Socket Outlets

Standards and approvals
13A socket outlets comply with BS 1363 Part 2: 1995.

Description
A range of socket outlets designed for ease of installation and having all the advantageous design features of the Aspect range.

Fitted with two earth terminals on a common busbar to provide a double earth facility for use when installations require a high integrity protective connection as specified within BS 7671: 2008.

The products can be quickly installed as replacement for existing 13 amp sockets or in a new installation (only if suitable mounting box is in position).

Round pin sockets
A range of round pin sockets is also available, switched and unswitched.

Features
- Matching metal rocker switches
- Optional neon indicators in the switch rockers with 175° visibility in the horizontal and vertical planes
- 3 pin operated safety shutter
- Printed terminal markings on grey rear mouldings for clearer identification
- Top access, angled terminals make wiring easier and quicker
- 3mm minimum switch contact gap
- Double pole switching
- Additional electrical safety from neutral ‘make first’, ‘break last’ feature
- Switch contacts with silver contacts on both surfaces for good continuity
- Only one size of screwdriver required for installation
- Dual earth terminals for high integrity earthing on all standard sockets
- Backed out and captive terminal screws

1 gang switchsocket – view from rear
Top-facing, angled, backed-out terminals make wiring easier and quicker.

For a full range of corresponding products, see pages 74-96 in the product selector.
13 Amp Socket Outlets

Aspect 13A socket outlets comply with BS1363 Part 2: 1995

**Technical specification**

**Electrical**
- Voltage rating: 250V a.c.
- Current rating: 13A per socket outlet
- Terminal capacity: Live, neutral & earth
  - 3 x 2.5mm²
  - 3 x 4mm²
  - 2 x 6mm² (stranded)
- Dual earth terminals on all standard sockets

**Physical**
- Ambient operating temperature: –5°C to +40°C
  (not to exceed an average of more than 25°C in any 24 hour period)
- IP rating: IP2XD
- Max. installation altitude: 2000 metres

**Light Reflective Values**
- Brushed Stainless Steel (BSS) 50
- Polished Brass (PBS) 57
- Polished Chrome (POC) 67
- White (WHI) 78
- Charcoal (CHA) 8
- Lacquered Brushed Steel (LBS) 50

**Installation**

Aspect socket outlets can be wall or bench mounted. Do not mount or use as a trailing socket or where they may be subject to excessive moisture or dampness.

**Dimensions (mm)**

1 gang

<table>
<thead>
<tr>
<th>86</th>
<th>60.3</th>
<th>4</th>
</tr>
</thead>
</table>

2 gang

<table>
<thead>
<tr>
<th>146</th>
<th>120.6</th>
<th>30</th>
</tr>
</thead>
</table>

**BOX TYPES**

<table>
<thead>
<tr>
<th></th>
<th>Flush</th>
<th>Flush (for extra wiring space)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 gang</td>
<td>866 ZIC</td>
<td>877 ZIC</td>
</tr>
<tr>
<td>2 gang</td>
<td>886 ZIC</td>
<td>878 ZIC</td>
</tr>
</tbody>
</table>
Installation

The MK ‘Aspect’ range of products consists of the main product complete with its support frame and clipping medium, plus a separate frontplate. The product is mounted to the wall, after wiring, and the front plate clipped onto the frame.

1. The frontplate is supplied loose to aid installation.
2. Make sure not to crush or deform the spring steel clips situated along one edge of the product support frame.
3. A gasket is also supplied with each product, which may prove useful on uneven walls. See note 5 below.
4. Using the gasket with all switches and the German socket, will ensure full compliance with the appropriate standards.
5. Both standards set out to guarantee full engagement of the frontplate on uneven surfaces, even when there is a mismatch of as much as 1mm between the distance the main body of the product is from the wall and that of the front plate.
6. Where no gasket is used, if thick wallpapers are cut such that they fit around the support frame and therefore remain under the edge of the frontplate, full plate engagement with the clips may be restricted.

Note when installing Aspect do not over tighten screws, so as to prevent damage or distortion to the product or support frame.

Frontplate Removal

1. Turn off the power supply.
2. Carefully slide a screwdriver between the ramp on the main body of the product and the notch in the lower right hand edge of the plate.
3. On uneven walls, make sure the screwdriver does not go between the spring steel ramp and the wall, or damage to the wall and/or product could result.
4. Carefully slide the blade upwards and then gently lift the handle away from the wall, which will lever the plate away from the first clip. See Fig.4.
5. With the first clip released, support the plate with one hand and continue to move the blade to the left under.

Data products in euromounting frames

Products operating at extra low voltage levels (<50v) must not be mounted in the same euro enclosures as equipment rated in excess of 50v (e.g. mains socket).

Cleaning Frontplates

In order to protect the quality surface finish of the front plate, periodic cleaning should only consist of polishing with a dry lint free soft cloth.

For a full range of corresponding products, see pages 74-96 in the product selector.
Round Pin Socket Outlets

Standards and approvals
Round pin socket outlets comply with BS 546: 1950.

Technical specification

Electrical
Voltage rating:
250V a.c.
Terminal capacities:
2 amp sockets (K24380):
7 x 1mm²
4 x 1.5mm²
2 x 2.5mm²
1 x 4mm²
5 amp sockets (K24381 and K24382):
3 x 2.5mm²
2 x 4mm²
2 x 6mm² (stranded)
15 amp sockets (K24383):
3 x 2.5mm²
3 x 4mm²
2 x 6mm² (stranded)

Physical
Ambient operating temperature:
-5°C to +40°C
(not to exceed an average of more than 25°C in any 24 hour period)
IP rating:
IP2XD
Max. installation altitude:
2000 metres

Light Reflective Values
Brushed Stainless Steel (BSS) 50
Polished Brass (PBS) 57
Polished Chrome (POC) 67
White (WHI) 78
Charcoal (CHA) 8
Lacquered Brushed Steel (LBS) 50

Description
A range of round pin socket outlets designed for ease of installation and having all the advantages and design features of the Aspect range. These products can be quickly installed as replacements for existing socket outlets or in new installations.

Features
- Top access terminals make wiring easier and quicker
- Integral ON indicator on switches will not rub off – totally safe
- Optional neon indicator on 15A switched socket rockers with 175° visibility in the horizontal and vertical planes
- 3mm minimum switch contact gap
- Double pole switching
- Terminal screws backed out
- Available with black or white inserts
- Additional electrical safety from neutral “make first”, “break last” feature on switched sockets
- Switch contacts with silver contact points on both surfaces for good continuity
- 5A and 15A sockets contain a 3 pin operated safety shutter
- Printed terminal markings on grey rear mouldings for clearer identification
- 2A socket shuttered
- Matching metal rockers switches

Dimensions (mm)

Installation
Aspect socket outlets can be wall or bench mounted – do not mount or use as a trailing socket or where they may be subjected to excessive moisture or dampness.

Cable management
Aspect socket outlets can be mounted in a variety of MK trunking systems.

<table>
<thead>
<tr>
<th>BOX TYPES</th>
<th>Flush</th>
<th>Flush for extra wiring space</th>
<th>Surface Insulated</th>
<th>Surface Metal</th>
</tr>
</thead>
<tbody>
<tr>
<td>5A and 15A</td>
<td>866 ZIC</td>
<td>877 ZIC</td>
<td>K2140 WHI</td>
<td>K2211 ALM K2213 ALM</td>
</tr>
<tr>
<td>2A</td>
<td>3995 ZIC</td>
<td>861 ZIC 866 ZIC</td>
<td>K2140 WHI</td>
<td>K2211 ALM K2213 ALM</td>
</tr>
</tbody>
</table>
Shaver Supply Unit

Standards and approvals
Shaver supply units comply with BS EN 61558-2-5: 1998.
Accommodates plugs as follows:
- British 5mm dia pins on 16.6mm pitch (230V socket) to BS 4573: 1970.
- European 4mm dia pins on 17 to 19mm pitch (230V socket) to IEC 83: 1975 Standard C5.
- Australian 6.5 x 1.6 flat blades each set at 30° to the vertical on a nominal pitch of 13.7mm (230V socket) AS C112: 1964.
- American 6.6 x 1.6 flat horizontal blades on 12.7mm pitch (115V socket) to ANSI C73.10.

Features
- Automatic primary supply switching on insertion of plug
- Choice of 230V or 115V output socket positions
- Safety interlocked shutters to prevent insertion of two plugs simultaneously
- Only one size of screwdriver required for installation
- Printed terminal markings on grey rear mouldings for clearer identification
- Integral over current device to protect transformer

Description
Designed for ease of installation and having many of the advantageous design features of the Aspect range.
May be used in bathrooms and washrooms but must only be installed in accordance with BS 7671: 2008.

Technical specification

Electrical
Voltage rating:
K24709: 230V a.c. Input (will operate at 220-250V a.c.)
230V or 115V nominal outputs
Current rating:
K24709: 200mA max. (internal thermister trip current)
Maximum load:
20VA
No load voltage < 275
Terminal capacities:
Each terminal will accommodate 1 x 4mm² or 2 x 2.5mm² solid conductors*

Physical
Ambient operating temperature:
−5°C to +40°C
IP rating:
IP41 (In Zone 2 if fixed where direct spray from showers is unlikely)
Max. installation altitude:
2000 metres

Light Reflective Values
Brushed Stainless Steel (BSS) 50
Polished Brass (PBS) 57
Polished Chrome (POC) 67
White (WHI) 78
Charcoal (CHA) 8
Lacquered Brushed Steel (LBS) 50

Dimensions (mm)

Box types
Flush mounting only
Metal box 878 ZIC – minimum metal mounting box depth is 47mm.

Installation
Shaver supply unit should be wall mounted.

Wiring
An installation instruction leaflet is available. List no. 42753 PL.
Connection Units

Standards and approvals
All Aspect Connection Units comply with BS 1362 Part 4: 1995.
All units are fitted with a 13 amp fuse* to BS 1362.
*Unless otherwise stated.

Description
A range of 13A fused connection units designed for the connection of refrigerators, water heaters, central heating boilers and other fixed appliances.
The range is designed for ease of installation and has all the advantageous design features of the Aspect range.

Neon indicators
Neon indicators can be included in the rockers of the switched connection units. In the case of unswitched units, they are located centrally and uppermost on the face plate. Neon indicators are integrally wired into the product and do not require separate connection when installing.
The design gives 175° visibility in the horizontal and vertical planes.

Fuse carriers
These are captive and are opened by a fast acting, screwdriver operated worm drive for ease of replacement.
Fuse carriers can be locked open using a padlock, List No. K2000.

Flex outlets
The products are equipped with very strong, push-fit nylon cord grips making installation safe, quick and easy.

Features
- Optional indicators in the switch rockers with 175° visibility in the horizontal and vertical planes
- Worm-drive operated fuse carriers for additional security (tamper-proof version available)
- Fuse carrier lockable in open position
- All supply and load cables can be cut and stripped to the same length
- Integritically wired indicators save installation time
- Push-fit cord grips, for safer, quicker installation
- Angled, top mounted terminal screws simplify wiring
- Captive fuse carrier
- Additional electrical safety from neutral ‘make first’, ‘break last’ feature
- Secure cable and flexible cord connection
- All terminal and fixing screws operated by one-size (4mm) screwdriver
- Backed out and captive terminal screws
Connection Units

**Technical specification**

**Electrical**
- Voltage rating: 250V a.c.
- Current rating: 13 amp
- Terminal capacity:
  - Supply terminal: 2 x 6mm² stranded, 2 x 4mm², 3 x 2.5mm²
  - Load terminals: 2 x 6mm² stranded, 2 x 4mm², 3 x 2.5mm²
- Flex outlet/cord grip capacities: min: 2 core, 0.5mm, max: 3 core, 1.5mm

**Physical**
- Ambient operating temperature: –5°C to +40°C (not to exceed an average of more than 25°C in any 24 hour period)
- IP rating:
  - With flex outlet: IP2XD
  - Without flex outlet: IP4X
- Max. installation altitude: 2000 metres

**Dimensions (mm)**

- Box Type: Flush
  - All units: 866 ZIC, 35mm deep
  - For greater wiring space use box – 877 ZIC (46mm deep)

**Installation**

Aspect connection units can be wall or bench mounted. Do not use on a trailing lead.

**Wiring**

Products must be installed in accordance with current IEE Regulations.

**Front outlet cord grip**
Supply and load cable cords cut and stripped to same length.

**Lockable fuse carrier**
Plateswitches

Standards and approvals
All Aspect plateswitches comply with BS EN 60669-1: 2000.

Technical specification

Electrical
- Voltage rating: 250V a.c. 50Hz
- Current rating: 20 amps – no derating when used on fluorescent or inductive loads
- Terminal capacity: All products – 4 x 1mm², 4 x 1.5mm², 3 x 2.5mm², 2 x 4mm², 1 x 6mm²
- Contact gap: 3mm switch contact gap

Physical
- Operating temperature: -5°C to +40°C
- IP rating: IP4X
- Max. installation altitude: 2000 metres

Operational testing (all plateswitches):
- tested to 100,000 operations for mechanical life
- tested to 10,000 operations at 20 amp rating

All plateswitches in these ranges are rated 20AX Specification of switch modules as per 20AX rated Grid Plus switch modules.

To prevent damage to front plates during installation it is recommended that a screwdriver with a blade width of 3.5mm is used.

Description
 Aspect products are supplied with matching metal rockers.

Features
- Two way switches can be wired as one or two way
- All products clearly printed with BS Nos., ratings, etc
- Matching Grid switches available in 10 or 20A ratings
- 3mm switch contact gap
- Positive switch action
- Top access, backed out and captive terminal screws
- Aspect products are supplied with matching metal rocker caps
- 2 gang switches are of the separated rocker design
- 3 gang switches are of the abutted rocker design
- An earth terminal is provided attached to rear of product
- Depth of front plate is 4mm

Dimensions (mm)

<table>
<thead>
<tr>
<th>abox</th>
<th>1 gang</th>
<th>2 gang</th>
<th>3 gang</th>
</tr>
</thead>
<tbody>
<tr>
<td>86</td>
<td>86</td>
<td>86</td>
<td>86</td>
</tr>
<tr>
<td>60.3</td>
<td>60.3</td>
<td>60.3</td>
<td>60.3</td>
</tr>
<tr>
<td>4</td>
<td>15</td>
<td>15</td>
<td></td>
</tr>
</tbody>
</table>

1 gang large rocker     2 gang large rockers  1 gang wide rocker

86     86     86
60.3     60.3     60.3
4     15

Sectional drawings show the furthest projections from the back of the frontplate (wall surface).
Fixing centres (60.3mm) are given for reference.
Plateswitches

Wiring Diagrams

One-way switching

Two-way switching – 2 wire control

Dotted lines show alternative switch positions

Two-way switching plus intermediate switching – 2 wire control

Dotted lines show alternative switch positions

Two-way switching – 3 wire control

Dotted lines show alternative switch positions

Two-way switching plus intermediate switching – 3 wire control

Dotted lines show alternative switch positions

N.B. Terminal positions may alter. The above diagrams are to show wiring layout.
High Current Switches

Standards and approvals

These switches comply with BS EN 60669-1: 2000

Technical specification

Electrical
- Voltage rating: 250V a.c.
- Current: 32A/50A resistive
- Switch: 3mm contact gap
- Double pole operation
- Terminal capacity, 50A Switches:
  - 4 x 4mm²
  - 3 x 6mm²
  - 1 x 16mm²
- Terminal capacity, 32A Switches:
  - 3 x 2.5mm²
  - 2 x 4mm²
  - 1 x 6mm²

Physical
- Ambient operating temperature: -5°C to +40°C (not to exceed an average of more than 25°C in any 24 hour period)
- IP rating: IP4X
- Max. installation altitude: 2000 metres

Features
- Positive switch action
- Positive double pole switching
- Toggle action switches
- Metal frontplates
- Replaceable neon indicators

Note: These switches are not recommended for switching large banks of PCs.

Description

A range of switches harmonising with the Aspect style, suitable for the switching of all domestic, commercial and industrial appliances where higher current ratings are required, i.e. cookers, heaters, commercial refrigeration units etc.

BOX TYPES

<table>
<thead>
<tr>
<th>Switches</th>
<th>Max. Cable Size</th>
<th>Flush</th>
<th>Surface</th>
</tr>
</thead>
<tbody>
<tr>
<td>32A</td>
<td>10mm²</td>
<td>46mm</td>
<td>40mm</td>
</tr>
<tr>
<td>50A</td>
<td>10mm²</td>
<td>47mm</td>
<td>40mm</td>
</tr>
</tbody>
</table>

BOX REFERENCES

<table>
<thead>
<tr>
<th>Flush</th>
<th>32A</th>
<th>45A</th>
</tr>
</thead>
<tbody>
<tr>
<td>46mm</td>
<td>866 ZIC</td>
<td>–</td>
</tr>
<tr>
<td>47mm</td>
<td>–</td>
<td>878 ZIC</td>
</tr>
</tbody>
</table>

Dimensions (mm)

<table>
<thead>
<tr>
<th>50A</th>
<th>32A</th>
</tr>
</thead>
<tbody>
<tr>
<td>146</td>
<td>86</td>
</tr>
<tr>
<td>24</td>
<td>86</td>
</tr>
<tr>
<td>120.6</td>
<td>60.3</td>
</tr>
<tr>
<td>24</td>
<td>17</td>
</tr>
</tbody>
</table>
Three Pole Fan Isolators

Standards and approvals
Comply with BS EN 60947: 1992

Technical specification

Electrical
- Voltage rating: 250V a.c. 50Hz
- Current rating: 10 amps
- Terminal capacity: 4 x 1mm², 4 x 1.5mm², 3 x 2.5mm², 2 x 4mm², 1 x 6mm²
- Contact gap: 3mm switch contact gap

Method of operation: Stored energy operation
Suitability for isolation: Suitable for isolation

Classifications
- Utilisation category: AC23B
- Rated operational voltage (Ue): 250V
- Conventional free air thermal current (Ith): 10A
- Rated frequency: 50Hz
- Rated making capacity: 100A rms
- Rated breaking capacity: 80A rms
- Rated conditional short-circuit current: 6000A rms (with supply side protective device GEC NIT 16 BS88: part 2: 1988 16A 550VAC utilisation category gG 80KA breaking capacity fuse links.)

Physical
- Operating temperature: -5°C to +40°C
- IP rating: IP4X
- Max. installation altitude: 2000 metres

Description
The MK Three Pole Fan Isolator provides a safe and simple method of isolating mechanical fan units and is particularly useful in bathrooms, toilets, storerooms and basements where there is little or no natural light.

For example, timer controlled fans are often linked into the lighting circuit for energy saving and convenience. In such an installation there is often a need for the lighting circuit to remain live to provide light whilst the fan unit is externally isolated so that routine maintenance and repairs can be carried out in complete safety.

The fan isolator can be used as a double pole or triple pole isolator. In addition it includes a clear on/off indicator and the frontplate features a fan isolator symbol for easy circuit identification.

Dimensions (mm)

- Width: 86mm
- Height: 16.5mm
- Depth: 86mm

Features
- Switchlock list no. K4858 is available to allow the isolator to be locked in the disconnected position to facilitate fan maintenance

Installation
Aspect Three Pole Fan Isolators are installed with the front edge of the mounting box set back 10mm from the mounting face.
Three Pole Fan Isolators

Wiring Diagrams

Two pole switching for fan units without timers

[Diagram showing two pole switching for fan units without timers]

Three pole switching for fan units incorporating timers

[Diagram showing three pole switching for fan units incorporating timers]
Modular Switching System

Standards and approvals

Switch modules
BS EN 60669-1: 2000
Indicator Units, Buzzer Units, Cord Unit
BS 5733: 1995

Dimmer switches
Dimmers comply with BS EN 60669-2-1, BS EN 50082-1

TV/FM Socket
Single non-isolated, BS 3041 Part 2: 1977

Universal Socket
BS 5733: 1995

Description

Grid Plus is a comprehensive modular switching and monitoring system ideal for a variety of applications within the commercial, public and domestic sectors.

Grid Plus cover plates have the advantageous design features of the Aspect range and the interchangeable modules also feature many of the wiring and installation benefits common to the Aspect range.

The system is extremely easy to assemble (see illustration) and modules can be individually changed without re-wiring of complete assembly by removal of frontplate and simply clipping in or out as required. For further installation details see ‘Installation’ overleaf.

Universal Socket

The Universal Socket does not incorporate an earth contact. Therefore appliances needing earth connection, (class 1 equipment), must NOT be used with the socket.

The socket is intended for use with BS, USA & CEE standard plugs.

Features

- Grid modules clip fit to frame without special tools
- Modules can be removed/replaced when grid frame is fixed in position
- Grid Plus styling matches Aspect plate switch range
- All products are 100% tested before delivery
- Options of neon/filament indicators label in rocker or printed rockers
- Wide variety of switch modules rated at 10 or 20 amps
- Single or double dimmer modules available
- Vast range of grid plates and modules from one source
- High quality grid frame
- Grid frame earth terminal has 16mm² cable capacity
- Backed out and captive terminal screws
- Plated grid frame prevents corrosion
- Up to 24 gang in decorative metal finish frontplates
- Top access terminal screws

Module Dimensions (mm)

<table>
<thead>
<tr>
<th>Module Type</th>
<th>Dimensions (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>24/240V buzzer units</td>
<td>25 x 34 x 65</td>
</tr>
<tr>
<td>Single dimmer module</td>
<td>25 x 57 x 65</td>
</tr>
<tr>
<td>Double dimmer module</td>
<td>49 x 57 x 65</td>
</tr>
<tr>
<td>All switch and</td>
<td>25 x 22 x 65</td>
</tr>
<tr>
<td>indicator modules</td>
<td></td>
</tr>
<tr>
<td>Universal Socket unit</td>
<td>25 x 31.5 x 65</td>
</tr>
<tr>
<td>Fuse unit</td>
<td>25 x 31.5 x 65</td>
</tr>
<tr>
<td>Cord unit</td>
<td>25 x 42 x 65</td>
</tr>
</tbody>
</table>

Multiple dimmer installation load ratings When installing more than one dimmer in multi-gang plates, the power rating must be reduced to allow for heat generation.
Modular Switching System

Frontplate Dimensions (mm)

1 module K24331

2 module K24332

3 module K24333

4 module K24334

6 module K24336

8 module K24338

Technical specification

**Electrical**

**Switches**
- Voltage rating: 250V a.c., 50 Hz
- Current rating: 10 or 20 amps – no derating when used on fluorescent or inductive loads.
- Load type: No restriction
- Terminal capacity: 4 x 1mm², 4 x 1.5mm², 4 x 1mm², 3 x 2.5mm², 2 x 4mm², 1 x 6mm²

**Indicator Units**
- Voltage rating: 24V indicators - min. 21V, max. 36V
  240V indicators - min. 200V, max. 250V
- Terminal capacity: as switches

**Buzzer Unit**
- Voltage rating: 240V
  24V
- Terminal capacity: as switches

**Fuse Unit**
- Voltage rating: 250V
  13 amps
- Terminal capacity: 2 x 4mm²

**Cord Outlet**
- Voltage rating: 250V
- Current rating: 16 amps
- Terminal capacity
- Supply: 2 x 4mm²
  Load: 1 x 5mm² multi-strand

**Dimmers**
- Voltage rating: 230V a.c., 50Hz
- Load rating:
  - For single dimmer installations: K4500 min. 40W/VA, max. 400W/320 VA
  - K4501 min. 40W/VA, max. 220W/180 VA
  - For multiple dimmer installation see Load Adjustment table, page 455
- Load types:
  - K4500, K4501 tungsten filament (GLS) lamps
  - Low voltage lighting electronic or wire-wound transformers
  - Soft start: Raises from low to control knob setting in 1-3 secs, (increases lamp life significantly)
- Terminal capacity
  - 1 x 2.5mm², 2 x 1.5mm²

**Universal Socket**
- Voltage rating: 12V/250V
- Current rating: 16 amps
- Terminal capacity:
  - 2 x 6mm² (stranded)
  - 3 x 4mm², 5 x 2.5mm²
Modular Switching System

**Installation**

**General**
Cut cables to length and make earth connections to grid. Earth bond Grid Frame to metal mounting box. Grid frames are screwed to back box, modules wired as appropriate and simply clipped into grid frame by hand. No tools are necessary. The front plate is screw fixed to the grid frame to finish the assembly.

To remove or change modules, simply remove front plate. Individual modules fit perfectly into the frontplate in flush fitting installations.

**Grid mounting**
An integral design feature automatically ensures that the modules fit perfectly into the frontplate in flush fitting installations.

Some manual adjustment may be required for surface mounted applications.

1. Locate bottom tab of module in base of grid.
2. Module pushes into place at top with a ‘click.
3. To remove module, press tab at top and lever forward.

**Dimmers**
The two module size dimmer can be fitted to any grid mounting frame over 1 gang. The supplied blank module can be placed at the required pitch to fill in the second position on the grid.

To avoid overheating when using more than one dimmer in the same Grid Plus Enclosure it is recommended that the dimmers are preferentially mounted on the bottom row on 6, 8, 9, 12, 18 and 24 Gang Enclosures, before mounting on any other rows and its load adjusted in accordance with the information provided in the Load adjustment Table 1 at the bottom of the next page.

**Dimmer wiring diagram**

- **One-way switching**
  - Supply 230V a.c. - 50Hz
  - L
  - N
  - DIMMER

- **Two-way switching**
  - (only one dimmer can be used)
  - Supply 230V a.c. - 50Hz
  - N
  - 2 way switch
  - L
  - DIMMER

Wires must be connected to the correct Dimmer terminals. Supply Earth must only be connected to the installation metalwork and not to any of the terminals on the dimmer module.

**Rocker window labels**
The following labels are available for insertion into window rockers.
Modular Switching System

The simple installation process is shown below.

Prise out window on rocker

Peel off and insert label. Replace window

Spare labels and windows are available.

**TV/FM socket outlets**
The TV outlet must not be mounted in the same enclosure as mains exceeding 50V.

<table>
<thead>
<tr>
<th>TABLE 1 – LOAD ADJUSTMENT FOR GRID PLUS DIMMERS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Frontplate Size, Number of Gangs</strong></td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>Max Power/Load per Row – Tungsten GLS Lamps – W</td>
</tr>
<tr>
<td>Max Power/Load per Row – Mains Tungsten Halogen Lamps or Low Voltage Transformers – W or VA</td>
</tr>
<tr>
<td>Max Power/Load for Total Plate – Tungsten GLS Lamps – W</td>
</tr>
<tr>
<td>Max Power/Load for Total Plate – Mains Tungsten Halogen Lamps or Low Voltage Transformers – W or VA</td>
</tr>
</tbody>
</table>
Dimmer Switch Modules

Standards and approvals
They also comply with BS EN 60669-2-1 and BS EN 55015.

Technical specification

Electrical
- Mains Supply Voltage: 230V a.c. (Nominal)
- Mains Supply Frequency: 50Hz
- Type of Loads: Low Voltage Dimmers: Fused GLS Tungsten Filament lamps to BS EN 60064: 1996 and BS EN 60432-1,2 rated at 230/240V. Dimmable wire wound or electronic Low Voltage Transformers of good quality. Can also be used with good quality mains voltage halogen lamps incorporating GU10 bases. Please check with lamp manufacturer to determine suitability.
- Note: Transformer must be suitable for dimming using phase delay (not phase out) type of dimmers.
- Warning: These dimmer switches are not suitable for use with Fluorescent Lamps or Energy Saving Lamps.

Physical
- Operating temperature: 0°C to +40°C
- IP rating: IP4X
- Max. installation altitude: 2000 metres

Description

Intelligent Dimmer Switches
Dimmer Switches belonging to this category, employ the latest, state of the art, micro-controller base electronic circuity and use current sensing to compute the load conditions. These products show progressive reaction to Over-load conditions, depending on the extent of Over-load – see Table 1. These Dimmer Switches employ one pole change over switches to facilitate two way switching.

MK Grid Plus Dimmer Switches are not suitable for use with Fluorescent Loads, including Energy Saving Lamps.

Features

MK Grid Plus Dimmer Switches incorporate the following advanced features

- Suitable for dimming Low Voltage Halogen lamps via suitable, fully dimmable electronic or wire-wound transformers. See Table 2 for the number of transformers allowed to be used with each dimmer
- Can be used with good quality mains voltage halogen lamps incorporating GU10 bases. Please check with lamp manufacturer to determine suitability
- Load current sensing. These dimmers continuously monitor the load current to help protect against overheating in wire wound transformers, and to prevent overloading of the dimmer for long term reliability
- Soft Start, which gradually increases the light output from the load over 1 to 3 seconds after switch on. The Soft Start feature is also particularly beneficial when used to dim Mains Voltage Tungsten Halogen lamps which have inherent very high inrush current at switch on

Cable Management
Grid Plus dimmer switches can be mounted in a variety of MK trunking systems.
Dimmer Switch Modules

**Table 1 – Overload Reaction**

<table>
<thead>
<tr>
<th></th>
<th>60-400W Circuit</th>
<th>40-220W Circuit</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overload管理:</td>
<td>60-400W nominal</td>
<td>40-220W nominal</td>
<td>Overload management:</td>
</tr>
<tr>
<td>40-500W function without dimming</td>
<td>40-275W function without dimming</td>
<td>40-275W function without dimming</td>
<td>40-275W function without dimming</td>
</tr>
<tr>
<td>&gt; 500-700W dim to 68 V±8 V r.m.s.</td>
<td>&gt; 275-375W dim to 68 V±8 V r.m.s.</td>
<td>&gt; 275-375W dim to 68 V±8 V r.m.s.</td>
<td>This is the minimum controlled voltage</td>
</tr>
<tr>
<td>&gt; 700W switch off</td>
<td>&gt; 375W switch off</td>
<td>&gt; 375W switch off</td>
<td></td>
</tr>
</tbody>
</table>

Dimensions

<table>
<thead>
<tr>
<th>1 gang</th>
<th>2 gang</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Dimensions" /></td>
<td><img src="image2.png" alt="Dimensions" /></td>
</tr>
</tbody>
</table>

**Table 2 – Grid Plus Intelligent Dimmer Switches**

<table>
<thead>
<tr>
<th>Rating</th>
<th>Max No. of Transformers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 module dimmer switch</td>
<td>3</td>
</tr>
<tr>
<td>40-220W (LV rating 40-180VA)</td>
<td></td>
</tr>
<tr>
<td>2 module dimmer switch</td>
<td>5</td>
</tr>
<tr>
<td>60-400W (LV rating 40-320VA)</td>
<td></td>
</tr>
</tbody>
</table>

Do not connect more than the maximum number of transformers stated for each dimmer. Grid Plus dimmer switch ratings are for each dimmer when installed singly. In multiple installations, each dimmer switch must be de-rated – see Table 1 under ‘Modular Switching System’ section.

One-way switching

```
+L | DIMMER
N  |
```

Supply 230V a.c. – 50Hz

Two-way switching

```
+L | DIMMER
N  |
```

Supply 230V a.c. – 50Hz

Wires must be connected to the correct dimmer terminals. DO NOT connect earth to dimmer.
Toggle Plates and Switches

Standards and approvals
All Aspect toggle switches comply with BS EN 60669-1: 2000.

Technical specification

**Electrical**
- Voltage rating: 250V a.c. 50Hz
- Current rating: 20 amps – no derating when used on fluorescent or inductive loads
- Terminal capacity: All products –
  - 4 x 1mm²
  - 4 x 1.5mm²
  - 3 x 2.5mm²
  - 2 x 4mm²
  - 1 x 6mm²
- Contact gap: 3mm switch contact gap

**Physical**
- Operating temperature: –5°C to +40°C
- IP rating: IP4X
- Max. installation altitude: 2000 metres
- Operational testing (all plateswitches): tested to 10,000 operations at 20 amp rating
- Switches in this range are rated 20AX
- Specification of switch modules as per 20AX rated Grid Plus switch modules.

To prevent damage to frontplates during installation it is recommended that a screwdriver with a blade width of 3.5mm is used.

Plastic box spanner supplied is used for tightening the centre facing nut.

Description
Aspect Toggle switches are made up from separate frontplates and switch modules.

Dimensions (mm)

Sectional drawings show the furthest projections from the back of the frontplate (wall surface).

Features
- Two way switches can be wired as one or two way
- All products clearly printed with BS Nos., ratings, etc
- 3mm contact gap
- Positive switch action
- Top access, backed out and captive terminal screws
- Frontplates have toggle switches supplied with special grid frame that has an earth link to facilitate earth continuity to frontplate
- An earth terminal is provided attached to rear of product
- Thickness of front plate is 4mm

BOX TYPES

<table>
<thead>
<tr>
<th>BOX TYPES</th>
<th>Flush</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 and 2 gang switches</td>
<td>891 ALM or 866 ZIC –</td>
</tr>
<tr>
<td>3 and 4 gang switches</td>
<td>892 ALM or 886 ZIC –</td>
</tr>
</tbody>
</table>

These products are designed for flush mounting only. The switch modules are designed to be mounted onto a special grid frame that has an earth link to facilitate earth continuity to the front plate. Recommended mounting box depth is 35mm deep.
Dimmer Switches

Standards and approvals
All CE marked Aspect dimmer switches comply with the EC Low Voltage Directive: 73/23/EEC, Electromagnetic Compatibility Directive 89/336/EEC. They also comply with BS EN 60669-2-1 and BS EN 55015.
* Non-UK dimmer switches see note below.

Technical specification

Electrical
Mains Supply Voltage:
230V a.c. (Nominal)
220V a.c. (Nominal, Non-UK)
Mains Supply Voltage Range:
216V a.c. to 253V a.c.
200V a.c. to 250V a.c. (Non-UK)
Mains Supply Frequency:
50Hz ±3Hz
60Hz ±3Hz (Non-UK)
Type of Loads:
Standard Dimmers:
Fused GLS Tungsten Filament lamps only to BS EN 60064: 1996 and BS EN 60432-1: 2000, rated at 230/240V.
Low Voltage Dimmers:
Fused GLS Tungsten Filament lamps to BS EN 60064: 1996 and BS EN 60432-1:2 rated at 230/240V. Dimmable wire wound or electronic Low Voltage Transformers of good quality. Can also be used with good quality mains voltage halogen lamps incorporating GU10 bases. Please check with lamp manufacturer to determine suitability.

Note: Transformer must be suitable for dimming using phase delay (leading edge) and NOT only phase cut trailing edge type of dimmers.

Warning: These dimmer switches are not suitable for use with Fluorescent Lamps or Energy Saving Lamps.

Physical
Operating temperature:
0°C to +40°C
IP rating:
IP4X
Max. installation altitude:
2000 metres

Description
Aspect Dimmer Switches fall into two categories:
1) Intelligent Dimmer Switches
2) Non-UK Dimmer Switches

Intelligent Dimmer Switches
Dimmer Switches belonging to this category, employ the latest, state of the art, micro-controller based electronic circuitry and use current sensing to compute the load conditions. These products show progressive reaction to overload conditions, depending on the extent of overload as shown in the table below. List numbers belonging to this category are identified by the suffix letters LV, e.g. K1551 MCO LV. All MK Intelligent Dimmer Switches employ one pole change over switches to facilitate two way switching.

MK Intelligent Dimmer Switches are not suitable for use with Fluorescent Loads, including Energy Saving Lamps.

Only one Dimmer Switch can be used in a two-way switching circuit.

OVERLOAD REACTION

<table>
<thead>
<tr>
<th>40-400W CIRCUIT</th>
<th>40-300W CIRCUIT</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overload management:</td>
<td>Overload management:</td>
<td>This is the minimum controlled voltage</td>
</tr>
<tr>
<td>40-400W nominal</td>
<td>40-220W nominal</td>
<td></td>
</tr>
<tr>
<td>40-500W function without dimming</td>
<td>40-275W function without dimming</td>
<td></td>
</tr>
<tr>
<td>&gt; 500-700W dim to 68V±8V r.m.s.</td>
<td>&gt; 275-375W dim to 68V±8V r.m.s.</td>
<td></td>
</tr>
<tr>
<td>&gt; 700W switch off</td>
<td>&gt; 375W switch off</td>
<td></td>
</tr>
</tbody>
</table>

*Non-UK Dimmer Switches
Dimmer switches belonging to this category only conform to the safety parts of BS EN 60669-2-1, without conforming to the EMC requirement. Loads suitable for use with standard dimmer switches above are also suitable for use with this category of dimmer switch.
Dimmer Switches

Features

Intelligent Dimmer Switches incorporate the following advanced features:

- Suitable for dimming Low Voltage Halogen lamps via good quality, fully dimmable electronic or wire-wound transformers.
- Can be used with good quality mains voltage halogen lamps incorporating GU10 bases. Please check with lamp manufacturer to determine suitability.
- Unidirectional current sensing. While being used with wire-wound transformers for low voltage lighting, these dimmer switches continuously monitor the drive conditions to the transformers, which require essentially, bi-directional a.c. supply at their input terminals. If, due to some fault condition, the supply to the wire-wound transformer is detected to be unidirectional, which could result in over-heating and/or damaging the transformer, the dimmer switches’ circuitry automatically stops supplying the transformer after a few cycles of detected unidirectional supply.
- Soft Start, which gradually increases the light output from the load over 1 to 3 seconds after switch on. The Soft Start feature is also particularly beneficial when used to dim Mains Voltage Tungsten Halogen lamps which have inherent very high inrush current at switch on.

Dimensions (mm)

1 gang single

1 gang double

BOX TYPES

<table>
<thead>
<tr>
<th>1 gang (excluding double dimmers)</th>
<th>866 ZIC (35mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 gang (for double dimmers)</td>
<td>866 ZIC (35mm)</td>
</tr>
</tbody>
</table>

INTELLIGENT DIMMER SWITCHES

<table>
<thead>
<tr>
<th>Rating</th>
<th>Max No. of Transformers (total rating of all transformers must not exceed maximum VA rating of dimmer)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 gang single dimmer 40-300W (LV and mains voltage halogen rating 40-240W/VA)</td>
<td>4</td>
</tr>
<tr>
<td>1 gang double dimmer 2 x 40-300W (LV and mains voltage halogen rating 2 x 40-240W/VA)</td>
<td>4 per dimmer</td>
</tr>
<tr>
<td>1 gang single dimmer 60-500W (LV and mains voltage halogen 60-400W/VA)</td>
<td>5</td>
</tr>
</tbody>
</table>

Please note the dimmer may be substituted for any of the Two-Way switches.
Euro and LJU6C Data Frontplates

**Standards and approvals**
BS 5733: 1995

**Technical specification**

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>86mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height:</td>
<td>86mm (1G)</td>
</tr>
<tr>
<td>Width:</td>
<td>146mm (2G)</td>
</tr>
<tr>
<td>Depth:</td>
<td>4mm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Aperture Dimensions</th>
<th>50mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height:</td>
<td>50mm (1G)</td>
</tr>
<tr>
<td>Width:</td>
<td>100mm (2G)</td>
</tr>
</tbody>
</table>

**Features**
- 1G and 2G frontplates
- Aspect style
- Accept industry standard Euro or LJU6C snapfit modules
- 1G Euro frontplate accepts 2 Euro modules, (50 x 50mm aperture)
- 2G Euro frontplate accepts 4 Euro modules, (100 x 50mm aperture)
- 1/2 module (12.5 x 50mm) blank available
- Interchangeable modules clip into frontplate
- 2G LJU6C frontplate accepts two LJU6C modules (25 x 37mm)

**Description**
Frontplates used for mounting snapfit data modules.

**Dimensions (mm)**

**Euro Frontplates**

1 gang
- 1 module: K24181
- 2 modules: K24182

2 gang
- 4 modules: K24184

**LJU6C Frontplates**

1 gang
- 1 module: K24171
- 2 modules: K24172

2 gang
- 4 modules: K24173
Power Modules

**Technical specifications**

**Electrical**
- **13A UK**
  - Voltage rating: 250V a.c.
  - Current rating: 13A
  - Terminal capacity: Live, neutral & earth
    - 3 x 2.5mm²
    - 2 x 4mm²
- **5A UK**
  - Voltage rating: 250V a.c.
  - Current rating: 5A
  - Terminal capacity: Live, neutral & earth
    - 3 x 2.5mm²
    - 2 x 4mm²
    - 2 x 6mm² (stranded)
- **16A German**
  - Voltage rating: 250V a.c.
  - Current rating: 16A
  - Terminal capacity: Live, neutral & earth
    - 4 x 1.5mm²
    - 2 x 2.5mm²
- **16A French/Belgian**
  - Voltage rating: 250V a.c.
  - Current rating: 16A
  - Terminal capacity: Live, neutral & earth
    - 3 x 2.5mm²
    - 2 x 4mm²
- **15A American**
  - Voltage rating: 127V a.c.
  - Current rating: 15A
  - Terminal capacity: Live, neutral & earth
    - 3 x 2.5mm²

**Physical**
- **Ambient operating temperature:**
  - –5°C to +40°C
  - Not to exceed an average of more than 25°C in any 24 hour period
- **IP rating:** IP2XD
- **Max. installation altitude:** 2000 metres

**Standards and approvals**

- K5830: BS 1363 Part 2: 1995
- K5831: IEC 60884-1: 2006
- K5832: SASO 2203: 2003
- K5833: BS 546: 1950
- K5834: French National Standard NF C 61-314

**Description**

A range of euro modules designed to provide a variety of power options.

**Dimensions (mm)**

<table>
<thead>
<tr>
<th>13A UK</th>
<th>5A UK</th>
<th>16A German</th>
<th>16A French/Belgian</th>
<th>15A American</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
<td><img src="image3.png" alt="Image" /></td>
<td><img src="image4.png" alt="Image" /></td>
<td><img src="image5.png" alt="Image" /></td>
</tr>
</tbody>
</table>

**Box Types**

- **Minimum**
  - 35mm
  - 46mm
- **Extra wiring space**
  - 35mm
  - 46mm

**Installation**

MK socket outlets can be wall or bench mounted. Do not mount or use as a trailing socket or where they may be subject to excessive moisture or dampness.
**RJ45 Data Outlets**

**Standards and approvals**
- BS EN 50173.
- IEC 11801.
- TIA/EIA 568A.
- TIA/EIA 568B.

**Description**
Suitable for use in all Euro or LJU6C data frontplates, available in all MK ranges, Cat 5e and Cat 6 modules suitable for use in structure cabling distribution systems.

**Installation**
- Maximum cable length 90m.
- Cable bend radii, 40mm during installation, 20mm after installation.
- Maximum pull force 8.7kg.
- Do not unwind the twists in the wire pairs by more than 13mm max.

**Dimensions**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Products</th>
<th>Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cat 6</td>
<td>Euro</td>
<td>46mm</td>
</tr>
<tr>
<td>Cat 5e</td>
<td>LJU6C</td>
<td>35mm</td>
</tr>
</tbody>
</table>

**Box Types**

**Euro and LJU6C modules are to be wired as follows**

**TIA Wiring Scheme Colour Codes:**

<table>
<thead>
<tr>
<th>Pin No.</th>
<th>568A</th>
<th>568B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>WHITE / green</td>
<td>WHITE / orange</td>
</tr>
<tr>
<td>2</td>
<td>GREEN / white</td>
<td>ORANGE / white</td>
</tr>
<tr>
<td>3</td>
<td>WHITE / orange</td>
<td>WHITE / green</td>
</tr>
<tr>
<td>4</td>
<td>BLUE / white</td>
<td>BLUE / white</td>
</tr>
<tr>
<td>5</td>
<td>WHITE / blue</td>
<td>WHITE / blue</td>
</tr>
<tr>
<td>6</td>
<td>ORANGE / white</td>
<td>GREEN / white</td>
</tr>
<tr>
<td>7</td>
<td>WHITE / brown</td>
<td>WHITE / brown</td>
</tr>
<tr>
<td>8</td>
<td>BROWN / white</td>
<td>BROWN / white</td>
</tr>
</tbody>
</table>
Telephone, RJ11/12 and Blank Modules

Standards and approvals
Telephone sockets K5820 and K5821 comply with the following:
BS 6312: 2.2, OFTEL Approval NS/G/23/1/00005.
Data sockets K5801, BS 5733: 1995 (where applicable).
K5887 complies with FCC68.

Technical specification

**Electrical**
- Cable types:
  - Telephone: CW1311, CW1293, CW1308, CW1316
- No. of cables per termination:
  - Telephone: 2
  - Rj11/12: 1
- Termination type:
  - Telephone module – IDC

**Physical**
- Temperature range:
  - Ambient air: -20°C to +60°C
- IP rating:
  - IP2XD – K5820, K5821, K5801 and K5887.
  - IP4X – K180, K188, K186 and K170
- Max. installation altitude:
  - 2000 metres

**DIMENSIONS (mm)**

<table>
<thead>
<tr>
<th>List No.</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>K5820 / K5821 / K5801 / K188 / K5887</td>
<td>25 x 50</td>
</tr>
<tr>
<td>K180</td>
<td>50 x 50</td>
</tr>
<tr>
<td>K186</td>
<td>12.5 x 50</td>
</tr>
<tr>
<td>K5787/K170</td>
<td>22 x 37</td>
</tr>
</tbody>
</table>

**Features**
- Meet all relevant BS, OFTEL and cabling standards
- Interchangeable modules clip into frontplates
- Front fixing facilitates easy exchange of modules
- Part of a complete range of products for telephone and data processing requirements
- Telephone sockets
  - 100% tested before delivery
  - Quick, simple and reliable IDC connectors
- Can be specified for all applications
- Fit in plaster depth boxes

**Description**
A range of telephone, data and blank modules to fit Euro frontplates. BNC Euro modules with a 50Ohm crimp connector suitable for use with RG58, URM43, URM76 and Beldon 9907 type coaxial cables are also available.

**Installation (Telephone socket modules)**

**Product performance, systems compatibility**
Master Sockets: For use as the first socket outlet on a direct exchange. They contain the required surge protector (for line protection against electrical surges) and ringing capacitor.

Secondary Sockets: for use as extension sockets when connected on the same line as a Master Socket.

**Installation tools required IDC Connectors (telephone & RJ45 outlets)**
MK insertion tool List No. 400 or 22630. Wire pull-out force: 10.5 Newtons when installed correctly.

**Wiring regulation restrictions**
Domestic Installations: The total REN (Ring Equivalent Number) value of all telephone equipment connected on a line must not exceed 4.

**BT Wiring Scheme**

<table>
<thead>
<tr>
<th>PIN</th>
<th>STRIPPED COLOUR</th>
<th>SOLID COLOUR</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO.</td>
<td>WIRE</td>
<td>WIRE</td>
</tr>
<tr>
<td>1</td>
<td>GREEN / white</td>
<td>White</td>
</tr>
<tr>
<td>2</td>
<td>BLUE / white</td>
<td>Black</td>
</tr>
<tr>
<td>3</td>
<td>ORANGE / white</td>
<td>Yellow</td>
</tr>
<tr>
<td>4</td>
<td>WHITE / blue</td>
<td>Red</td>
</tr>
<tr>
<td>5</td>
<td>WHITE / blue</td>
<td>Green</td>
</tr>
<tr>
<td>6</td>
<td>GREEN / white</td>
<td>Blue</td>
</tr>
</tbody>
</table>

Note: Main wire colour is shown in capitals

**RJ11/12 Wiring Scheme**

<table>
<thead>
<tr>
<th>PIN</th>
<th>STRIPPED COLOUR</th>
<th>SOLID COLOUR</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO.</td>
<td>WIRE</td>
<td>WIRE</td>
</tr>
<tr>
<td>1</td>
<td>WHITE / green</td>
<td>White</td>
</tr>
<tr>
<td>2</td>
<td>WHITE / orange</td>
<td>Black</td>
</tr>
<tr>
<td>3</td>
<td>BLUE / white</td>
<td>Red</td>
</tr>
<tr>
<td>4</td>
<td>WHITE / blue</td>
<td>Green</td>
</tr>
<tr>
<td>5</td>
<td>ORANGE / white</td>
<td>Yellow</td>
</tr>
<tr>
<td>6</td>
<td>GREEN / white</td>
<td>Blue</td>
</tr>
</tbody>
</table>

Note: Main wire colour is shown in capitals

**For information on TV Satellite and FM Modules see page 466**
Digital TV, Radio and Telephone Outlets

**Standards and approvals**
All MK Digital TV Outlets comply with BS 5733 and BS EN 50083 where applicable.
Also IEC 169-2, BS EN 60169-24 and BS 6312 Part 2.
Modular products are Euro compatible.

**Technical specification**

<table>
<thead>
<tr>
<th>Single Outlets</th>
</tr>
</thead>
<tbody>
<tr>
<td>TV/FM IEC Male or Female</td>
</tr>
<tr>
<td>SAT F-Type</td>
</tr>
</tbody>
</table>

**Diplexer and Triplexer products**

<table>
<thead>
<tr>
<th></th>
<th>TV</th>
<th>FM</th>
<th>SAT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Diplexer</strong></td>
<td>DC-68.5MHz, 174-862MHz</td>
<td>87.5-108MHz</td>
<td>n/a</td>
</tr>
<tr>
<td><strong>Triplexer</strong></td>
<td>DC-68.5MHz, 174-862MHz</td>
<td>87.5-108MHz</td>
<td>DC-200kHz, 950-2400MHz</td>
</tr>
</tbody>
</table>

**TV/FM/DAB/SAT products for digital radio**

<table>
<thead>
<tr>
<th></th>
<th>TV</th>
<th>FM</th>
<th>SAT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Diplexer</strong></td>
<td>470-862MHz</td>
<td>87.5-230MHz</td>
<td>n/a</td>
</tr>
<tr>
<td><strong>Triplexer</strong></td>
<td>470-862MHz</td>
<td>87.5-230MHz</td>
<td>950-2400MHz</td>
</tr>
</tbody>
</table>

** Features**
- Non Isolated
- Fully screened
- Earth terminal provided on TV modules

**Cable management**
Digital TV outlets can be mounted in a variety of MK trunking systems.

**Description**
There are two ranges of diplexer and triplexer products, an established range suitable for VHF TV, and a range suitable for digital radio (DAB).

Diplexer modules are for connecting to a single co-axial aerial down lead carrying combined TV and FM signals. The filtering in the diplexer splits out the appropriate signal and feeds it to the relevant output connection. A DC control path is provided in the TV signal path through the diplexer.

Triplexer modules are for connecting to a single co-axial aerial down lead carrying combined TV, FM and SAT signals. The filtering in the triplexer splits out the appropriate signal and feeds it to the relevant output connection. A DC control path is provided in the SAT signal path through the triplexer.

The quad outlet contains a triplexer together with a separate satellite output, for use with Sky+, or more complex installations.

Telephone secondary outlets are provided on some products for connection of telephone or for interactive TV applications.

**Dimensions (mm)**

<table>
<thead>
<tr>
<th></th>
<th>Euro 1 module</th>
<th>Euro 2 module Triplexer</th>
<th>Euro 2 module Quadplexer</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TV</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diplexer</td>
<td>470-862MHz</td>
<td>470-862MHz</td>
<td>470-862MHz</td>
</tr>
<tr>
<td><strong>FM/DAB</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diplexer</td>
<td>87.5-230MHz</td>
<td>87.5-230MHz</td>
<td>87.5-230MHz</td>
</tr>
<tr>
<td><strong>SAT or SAT1</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diplexer</td>
<td>n/a</td>
<td>950-2400MHz</td>
<td>n/a</td>
</tr>
<tr>
<td><strong>SAT2</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diplexer</td>
<td>n/a</td>
<td>950-2400MHz</td>
<td>950-2400MHz</td>
</tr>
</tbody>
</table>

**Note:** Minimum box depth: 47mm

**Installation**
- When installing the TV Co-axial cable ensure that all cable bends are smooth so that the inner insulation is not crushed or squashed. Otherwise the TV signal quality may be affected.
- Not suitable for loop-in loop-out installations.
- Use CT100 cable (or equivalent.)
TV/FM and Satellite Socket Outlets

Installation (TV sockets)

Product performance, systems compatibility
Isolated Outlets are intended for use where safety isolation (rated at 2000V ac) is required to provide protection against faults occurring within any mains powered product used on different parts of the distribution system. They are not suitable for use in systems where DC signals are passed through the socket, (e.g. where masthead/headend equipment is controlled by receiver/decoder equipment).

Diplexer Outlets are used in distribution systems where both TV and FM band signals are combined on a single aerial downlead. The filtering in the diplexer separates the appropriate signals and feeds them through to the relevant output connection port.

Cable Routing and Use of Cable Clamp
Sharp bends in the cable must be avoided during installation. The single TV/FM socket is fitted with a cable clamp that can be fixed on either side of the termination position to facilitate this.

When tightening the screening braid clamps ensure that the cable is firmly gripped and that the inner insulation is not squashed flat beyond a slight oval shape.

Safety Information
TV outlets or modules must not be installed in the same enclosure as equipment rated in excess of 50V, (e.g. mains rated 13A sockets or switches).

Method of installation of TV and FM aerial connection by using MK co-axial socket outlet and only one downlead.

Conventional distribution system for TV and FM signals using a single aerial downlead.

1. The signals from the TV and FM aerials and the satellite dish are combined together using two products. The first combines the TV and FM signals and the second adds the Sky signal to the TV/FM signal and provides a DC control path to power the LNB unit on the satellite dish. (These products are not supplied by MK).

   The single aerial down lead feeds into the triplexer (black lines in wiring diagram).

2. The separated satellite signal is then fed to the decoder. The decoded satellite signal is then fed into the VCR along with the TV signal from the Triplexer. The output signal from the VCR then feeds into the TV and also back to the single outlet and onto the distribution amplifier (black lines in wiring diagram).

3. The single cable back-feed then feeds back to the input of a multi way distribution amplifier, (typically located in the loft or garage) (red lines in wiring diagram).

4. Each individual output from the distribution amplifier is then fed to the individual rooms in the house to a standard TV (single or diplexer) outlet to which the TV/VCR and/or Hi-Fi can be connected (blue lines in wiring diagram).