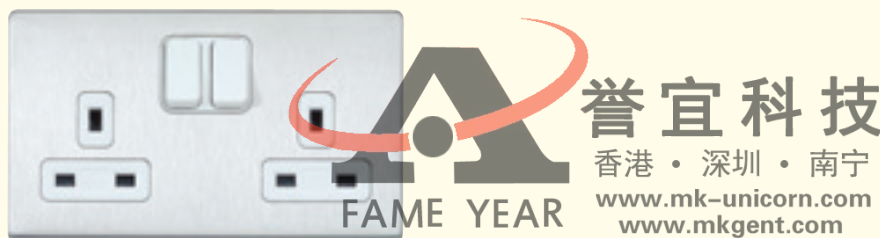


Socket Outlets

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.



1 gang switchsocket – view from rear

Top-facing, angled, backed-out terminals make wiring easier and quicker.

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

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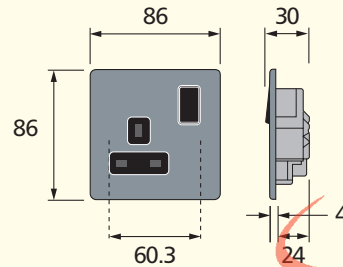
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13 Amp Socket Outlets

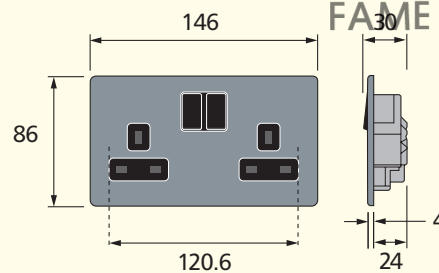
Aspect 13A socket outlets comply with BS1363 Part 2: 1995

Dimensions (mm)

1 gang



2 gang



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

Physical

Ambient operating temperature:
-5°C to +40°C
(not to exceed an average of more than 25°C in any 24 hour period)

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.

BOX TYPES

	Flush	Flush (for extra wiring space)
1 gang	866ZIC	877ZIC
2 gang	886ZIC	878ZIC

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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.

Frontplate Installation

Figure 1a

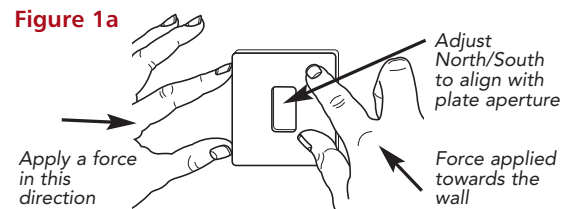
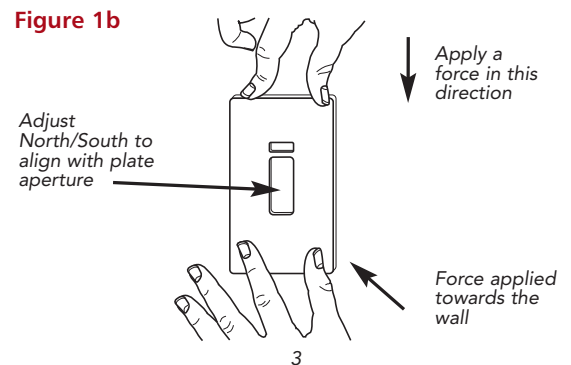


Figure 1b



Frontplate Removal

Figure 2

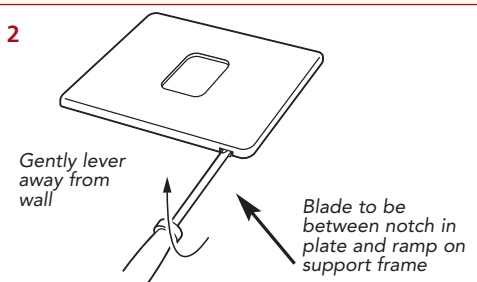


Figure 3

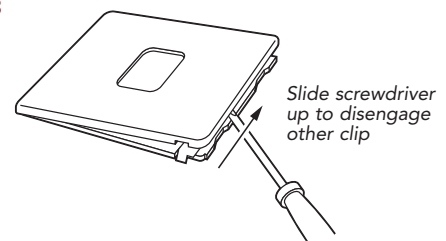


Figure 4

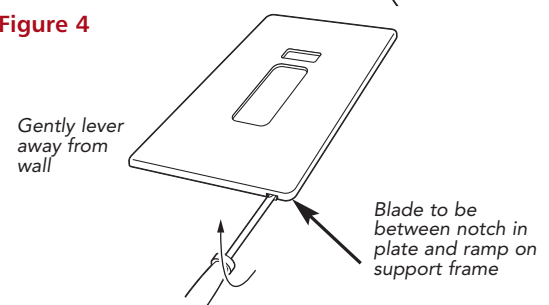
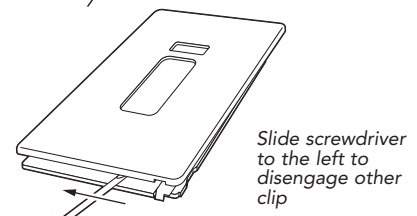


Figure 5



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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

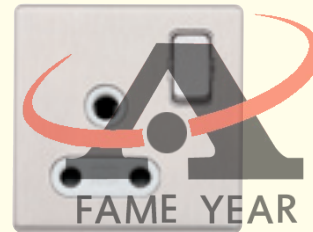
(not to exceed an average of more than 25°C in any 24 hour period)

IP rating:

IP2XD

Max. installation altitude:

2000 metres



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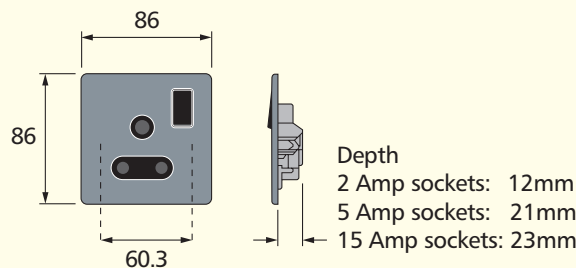
Description

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.

BOX TYPES

	Flush	Flush for extra wiring space	Surface Insulated	Surface Metal
5A and 15A	866ZIC	877ZIC	K2140WHI	K2211ALM K2213ALM
2A	3995ZIC	861ZIC 866ZIC	K2140WHI	K2211ALM K2213ALM

Shaver/Toothbrush Supply Unit

Standards and approvals

Shaver/Toothbrush 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.



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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

*The design of this unit means that on no load the transformer output is allowed to be as high as 275V. This means that rechargeable shavers and toothbrushes intended for use on the continent may be damaged by the inrush current created by this higher voltage. Rechargeable shavers and toothbrushes with a wide range of input voltage should be recharged at 115V. Shavers and toothbrushes manufactured for the UK are designed to be used with a transformer unit. Loads in excess of 20VA may cause the solid state overload to operate before shaving is completed. This is to protect the transformer.

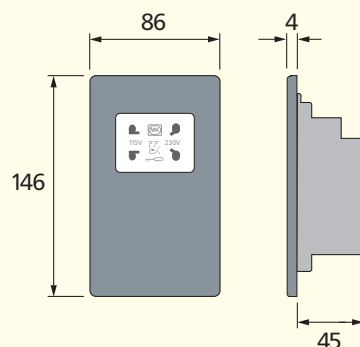
Description

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.

- Bottom access terminal screws make wiring quicker and easier
- 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
- Terminal screws supplied 'backed out' and held captive within the terminal moulding
- Printed terminal markings on grey rear mouldings for clearer identification
- Front plate fixing screws retained on rear case moulding
- Integral over current device to protect transformer
- Suitable for use with electric toothbrush chargers.

Dimensions (mm)



Installation

Shaver/Toothbrush supply unit should be wall mounted.

Wiring

An installation instruction leaflet is available. List no. 42753 PL.

BOX TYPES

Flush mounting only

Metal box 878ZIC (minimum metal mounting box depth is 47mm)

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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, worm-drive operated screwdriver 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
- Integrally 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

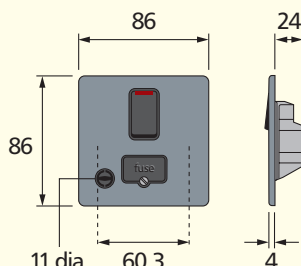
Physical

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 TYPES

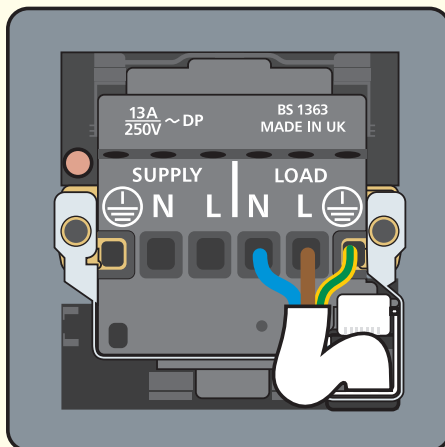
	Flush	
All units	866ZIC	35mm deep
For extra wiring space use box – 877ZIC (46mm deep)		

Installation

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

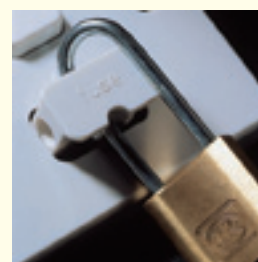
Wiring

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

Installation

Wiring

Products must be installed in accordance with current IEE Regulations.

Changing Fuses

1. Unscrew the fuse carrier screw to partially eject the carrier.
2. Carefully lever the carrier out further to remove the fuse. Note: The carrier does not come fully out.
3. Always replace with a BS 1362 type fuse (as used in 13A plugs) of the correct rating.
4. Consistent fuse blowing could mean a faulty appliance. If in doubt, consult a qualified electrician.
5. Push carrier back until engaging with jacking screw. Screw the carrier down until flush with surface of the plate. Do not over tighten the screw.

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Plateswitches

Standards and approvals

All Aspect plateswitches comply with
BS EN 60669-1: 1999.

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.

BOX TYPES

	Flush
All 1 and 2 gang switches	861ZIC (25mm deep)



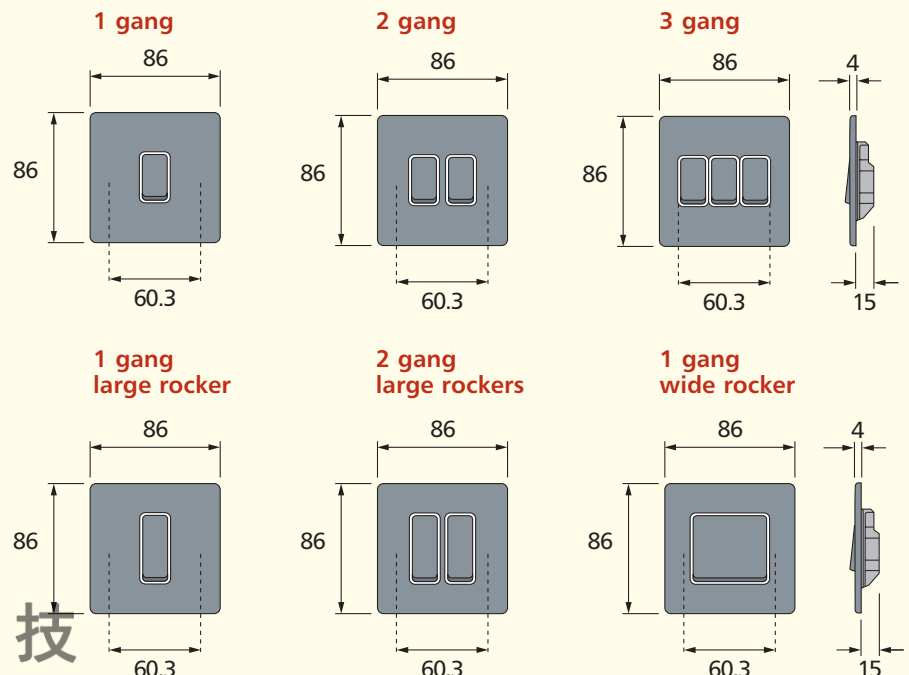
Description

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)



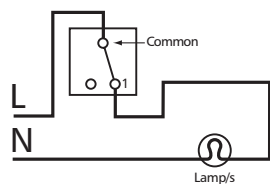
Sectional drawings show the furthest projections from the back of the frontplate (wall surface).

Fixing centres (60.3mm) are given for reference.

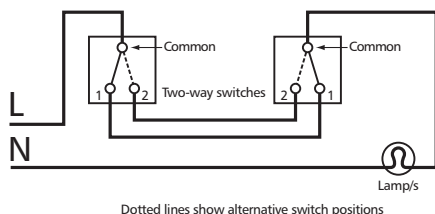
Plateswitches

Wiring Diagrams

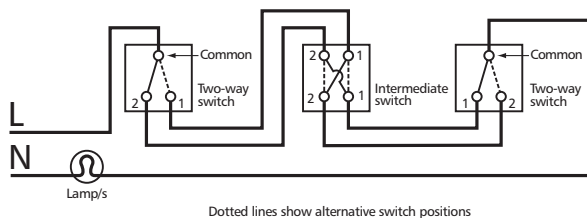
One-way switching



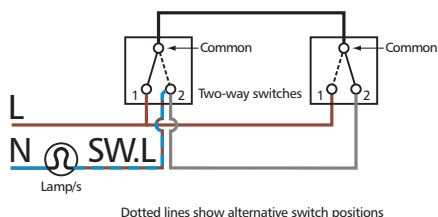
Two-way switching – 2 wire control



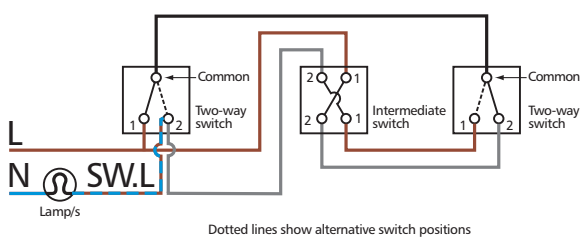
Two-way switching plus intermediate switching – 2 wire control



Two-way switching – 3 wire control



Two-way switching plus intermediate switching – 3 wire control



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

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High Current Switches

Standards and approvals

These switches comply with BS EN 60669-1: 1999

Technical specification

Electrical

Voltage rating:
250V a.c.

Current:
32A Switch
50A Switch

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



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

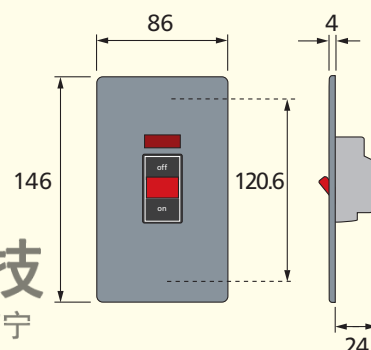
Switches	Max. Cable Size	Flush	Surface
32A	10mm ²	46mm	40mm
50A	10mm ²	47mm	40mm

BOX REFERENCES

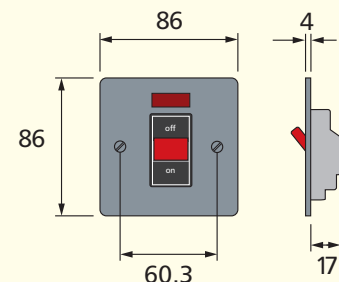
Flush	32A	45A
Box depth		
46mm	866ZIC	—
47mm	—	878ZIC

Dimensions (mm)

50A



32A



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

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:
4mm switch contact gap

Classifications

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

Ratings

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



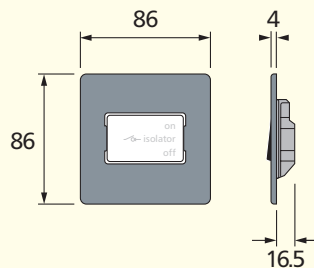
Description

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)



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.

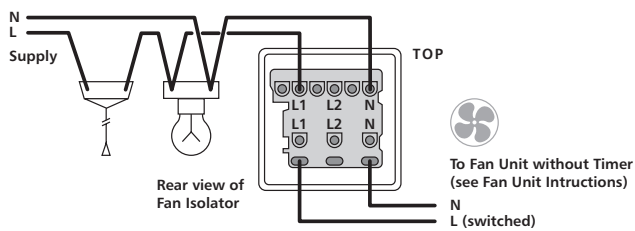
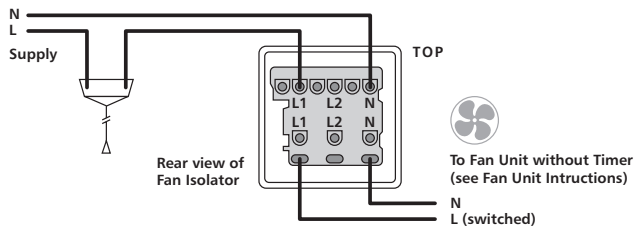
BOX TYPES

Flush	
Aspect	866ZIC

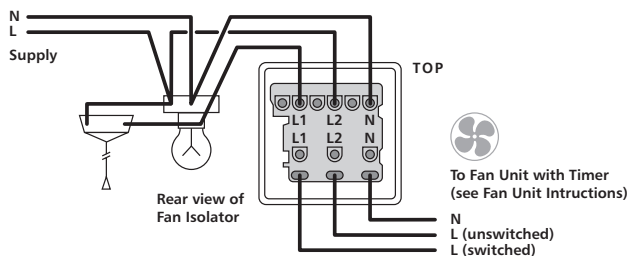
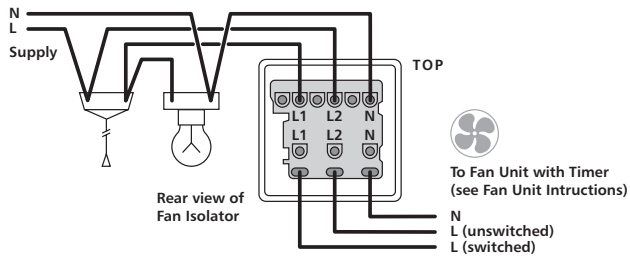
Three Pole Fan Isolators

Wiring Diagrams

Two pole switching for fan units without timers



Three pole switching for fan units incorporating timers



Modular Switching System

Standards and approvals

Switch modules

BS EN 60669-1: 1999

Indicator Units, Buzzer Units, Cord Unit

BS 5733: 2010

Dimmer switches

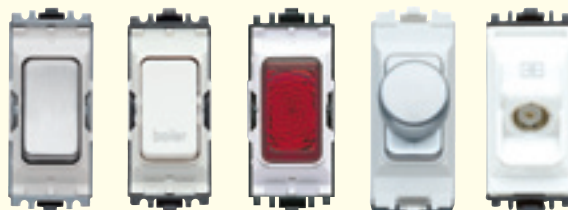
Dimmers comply with BS EN 60669-2-1, BS EN 50082-1

TV/FM Socket

Single non-isolated,
BS 3041 Part 2: 1977

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

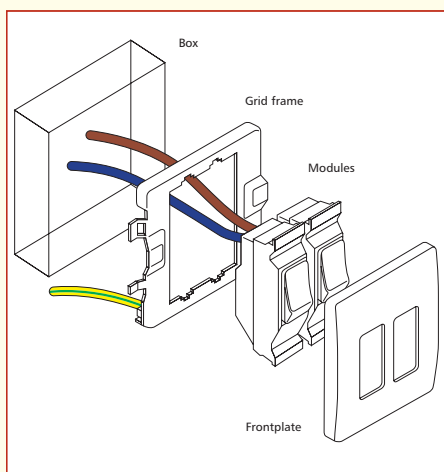


Description

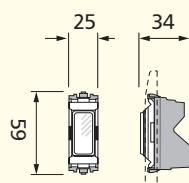
Grid Plus is a comprehensive modular switching and monitoring system ideal for a variety of applications within the commercial, public and domestic sectors.

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.

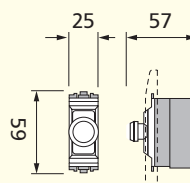
The system is extremely easy to assemble (see illustration) and modules can be individually changed without re-wiring of complete assembly by removal of frontplate and simply clipping in or out as required. For further installation details see 'Installation' overleaf.



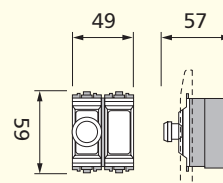
Module Dimensions (mm)



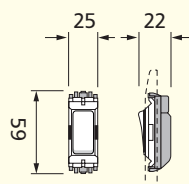
24/240V buzzer units



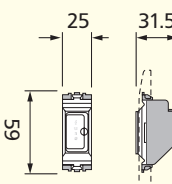
Single dimmer module



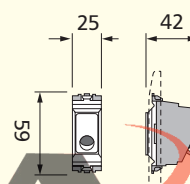
Double dimmer module



All switch and indicator modules



Fuse unit



Cord unit

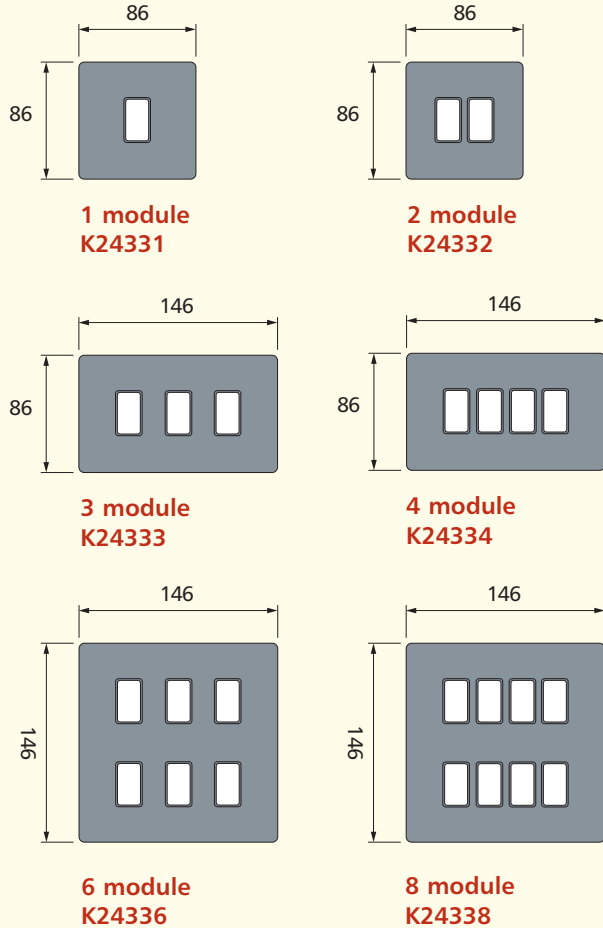
Multiple dimmer installation load ratings When installing more than one dimmer in multi gang plates the power rating must be reduced to allow for heat generation.

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Modular Switching System

Frontplate Dimensions (mm)



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

Current rating:
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 1.5mm² 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

Modular Switching System

Technical specification

Physical (all products)

Operating temperature:
-5°C to +40°C

IP rating:
IP4X

Max. installation altitude:
2000 metres

Installation

General

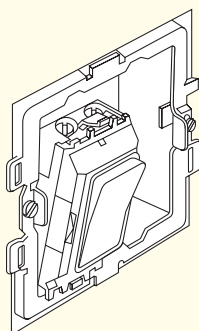
Cut cables to length and make earth connections to grid. Earth bond Grid Frame to metal mounting box. Grid frames are screwed to back box, modules wired as appropriate and simply clipped into grid frame by hand. No tools are necessary. The front plate is screw fixed to the grid frame to finish the assembly.

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

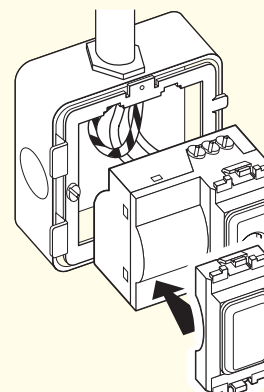
Grid mounting

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.



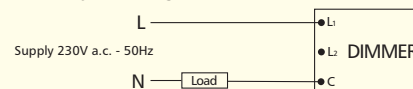
- 1 Locate bottom tab of module in base of grid.
- 2 Module pushes into place at top with a 'click'.
- 3 To remove module, press tab at top and lever forward.



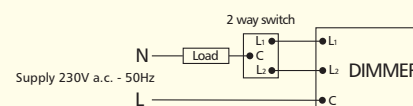
Typical mounting arrangement (two module single dimmer)

Dimmer wiring diagram

One-way switching



Two-way switching (only one dimmer can be used)



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.

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.

Rocker window labels

The following labels are available for insertion into window rockers.

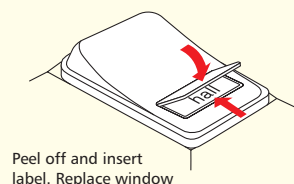
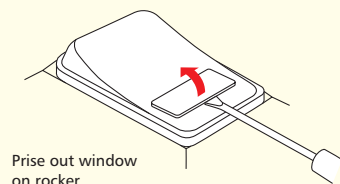
air conditioner	water heater	dish washer	store
bedroom	dining area	kitchen	lounge
pool	lights	bar	conference room
office	reception	bell	push
front	middle	bottom	rear
back	top	landing	hall
porch	toilets	ladies	gents
exterior			

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Modular Switching System

The simple installation process is shown below.



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 1 – LOAD ADJUSTMENT FOR GRID PLUS DIMMERS

Frontplate Size, Number of Gangs	2	3	4	6	8	9	12	18	24
Max Power/Load per Row – Tungsten GLS Lamps – W	400	480	480	480	480	480	480	720	720
Max Power/Load per Row – Mains Tungsten Halogen Lamps or Low Voltage Transformers – W or VA	320	380	380	380	380	380	380	580	580
Max Power/Load for Total Plate – Tungsten GLS Lamps – W	400	480	480	740	740	940	940	1440	1440
Max Power/Load for Total Plate – Mains Tungsten Halogen Lamps or Low Voltage Transformers – W or VA	320	380	380	600	600	750	750	1155	1155

Dimmer Switch Modules

Standards and approvals

All Grid Plus 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



Technical specification

Electrical

Mains Supply Voltage:
230V a.c. (Nominal)

Mains Supply Voltage Range:
216V a.c. to 253V a.c.

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 circuitry 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

60-400W CIRCUIT	40-220W CIRCUIT	COMMENTS
Overload management: 60-400W nominal 40-500W function without dimming > 500-700W dim to $68V \pm 8V$ r.m.s. > 700W switch off	Overload management: 40-220W nominal 40-275W function without dimming > 275-375W dim to $68V \pm 8V$ r.m.s. > 375W switch off	This is the minimum controlled voltage

Dimensions

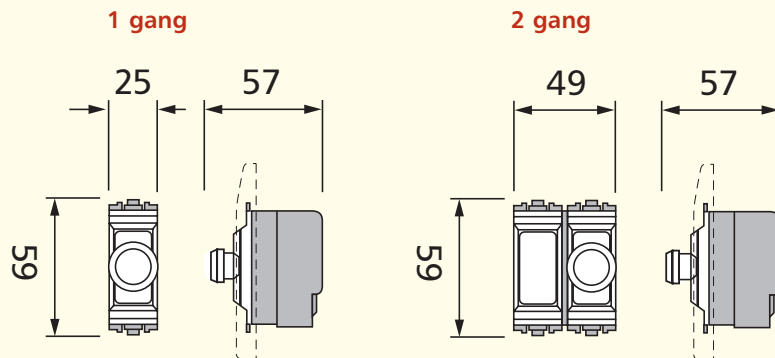
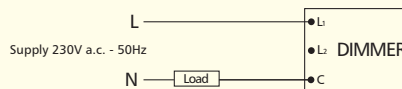


TABLE 2 – GRID PLUS INTELLIGENT DIMMER SWITCHES

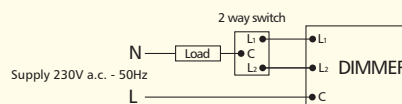
Rating	Max No. of Transformers	
1 module dimmer switch	40-220W (LV rating 40-180VA)	3
2 module dimmer switch	60-400W (LV rating 40-320VA)	5

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



Two-way switching (only one dimmer can be used)



Wires must be connected to the correct dimmer terminals.
DO NOT connect earth to dimmer.

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 ± 3 Hz
60Hz ± 3 Hz (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		
40-400W CIRCUIT	40-300W CIRCUIT	COMMENTS
Overload management: 40-400W nominal 40-500W function without dimming > 500-700W dim to 68V \pm 8V r.m.s. > 700W switch off	Overload management: 40-220W nominal 40-275W function without dimming > 275-375W dim to 68V \pm 8V r.m.s. > 375W switch off	This is the minimum controlled voltage

*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.

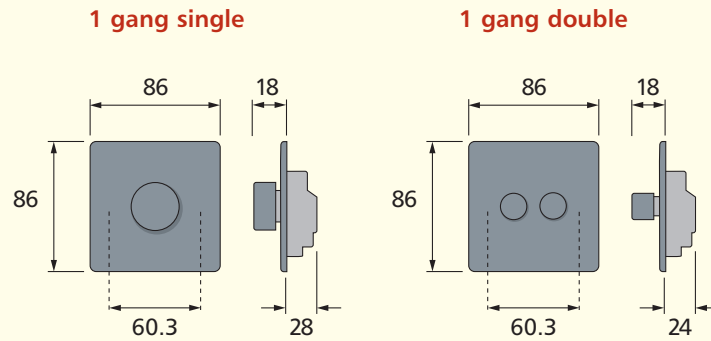
Dimmer Switches

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)



BOX TYPES

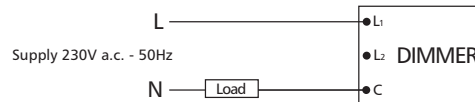
Flush

1 gang (excluding double dimmers)	866ZIC (35mm)
1 gang (for double dimmers)	866ZIC (35mm)

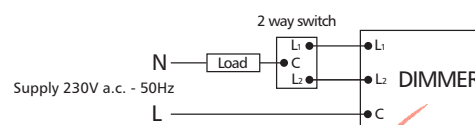
INTELLIGENT DIMMER SWITCHES

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

One-way switching



Two-way switching (only one dimmer can be used)



Wires must be connected to the correct dimmer terminals.
DO NOT connect earth to dimmer.

Please note the dimmer may be substituted for any of the Two-Way switches

Euro and LJU6C Data Frontplates

Standards and approvals

BS 5733: 2010

Technical specification

Dimensions

Height:	86mm
Width:	86mm (1G)
	146mm (2G)
Depth:	4mm

Aperture Dimensions

Height:	50mm
Width:	50mm (1G)
	100mm (2G)

Features

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



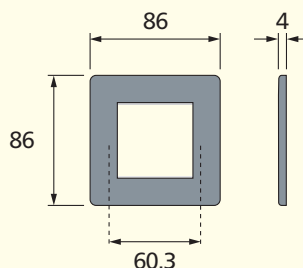
Description

Frontplates used for mounting snapfit data modules.

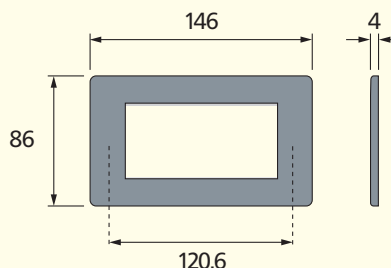
Dimensions (mm)

Euro Frontplates

1 gang
1 module: K24181
2 module: K24182

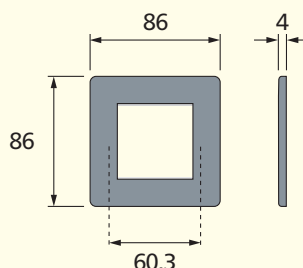


2 gang
4 module: K24184

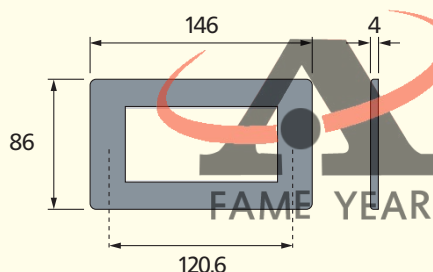


LJU6C Frontplates

1 gang
1 module: K24171
2 module: K24172



2 gang
4 module: K24173



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Power Modules

Standards and approvals

K5830: BS 1363 Part 2: 1995

K5833: BS 546: 1950

K5831: IEC 60884-1: 2006

K5834: French National Standard NF

C 61-314

K5832: SASO 2203: 2003

Description

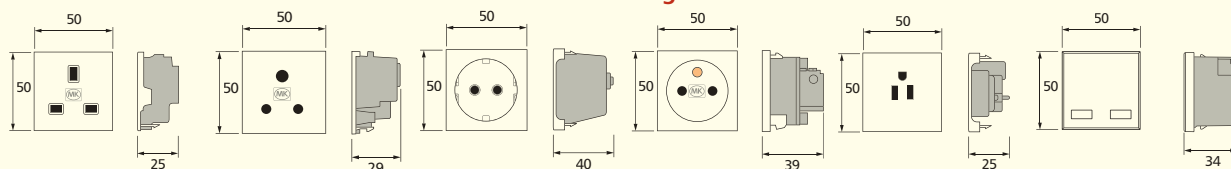
A range of euro modules designed to provide a variety of power options.

Technical specification

13A UK	5A UK	16A German	16A French/Belgian	15A American	1A USB Charging Module	
Electrical	Electrical	Electrical	Electrical	Electrical	Electrical	
Voltage rating: 250V a.c.	Voltage rating: 250V a.c.	Voltage rating: 250V a.c.	Voltage rating: 250V a.c.	Voltage rating: 127V a.c.	Input Voltage rating: 220-240V a.c. Frequency : 50Hz Rated Current: 0.6A Terminal Capacity: Live & neutral 1 x 2.5mm ²	Output Voltage rating: 2 x 5V d.c. Max current: 1A per socket Charging sockets: USB 2.0 type A
Current rating: 13A	Current rating: 5A	Current rating: 16A	Current rating: 16A	Current rating: 15A		
Terminal capacity: Live, neutral & earth 3 x 2.5mm ² 3 x 4mm ² 2 x 6mm ² (stranded)	Terminal capacity: Live, neutral & earth 3 x 2.5mm ² 2 x 4mm ² 2 x 6mm ² (stranded)	Terminal capacity: Live, neutral & earth 4 x 1.5mm ² 2 x 2.5mm ² 1 x 4mm ²	Terminal capacity: Live, neutral & earth 3 x 2.5mm ² 2 x 4mm ² 1 x 6mm ²	Terminal capacity: Live, neutral & earth 3 x 2.5mm ² 2 x 4mm ² 1 x 6mm ² (stranded)		
Physical	Physical	Physical	Physical	Physical	Physical	
Ambient operating temperature: -5°C to +40°C (not to exceed an average of more than 25°C in any 24 hour period)	Ambient operating temperature: -5°C to +40°C (not to exceed an average of more than 25°C in any 24 hour period)	Ambient operating temperature: -5°C to +40°C (not to exceed an average of more than 25°C in any 24 hour period)	Ambient operating temperature: -5°C to +40°C (not to exceed an average of more than 25°C in any 24 hour period)	Ambient operating temperature: -5°C to +40°C (not to exceed an average of more than 25°C in any 24 hour period)	Ambient operating temperature: 0°C to +40°C	
IP rating: IP2XD	IP rating: IP2XD	IP rating: IP2XD	IP rating: IP2XD	IP rating: IP2XD	IP rating: IP2XD	
Max. installation altitude: 2000 metres	Max. installation altitude: 2000 metres	Max. installation altitude: 2000 metres	Max. installation altitude: 2000 metres	Max. installation altitude: 2000 metres	Max. installation altitude: 2000 metres	

Dimensions (mm)

13A UK 5A UK 16A German 16A French/Belgian 15A American 1A USB Charging Module



K5830

BOX TYPES
Minimum
35mm
Extra wiring space
46mm

K5833

BOX TYPES
Minimum
35mm
Extra wiring space
46mm

K5831

BOX TYPES
Minimum
46mm

K5834

BOX TYPES
Minimum
46mm

K5832

BOX TYPES
Minimum
35mm
Extra wiring space
46mm

K5837

MK EURO FRONT PLATE THICKNESS	BOX TYPES
> 7mm	Min 35mm
< 7mm	Min 46mm

FAME YEAR

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RJ45 Data Outlets

Standards and approvals

ISO/IEC 11801
EN 50173
TIA 568
EN 41003



Description

Suitable for use in all LUJ6C, Euro and MK Modular frontplates, available in the Logic Plus range, Cat 5e and Cat 6 modules suitable for use in structured cabling distribution systems.

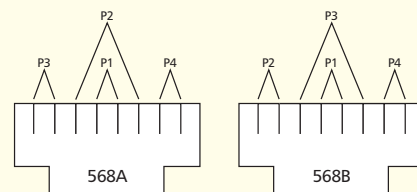
Installation

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

Installation details and wiring diagram illustrations

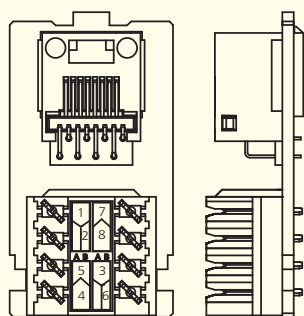
TIA WIRING SCHEME COLOUR CODES:

Pin No.	568A	568B
1	WHITE / green	WHITE / orange
2	GREEN / white	ORANGE / white
3	WHITE / orange	WHITE / green
4	BLUE / white	BLUE / white
5	WHITE / blue	WHITE / blue
6	ORANGE / white	GREEN / white
7	WHITE / brown	WHITE / brown
8	BROWN / white	BROWN / white

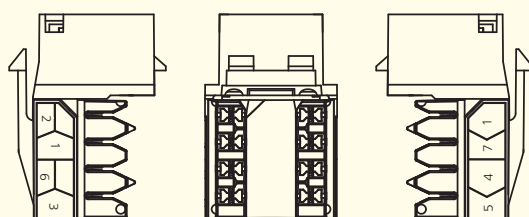


Pair 1 – BLUE/white & WHITE/blue
Pair 2 – ORANGE/white & WHITE/orange
Pair 3 – GREEN/white & WHITE/green
Pair 4 – BROWN/white & WHITE/brown

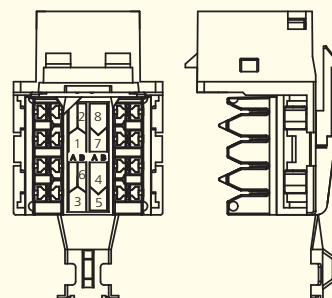
Euro and LUJ6C modules are to be wired as follows



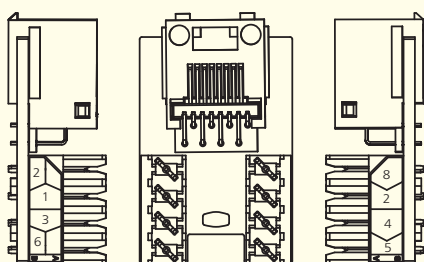
RJ45 Cat.5e Euro K5845



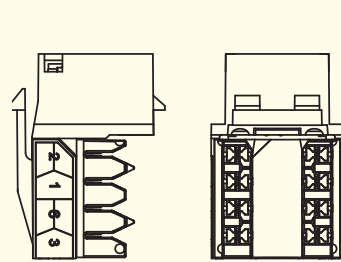
RJ45 Cat.5e Euro - Angled K5844



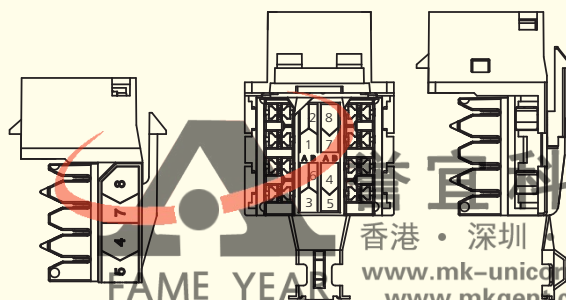
RJ45 Cat.6 Screened
K5746S - LUJ6C, K5846S - Euro



RJ45 Cat.5e LUJ6C K5745



RJ45 Cat.6 Euro - Angled K5746 - LUJ6C
K5846 - Euro, K5864 - Euro Angled



RJ45 Cat.5e Screened
K5845S - Euro

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decorative | wiring devices

Telephone, RJ11/12, BNC Data and Blank Modules

Standards and approvals

Telephone sockets K5820 and K5821 comply with the following:

BS 6312: 2.2

Data sockets K5801, BS 5733: 2010 (where applicable).

K5887 complies with FCC68 and EN 41003.



Technical specification

Electrical

Cable types:

Telephone: CW1311, CW1293, CW1308, CW1316

No. of cables per termination:

Telephone: 2

RJ11/12: 1

BNC

50 Ohms impedance cable – RG58, RG141, URM43 Belden 9907

Frequency range:

BNC connector: 0 to 4GHz

Impedance:

BNC Connector: 50. nominal

Termination type:

Telephone module – IDC

BNC module – Crimped connection

Physical

Temperature range:

Ambient air –20°C to +60°C

IP rating:

IP2XD – K5820, K5821, K5801 and K5787.

IP4X – K180, K188, K186 and K170

Max. installation altitude:

2000 metres

Description

A range of telephone, data and blank modules to fit Euro and U6UC front plates. BNC Euro modules with a 50Ohm crimp connector suitable for use with RG58, URM43, URM76 and Belden 9907 type co-axial 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. 400NAT.

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.

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

Data sockets

- Latest specification for high performance systems
- Made to stringent quality assurance procedures
- Wide range of data connectors available

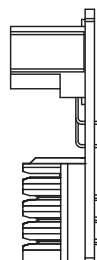
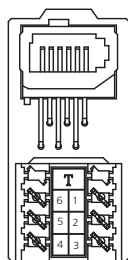
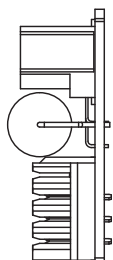
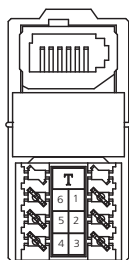
For information on TV Satellite and FM Modules see pages 451-453

Telephone, RJ11/12, BNC Data and Blank Modules

Telephone Wiring Scheme

- 1 GREEN / white
- 2 BLUE / white
- 3 ORANGE / white
- 4 WHITE / orange
- 5 WHITE / blue
- 6 WHITE / green

Note: Main wire colour is shown in capitals

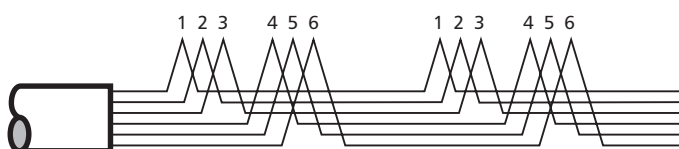


K5820

K5821

First Socket Outlet
Master

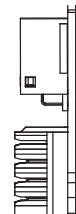
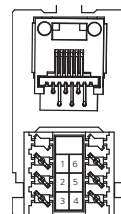
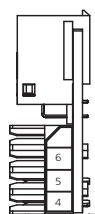
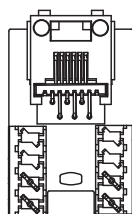
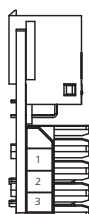
Extension Outlet
Secondary



RJ11/12 Wiring Scheme

PIN NO.	STRIPPED COLOUR WIRE	SOLID COLOUR WIRE
1	WHITE / green	WHITE
2	WHITE / orange	BLACK
3	BLUE / white	RED
4	WHITE / blue	GREEN
5	ORANGE / white	YELLOW
6	GREEN / white	BLUE

Note: Main wire colour is shown in capitals



K5787

K5887

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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

Single Outlets

TV/FM IEC Male or Female DC-950MHz
SATF-Type DC-1.75GHz

Diplexer and Triplexer products

TV

Diplexer: 5-65MHz
470-862MHz
Triplexer: 5-65MHz
470-862MHz

FM

Diplexer: 87.5-108MHz
Triplexer: 87.5-108MHz

SAT

Diplexer: n/a
Triplexer: 950-2300MHz

TV/FM/DAB/SAT products for digital radio

TV

Diplexer: 5-65MHz
470-862MHz
Triplexer: 5-65MHz
470-862MHz

FM/DAB

Diplexer: 87.5-230MHz
Triplexer: 87.5-230MHz

SAT or SAT1

Diplexer: n/a
Triplexer: 950-2300MHz

SAT2

Diplexer: n/a
Triplexer: 5-2300MHz

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.

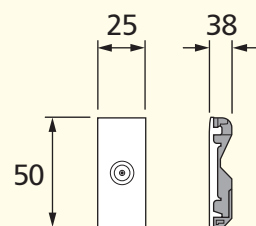
Triplexer modules are for connecting to a single co-axial aerial down lead carrying combined TV, FM and SAT signals. The filtering in the triplexer splits out the appropriate signal and feeds it to the relevant output connection. A DC control path is provided in the SAT signal path through the triplexer.

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

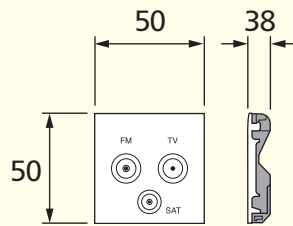
Telephone secondary outlets are provided on some products for connection of telephone or for interactive TV applications.

Dimensions (mm)

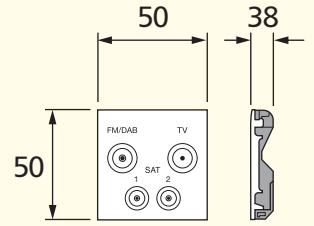
Euro 1 module



Euro 2 module Triplexer



Euro 2 module Quadplexer



Note: Minimum box depth: 47mm

Features

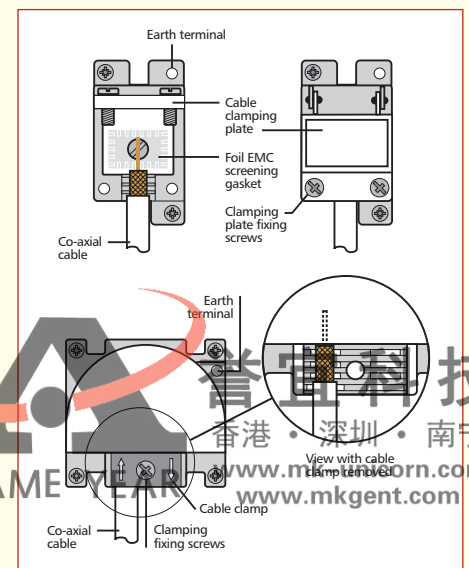
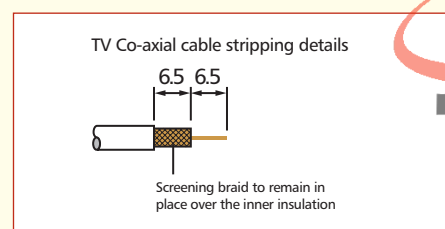
- Non Isolated
- Fully screened
- Earth terminal provided on TV modules

Cable management

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

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 download. The filtering in the diplexer separates the appropriate signals and feeds them through to the relevant output connection port.

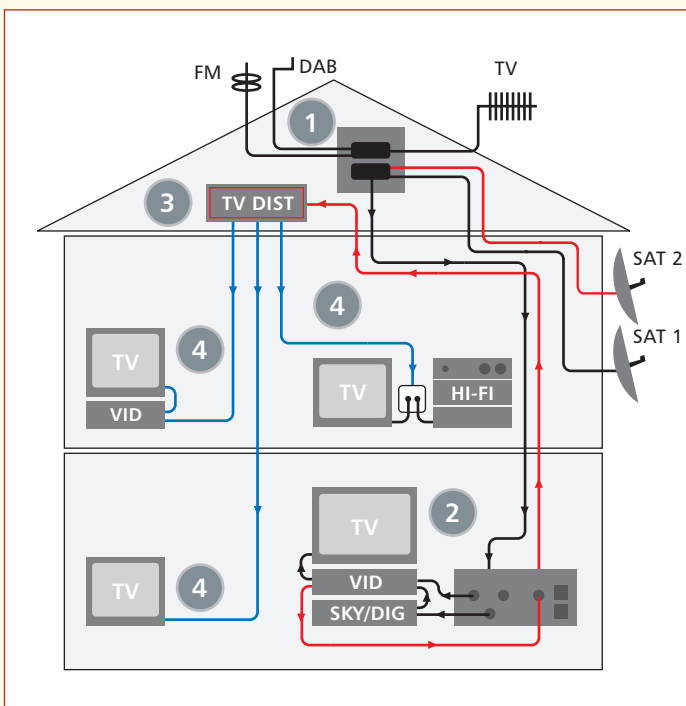
Cable Routing and Use of Cable Clamp

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 download.

- 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).

- 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).
- 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).
- 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).

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Albany Plus switched socket outlet, unswitched fuse and DP switch in polished chrome

Available on a worldwide basis, the MK Design Service is supported by a dedicated team to ensure the seamless delivery of your chosen products.

To find out more visit www.mkelectric.co.uk