

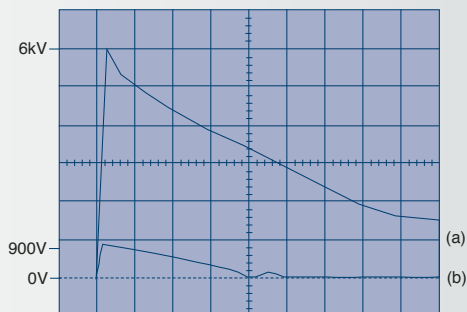
# The 6651C Surge Protector

The 6651C unit is suitable for front end of building protection applications as recommended by BS6651 : 1999 Annex C location Category C. The protector provides an economical means of preventing damage to electrical installations from induced voltage transients caused by switching or nearby lightning strikes.

The 6651C unit provides three mode system protection from mainsborne voltage spikes and surges that can occur between phase and neutral, phase and earth, neutral and earth and additionally phase to phase for the three phase model. This protection is achieved by using high energy elements which absorb or redirect incoming mainsborne transients. Every unit has two stages of protection, the status of which are clearly indicated by lights incorporated in the front panel, thus ensuring continuity of protection by allowing time for replacement once the first stage has ceased to protect.

Figure 1

## Example of 6651C Voltage Clamping



(a) BS6651:1999 Annex C open circuit voltage wave 6kV 1.2/50µs.

(b) Let-through voltage for 3kA 8/20µs current wave.

## Installation

Designed to be quickly and easily installed alongside the incoming electrical supply panel, the unit is connected in parallel with the mains supply, thus eliminating complicated by-pass wiring associated with series suppressors. Connected in this manner the 6651C thereby carries only the current associated with the transient being discharged.



By connecting the 6651C ahead of a RCD the incidence of nuisance tripping may be reduced.

The unit is suitable for direct connection to a line rated up to 60 Amps but can be connected via 60 Amp series fuses (BS 88 pt.2) for lines up to 100 Amps.

Since the 6651C should be installed as close as possible to the distribution panel the half metre cable supplied should be reduced in length if possible and as appropriate.

The 6651C unit may be installed at any angle to achieve minimum cable length, so the cable entry may be at the top, bottom, right or left of the housing.

## Maintenance

The unit requires no maintenance other than a routine examination of the status of the lights and replacement if required.

## Operation

The 6651C will automatically reset after clamping surges up to the required 10kA level and the Green light(s) indicates that full protection is present. However, after clamping a number of 10kA surges the energy handling capability of the unit's first stage may be exceeded causing the 6651C's internal fuses to operate thus safely disconnecting this stage. The Red light(s) will then also be illuminated and, whilst the system will still be adequately protected, the unit should be replaced before a further large surge can remove the second protection stage. There is no protection present when only the Red light(s) is illuminated, but unprotected mains power will still be supplied to the system.

### Let Through Voltage

The let-through voltage of the 6651C, including 0.5 metre of cable, is less than 900 volts in all modes when tested at 6kV 1.2/50µs o/c 3kA 8/20µs s/c (i.e. as per BS6651: 1999 Annex C 13.6.1. See figure 1).

In accordance with BS6651: 1999 Annex C 13.6.2, the 6651C unit does not affect the in-line impedance, and the shunt capacitance is minimal.



### Safety

The 6651C unit includes internal fuses to ensure that suppression components are adequately protected in the event of violent electrical discharge.

### The Total Solution

The 6651C provides cost effective entry level protection, ensuring that transient voltage surges from external sources are held within

levels considered safe for sensitive electronic equipment. However, that's only part of the solution. Air conditioners, copiers, power tools, and a wide variety of other electrical equipment can generate destructive surges within a protected environment. So, don't settle for partial protection. Let us help you configure a zoned solution that provides complete protection at a very reasonable cost.

	SINGLE PHASE 6651C	THREE PHASE 6651C
Specification		
Voltage Rating	230 V rms	400 V rms
Maximum operating voltage	300 V rms	L-N 300 V rms L-L 500 V rms
Maximum current rating	Unlimited (Parallel Connection)	Unlimited (Parallel Connection)
Maximum current surge handling (8/20 µs)	10 kA	10kA
Response time	< 10 ns	< 10 ns
Power Consumption	Negligible	Negligible
Leakage current	0.15 mA	0.40 mA
No system impairments auto reset after surge has occurred	✓	✓
Cable Supplied (0.5 m)	3 Core 2.5mm <sup>2</sup>	5 Core 2.5mm <sup>2</sup>
Operating Temperature	-40° to +70° Celcius	-40° to +70° Celcius
Indicator Lights	Green - Full Protection Red & Green - Reduced Protection Red - No Protection	Green - Full Protection Red & Green - Reduced Protection Red - No Protection
Case	Die Cast Aluminium	Die Cast Aluminium
IP Rating	54	54
Dimensions (in mm)		
L	182	182
W	81	81
D	61	61
Weight (in grams)	900	1100
BS6651 - 1999 Annex C Location category	C	C
Order Code	6651C/1-BOW	6651C/3-BOW



Thank you for reading this data sheet.

For pricing or for further information, please contact us at our UK Office, using the details below.



**UK Office**

**Keison Products,**

**P.O. Box 2124, Chelmsford, Essex, CM1 3UP, England.**

**Tel: +44 (0)1245 600560**

**Fax: +44 (0)1245 600030**

**Email: [sales@keison.co.uk](mailto:sales@keison.co.uk)**

Please note - Product designs and specifications are subject to change without notice. The user is responsible for determining the suitability of this product.