are also mechanical devices so they draw no current under normal operation. Under operation the tripping coil will energise for 0.2 seconds or less. Once the device has been tripped the tripping coil is also disconnected, again leaving the circuit drawing no current, and protecting the tripping coil. The circuit breakers cannot be reset whilst a sensor remains open circuit.

Only certain units are approved to work with the SIS system, to ensure correct operation these units will be supplied with the SIS units, the use of unapproved MCBs may damage the SOLO units. In order to ensure complete isolation the system however configured will use double pole circuit breakers to ensure both live and neutral are disconnected, this ensures the structure or circuit is completely isolated.

Installation

Underground units will be located within a 40 tonne access chamber adjacent to the structure, no less than 1 metre away. Units are supplied with a standard 5 metres of flex, to allow units to be placed up to 3m from the structure. Units can be supplied with additional flex if required to locate units further away.

The units will be supplied to the user specification and are capable of taking up to three 25mm 3 core cables maximum. The attached flex will again be to the user specification, with 5 metres being the standard. These units can also be fitted with a sub fuse for an additional circuit or a transformer for ELV equipment such as LED signs.

- 1) The units are to be mounted within the supplied 40 tonne access chamber on the mounting shelf.
- 2) The incoming cables will use the pre-fitted IP68 brass cable glands to user specification and terminated in the DIN terminals provided.
- 3) The two fitted flexible cables are to be taken to the protected structure. Black to supply power and orange with sensor plug attached for the sensor.
- 4) The black to be terminated in to user specified device. The orange flex is to be plugged into the supplied sensor.
- 5) If required the inline snatch plugs and sockets can be fitted to the power and sensor flex.

Testing

The system once installed is simple and safe to test, either operate the sensor by giving it a sharp jolt, or alternatively unplug its connector. The MCB in the underground unit should trip, and you should not be able to reset it. Now reset the sensor by pressing the red cap (which should click) or reconnect the connector. You can now reset the MCB.

For more details please see the full SOLO-E manual.