

Socket Outlets

Standards and approvals

All Aspect 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 are to comply with Section 607 of BS 7671, IEE Wiring Regulations.

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.



2 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
- Unique 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 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

Socket Outlets

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

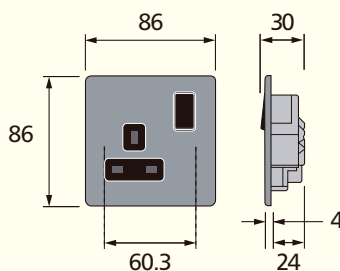
Ambient operating temperature:
-5°C to +40°C
(not to exceed an average of more than 25°C in any 24
hour period)

IP rating:
IP2XD

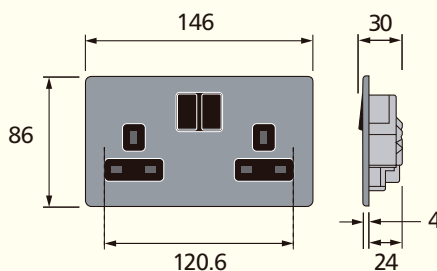
Max. installation altitude:
2000 metres

Dimensions (mm)

1 gang



2 gang



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.

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):
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



Description

A range of 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 switch contact gap
- Double pole switching
- Terminal screws backed out
- 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 unique 3 pin operated safety shutter
- Printed terminal markings on grey rear mouldings for clearer identification
- 2A socket shuttered

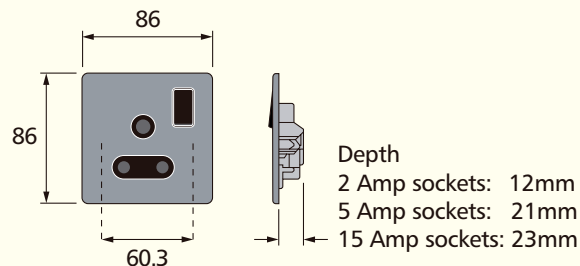
Installation

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.

Dimensions (mm)



BOX TYPES

	Flush	Flush for extra wiring space	Surface Insulated	Surface Metal
5A and 15A	866 ZIC	877 ZIC	K2140 WHI	K2211 ALM K2213 ALM
2A	3995 ZIC	866 ZIC 861 ZIC	K2140 WHI	K2211 ALM K2213 ALM

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.



Technical specification

Electrical

Voltage rating:

K14709: 230V a.c. Input (will operate at 220-250V a.c.)

K14710: 127V a.c. Input (will operate at 110-130V a.c.)

230V or 115V nominal outputs

Current rating:

K14709: 200mA max. (internal thermister trip current)

K14710: 400mA 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 intended for use on the continent may be damaged by the inrush current created by this higher voltage. Rechargeable shavers with a wide range of input voltage should be recharged at 115V. Shavers 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

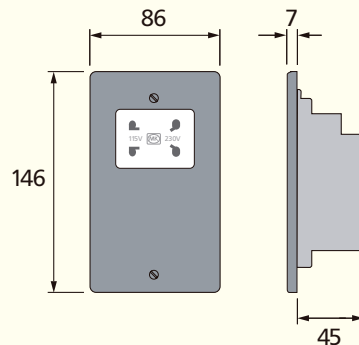
Designed for ease of installation and having many of the advantageous design features of the Aspect range.

May be used in bathrooms and washrooms but must only be installed in accordance with IEE Wiring Regulations BS 7671: 1992: Amendment 3.

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

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
- 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)

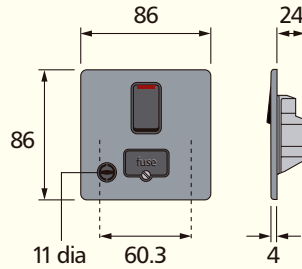
IP rating:

With flex outlet: IP2XD

Without flex outlet: IP4X

Max. installation altitude:
2000 metres

Dimensions (mm)



BOX TYPES

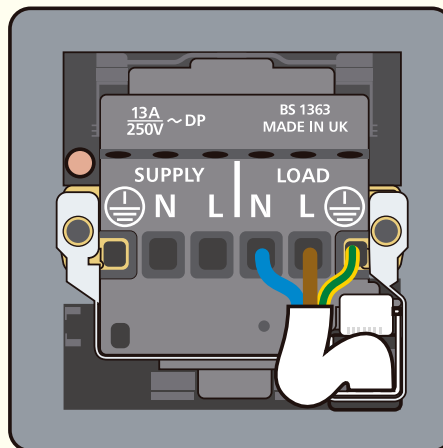
	Flush	
All units	866 ZIC	35mm deep
For greater wiring space use box – 877 ZIC (46mm deep)		

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 GridPlus 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.



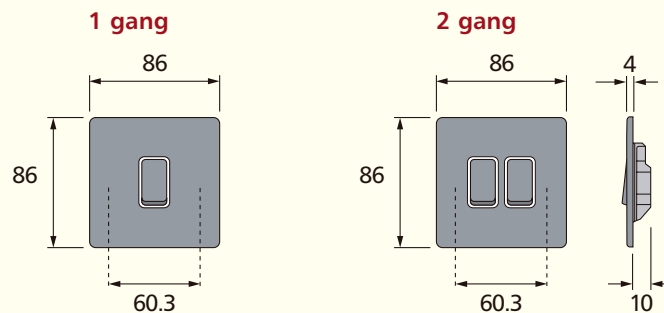
Description

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
- 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.

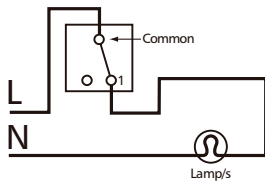
BOX TYPES

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

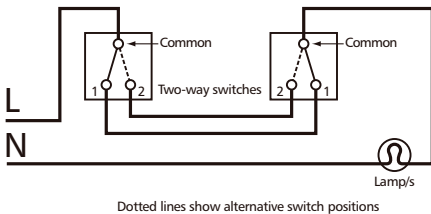
Plateswitches

Wiring Diagrams

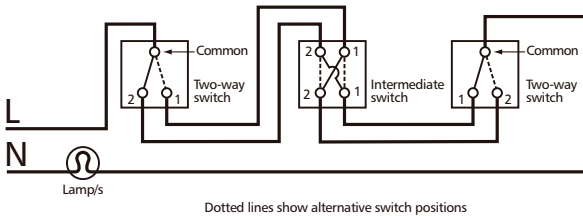
One-way switching



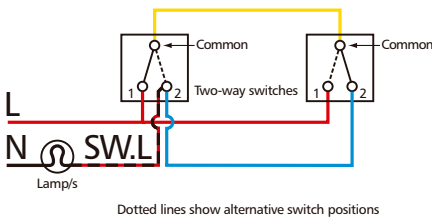
Two-way switching – 2 wire control



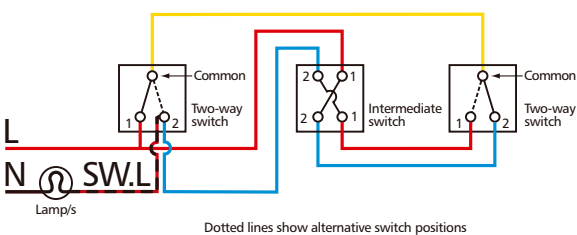
Two-way switching plus intermediate switching – 2 wire control



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.

High Current Switches

Technical specification

Electrical

Voltage rating:
250V a.c.

Current:
45A resistive

Switch:
3mm contact gap
Double pole operation

Terminal capacity, 45A Switches:
4 x 4mm²
3 x 6mm²
1 x 16mm²

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



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.

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

BOX TYPES

Switches	Max. Cable Size	Flush	Surface
32A	10mm ²	46mm	40mm
45A	10mm ²	47mm	40mm

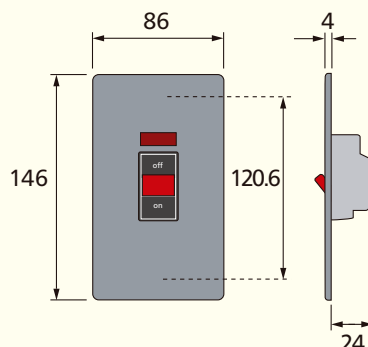
Features

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

BOX REFERENCES

Flush	32A	45A
Box depth		
46mm	877 ZIC	-
47mm	-	878 ZIC

Dimensions (mm)



Modular Switching System

Standards and approvals

Switch modules

BS EN 60669-1: 2000 or BS 3676: Part 1: 1989

Indicator units

BS 5733: 1995

Dimmer switches

Dimmers comply with IEC 669-2-1, BSEN 50082-1

Accessory modules

Single non-isolated, TV/FM socket outlet,
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.

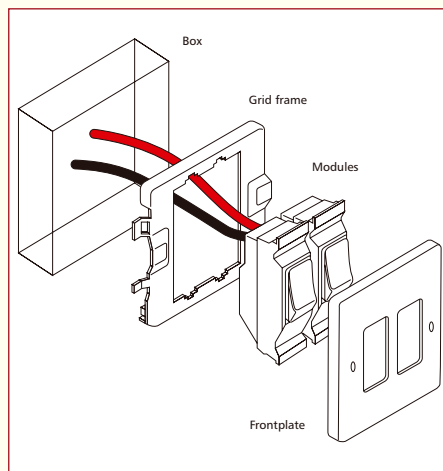
Grid Plus cover plates have the advantageous design features of the Aspect range and the interchangeable modules also feature many of the wiring and installation benefits common to the Aspect range.

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.

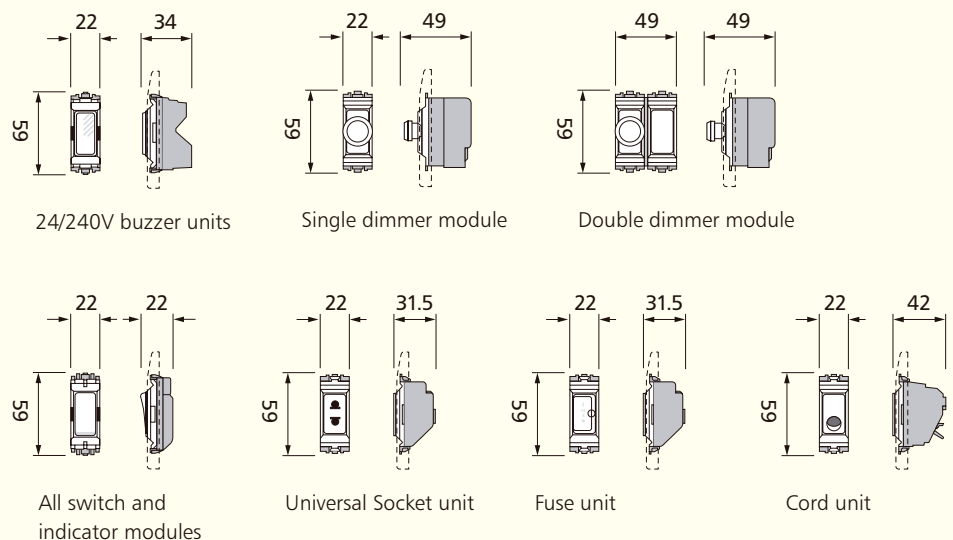
The socket is intended for use with BS, USA & CEE standard plugs.



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

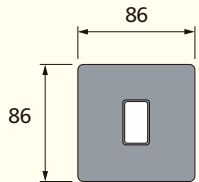
Module Dimensions (mm)



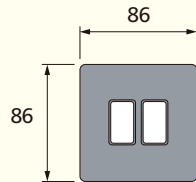
Multiple dimmer installation load ratings When installing more than one dimmer in multi-gang plates, the power rating must be reduced to allow for heat generation.

Modular Switching System

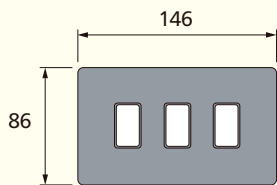
Frontplate Dimensions (mm)



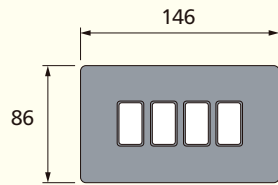
1 module
K24331



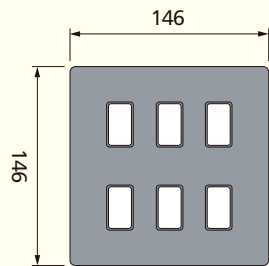
2 module
K24332



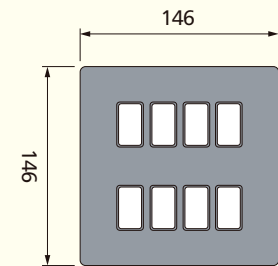
3 module
K24333



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

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
K4510 min. 40VA, max. 400W
K4511 min. 40VA, max. 220W

For multiple dimmer installation see Load
Adjustment table, page TD57

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
125/250V

Current rating:
16 amps

Terminal capacity
2 x 6mm² (stranded)
3 x 4mm² 3 x 2.5mm²

Modular Switching System

Standards and approvals

Switch modules

BS EN 60669-1: 2000 or BS 3676: Part 1: 1989

Indicator units

BS 5733: 1995

Dimmer switches

Dimmers comply with BS EN 60669-2-1,
BS EN 55015

Accessory modules

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

Technical specification

Physical (all products)

Operating temperature:
-5°C to +40°C

IP rating:
IP4X

Max. installation altitude:
2000 metres

Installation

General

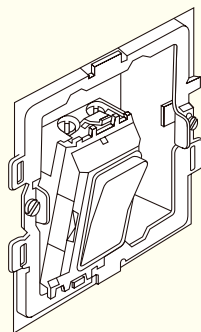
Cut cables to length and make earth connections to grid. Earth: bond Grid Frame to metal mounting box. Grid frames are screwed to back box, modules wired as appropriate and simply clipped into grid frame by hand. No tools are necessary. The front plate is screw fixed to the grid frame to finish the assembly.

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.

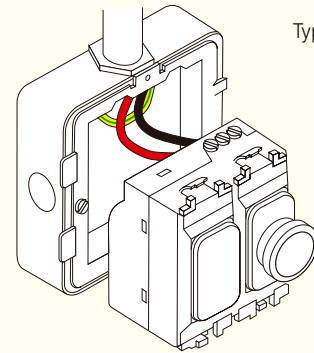


- 1 Locate bottom tab of module in base of grid.
- 2 Module pushes into place at top with a 'click'.
- 3 To remove module, press tab at top and lever forward.

Dimmers

The two module dimmers can only be fitted into two, or four module wide Grid Mounting Frames, and therefore can only be used with 2, 4, 8, 12, 18 and 24 Gang Frontplates.

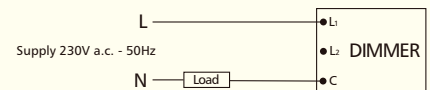
To avoid overheating when using more than one dimmer in the same Grid Plus Enclosure it is recommended that the dimmers are preferentially mounted on the bottom row on 6, 8, 9, 12, 18 and 24 Gang Enclosures, before mounting on any other rows and its load adjusted in accordance with the information provided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



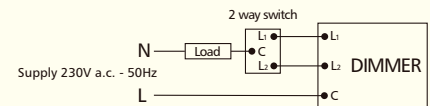
Typical mounting arrangement

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.

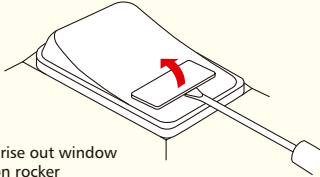
Rocker window labels

The following labels are available for insertion into window rockers.

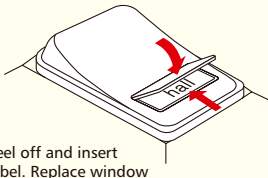
air conditioner	water heater	dish washer	store
bedroom	dining area	kitchen	lounge
pool	lights	bar	conference room
office	reception	bell	push
front	middle	bottom	rear
back	top	landing	hall
porch	toilets	ladies	gents
exterior			

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 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
- 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

Cable Management

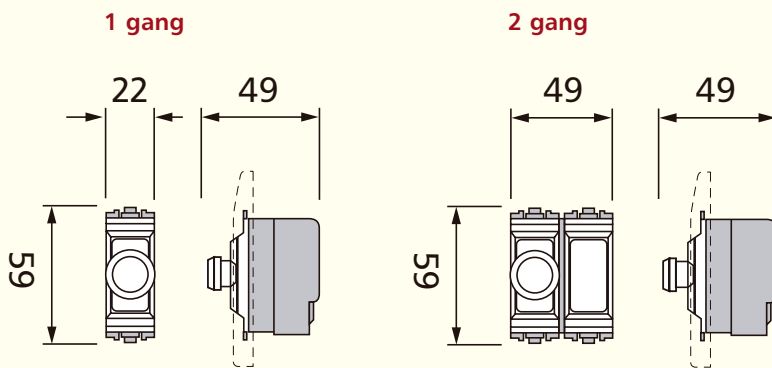
Grid Plus dimmer switches can be mounted in a variety of MK trunking systems.

Dimmer Switch Modules

TABLE 1 – OVERLOAD REACTION

Case	Approximate load on the dimmer as a percentage of its maximum load	Power output to load when dimmer control is set to maximum
1	Up to 125	Load will receive maximum power continuously.
2	>125 to 150	Output to load will be reduced to 50% of the maximum after a delay of approximately 20 seconds after switch on.
3	>150 to 200	Output to load will be reduced to the minimum setting of the dimmer after a delay of approximately 20 seconds after switch on.
4	>200	Output will be disabled (load will be switched off) almost instantaneously after switch on.

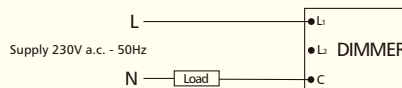
Dimensions


TABLE 2 – GRID PLUS INTELLIGENT DIMMER SWITCHES

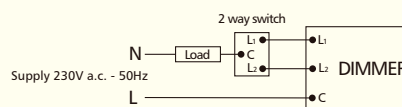
	Rating	Max No. of Transformers
1 module dimmer switch	40-220W (LV rating 40-180VA)	3
2 module dimmer switch	40-400W (LV rating 40-320VA)	5

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 conform to the relevant parts of BS 5518.



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 \pm 3Hz
60Hz \pm 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		
Case	Approximate load on the dimmer as a percentage of its maximum load	Power output to load when dimmer control is set to maximum
1	Up to 125%	Load will receive maximum power continuously.
2	>125% to 150%	Output to load will be reduced to 50% of the maximum after a delay of approximately 20 seconds after switch on.
3	>150% to 200%	Output to load will be reduced to the minimum setting of the dimmer after a delay of approximately 20 seconds after switch on.
4	>200%	Output will be disabled (load will be switched off) almost instantaneously after switch on.

Non-UK Dimmer Switches

Dimmer switches belonging to this category only conform to the relevant parts of BS 5518, without conforming to BS 800. Loads suitable for use with standard dimmer switches above are also suitable for use with this category of dimmer switch.

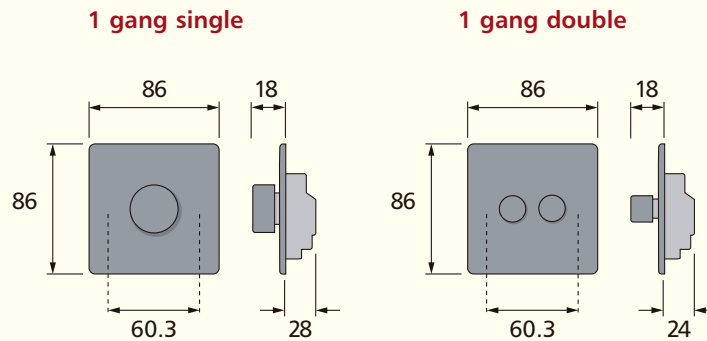
Dimmer Switches

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)



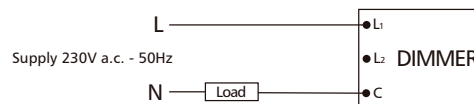
BOX TYPES

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

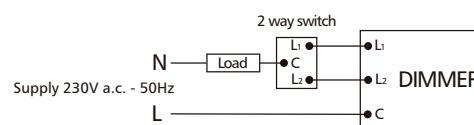
INTELLIGENT DIMMER SWITCHES

	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 shown on page 65.

Euro Data Frontplates

Standards and approvals

BS 5733

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) 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



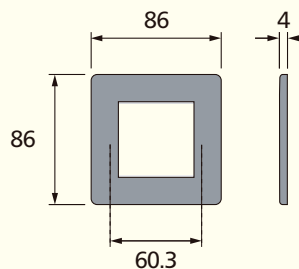
Description

Frontplates used for mounting snapfit data modules.

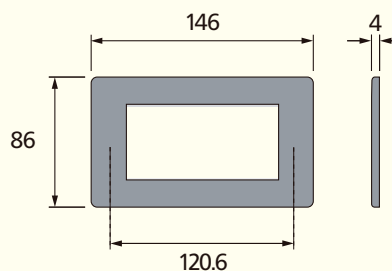
Dimensions (mm)

Euro Frontplates

1 gang
1 module: K24181
2 module: K24182



2 gang
4 module: K24184



Power Modules

Standards and approvals

K5830: BS 1363: Part 2: 1995

K5831: IEC 60884-1: 2002

K5832: SSA.444: 1985

Description

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

Technical specification

13A UK

Electrical

Voltage rating:
250V a.c.

Current rating:
13A

Terminal capacity:
Live, neutral & earth
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

16A German

Electrical

Voltage rating:
250V a.c.

Current rating:
16A

Terminal capacity:
Live, neutral & earth
4 x 1.5mm²
2 x 2.5mm²
1 x 4mm²

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

15A American

Electrical

Voltage rating:
127V a.c.

Current rating:
15A

Terminal capacity:
Live, neutral & earth
3 x 2.5mm²
2 x 4mm²
1 x 6mm² (stranded)

Physical

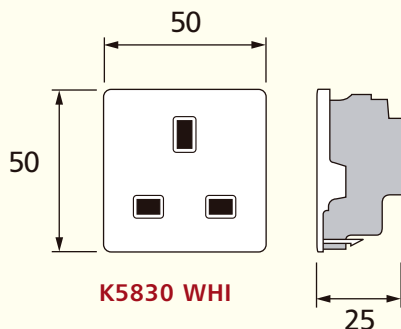
Ambient operating temperature:
-5°C to +40°C
(not to exceed an average of more than 25°C in any 24 hour period)

IP rating:
IP2XD

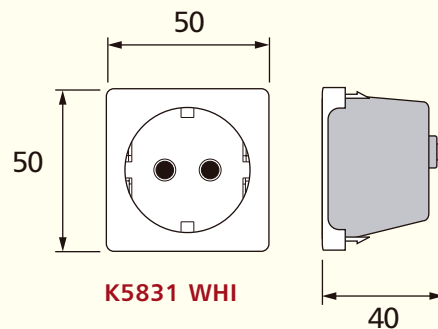
Max. installation altitude:
2000 metres

Dimensions (mm)

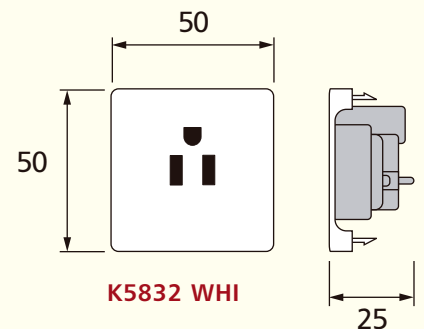
13A UK



16A German



15A American



BOX TYPES

Minimum	Extra wiring space
35mm	46mm

BOX TYPES

Minimum
46mm

BOX TYPES

Minimum	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.

For a full range of corresponding products, see page 74 in the product selector.

RJ45/ISDN Data Outlets

Standards and approvals

BS EN 50173.
IEC 11801.
TIA/EIA 568A.
TIA/EIA TSB40A.



Description

Suitable for use in all Euro data frontplates, available in all MK ranges, Cat5/5e and ISDN modules suitable for use in structured cabling distribution systems. ISDN modules incorporate a line terminating resistor.

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.

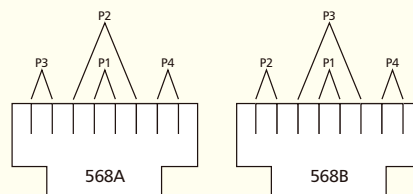
BOX TYPES	
	Depth
UTP	32mm
STP	45mm

DIMENSIONS	
Euro	25 x 50mm
LJU6C	22 x 37mm

Installation details and wiring diagram illustrations

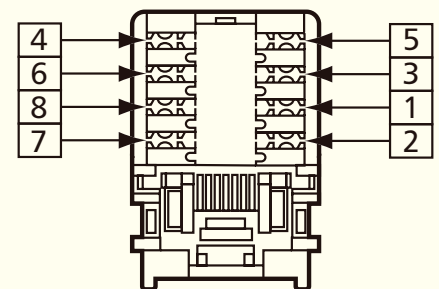
TIA WIRING SCHEME COLOUR CODES:

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 LJU6C modules are to be wired as follows



Telephone, RJ11/12, BNC Data and Blank Modules

Standards and approvals

Telephone sockets K5820 and K5821 comply with the following:
 BS 6312: 2.2, OFTEL Approval NS/G/23/L/100005.
 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

BNC

50. 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

DIMENSIONS (mm)

List No.	Dimensions
K5820 / K5821 / K5801/ K188 / K5887	25 x 50
K180	50 x 50
K186	12.5 x 50
K5787/K170	22 x 37

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

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 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. 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.

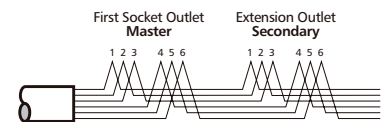
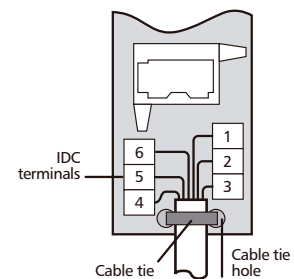
BOX TYPES

K5820 / K5821	16mm
K5801 / K5887 / K5787	25mm

BT Wiring Scheme

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

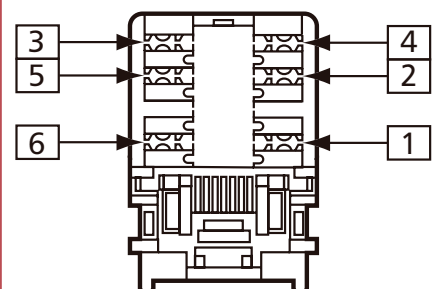
Note: Main wire colour is shown in capitals



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



- Can be specified for all applications
- Fit in plaster depth boxes

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 TD64 – TD65

Digital TV 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

Frequency Specification

TV outlet

Single Modules: DC - 950MHz

Diplexer Modules: DC - 68.5MHz, 174 - 862MHz

Triplexer Modules: 5 - 68.5MHz, 174 - 862MHz

FM outlet

Single Modules: DC - 950MHz

Diplexer Modules: 87.5 - 108MHz

Triplexer Modules: 87.5 - 108MHz

SAT outlet

Single Modules: DC - 1.75GHz

Diplexer Modules: n/a

Triplexer Modules: DC - 200kHz: 950 - 2400MHz

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.



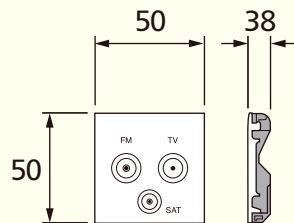
Description

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.

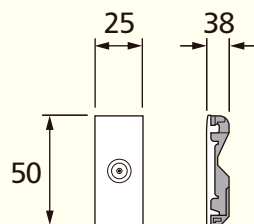
Triplexer modules are for connecting to a single co-axial aerial down lead carrying combined TV, FM and SAT signals. The filtering in the triplexer splits out the appropriate signal and feeds it to the relevant output connection. A DC control path is provided in the SAT signal path through the triplexer.

Dimensions (mm)

Euro 2 module



Euro 1 module

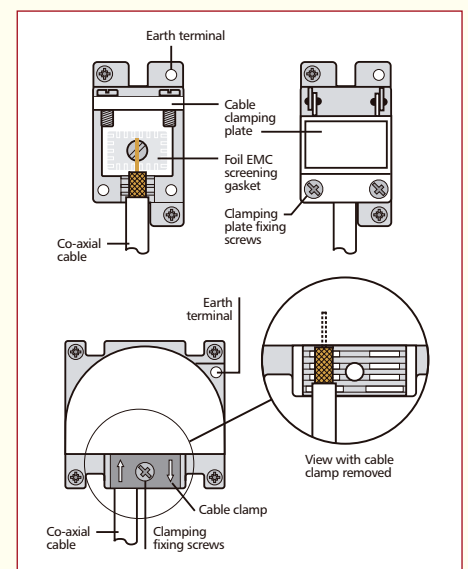
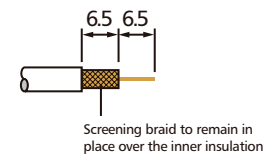


Note: Minimum box depth: 47mm

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 Co-axial cable stripping details



Digital TV Outlets

Installation (Digital TV sockets)

Product Performance, System 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.

Triplexer Outlets are used in distribution systems where TV, FM and Satellite band signals are combined on a single aerial download. The filtering in the triplexer separates the appropriate signals and feeds them through to the relevant output connection port.

Cable Routing and Use of Cable Clamp

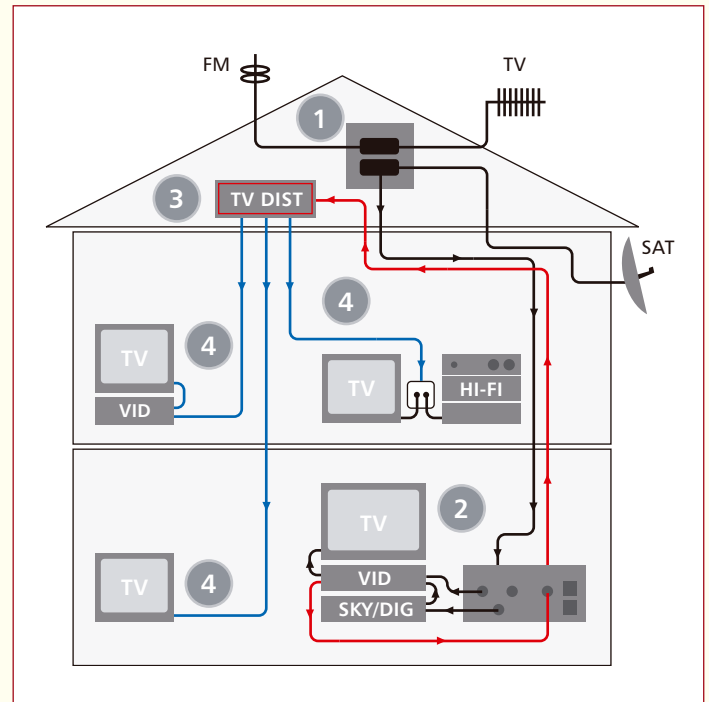
Sharp bends in the cable must be avoided during installation. The single TV/FM socket is fitted with a cable clamp that can be fixed on either side of the termination position to facilitate this.

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).

Distribution system for Digital TV, FM and Satellite signals using a single aerial download.



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

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 download feeds into the triplexer of a K3563 outlet (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 on the K3563 and onto the distribution amplifier (black lines in wiring diagram).
- 3 The single cable back-fed from the K3563 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).