

# SURGE PROTECTION DEVICES



- AC Domestic Surge Arresters
- AC Commercial Surge Arresters
- AC Industrial Surge Arresters
- DC Surge Arresters
- AC Combined Lightning & Surge Arresters
- DC Combined Lightning & Surge Arresters
- Boxed Surge Arresters
- Special Equipment Surge Arresters



## INTRODUCTION

### WHY DO WE NEED LIGHTNING & SURGE PROTECTION?

Sensitive electronic components within our electrical installations has led to an increase in the use of surge protection devices [SPDs]. These devices are designed to protect equipment from damage due to transient overvoltage such as direct and in-direct lightning strikes and switching surges.

Critical safety equipment as well as high value products now need to be protected, this applies to domestic, commercial and industrial applications.

### WHAT DO THE BRITISH STANDARDS SAY?

There are two standards that specify the inclusion of Surge Protection Devices within electrical installations:

[1] BS EN 62305 is relevant to any installation which has an external lightning protection system [LPS]

If an installation has an external lightning protection system designed to BS EN 62305, any cable that crosses lightning protection zones 0-1 must have a type 1 SPD, also known as a combined lightning and surge protection device.

[2] BS 7671 is relevant to all electrical installations.

BS 7671:2018 Amendment 2

Regulation 443.4.1:

Protection against transient overvoltages shall be provided where the consequence caused by overvoltage could:

- i. Result in serious injury to, or loss of human life, or
- iii. Result in significant financial loss or data loss

For all other cases SPDs shall be fitted to protect against transient overvoltages, unless the owner of the installation declines such protection and wishes to accept the risk of damage to both wiring and equipment as tolerable.

### WHAT ARE THE ARRESTER TYPES OFFERED AND WHAT ARE THEY USED FOR?

#### Type 1 + 2 + 3 Device

Characterised by a 10/350 current wave, these devices are used on the main incomer of installations with a lightning protection system present [LPS] or installations with an overhead power supply also with an LPS.

These devices are also used on sub distribution boards that supply external circuits in installations with an Lightning Protection System.

They protect against lightning strikes where an LPS is present, secondary surges and sensitive equipment in a single device.

#### Type 2 + 3 Device

Characterised by a 8/20 current wave, these devices are used at the main incomer and sub distribution boards where a Type 1 device is not required, for use in general low voltage electrical installations.

#### Type 3 Device

These devices are used local to the sensitive equipment such as fire and burglar alarms, individual sockets, telephone, modems, data signal and CCTV, BNC and CCTV installations.

### SOLAR & PV INSTALLATIONS

#### Type 1 DC

Lightning protection device designed to protect the PV panels and Inverter [DC side]

#### Type 2 DC

Surge protection device designed to protect the inverter [DC side]

There are devices for all earthing systems and the devices listed in this catalogue are the most common, a simple selection guide is provided, see page 3, to help you choose the correct device for your application, quickly.

Should you not see the device you require or need any further assistance then please give us a call on 01302-342642, it is important to choose the correct device.

Product data sheets are available upon request for all devices featured.

ALL SPD.Co devices include a 10 Year manufacturers warranty, against defect, for your piece of mind, quality assured.



For further details on our distribution and circuit protection devices see our dedicated digital catalogue that you can access here:

Check out our information and training videos on YouTube  
Please scan the QR codes



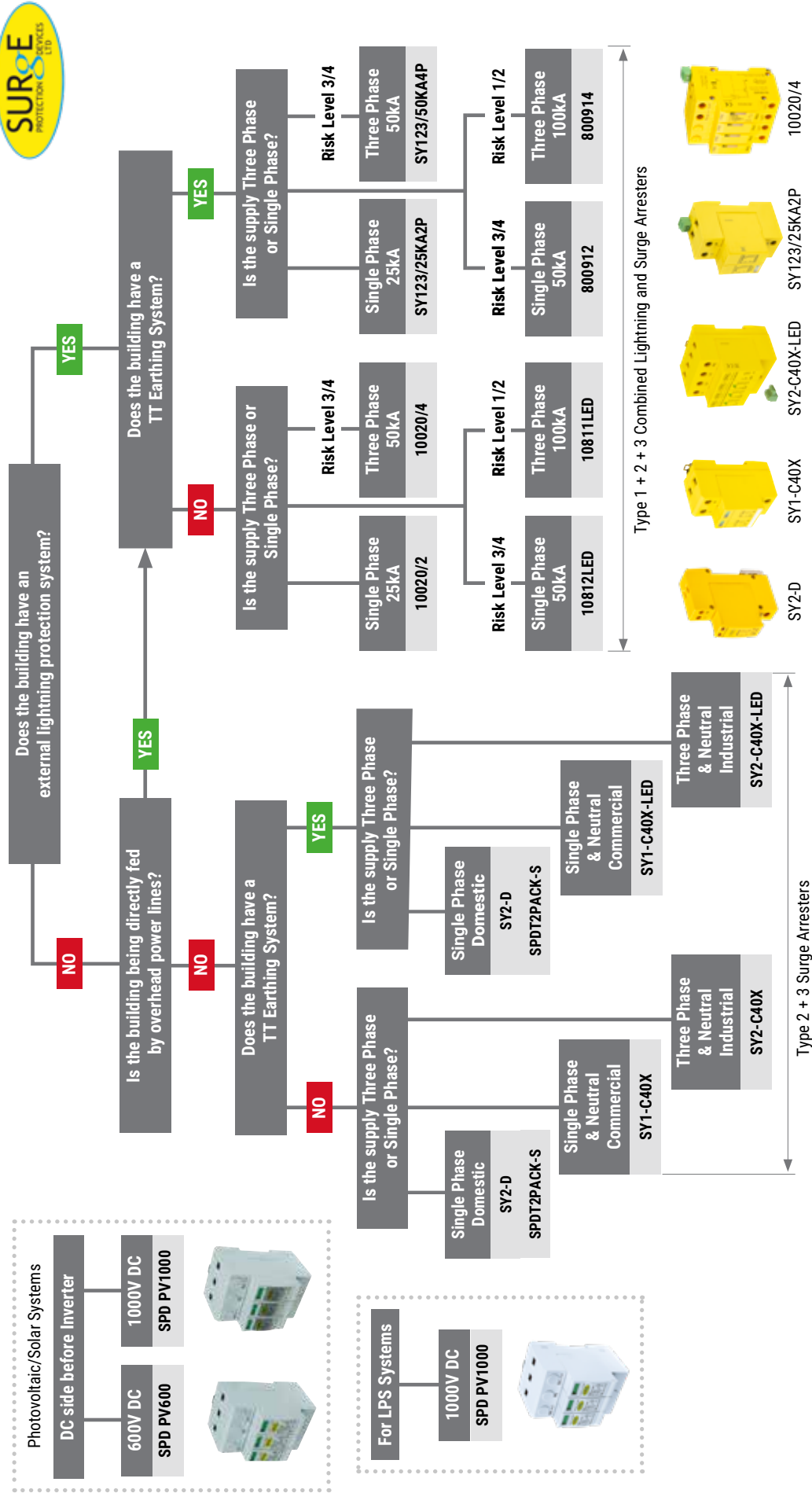
Basics of SPD Selection



The SYD-2 Device

## GENERATION ELECTRICITY METERS

### WHICH SURGE PROTECTION DEVICE DO I NEED?



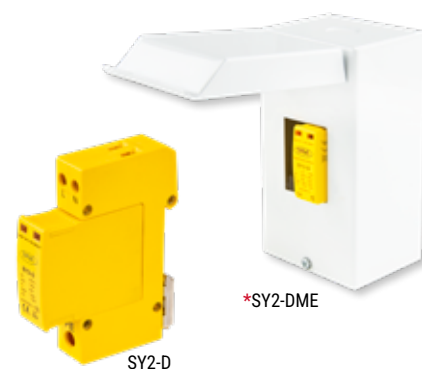
## USE THIS CHART TO CHOOSE YOUR DEVICE

<b>Main Incoming Position - Type 1</b>	<b>Sub Dist. Board Position - Type 2</b>	<b>Final Sub Circuit - Type 3</b>
PROTECTION AGAINST DIRECT LIGHTNING CURRENTS [LIGHTNING CURRENT ARRESTER] - 10/350µs	PROTECTION AGAINST INDIRECT LIGHTNING EFFECTS [SURGE ARRESTER] - 8/20µs	PROTECTION AGAINST SWITCHING OVERVOLTAGES [SURGE ARRESTER] - 8/20µs

**Please Note:** Devices are also available for specific protection, such as: Telephone/Fax/Modems, Co-axial/BNC/CCTV/Satellite, Power over Ethernet etc., as per BS7671:2018 - Further details on request.

## T2 - 3 SURGE ARRESTERS

MCG Ref	<b>SY2-D</b>	<ul style="list-style-type: none"> <li>• Ideal for domestic applications</li> <li>• Suitable for TN-S, TN-C-S, TT and PME earthing systems</li> <li>• End of module life indication</li> <li>• No earth leakage [can be placed either side of RCDs]</li> <li>• Pluggable and replaceable modules</li> <li>• Mounted: DIN rail</li> <li>• Use 16A to 32A backup MCB [sold separately]</li> <li>• Cable size: 2.5mm<sup>2</sup> to 4mm<sup>2</sup></li> <li>• Suitable for use with any brand of consumer unit</li> <li>• Conforms to IEC 61643-1 and EN 61643-11</li> <li>• Compliant to latest BS 7671 wiring regulations</li> <li>* Also available, complete with metal enclosure</li> </ul>
CEF Code	2433-7003	
Type	T2 + 3	
Earthing System	TN-S, TN-C-S & PME	
Cable Entry Size	2.5 - 4mm <sup>2</sup>	
Back Up Fuse Required	16 - 32A	
Auxiliary Contact	No	
Version	Single Phase	
Other	Available c/w metal enclosure SY2-DME	
Other	SPD2PACK-S c/w 16Amp MCB & wiring kit	
Modules	1	



MCG Ref	<b>SY1-C40X</b>	<ul style="list-style-type: none"> <li>• Ideal for commercial applications</li> <li>• Suitable for TN-S and TN-C-S systems</li> <li>• End of module life indication</li> <li>• Auxiliary contacts for remote indication</li> <li>• Pluggable and replaceable modules</li> <li>• Mounted: DIN rail</li> <li>• Use 32A to 63A backup MCB [sold separately]</li> <li>• Cable size: 6mm<sup>2</sup> to 16mm<sup>2</sup></li> <li>• Suitable for use with any brand of consumer unit</li> <li>• Conforms to IEC 61643-1 and EN 61643-11</li> <li>• Compliant to 18th Edition Wiring Regulations [BS 7671:2018 Surge Protection]</li> <li>* Also available, complete with metal enclosure</li> </ul>
CEF Code	2433-6997	
Type	T2 + 3	
Earthing System	TN-S, TN-C-S & PME	
Cable Entry Size	6 - 16MM <sup>2</sup>	
Back Up Fuse Required	32 - 63A	
Auxiliary Contact	Yes [For Remote Indication]	
Version	Single Phase	
Other	Available c/w metal enclosure SY1-C40XME	
Modules	2	



MCG Ref	<b>SY2-C40X</b>	<ul style="list-style-type: none"> <li>• Ideal for industrial applications</li> <li>• Suitable for TN-S and TN-C-S systems</li> <li>• End of module life indication</li> <li>• Auxiliary contacts for remote indication</li> <li>• Pluggable and replaceable modules</li> <li>• Mounted: DIN rail</li> <li>• Use 32A to 63A backup MCB [sold separately]</li> <li>• Cable size: 6mm<sup>2</sup> to 16mm<sup>2</sup></li> <li>• Suitable for use with any brand of consumer unit</li> <li>• Conforms to IEC 61643-1 and EN 61643-11</li> <li>• Compliant to 18th Edition Wiring Regulations [BS7671:2018 Surge Protection]</li> <li>* Also available, complete with metal enclosure</li> </ul>
CEF Code	2433-7000	
Type	T2 + 3	
Earthing System	TN-S, TN-C-S & PME	
Cable Entry Size	6 - 16MM <sup>2</sup>	
Back Up Fuse Required	32 - 63A	
Auxiliary Contact	Yes [For Remote Indication]	
Version	Three Phase	
Other	Available c/w metal enclosure SY2-C40XME	
Modules	4	



MCG Ref	<b>SY1-C40X-LED</b>	<ul style="list-style-type: none"> <li>• Ideal for commercial applications</li> <li>• LED indication</li> <li>• Suitable for TT systems</li> <li>• Auxiliary contacts for remote indication</li> <li>• Pluggable and replaceable modules</li> <li>• Mounted: DIN rail</li> <li>• Use 32A to 63A backup MCB or RCBO [sold separately]</li> <li>• Cable size: 6mm<sup>2</sup> to 16mm<sup>2</sup></li> <li>• Suitable for use with any brand of consumer unit</li> <li>• Conforms to IEC 61643-1 and EN 61643-11</li> <li>• Compliant to 18th Edition Wiring Regulations [BS 7671:2018 Surge Protection]</li> </ul>
CEF Code	2606-4943	
Type	T2 + 3	
Earthing System	TT	
Cable Entry Size	6 - 16MM <sup>2</sup>	
Back Up Fuse Required	32- 63A	
Auxiliary Contact	Yes [For Remote Indication]	
Version	Single Phase / Three Phase	
Other	N/A	
Modules	2 - 4	



## SURGE ARRESTERS FOR SOLAR PV INSTALLATION

MCG Ref	<b>SPD PV600</b>	<ul style="list-style-type: none"> <li>• Ideal for photovoltaic/solar systems</li> <li>• Designed for the protection of the DC side before the inverter</li> <li>• End of module life indication</li> <li>• Remote signal contacts</li> <li>• Pluggable and replaceable modules</li> <li>• Mounted: DIN rail</li> <li>• Cable size: 6mm<sup>2</sup> to 25mm<sup>2</sup></li> <li>• Conforms to IEC 61643-1 and EN 61643-11</li> </ul>
CEF Code	2524-0903	
Type	T2 + 3	
Cable Entry Size	6 - 25mm <sup>2</sup>	
Back Up Fuse Required	63A	
Remote Signal Contacts	Yes	
DC Rating	600V	
Other	For DC Side	
Modules	3	



Surge Arrester

SPD PV600

MCG Ref	<b>SPD PV1000</b>	<ul style="list-style-type: none"> <li>• Ideal for photovoltaic/solar systems</li> <li>• Designed for the protection of the DC side before the inverter</li> <li>• End of module life indication</li> <li>• Remote signal contacts</li> <li>• Pluggable and replaceable modules</li> <li>• Mounted: DIN rail</li> <li>• Cable size: 6mm<sup>2</sup> to 25mm<sup>2</sup></li> <li>• Conforms to IEC 61643-1 and EN 61643-11</li> </ul>
CEF Code	2524-0900	
Type	T2 + 3	
Cable Entry Size	6 - 25mm <sup>2</sup>	
Back Up Fuse Required	63A	
Remote Signal Contacts	Yes	
DC Rating	1000V	
Other	For DC Side	
Modules	3	



Surge Arrester

SPD PV1000

MCG Ref	<b>LSPD PV1000</b>	<ul style="list-style-type: none"> <li>• Ideal for photovoltaic/solar systems</li> <li>• Designed for the protection of the DC side before the inverter</li> <li>• End of module life indication</li> <li>• Remote signal contacts</li> <li>• Pluggable and replaceable modules</li> <li>• Mounted: DIN rail</li> <li>• Cable size: 6mm<sup>2</sup> to 25mm<sup>2</sup></li> <li>• Conforms to IEC 61643-1 and EN 61643-11</li> </ul>
CEF Code	2764-7161	
Type	T1 + 2	
Cable Entry Size	6 - 25mm <sup>2</sup>	
Back Up Fuse Required	63A	
Remote Signal Contacts	Yes	
DC Rating	600V	
Other	For DC Side. LPS MUST BE PRESENT	
Modules	3	



Lightning & Surge Arrester

LSPD PV1000

## DID YOU KNOW?

Solar PV inverters that have internal/integral surge protection devices do not necessarily have failure indication.



## SURGE PROTECTION FOR SPECIFIC EQUIPMENT - TYPE 3

### FIRE, BURGLAR ALARMS OR INDIVIDUAL SOCKETS

- Meets all the latest standards and requirements
- Backup fuse or MCB 16 Amps
- Built in acoustic fault detection
- Easy and quick to connect
- Earth leakage free



### TELEPHONE, FAX OR MODEM

- For BT type sockets
- Meets all the latest standards and requirements
- Test category D+C+B to BS EN61643-21
- Simple plug in, plug out design
- Highly recommended for lines fed via overhead



### DATA, SIGNAL AND CCTV

- For 4/20mA signals
- Meets all the latest standards and requirements
- DIN rail mounting
- Wide range



### CO-AXIAL, BNC AND CCTV

- Data network protector to IEC614321
- Two stage protection in aluminium housing
- BNC connector for ethernet systems
- Simple installation
- Also application for the protection of video signals, cameras and/or TV systems



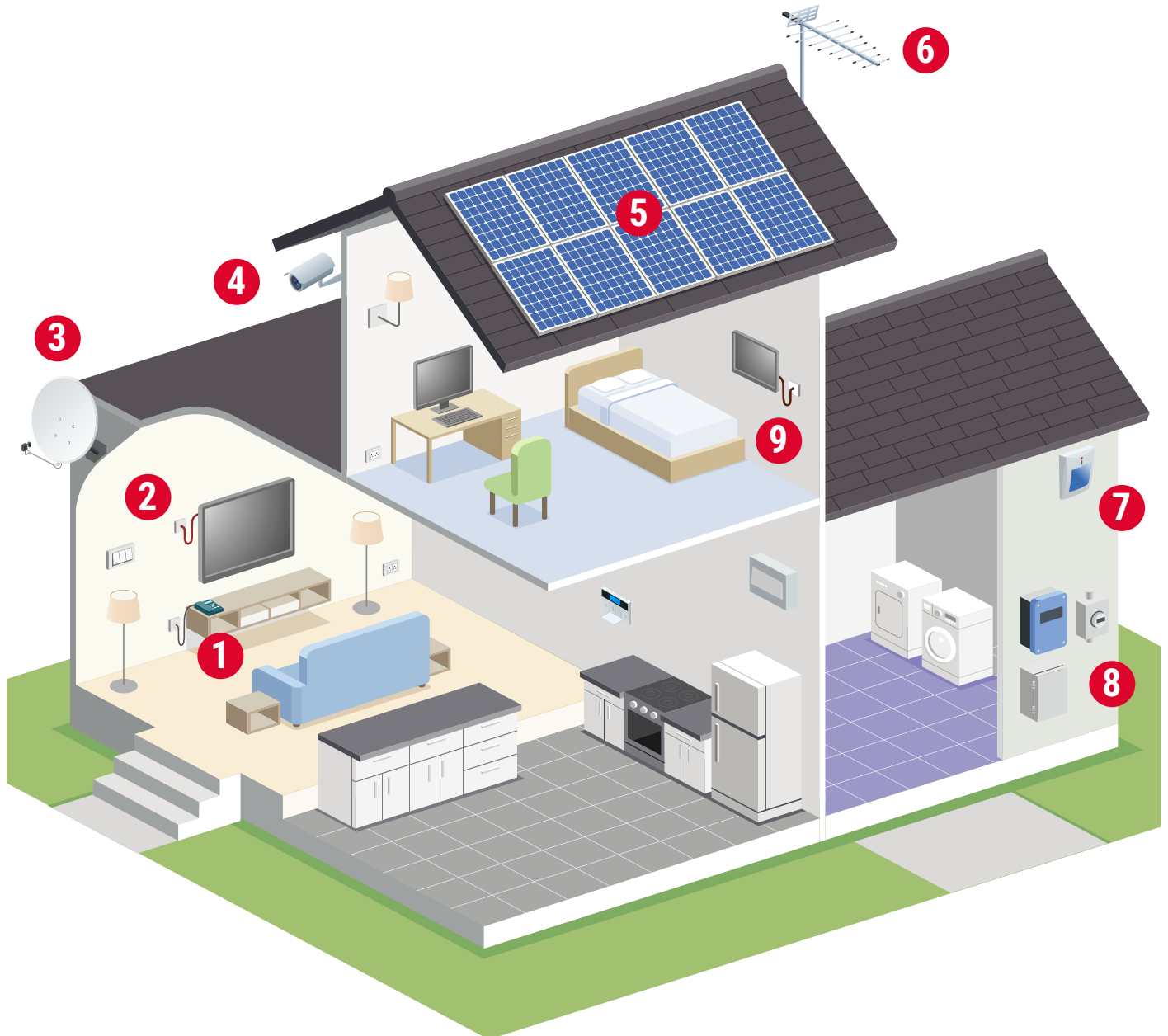
See page 7 for specific equipment distribution

\*Available to order

Please contact MCG for details of all of the above

## SURGE PROTECTION FOR SPECIFIC EQUIPMENT

Protecting Telephone, Fax, Modems, Data, Satellite, Signal, CCTV, Co-Axial and Solar Systems equipment.



- |                         |                               |
|-------------------------|-------------------------------|
| 1. Telephone            | 6. Co-Axial TV Aerial         |
| 2. Satellite Television | 7. Burglar Alarm              |
| 3. Satellite Dish       | 8. Solar System Inverters etc |
| 4. CCTV                 | 9. Co-Axial Television        |
| 5. Solar Panels         |                               |

## T1 - 2 - 3 LIGHTING AND SURGE ARRESTERS

MCG Ref	<b>10020/2</b>	<ul style="list-style-type: none"> <li>• Suitable for TN-S, TN-C-S &amp; PME systems</li> <li>• End of module life indication</li> <li>• Remote signal contacts</li> <li>• Pluggable and replaceable modules</li> <li>• Use 63A backup MCB [sold separately]</li> <li>• Cable size: 16mm<sup>2</sup> to 25mm<sup>2</sup></li> <li>• Conforms to IEC 61643-1 and EN 61643-11</li> <li>• Compliant to 18th Edition Wiring Regulations [BS 7671:2018 Surge Protection and BS EN 62305 Lightning Standards]</li> </ul>
CEF Code	2462-7877	
Type	T1 + 2 + 3	
Earthing System	TN-S, TN-C-S & PME	
Rating	25kA	
Cable Entry Size	16 - 25mm <sup>2</sup>	
Back Up Fuse Required	63A	
Auxiliary Contact	Yes [For Remote Indication]	
Version	Single Phase	
Modules	2	



10020/2

MCG Ref	<b>10020/4</b>	<ul style="list-style-type: none"> <li>• Suitable for TN-S, TN-C-S &amp; PME systems</li> <li>• End of module life indication</li> <li>• Remote signal contacts</li> <li>• Pluggable and replaceable modules</li> <li>• Mounted: DIN rail</li> <li>• Use 63A backup MCB [sold separately]</li> <li>• Cable size: 16mm<sup>2</sup> to 25mm<sup>2</sup></li> <li>• Conforms to IEC 61643-1 and EN 61643-11</li> <li>• Compliant to 18th Edition Wiring Regulations [BS 7671:2018 Surge Protection and BS EN 62305 Lightning Standards]</li> </ul>
CEF Code	2462-7880	
Type	T1 + 2 + 3	
Earthing System	TN-S, TN-C-S & PME	
Rating	25kA	
Cable Entry Size	16 - 25mm <sup>2</sup>	
Back Up Fuse Required	63A	
Auxiliary Contact	Yes [For Remote Indication]	
Version	Three Phase	
Modules	4	



10020/4

MCG Ref	<b>10811LED</b>	<ul style="list-style-type: none"> <li>• Suitable for TT, TN-S, TN-C-S &amp; PME systems</li> <li>• Lightning protection level 1</li> <li>• Highest protection level 100kA</li> <li>• Full mode protection level</li> <li>• Green Optical LED Indicators</li> <li>• Internal thermal disconnecter</li> <li>• Mounted: DIN Rail</li> <li>• Use 63A backup MCB [sold separately]</li> <li>• Conforms to IEC 61643-1 and EN 61643-11</li> <li>• Compliant to 18th Edition Wiring Regulations [BS7671:2008 Surge Protection and BS EN 62305 Lightning Standards]</li> </ul>
CEF Code	2591-2036	
Type	T1 + 2 + 3 Full Mode Protection	
Earthing System	TT, TN-S, TN-C-S & PME	
Rating	100kA	
Cable Entry Size	25mm <sup>2</sup>	
Back Up Fuse Required	63A	
Auxiliary Contact	Yes [For Remote Indication]	
Version	Three Phase	
Modules	8	



10811LED

MCG Ref	<b>SY123/25KA2P</b>	<ul style="list-style-type: none"> <li>• Suitable for all installations [TT, TN-S, TN-C-S, PME]</li> <li>• End of module life indication</li> <li>• Remote signal contacts</li> <li>• Pluggable and replaceable modules</li> <li>• Mounted: DIN rail</li> <li>• Use 63A backup MCB [sold separately]</li> <li>• Cable size: 16mm<sup>2</sup> to 25mm<sup>2</sup></li> <li>• Conforms to IEC 61643-1 and EN 61643-11</li> <li>• Compliant to 18th Edition Wiring Regulations [BS 7671:2018 Surge Protection and BS EN 62305 Lightning Standards]</li> </ul>
CEF Code	2562-0748	
Type	T1 + 2 + 3	
Earthing System	TT, TN-S, TN-C-S, PME	
Rating	25kA	
Cable Entry Size	16 - 25MM <sup>2</sup>	
Back Up Fuse Required	63A	
Auxiliary Contact	Yes [For Remote Indication]	
Version	Single Phase	
Modules	2	



SY123/25KA2P

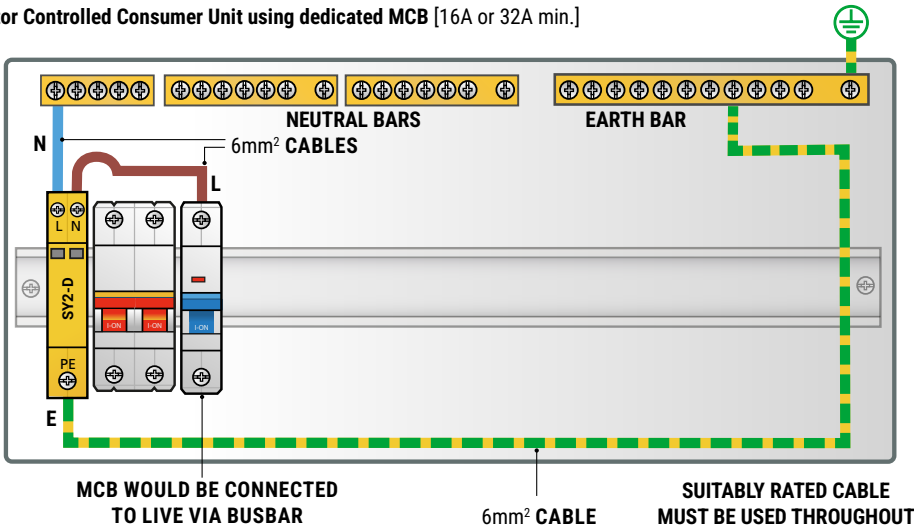
MCG Ref	<b>SY123/50KA4P</b>	<ul style="list-style-type: none"> <li>• Suitable for all installations [TT, TN-S, TN-C-S, PME]</li> <li>• End of module life indication</li> <li>• Remote signal contacts</li> <li>• Pluggable and replaceable modules</li> <li>• Mounted: DIN rail</li> <li>• Use 63A backup MCB [sold separately]</li> <li>• Cable size: 16mm<sup>2</sup> to 25mm<sup>2</sup></li> <li>• Conforms to IEC 61643-1 and EN 61643-11</li> <li>• Compliant to 18th Edition Wiring Regulations [BS 7671:2018 Surge Protection and BS EN 62305 Lightning Standards]</li> </ul>
CEF Code	2562-0751	
Type	T1 + 2 + 3	
Earthing System	TT, TN-S, TN-C-S, PME	
Rating	50kA	
Cable Entry Size	16 - 25MM <sup>2</sup>	
Back Up Fuse Required	63A	
Auxiliary Contact	Yes [For Remote Indication]	
Version	Three Phase	
Modules	4	



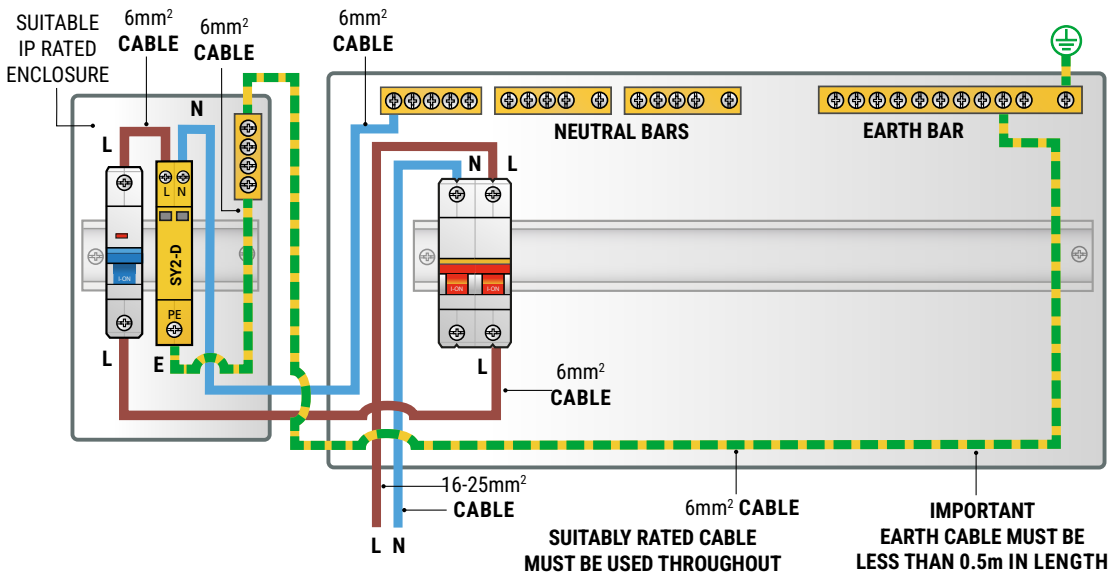
SY123/50KA4P

## INSTALLATION EXAMPLES

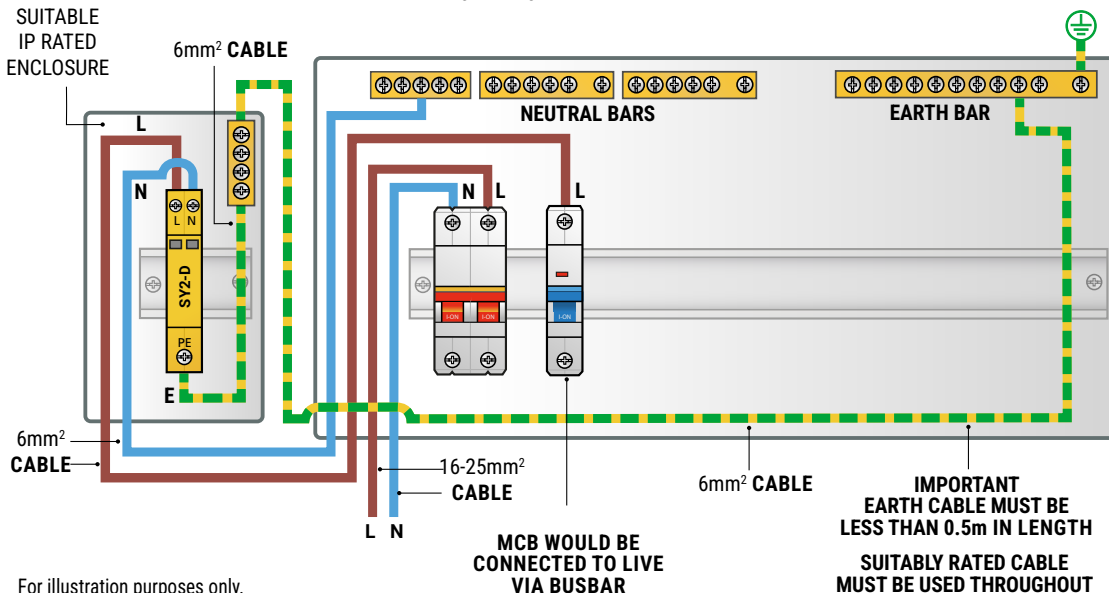
Isolator Controlled Consumer Unit using dedicated MCB [16A or 32A min.]



Isolator Controlled Consumer Unit with external SPD and MCB [16A or 32A min.]



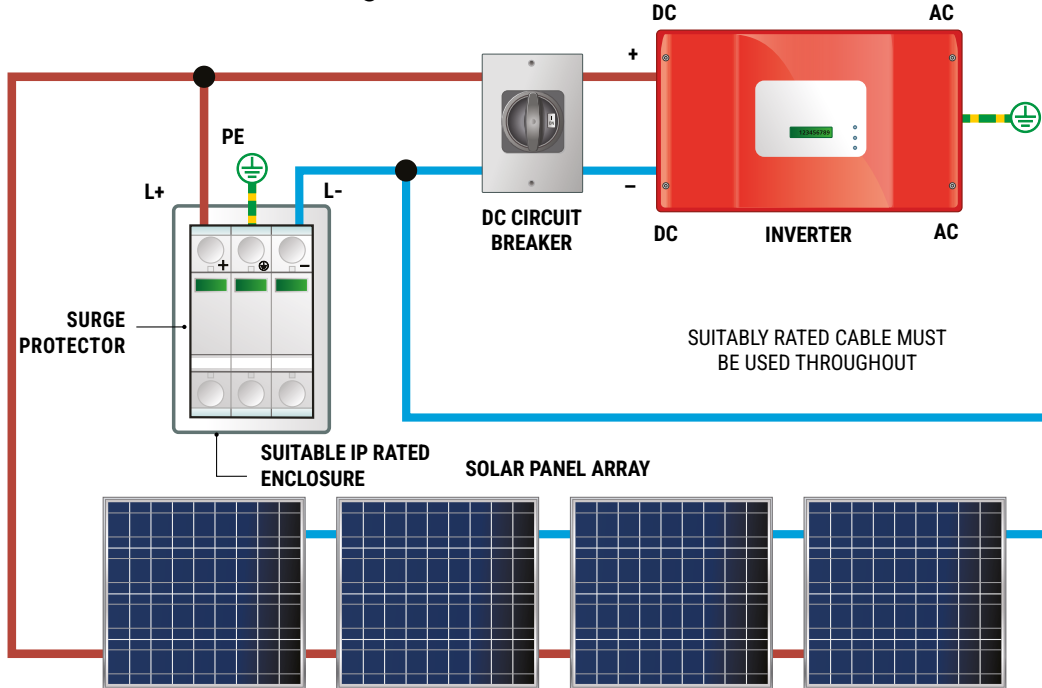
Isolator Controlled Consumer Unit with external SPD using existing MCB [16A or 32A min.]



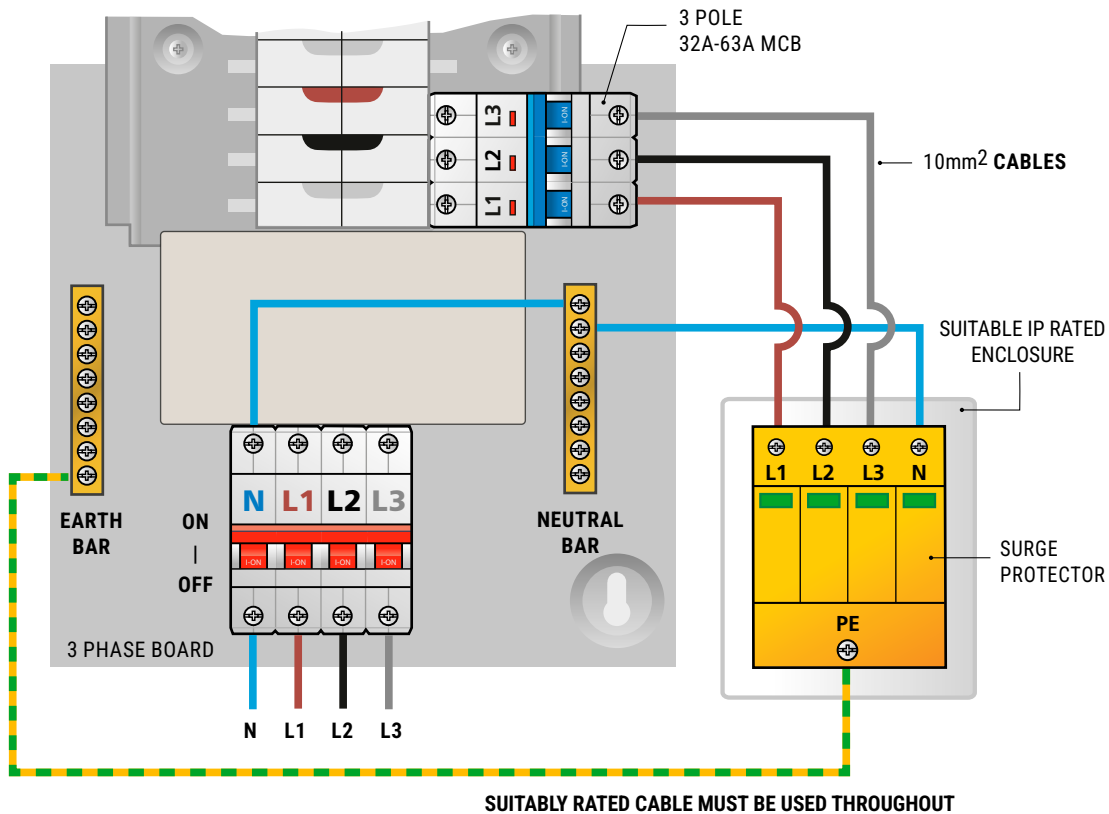
For illustration purposes only.

## INSTALLATION EXAMPLES

### A 600V DC or 1000V DC Surge Protection Device



### 3 Phase system using internal 3 Pole MCB fuse and externally fitted Surge Protection



**PLEASE NOTE:**

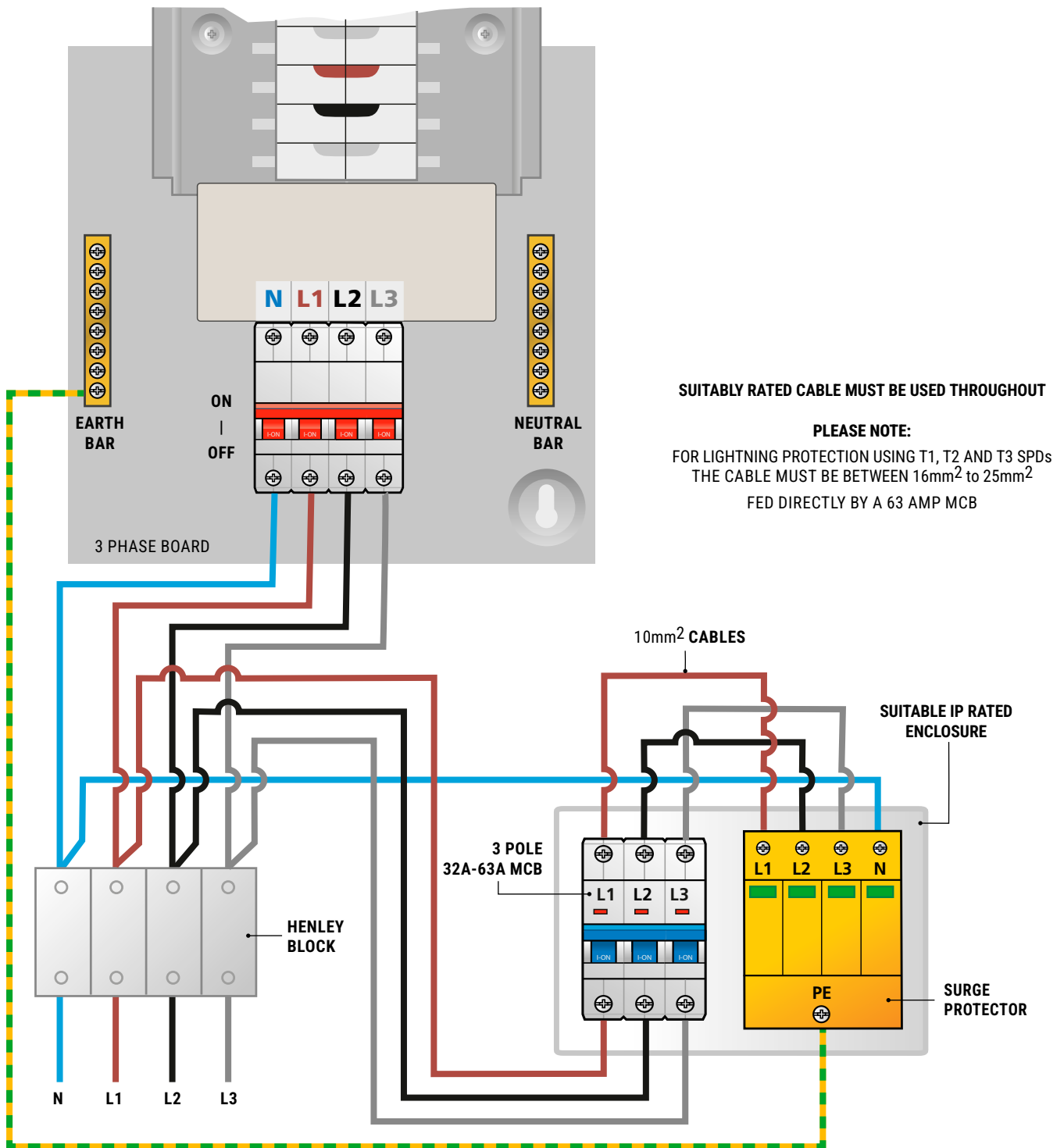
FOR LIGHTNING PROTECTION USING T1, T2 AND T3 SPDs THE CABLE MUST BE BETWEEN 16mm<sup>2</sup> to 25mm<sup>2</sup>.

FED DIRECTLY BY A 63 AMP MCB  
SITTING BEFORE THE DISTRIBUTION BOARD

For illustration purposes only.


## INSTALLATION EXAMPLES

### 3 Phase system using External 3 pole MCB & Henley Blocks



For illustration purposes only.



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