

Electrical Switching / Locking

proSTOP - Non Solenoid Switch Body - Standard



The *proSTOP* is a robust, heavy duty, switch interlock. When properly installed, it provides safe access and control for a variety of machinery. This unit may be installed in any orientation. The unit is ready to accept a variety of modules from the AmGard*pro* range, which will enable it to be used in many applications.

IMPORTANT

This product is designed for use according to the installation and operating instructions enclosed. It must be installed by competent and qualified personnel who have read and understood the whole of this document prior to commencing installation. If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired. Any modification to or deviation from these instructions invalidates all warranties. Fortress Interlocks Ltd accepts no liability whatsoever for any situation arising from misuse or misapplication of this product. This product is not to be used as a Mains Isolator or Emergency Stop. The unit is a component to be added to a permanent electrical installation meeting the requirements of the applicable IEC/EN standards. This product meets the requirements of the standard IEC/ EN 61010-1:2001 safety requirements for electrical equipment for measurement control and laboratory use - Part 1 General Requirements.

The voltages used within the *proSTOP* circuits must all be of the same type. i.e. ALL Hazardous Live or ALL Machine Extra Low Voltage.

BEWARE OF INTENTIONAL MISUSE CAUSED BY OPERATORS WANTING TO BYPASS SAFETY SYSTEMS. THE INSTALLER SHOULD ASSESS THE RISKS AND MITIGATE AGAINST THEM.

IF YOU HAVE ANY QUESTIONS OR QUERIES OF ANY NATURE WHATSOEVER PLEASE CONTACT THE SUPPLIER WHO WILL BE PLEASED TO ADVISE AND ASSIST.

Functioning (Typical with *proAT* Head/Tongue fitted)

Closing

The safety switch is activated by inserting the tongue into the head. The safety circuits are closed and the monitoring circuit is open. No LEDs are lit.

Opening

When the tongue is removed, the safety circuits are positively opened and the monitoring circuit is closed. Both the red LEDs light up.

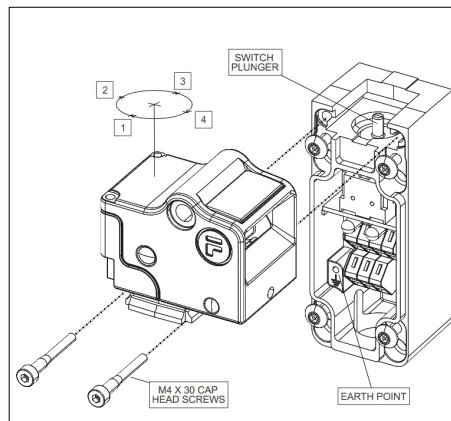
Tools and Fixings Required

Pin Hex Driver Bit (Provided)
1/4" Driver (to suit above)
Ø8.2mm Drill or M5 Drill and Tap
3.5mm Flat Blade Electrical Screwdriver
4 x M5 caphead screws (front fixing)
4 x M8 screws (rear fixing)

Mounting

Mount the safety switch only in the correctly assembled condition.

1. Locate the safety switch so that inspection and replacement are possible.
2. Using the driver bit provided, loosen the 4 tamperproof lid screws. Remove the lid assembly complete with the retained screws.
3. Remove the Tongue assembly from the unit by pulling it out of the head. Mount the safety unit only in the correctly assembled condition.
4. Mount the enclosure assembly together with head assembly to a flat metal, static part of the machine. Use M5 screws through the unit or M8 screws from the rear.
The mounting surface should be flat.
5. Make sure that the gap around the perimeter of the guard, when closed (Safety Circuits Closed), does not exceed the limits specified in En294 & En953.
6. All fixing screws must be permanently prevented from removal, either by vibration or by personnel using standard tools.

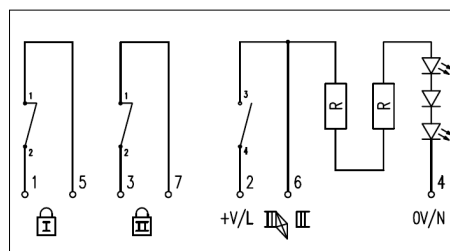


Protection Against Environmental Influences

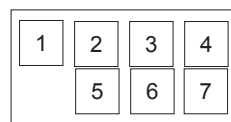
A lasting and correct safety function requires that the unit be protected against the ingress of foreign bodies such as swarf, sand, blasting shot, etc.

The unit is to be mounted away from the machine, or by the use of anti-vibration mountings, in order to avoid the effects of vibration, shock and bump.

Electrical Connection



Terminal Arrangement



1. Check that the unit to be installed is of the same electrical type and voltage rating as the machine control circuits. This information can be found on a label, fixed to the unit. Note that all units are designed to operate at +/-10% of the nominal supply voltage. The use of an incorrect voltage can seriously damage the interlock. AC Units are suitable for 50/60 Hz.
2. Make sure the electrical supply is isolated and attach suitable conduit(s) via M20 cable gland(s). Unused entries should be sealed with the blanking plug supplied with the unit. Correct size cable glands/blanking plugs must be used to achieve IP67 sealing.
3. Bond the enclosure to Earth potential via the Earth point provided. The earth wire used must be multi-stranded Yellow and Green PVC sheathed and approved to BS 6231 with conductor cross-sectional area of 2.5mm².
4. Make the electrical connections using 28 - 24 AWG cable referring to the information below.

The electrical system must incorporate fuse protection for all circuits, using a Quick-Acting (F) fuse (maximum rating 3A, 250v to IEC 127).

Terminal 4. (Supply common return).

For DC installations, connect this terminal to 0v of the machine control system.

For AC installations, this will be Neutral.

Terminals 1 & 5. (Safety Circuit I)

These Contacts should be connected in series with the device which isolates all electrical parts of the machine that are being protected by the *proSTOP*. Each 'Safety Circuit' will start and end at a 'Safety Relay'. All machine safety devices should be connected in series with this circuit, in accordance with the safety relay manufacturers installation guidance.

This is a second, isolated Safety Circuit (See above) and should be connected in parallel to the first, to the Safety Relay, in the same manner as 'Safety Circuit I'.

Permanent supply voltage to guard unit.

Control signal produced by the guard unit to indicate that the guard is in an open state. This signal can be used for indication and/or machine control.

5. When all wiring is complete, conduct a Protective Earth Test to BS 60204, clause 20.
Replace the lid. Test the unit for correct operation.

230V Max 50/60Hz, AC15, 3A/DC12, 3A

Electrical Function Test

Close the guard and start the machine. Open the guard. The machine **must** stop! The machine **must not** start when the guard is open!

Regular inspection of the following is necessary to ensure trouble-free, lasting operation:

- The Lock Assembly should be lubricated with CK Dry Powder Graphite lubricant, every 10,000 operations. There are no user serviceable parts in the *proStop*. If damage or wear is found with an assembly, please contact your local Fortress stockist for a replacement. The complete safety switch must be replaced after 1 million switching operations.

This interlock does not contain any certified hazardous materials so should be disposed of as industrial waste.

- if these instructions are not followed
- non-compliance with safety regulations
- installation and electrical connection not performed by authorised personnel
- non-implementation of functional checks.

The *proStop* is designed to be safe under the following conditions:

24V, 48V, 110V, Refer to device for precise details.

This guide should be retained for future reference.

