

Transient Voltage Surge Suppression (TVSS) TPC Plug in Series 230V/415V 50 and/or 60Hz Installation and Operation Document

1. Installation

NOTE: Installation and connection of these devices should be carried out by a qualified electrician.

1.1 Introduction

The TPC series of StrikeSafe transient voltage surge suppression units are designed to be installed at either the point of the incoming supply or at any point on the distribution system where high transient surges are likely to occur. StrikeSafe modules use a combination of SADs (Silicon Avalanche Diodes) and MOVs (Metal Oxide Varistors) to give maximum protection. They have visual and remote alarm indication and both thermal and wire fuse protection.

This document covers the following models:

The TPC 200KA11/01 and /02, which are the individual SAD/MOV, plug in modules.

The TPCE 200KA11 is a single phase unit housed in a wall mounted case containing 1 each of SAD and MOV modules connection terminals, and alarm indication with connections for remote indication.

The TPCE 200KA33 is a 3 phase unit housed in a wall mounted case containing 3each of SAD and MOV modules, connection terminals, and alarm indication with connections for remote indication.

NOTE: The TPCE 200KA11/01 & TPCE 200KA33/01 are the same wall mounted units populated with MOV modules only.

1.2 Connecting

NOTE: Ensure that the circuit is isolated from the mains before installing the TVSS device

Model No	Rating	UPS Size	Wire Size
TPCE 200ka11	100A	Single Phase	25mm ² x M6 lugs
TPCE 200ka33	100A	Three Phase	25mm ² x M6 lugs

The method of connecting any TVSS device can have a dramatic effect on its ability to protect against transient voltage surges. Ideally the TPCE should be in line with the supply cables. If this is not feasible the feed cable must be kept as straight and short as possible. With the TPCE wired as 'A' or 'B' in Fig 1 the longer the connecting wires the less effective the TPCE will be in suppressing transient surges. Diagrams 'C' & 'D' (fig.1) show the preferred method of connection. If connection is to be made using stranded wire fit correctly sized bootlace ferrules before terminating.

TPCE 200KA11 (fig.3 overleaf)

Wall mounted single-phase unit. Remove cover (a) mount unit on a flat surface as close to the circuit to be protected as possible, using the fixing points (b). Unplug the TVSS modules and remove secondary insulation cover (c), insert cables through the cable glands (e). Attach cables to the correct points (see fig 3) using M6 lugs and the M6 bolts provided. Tighten cable glands, refit secondary insulation, plug in the TVSS modules and refit cover.

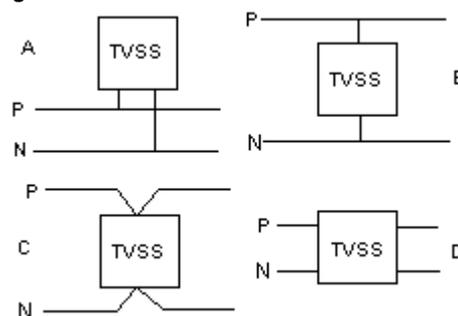
TPCE 200KA33 (fig.2 overleaf)

Wall mounted three phase unit. Remove cover (a) mount unit on a flat surface as close to the circuit to be protected as possible, using the fixing points (b). Unplug the TVSS modules and remove secondary insulation cover (c), insert cables through the cable glands (e). Attach cables to the correct points (see fig.2) using M6 lugs and the M6 bolts provided. Tighten cable glands, refit secondary insulation, plug in the TVSS modules, ensuring correct order and orientation (see diagram) and refit cover.

Plug in Modules

Each module has three pins, the two larger ones are for the power connections and the smaller centre pin is the alarm contact. If a module is removed or inserted upside down the associated alarm LED will glow red. When a module is inserted ensure the pins line up with the sockets and keep the module square to the secondary insulation cover to reduce the possibility of damage to the pins.

Fig 1



2. Operation

Once the installation has been completed and checked turn the supply on. The two LEDs on the front of the module should glow GREEN and the relay operate. If this does not happen check that all the modules are inserted correctly if they are check connections. If both LEDs are green then the module is functioning correctly and is protecting your distribution system.

3. Alarms

Alarms are indicated by LEDs mounted in the units secondary insulation cover. Each SAD and MOV module has an associated LED which is normally GREEN.

If an LED glows RED this indicates that the associated module has been removed or that a fault has occurred and the level of protection provided by the module has reduced partially or in total.

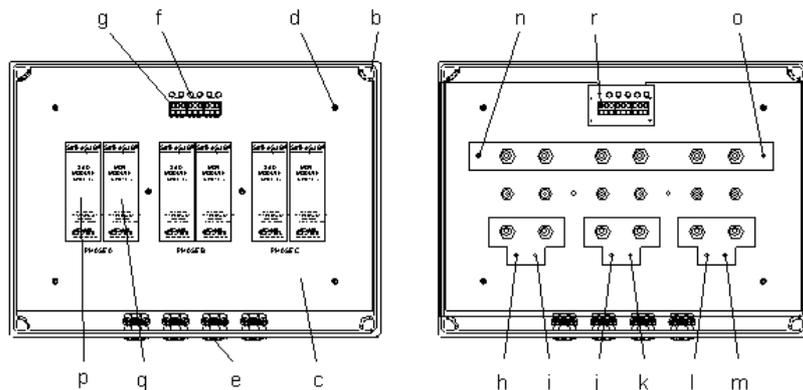
4. Connectivity (/04, /05 & /06 versions)

There are three terminals marked NO, NC & COM. (g) connected to volt free relay contacts (8mm creepage & clearance). The NO (normally open) and NC (normally closed) relate to normal alarm free operation. In the event of a fault the relay will change state.

To insert wire put the blade of a small screwdriver into the hole (r) and twist. The wire can now be inserted and is clamped when the screwdriver is removed.

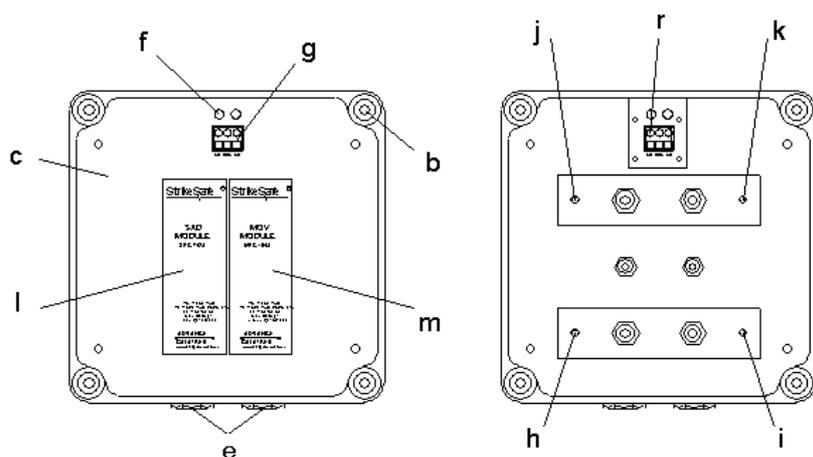
Where multiple modules are fitted the alarm contacts can either be used individually or commoned in series for the normally closed or parallel for the normally open. The maximum switching for the volt free contacts is 230Vac at 5Amps.

Fig 2 TPCE 200kVA33



- b) Fixing points
- c) Secondary insulation cover
- d) Secondary insulation fixings
- e) Cable glands
- f) Alarm indicators
- g) Remote alarm contacts
- h) Phase A in
- i) Phase A out
- j) Phase B in
- k) Phase B out
- l) Phase C in
- m) Phase C out
- n) Neutral in
- o) Neutral out
- p) SAD module
- q) MOV module
- r) Wire release

Fig 3 TPCE 200kA11



5. Specification

	TPC200kA11/02	TPC200kA11/03	TPC200kA11/04	TPC200kA11/05	TPC200kA11/01
Nominal Clamping Voltage	400Vpk	401Vpk	401Vpk	401Vpk	460Vpk
Maximum Clamping Voltage	560Vpk	560Vpk	560Vpk	560Vpk	710Vpk
Peak Pulse current (8x20uS)/ph	720A	12kA	24kA	36kA	208kA
Protection:	Internal thermal & wire fuses				

	TSB 30kA33	TSB 30kA11/01
Fixing:	Wall mounted, screw fixing.	
Nett. Dimensions:	W187x182Dx187Lmm	W390x185Dx298Lmm
Nett Weight:	1.45kg	3.85kg
Local Indicators:	Dual coloured LEDs, Green ok, RED fault indication/module removal.	
Remote indication:	Single pole changeover volt free contacts.	
Contact rating:	230Vac, 5Amp	
Operating voltage:	230Vac per phase (phase to neutral)	
Complies with:	EN60335-1, EN60950-1: 2001, EN61000-4-1: 2001.	