

Range

Technical Data

Wiring Devices

MK Astral, advanced lighting system

A versatile and intelligent system incorporating Zensys RF communications technology

388-416

Echo

Wireless, batteryless, self-powered switch technology

417-422

White

Logic Plus

Widest selection of wiring devices in one range

423-459

Sensors

A range of energy saving and lighting management products

461-471

Heating Controls

A range of temperature control products for domestic heating applications

472-478

Ceiling Accessories

Lampholders, pendant sets and ceiling switches

479-481

Link

Plug-in connection and distribution system for lighting

482-483

Clearshave Plus

Shaverlights and luminaires for bathrooms

484-485

Decorative

Aspect

Range of slimline, flawless profile devices

486-512

Edge

Function and style with very slim profile frontplate

514-544

Alloy

A range of wiring devices with modern styling and finishes

546-561

Albany Plus

Satin Gold and Brushed Chrome devices

562-583

Range	Technical Data
Modular	
Grid Plus Modular switching and monitoring system	584-589
Lighting Controls	
High Power Dimmer Range of dimmers to control large lighting loads	590-592
Boxes and Ancillary Products	
Boxes Wide selection of surface and flush mounted, metal and PVC boxes	N/A
Ancillary Products A selection of miscellaneous wiring devices	N/A
Surface	
Metalclad Plus Tough, impact resistant surface mounted devices	594-617
Portable Power	
Duraplug Durable, strong and reliable accessories	618-620
Plugs and Adaptors High quality plugs and adaptors	621
Ingress Protected	
Masterseal Plus Award winning range of weatherproof wiring devices	622-633
MK Shield Ingress protected wiring devices for domestic or small commercial applications	634-635
Commando Safetyswitch Impact resistant switches for indoors or outdoors	636-637
Commando Plugs and Sockets Comprehensive selection of industrial plugs and connectors	638-652
Commando Combination Units RCD protection with high impact PBT units	653-654
Commando Modular Combi Factory built modular system for industrial and service applications	655-656

Programming Overview

The MK Astral™ lighting control system provides flexible control of lighting to create the right ambience for any occasion. You can control lights individually or as a group, instantly setting the mood or scene, or turn all the lights in a home off with the touch of one button.

There are just four easy steps to building your MK Astral™ system.

step 1 Selection
Select your system's primary controller

step 2 Inclusion
Add all devices to the system

step 3 Replication
Copy the routing table to all controllers

step 4 Association
Create groups and scenes

step 1 Select primary controller

Every network must have a Primary Controller; this is used to add all devices into the system.

We recommend the Primary Controller to be a Remote Control, though it can also be a Battery Controller.



step 2 Inclusion

All devices must be included into the Primary Controller.

On the Primary Controller press **Inc** until the indicator turns **yellow** – Inclusion Mode.

Holding the Primary Controller within two metres of the device being added, press any button on the front of that device; the **Inc** indicator on the Primary Controller will flash **green** three times. This should now be repeated for all new devices to be added into the system.



Once all devices have been added, press **Inc** once again on the Primary Controller until the LED extinguishes. The Primary Controller now leaves Inclusion Mode.



step 3 Replication

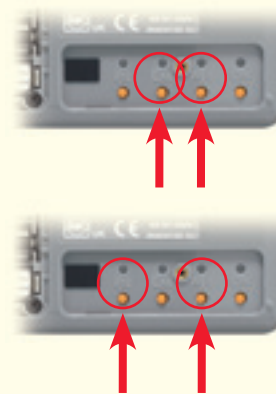
The information held within the Primary Controller must be replicated to all other controllers; this step is only undertaken if you have further controllers in your system.

On the Primary Controller press **Exc** and **Asc** until the indicators turn **yellow** – Replication Transmit Mode.

Hold the Primary Controller within two metres of the secondary controller. Press **Inc** and **Asc** on the secondary controller until the indicators turn **yellow** – Replication Receive Mode.

Whilst the routing table is copied the indicators flash **yellow** and then extinguish – the Controllers now leave Replication Mode.

This should now be repeated for all Controllers in the system.



step 4 Association (detailed for a Remote Control)

The devices included within the system can now be set up within groups and scenes.

On the Remote Control press **Asc** until the indicator turns **yellow** – Association Mode.

Select the desired button for the group or scene that you wish to control, the button will illuminate blue.

Hold the Remote Control within two metres of the device being added and set the light level of that particular device to how you wish it to be in the group or scene. The Status and **Asc** indicators will flash **green**.

This light level adjustment should now be repeated for all devices in that group or scene.

Once the group or scene is complete press **Asc** until the LED extinguishes and the Remote Control will leave Association Mode.

This should now be repeated for all groups or scenes you wish to configure.



Lighting Compatibility

Lamp type	Compatible with MK Astral™ switches
Incandescent	
GLS, Tungsten Filament, Reflector lamps	✓
Tungsten Halogen Tube	✓
LED lighting	✓ N
Compact Fluorescent	
Non dimmable	✓ N
Dimmable	✓ N (switching only)
Fluorescent Tube	
With conventional ferro-magnetic ballast (Non dimmable)	✓ N
With HF electronic ballasts (Non dimmable)	✓ N
With HF electronic ballasts (Dimmable)	✓ N (switching only)
Mains GU10	
Tungsten Filament	✓
CFL based	✓ N
LED based	✓ N
12V ELV Tungsten Halogen	
With non-dimmable wire-wound ferro-magnetic transformers	✓
With dimmable wire-wound ferro-magnetic transformers	✓
With non-dimmable electronic transformers	✓
With dimmable electronic transformers	✓

N Neutral connection or Low Energy Lighting Adaptor may be required

Note: Some compact fluorescents lamps will operate correctly without the need for a Neutral connection. However, due to the wide variety of lamps available and the varying ballast technology used within these lamps a Neutral connection is always recommended to ensure operate with most makes compact fluorescent lamps.

MK Astral™ Advanced Lighting Control dims a variety of lamps including GLS, Tungsten Filament, Reflector Lamps, Tungsten Halogen Tubes and 12V ELV with dimmable Wirewound and Electronic Transformers. For further details on dimming compatibility please visit www.mkelectric.co.uk

Remote control



LRC14U	Remote Control, 868.4MHz, UK/UAE
LRC14S	Remote Control, 868.4MHz, Singapore
LRC14M	Remote Control, 868.1MHz, Malaysia
LRC14H	Remote Control, 919.8MHz, Hong Kong
LRC14I	Remote Control, 865.2MHz, India

Accessories:

LRC130	Alternative printed Group/Scene buttons
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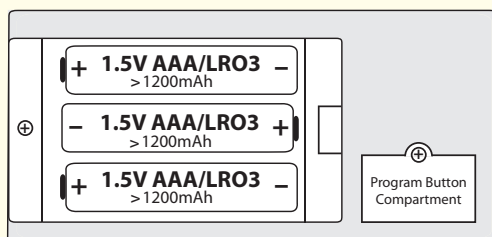
Features and Benefits

- Fully portable - can be used from any location in the system
- Can be the system Primary Controller
- Up to 75m RF range (open field)
- Can control up to 64 devices in total
- Can control up to four groups and four scenes
- Battery-powered
- Low battery indicator Long battery life, up to two years (under normal operating conditions)
- System ALL OFF control Supplied with wall and wall box mounting brackets, batteries and all fixings
- Alternative pre-printed group and scene buttons available to customise the keypad

Installation

Slide off battery cover and fit batteries as shown below:

Do not fit old and new batteries or batteries of different types. Not suitable for NiMH or NiCd rechargeable batteries.




Operation

1) Select group or scene

2) While selected group/scene button is illuminated use centre rocker to control.

illuminated use centre rocker to control.

- Short press on top: Group-On / Set-scene
- Long press on top: Dim-up
- Long press on bottom: Dim-down
- Short press on bottom: OFF

System ALL-OFF: press  for 2s

Command Status Indications

Flash red 1 time Device not included in the network

Flash green 3 times Command received by all target switches and dimmers

Flash red 3 times: At least 1 target device has not confirmed receipt of the command.

Flash yellow 5 times Low battery

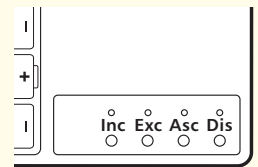
Program Buttons and Functions

Program buttons:

Located on rear of product in program compartment.

Program functions:

Include	Replicate transmit
Exclude	Replicate receive
Associate	Duplicate transmit
Disassociate	Duplicate receive
Delete group/scene	Network rediscovery
Controller ID	Update request to SUC/SIS
NVM reset	



Power Supply

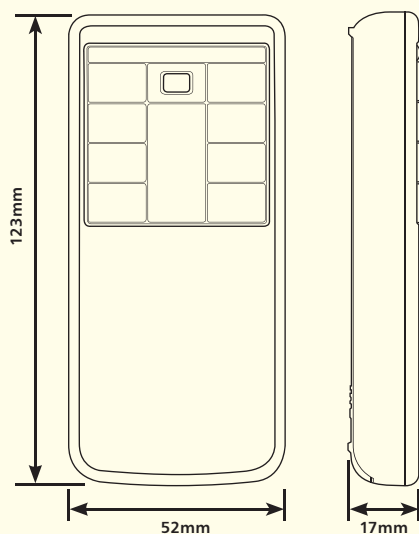
Power Source	Battery
Rated voltage	4.5V
Batteries	3 x 1.5V AAA / LR03
Battery Type	Alkaline <i>Note: Not suitable for NiMH or NiCd rechargeable batteries</i>
Battery Capacity	1200mA or greater
Typical battery life	Up to 2 years. <i>Note: Based on normal operation of 12 events per day and ambient temperature of 20-25°C. Additional operation or programming use and lower temperatures will reduce life</i>
Low battery signal	Status indicator flashes yellow 5 times after operation

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wireless | wiring devices

RF Performance	
RF operating frequency	
LRC14U	868.4MHz for use in UK, Ireland, UAE
LRC14S	868.4MHz for use in Singapore
LRC14M	868.1MHz for use in Malaysia
LRC14H	919.8MHz for use in Hong Kong
LRC14I	865.2MHz for use in India
RF Specification	
RF range	Up to 75m (open field)
Modulation	FM
Radiated power	<1mW

Mechanical and Environmental	
Dimensions	
123(h) x 52(w) x 17(d)mm	
Weights	
85g (excluding batteries)	
Temperature and Humidity	
Operating	0°C to +45°C
Storage	-20°C to +60°C
Humidity	95% (non condensing)



Certification and Approvals	
Certification	
CE marked	Yes
EU Directives	LVD, EMC and R&TTE
LVD	(BS) EN 60950-1 (MS) IEC 60950-1
EMC	(BS) EN 61000-6-1 / 3 (MS) IEC 61000-6-1 / 3 ETSI EN 301489-1 / 2
R&TTE	ETSI EN 300220-1 / 2
Local Regional and Other Approvals	
UK, Ireland	None required
UAE	TRA
Singapore	IDA
Malaysia	CMST
Hong Kong	None required
India	None required
Zensys	Z-Wave® compliant and interoperable

Zensys

Z-Wave® device type

- Basic class: Portable controller
- Generic class: Remote switch
- Specific class: Portable remote controller

Z-Wave® command classes

- All switch, (C)
- Association, (C)
- Basic, (C)
- Battery, (S)
- Indicator, (S)
- Manufacturer specific, (S/C)
- Multi-channel, (C)
- Multi-channel association, (S)
- Multi-level switch, (C)
- Version, (S)
- Wake Up, (S)

Where: S = Supported, C = controlled

 Note: Please refer to www.mkelectric.co.uk for the latest data and information

Associations

Control modes: Can be configured for group or scene control

No of groups/scenes: 4 groups and 4 scenes

No of Associations: 64

Note: The device can support associations to up to 64 other devices in total.
Each group/scene may be associated to a maximum of 64 end points from the 64 devices.

Association Command class support

It is not possible to create or remove associations on the remote control using another controller. Associations can only be created or removed using the Remote Control's devices own internal Associate and Disassociate modes.

Inclusion

To activate device's Inclusion Mode press Inc for 2s, (only if device is the primary controller).

To include device into another system press any operation button.

Exclusion

To activate device's Exclusion Mode press Exc for 2s, (only if device is the primary controller).

To exclude device from a system press Exc button twice in 1s.

Association

To activate device's association mode press Asc for 2s.

To create associations using another controller press normal operation button/rocker of required channel.

Disassociation

To activate device's disassociation mode press Dis for 2s.

To remove associations using another controller press normal operation button/rocker of required channel.

Replicate transmit

To activate device's replicate transmit mode press Exc and Asc buttons for 2s, (only if device is the primary controller).

Replicate receive

To activate device's replicate receive mode press Inc and Asc buttons for 2s, (only if device is a secondary controller).

Duplicate transmit

To activate device's duplicate transmit mode press Exc and Dis buttons for 2s, (Astral™ products only).

Duplicate receive

To activate device's duplicate receive mode press Inc and Dis buttons for 2s, (Astral™ products only).

SUC/SIS updates

Periodic and routine update will be requested every 36 operations

- To initiate a manual wake-up and update request press Dis

Note: Only available if SUC/SIS in network.

Wake Up Command Class Support: A wake up period setting of 0x000000 seconds only is supported. i.e. The device will contact the specified device whenever we wake up under the above conditions.

Response to indicator request:

On receipt of an indicator request command from another Z-Wave® device each group/scene button will illuminate blue for 1s in a continuous sequence for 30s.

Z-Wave® programming power

This product is supplied preset to Low Power Configuration Mode.

Low power range: 2 - 5m.

Z-Wave® compatibility

MK Astral™ products are tested and certified as Z-Wave® compliant and are designed to work with other manufacturers Z-wave® compliant and interoperable products. Z-Wave® products of other types and applications can be added to the system and will act as repeaters if they support this functionality. This enables the system to grow and expand to other application areas as your needs develop.

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wireless | wiring devices

LIB1, LIB2 Battery Controller



LIB1U	1 Gang Battery Controller, 868.4MHz, UK/UAE
LIB2U	2 Gang Battery Controller, 868.4MHz, UK/UAE
LIB1S	1 Gang Battery Controller, 868.4MHz, Singapore
LIB2S	2 Gang Battery Controller, 868.4MHz, Singapore
LIB1M	1 Gang Battery Controller, 868.1MHz, Malaysia
LIB2M	2 Gang Battery Controller, 868.1MHz, Malaysia
LIB1H	1 Gang Battery Controller, 919.8MHz, Hong Kong
LIB2H	2 Gang Battery Controller, 919.8MHz, Hong Kong
LIB1I	1 Gang Battery Controller, 865.2MHz, India
LIB2I	2 Gang Battery Controller, 865.2MHz, India

Compatible with Astral™ dimmer fascias (supplied separately)

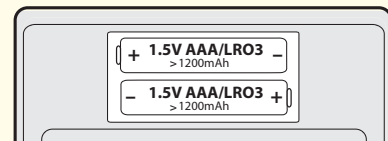
	LDF21	1 Gang Metal Dimmer Fascia		LDF11	1 Gang Plastic Dimmer Fascia
	LDF22	2 Gang Metal Dimmer Fascia		LDF12	2 Gang Plastic Dimmer Fascia

Features and Benefits

- 1 and 2 Gang versions available
- Fully portable - can be used from any location in the system
- Can be the systems primary controller
- Can control either a group or scene
- Up to 75m RF range (open field)
- Can control to up to 64 devices in total
- Maximum of 64 devices per control channel
- Battery powered
- Low battery indicator
- Long battery life, up to two years (under normal operating conditions)
- System ALL OFF control
- Astral™ holiday mode control
- Supplied with wall and wall box mounting brackets, batteries and all fixings
- Use Astral™ dimmer fascia

Installation

Unclip battery cover and fit batteries as shown below



Do not fit old and new batteries or batteries of different types.
Not suitable for NiMH or NiCd rechargeable batteries.

Operation

Normal Operation

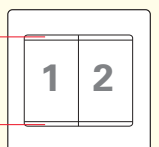
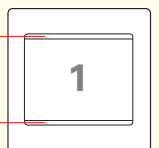
Short press ON/SET SCENE
Long press DIM UP

Short press OFF
Long press DIM DOWN

Default Functionality

System ALL-OFF
Long press

Holiday mode
ON Long press
OFF Short press



Only available if no associations are created on Channel 1

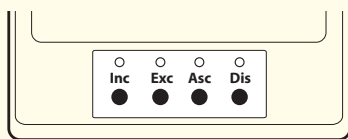
Command Status Indications

Flash red 1 time	Device not included in the network
Flash green 3 times	Command received by all target switches and dimmers
Flash red 3 times:	At least 1 target device has not confirmed receipt of the command
Flash yellow 5 times	Low battery

Program Buttons and Functions

Program buttons

Located on rear of product in program compartment



Program functions

Include	NVM reset
Exclude	Replicate transmit
Associate	Replicate receive
Disassociate	Duplicate transmit
Delete group/scene	Duplicate receive
Group/Scene control select	Network rediscovery
Controller ID	Update request to SUC/SIS

Power Supply	
Power Source	Battery
Rated voltage	3.0V
Batteries	2 x 1.5V AAA / LR03
Battery Type	Alkaline <i>Note: Not suitable for NiMH or NiCd rechargeable batteries</i>
Battery Capacity	1200mA or greater
Typical battery life	Up to 2 years. Note: Based on normal operation of 12 events per day and ambient temperature of 20-25°C. Additional operation or programming use and lower temperatures will reduce life
Low battery signal	Status indicator flashes yellow 5 times after operation

RF Performance

RF operating frequency

LIB1U, LIB2U	868.4MHz for use in UK, Ireland, UAE
LIB1S, LIB2S	868.4MHz for use in Singapore
LIB1M, LIB2M	868.1MHz for use in Malaysia
LIB1H, LIB2H	919.8MHz for use in Hong Kong
LIB1I, LIB2I	865.2MHz for use in India

RF Specification

RF range	Up to 75m (open field)
Modulation	FM
Radiated power	<1mW

Mechanical and Environmental

Dimensions

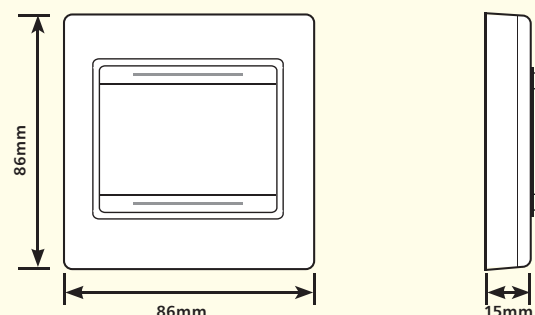
with metal fascia	86(h) x 86(w) x 15(d)mm
with plastic fascia	86(h) x 86(w) x 17.5(d)mm

Weights

1 Gang Controller (excluding batteries)	62g
2 Gang Controller (excluding batteries)	64g
Metal Fascia	54g
Plastic Fascia	30g

Temperature and Humidity

Operating	0°C to +45°C
Storage	-20°C to +60°C
Humidity	95% (non condensing)



*Shown with metal fascia installed; with plastic fascia installed, product is 15mm thick

Certification and Approvals	
Certification	
CE marked	Yes
EU Directives	LVD, EMC and R&TTE
LVD	(BS) EN 60950-1 (MS) IEC 60950-1
EMC	(BS) EN 61000-6-1 / 3 (MS) IEC 61000-6-1 / 3 ETSI EN 301489-1 / 2
R&TTE	ETSI EN 300220-1 / 2
Local Regional and Other Approvals	
UK, Ireland	None required
UAE	TRA
Singapore	IDA
Malaysia	CMST
Hong Kong	None required
India	None required
Zensys	Z-Wave® compliant and interoperable

Zensys

Z-Wave® device type

- Basic class: Portable controller
- Generic class: Remote switch
- Specific class: Portable remote controller

Z-Wave® command classes

- All switch, (C)
- Association, (C)
- Basic, (C)
- Battery, (S)
- Indicator, (S)
- Manufacturer specific, (S/C)
- Multi-channel, (C)
- Multi-channel association, (S)
- Multi-level switch, (C)
- Version, (S)
- Wake Up, (S)

Where: S = Supported, C = controlled

Associations

Control modes: Can be configured for group or scene control

No of groups/scenes: One per channel

No of Associations: 64

Note: The device can support associations to up to 64 other devices in total. Each group/scene may be associated to a maximum of 64 end points from the 64 devices.

Inclusion

To activate device's Inclusion Mode press Inc for 2s, (only if device is the primary controller).

To include device into another system press any operation button.

Exclusion

To activate device's Exclusion Mode press Exc for 2s, (only if device is the primary controller).

To exclude device from a system press Exc button twice in 1s.

Association

To activate device's association mode press Asc for 2s.

To create associations using another controller press normal operation button/rocker of required channel.

Disassociation

To activate device's disassociation mode press Dis for 2s

To remove associations using another controller press normal operation button/rocker of required channel.

Replicate transmit

To activate device's replicate transmit mode press Exc and Asc buttons for 2s, (only if device is the primary controller).

Replicate receive

To activate device's replicate receive mode press Inc and Asc buttons for 2s, (only if device is a secondary controller).

Duplicate transmit

To activate device's duplicate transmit mode press Exc and Dis buttons for 2s, (Astral™ products only).

Duplicate receive

To activate device's duplicate receive mode press Inc and Dis buttons for 2s, (Astral™ products only).

SUC/SIS updates

Periodic and routine update will be requested every

- 24 operations on 1 Gang Products
- 36 operations on 2 Gang Products
- To initiate a manual wake-up and update request press Dis

Note: Only available if SUC/SIS in network.

Wake Up Command Class Support: A wake up period setting of 0x000000 seconds only is supported. i.e. The device will contact the specified device whenever we wake up under the above conditions.

Response to indicator request

On receipt of an indicator request command from another Z-Wave® device each channel status indicator will illuminate green for 1s in a continuous sequence for 30s.

Z-Wave® programming power

This product is supplied preset to Low Power Configuration Mode.

Low power range: 2 - 5m.

Z-Wave® compatibility

MK Astral™ products are tested and certified as Z-Wave® compliant and are designed to work with other manufacturers Z-wave® compliant and interoperable products. Z-Wave® products of other types and applications can be added to the system and will act as repeaters if they support this functionality. This enables the system to grow and expand to other application areas as your needs develop.

Note: Please refer to www.mkelectric.co.uk for the latest data and information

LIM1, LIM2 Mains Controller



LIM1U	1 Gang Mains Controller, 868.4MHz, UK/UAE
LIM2U	2 Gang Mains Controller, 868.4MHz, UK/UAE
LIM1S	1 Gang Mains Controller, 868.4MHz, Singapore
LIM2S	2 Gang Mains Controller, 868.4MHz, Singapore
LIM1M	1 Gang Mains Controller, 868.1MHz, Malaysia
LIM2M	2 Gang Mains Controller, 868.1MHz, Malaysia
LIM1H	1 Gang Mains Controller, 919.8MHz, Hong Kong
LIM2H	2 Gang Mains Controller, 919.8MHz, Hong Kong
LIM1I	1 Gang Mains Controller, 865.2MHz, India
LIM2I	2 Gang Mains Controller, 865.2MHz, India

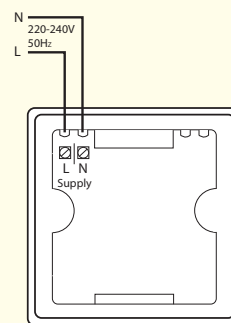
Compatible with Astral™ dimmer fascias (supplied separately)

	LDF21	1 Gang Metal Dimmer Fascia		LDF11	1 Gang Plastic Dimmer Fascia
	LDF22	2 Gang Metal Dimmer Fascia		LDF12	2 Gang Plastic Dimmer Fascia

Features and Benefits

- 1 and 2 Gang versions available
- Can control either a group or scene
- Up to 75m RF range (open field)
- Can control to up to 64 devices in total
- Maximum of 64 devices per control channel
- System ALL OFF control
- Astral™ holiday mode control
- Use Astral™ dimmer fascia

Installation



IMPORTANT
The mains supply must be protected by a 10A class B or C MCB

Operation

Normal Operation

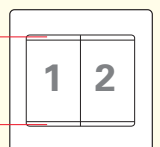
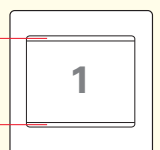
Short press ON/SET SCENE
Long press DIM UP

Short press OFF
Long press DIM DOWN

Default Functionality

System ALL-OFF
Long press

Holiday mode
ON Long press
OFF Short press



Only available if no associations are created on Channel 1

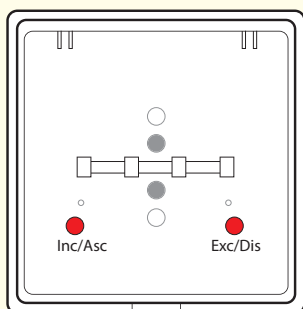
Command Status Indications

Flash red 1 time	Device not included in the network
Flash green 3 times	Command received by all target switches and dimmers
Flash red 3 times:	At least 1 target device has not confirmed receipt of the command
Low Blue	Night locator (Visible only in low light level conditions.)

Program Buttons and Functions

Program buttons

Located on front of module beneath fascia



Program functions

Replicate receive	Controller ID
Group/Scene control select	NVM reset
Delete group/scene	Update request to SUC/SIS

RF Performance

RF operating frequency

LIM1U, LIM2U	868.4MHz for use in UK, Ireland, UAE
LIM1S, LIM2S	868.4MHz for use in Singapore
LIM1M, LIM2M	868.1MHz for use in Malaysia
LIM1H, LIM2H	919.8MHz for use in Hong Kong
LIM1I, LIM2I	865.2MHz for use in India

RF Specification

RF range	Up to 75m (open field)
Modulation	FM
Radiated power	<1mW

Mechanical and Environmental

Dimensions

with metal fascia	86(h) x 86(w) x 32(d)mm
with plastic fascia	86(h) x 86(w) x 34.5(d)mm
Wall box depth	35mm (min)

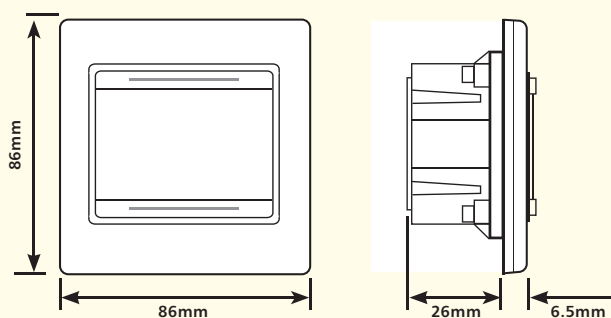
Weights

1 Gang Controller	75g
2 Gang Controller	76g
Metal Fascia	54g
Plastic Fascia	30g

Temperature and Humidity

Operating	0°C to +45°C
Storage	-20°C to +60°C
Humidity	95% (non condensing)

Power Supply	
Power Source	Mains
Rated voltage	220 - 240Vac / 50Hz
Power Consumption	<1W in standby



* Shown with metal Fascia. Plastic Fascia is 7.5 mm thick

Certification and Approvals	
Certification	
CE marked	Yes
EU Directives	LVD, EMC and R&TTE
LVD	(BS) EN 60950-1 (MS) IEC 60950-1
EMC	(BS) EN 61000-6-1 / 3 (MS) IEC 61000-6-1 / 3 ETSI EN 301489-1 / 2
R&TTE	ETSI EN 300220-1 / 2
Local Regional and Other Approvals	
UK, Ireland	None required
UAE	TRA
Singapore	IDA
Malaysia	CMST
Hong Kong	None required
India	None required
Zensys	Z-Wave® compliant and interoperable

Zensys

Z-Wave® device type

- Basic class: Static controller
- Generic class: Remote switch
- Specific class: Not Used

Z-Wave® command classes

- All switch, (C)
- Association, (C)
- Basic, (C)
- Indicator, (S)
- Manufacturer specific, (S/C)
- Multi-channel, (C)
- Multi-channel association, (S)
- Multi-level switch, (C)
- Version, (S)

Where: S = Supported, C = controlled

Associations

Control modes: Can be configured for group or scene control

No of groups/scenes: One per channel

No of Associations: 64

Note: The device can support associations to up to 64 other devices in total. Each group/scene may be associated to a maximum of 64 end points from the 64 devices.

Inclusion

To include device into another system press any operation button.

Exclusion

To exclude device from a system press Exc button twice in 1s.

Association

To create associations using another controller press normal operation button/rocker of required channel.

Disassociation

To remove associations using another controller press normal operation button/rocker of required channel.

Replicate transmit

To activate device's replicate receive mode press Inc and Asc buttons for 2s, (only if device is a secondary controller).

SUC/SIS updates

Periodic and routine update will be requested every

- 24 operations on 1 Gang Products
- 36 operations on 2 Gang Products
- To initiate a manual wake-up and update request press Exc/Dis

Note: Only available if SUC/SIS in network.

Wake Up Command Class Support: A wake up period setting of 0x000000 seconds only is supported. i.e. The device will contact the specified device whenever we wake up under the above conditions.

Response to indicator request

On receipt of an indicator request command from another Z-Wave® device each channel status indicator will illuminate green for 1s in a continuous sequence for 30s.

Z-Wave® compatibility

MK Astral™ products are tested and certified as Z-Wave® compliant and are designed to work with other manufacturers Z-wave® compliant and interoperable products. Z-Wave® products of other types and applications can be added to the system and will act as repeaters if they support this functionality. This enables the system to grow and expand to other application areas as your needs develop.

Note: Please refer to www.mkelectric.co.uk for the latest data and information

LSM11, LSM12 10AX Switches



LSM11U	1 Gang 10AX Switch, 868.4MHz, UK/UAE
LSM12U	2 Gang 10AX Switch, 868.4MHz, UK/UAE
LSM11S	1 Gang 10AX Switch, 868.4MHz, Singapore
LSM12S	2 Gang 10AX Switch, 868.4MHz, Singapore
LSM11M	1 Gang 10AX Switch, 868.1MHz, Malaysia
LSM12M	2 Gang 10AX Switch, 868.1MHz, Malaysia
LSM11H	1 Gang 10AX Switch, 919.8MHz, Hong Kong
LSM12H	2 Gang 10AX Switch, 919.8MHz, Hong Kong
LSM11I	1 Gang 10AX Switch, 865.2MHz, India
LSM12I	2 Gang 10AX Sw itch, 865.2MHz, India

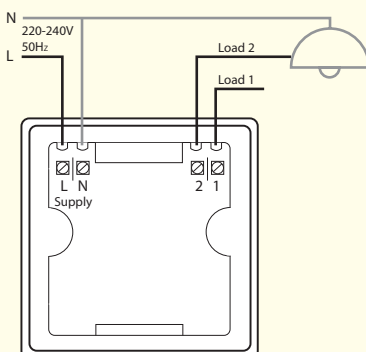
Compatible with Astral™ switch fascias (supplied separately)

	LSF21	1 Gang Metal Switch Fascia		LSF11	1 Gang Plastic Switch Fascia
	LSF22	2 Gang Metal Switch Fascia		LSF12	2 Gang Plastic Switch Fascia

Features and Benefits

- 1 and 2 Gang versions available
- Up to 75m RF range (open field)
- Can only control a group
- Can control up to 5 devices in total
- Maximum of 5 devices per control channel
- Mains-powered
- Astral™ holiday mode occupation simulation
- Use Astral™ switch fascias

Installation



IMPORTANT

The mains supply must be protected by a 10A class B or C MCB

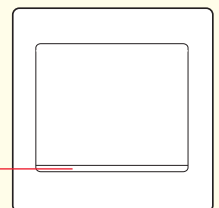
Neutral connection or Low Energy Lighting Adaptor may be required for following load types:

- Fluorescent tubes
- Compact fluorescent energy saving lamps
- ELV tungsten halogen lamps with electronic transformers

Operation

Normal Operation

press ON
press OFF



Command Status Indications

Flash red 1 time Device not included in the network

Flash green 3 times Command received by all target switches and dimmers

Flash red 3 times: At least 1 target device has not confirmed receipt of the command

High level blue Load ON

Low Blue Night locator
(Visible only in low light level conditions.)

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Command Status Indications

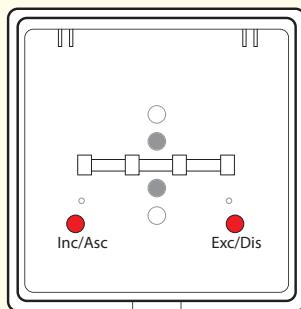
Red flash every 3s Load switched OFF due to detection of overload or short circuit condition on load side of switch

Alternating High/Low: blue every second Holiday mode active

Program Buttons and Functions

Program buttons

Located on front of module beneath fascia



Program functions

Delete group/scene

Update request to SUC/SIS

NVM reset

Power Supply	
Power Source	Mains
Rated voltage	220 - 240Vac / 50Hz
Power Consumption	<1W in standby

Load Specification

Suitable for use with the following load types and maximum load ratings only.

- GLS / Tungsten filament 25 - 2400W
- Tungsten halogen 25 - 2000W
- ELV Tungsten halogen ferro-magnetic or electronic transformers * 25 - 1500VA
- Fluorescent tubes with ferro-magnetic * ballast and power factor correction 25 - 1800W
- Maximum load capacitance 140 μ F

- Fluorescent tubes with electronic ballast * 18 - 540W (eg 30 x 18W tubes/ballasts)
 - Compact fluorescent (low energy) lamps * 25 - 750W
- * requires Neutral connection to switch or Low Energy Lighting Adaptor.

RF Performance

RF operating frequency

LSM1U, LSM2U	868.4MHz for use in UK, Ireland, UAE
LSM1S, LSM2S	868.4MHz for use in Singapore
LSM1M, LSM2M	868.1MHz for use in Malaysia
LSM1H, LSM2H	919.8MHz for use in Hong Kong
LSM1I, LSM2I	865.2MHz for use in India

RF Specification

RF range	Up to 75m (open field)
Modulation	FM
Radiated power	<1mW

Mechanical and Environmental

Dimensions

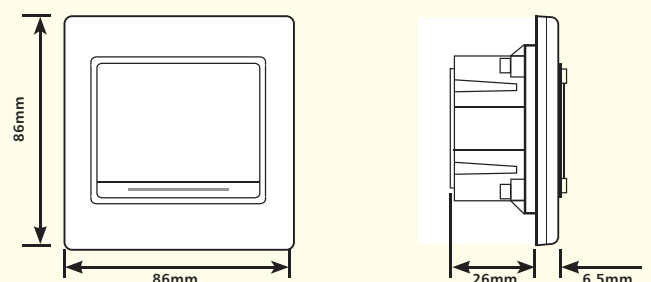
With metal fascia	86(h) x 86(w) x 32(d)mm
With plastic fascia	86(h) x 86(w) x 34.5(d)mm
Wall box depth	35mm (min)

Weights

1 Gang Switch	100g
2 Gang Switch	115g
Metal Fascia	54g
Plastic Fascia	30g

Temperature and Humidity

Operating	0°C to +45°C
Storage	-20°C to +60°C
Humidity	95% (non condensing)



* Shown with metal Fascia. Plastic Fascia is 7.5 mm thick

Certification and Approvals	
Certification	
CE marked	Yes
EU Directives	LVD, EMC and R&TTE
LVD	(BS) EN 60669-2-1 (MS) IEC 60669-2-1 SS227-2-1
EMC	(BS) EN 61000-6-1 / 3 (MS) IEC 61000-6-1 / 3 ETSI EN 301489-1 / 2
R&TTE	ETSI EN 300220-1 / 2
Local Regional and Other Approvals	
UK, Ireland	None required
UAE	TRA
Singapore	IDA
Malaysia	CMST
Hong Kong	None required
India	None required
Zensys	Z-Wave® compliant and interoperable

Zensys

Z-Wave® device type

- Basic class: Routing Slave
- Generic class: Binary Switch
- Specific class: Binary Power Switch

2 Gang Products

- Basic class: Routing Slave
- Generic class: End point 1: Binary Switch channel 1
End point 2: Binary Switch channel 2
- Specific class: End point 1: Binary Power Switch channel 1
End point 2: Binary Power Switch channel 2

Z-Wave® command classes

- All switch, (S)
- Basic, (S/C)
- Binary switch, (S)
- Indicator, (S)
- Manufacturer specific, (S/C)
- Multi-channel, (S/C)
- Multi-channel association, (S)
- Node Naming & Location, (S)
- Version, (S)

Where: S = Supported, C = controlled

Associations

- Control modes: Can be configured for group control only
- No of groups/scenes: One per channel
- No of Associations: 5

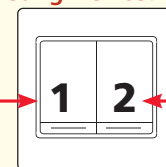
Note: The device can support associations to up to 5 other devices in total.
Each channel may be associated to a maximum of 5 end points from the 5 devices.

For Multi-Channel 2 Gang Devices

Channel 1:

Composite Device:

End Point 1



Channel 2:

Composite Device:

End Point 2

Inclusion

To include device into another system press any operation button.

Exclusion

To exclude device from a system press Exc button twice in 1s.

Association

To create associations using another controller press normal operation button/rocker of required channel.

Disassociation

To remove associations using another controller press normal operation button/rocker of required channel.

SUC/SIS updates

Periodic and routine update will be requested every

- 24 operations on 1 Gang Products
- 36 operations on 2 Gang Products
- To initiate a manual wake-up and update request press Exc/Dis

Note: Only available if SUC/SIS in network.

Response to indicator request

On receipt of an indicator request command from another Z-Wave® device each channel status indicator will illuminate green for 1s in a continuous sequence for 30s.

Z-Wave® compatibility

MK Astral™ products are tested and certified as Z-Wave® compliant and are designed to work with other manufacturers Z-wave® compliant and interoperable products. Z-Wave® products of other types and applications can be added to the system and will act as repeaters if they support this functionality. This enables the system to grow and expand to other application areas as your needs develop.

Note: Please refer to www.mkelectric.co.uk for the latest data and information

LDM31, LDM32, LDM61 300W/600W Dimmers



LDM31U	1 Gang 300W Dimmer, 868.4MHz, UK/UAE
LDM32U	2 Gang 300W Dimmer, 868.4MHz, UK/UAE
LDM61U	1 Gang 600W Dimmer, 868.4MHz, UK/UAE
LDM31S	1 Gang 300W Dimmer, 868.4MHz, Singapore
LDM32S	2 Gang 300W Dimmer, 868.4MHz, Singapore
LDM61S	1 Gang 600W Dimmer, 868.4MHz, Singapore
LDM31M	1 Gang 300W Dimmer, 868.1MHz, Malaysia
LDM32M	2 Gang 300W Dimmer, 868.1MHz, Malaysia
LDM61M	1 Gang 600W Dimmer, 868.1MHz, Malaysia
LDM31H	1 Gang 300W Dimmer, 919.8MHz, Hong Kong
LDM32H	2 Gang 300W Dimmer, 919.8MHz, Hong Kong
LDM61H	1 Gang 600W Dimmer, 919.8MHz, Hong Kong
LDM31I	1 Gang 300W Dimmer, 865.2MHz, India
LDM32I	2 Gang 300W Dimmer, 865.2MHz, India
LDM61I	1 Gang 600W Dimmer, 865.2MHz, India

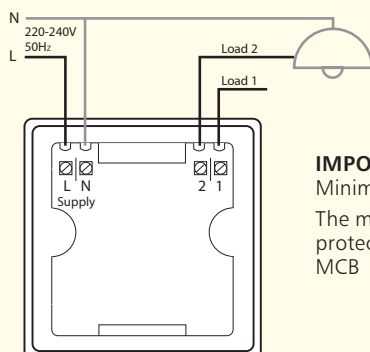
Compatible with Astral™ dimmer fascias (supplied separately)

	LDF21	1 Gang Metal Dimmer Fascia		LDF11	1 Gang Plastic Dimmer Fascia
	LDF22	2 Gang Metal Dimmer Fascia		LDF12	2 Gang Plastic Dimmer Fascia

Features and Benefits

- 1 and 2 Gang versions available
- Up to 75m RF range (open field)
- Can control either a group or scene
- Can control up to 5 devices in total
- Maximum of 5 devices per control channel
- Mains-powered
- Astral™ holiday mode occupation simulation
- Use Astral™ dimmer fascias

Installation



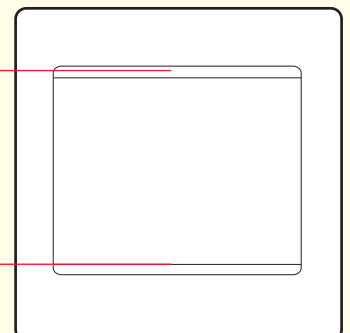
IMPORTANT
Minimum wall box depth: 35mm
The mains supply must be protected by a 10A class B or C MCB

Operation

Normal Operation

Short press ON/SET SCENE
Long press DIM UP

Short press OFF
Long press DIM DOWN



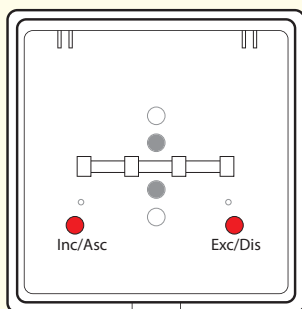
Command Status Indications

Flash red 1 time	Device not included in the network
Flash green 3 times	Command received by all target switches and dimmers
Flash red 3 times:	At least 1 target device has not confirmed receipt of the command
High level blue	Load ON
Low Blue	Night locator (Visible only in low light level conditions.)
Red flash every 3s	Load switched OFF due to detection of overload or short circuit condition on load side of switch
Alternating High/Low: blue every second	Holiday mode active

Program Buttons and Functions

Program buttons

Located on front of module beneath fascia



Program

- Group/Scene control select
- Delete group/scene
- NVM reset
- Update request to SUC/SIS

functions

Power Supply

Power Source	Mains
Rated voltage	220 - 240Vac / 50Hz
Power Consumption	<1W in standby

Load Specification

Suitable for use with the following load types and maximum load ratings only.

	1G 300W Dimmer	1G 600W Dimmer	2G 300W Dimmer
GLS Tungsten filament Tungsten halogen	25-300W	25-600W	25-300W per channel
12V ELV Tungsten halogen with wirewound or electronic transformers	35-300VA	35-600VA	35-300VA per channel

Not suitable for any other load type.

Do not use different types of lamps on the same circuit.

Remember to allow for the inefficiency and losses in the transformer when calculating dimmer loading, (e.g. a 50VA transformer will look like more than 60VA to the dimmer if it is 80% efficient).

Notes on using ELECTRONIC TRANSFORMERS:

To minimise the risk of flicker associated with using electronic transformers at low dimming levels please take note of the following installation points:

- Always follow the loading instructions for the transformer and load the transformer to a minimum of 70% of its rating
- Always use transformers from the same manufacturer and of the same type and size on each load circuit
- Load each transformer equally
- Do not use both electronic and wire-wound transformers on the same load circuit

Notes on using MAGNETIC TRANSFORMERS:

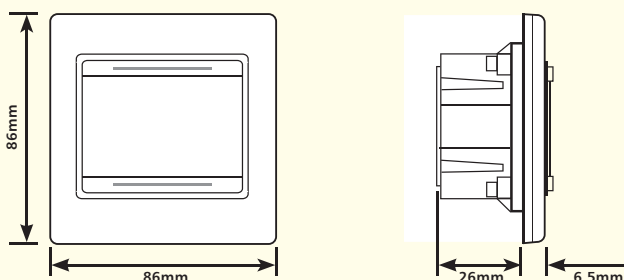
- Always use transformers of a similar rating to the load connected to it
- Always follow the loading instructions for the transformer and load the transformer to at least 50% of its rating
- Remember to allow for the losses of the transformer
(A 100VA transformer will actually load the dimmer with approx 120VA (or more) depending on the transformer.)

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RF Performance	
RF operating frequency	
LDM31U, LDM32U, LDM61U	868.4MHz for use in UK, Ireland, UAE
LDM31S, LDM32S, LDM61S	868.4MHz for use in Singapore
LDM31M, LDM32M, LDM61M	868.1MHz for use in Malaysia
LDM31H, LDM32H, LDM61H	919.8MHz for use in Hong Kong
LDM31I, LDM32I, LDM61I	865.2MHz for use in India
RF Specification	
RF range	Up to 75m (open field)
Modulation	FM
Radiated power	<1mW

Mechanical and Environmental	
Dimensions	
With metal fascia	86(h) x 86(w) x 32(d)mm
With plastic fascia	86(h) x 86(w) x 34.5(d)mm
Wall box depth	35mm (min)
Weights	
1 Gang Switch	100g
2 Gang Switch	103g
Metal Fascia	54g
Plastic Fascia	30g
Temperature and Humidity	
Operating	0°C to +45°C
Storage	-20°C to +60°C
Humidity	95% (non condensing)



* Shown with metal Fascia. Plastic Fascia is 7.5 mm thick

Certification and Approvals	
Certification	
CE marked	Yes
EU Directives	LVD, EMC and R&TTE
LVD	(BS) EN 60669-2-1 (MS) IEC 60669-2-1 SS227-2-1
EMC	(BS) EN 61000-6-1 / 3 (MS) IEC 61000-6-1 / 3 ETSI EN 301489-1 / 2
R&TTE	ETSI EN 300220-1 / 2
Local Regional and Other Approvals	
UK, Ireland	None required
UAE	TRA
Singapore	IDA
Malaysia	CMST
Hong Kong	None required
India	None required
Zensys	Z-Wave® compliant and interoperable

Zensys

Z-Wave® device type

- Basic class: Routing Slave
- Generic class: Multi-Level Switch
- Specific class: Multi-Level Power Switch

2 Gang Products

- Basic class: Routing Slave
- Generic class: End point 1: Multi-Level channel 1
End point 2: Multi-Level channel 2
- Specific class: End point 1: Multi-Level Power Switch channel 1
End point 2: Multi-Level Power Switch channel 2

Z-Wave® command classes

- All switch, (S)
- Basic, (S/C)
- Binary switch, (S)
- Indicator, (S)
- Manufacturer specific, (S/C)
- Multi-channel, (S/C)
- Multi-channel association, (S)
- Node Naming & Location, (S)
- Version, (S)

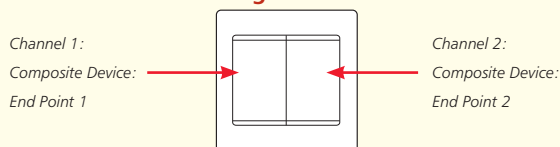
Where: S = Supported, C = controlled

Associations

Control modes:	Can be configured for group control only
No of groups/scenes:	One per channel
No of Associations:	5

Note: The device can support associations to up to 5 other devices in total.

Each channel may be associated to a maximum of 5 end points from the 5 devices.

For Multi-Channel 2 Gang Devices**Inclusion**

To include device into another system press any operation button.

Exclusion

To exclude device from a system press Exc button twice in 1s.

Association

To create associations using another controller press normal operation button/rocker of required channel.

Disassociation

To remove associations using another controller press normal operation button/rocker of required channel.

SUC/SIS updates

Periodic and routine update will be requested every

- 24 operations on 1 Gang Products
- 36 operations on 2 Gang Products
- To initiate a manual wake-up and update request press Exc/Dis

Note: Only available if SUC/SIS in network.

Response to indicator request

On receipt of an indicator request command from another Z-Wave® device each channel status indicator will illuminate green for 1s in a continuous sequence for 30s.

Z-Wave® compatibility

MK Astral™ products are tested and certified as Z-Wave® compliant and are designed to work with other manufacturers Z-wave® compliant and interoperable products. Z-Wave® products of other types and applications can be added to the system and will act as repeaters if they support this functionality. This enables the system to grow and expand to other application areas as your needs develop.

Note: Please refer to www.mkelectric.co.uk for the latest data and information

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LPIR1 SP103 PIR Detectors

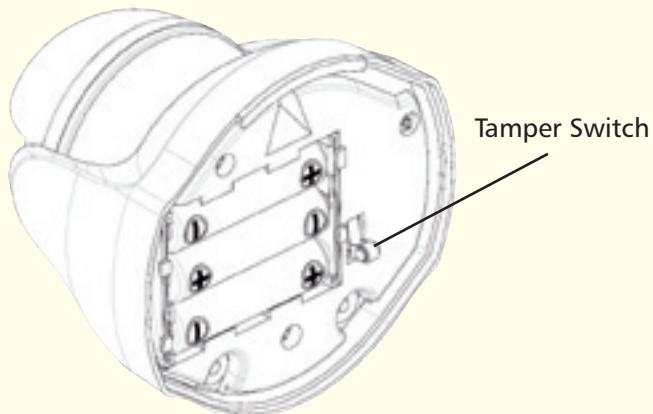


Features and Benefits

- Up to 50m RF range (open field)
- Can control a group of up to 5 devices
- 12m Range detection with 100° field of view
- Adjustable time on period
- Battery-powered
- Low battery indicator
- Supplied with batteries and wall fixings
- For indoor use only

Installation

Slide off battery cover and fit batteries as shown below
Do not mix old and new batteries or batteries of different types.
Not suitable for NiMH or NiCd rechargeable batteries.



LPIR1U	SP103 PIR Detector, 868.4MHz, UK/UAE
LPIR1S	SP103 PIR Detector, 868.4MHz, Singapore
LPIR1M	SP103 PIR Detector, 868.1MHz, Malaysia
LPIR1H	SP103 PIR Detector, 919.8MHz, Hong Kong

Note: other regions not available.

Operation and Detection

Normal Operation

Operation Mode	24 hour
Time-On period	5 seconds - 12 minutes

Movement Detection

Range	6 - 12m
Field of View	100°

Command Status Indications

Movement Indicator

will not flash on movement detection unless the battery is low or the battery cover is removed.

Note: During normal operation there is no indication of command success/failure on the product as with other MK astral™ products.

Program Buttons and Functions

Program buttons

Tamper switch lever behind battery cover

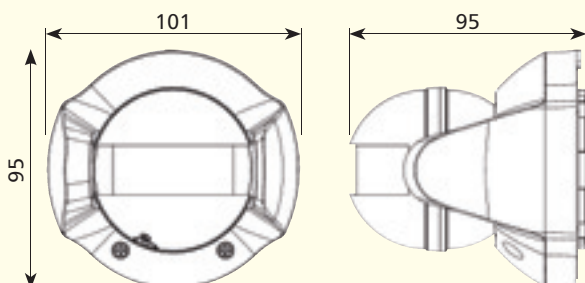
Program functions

Not applicable

Power Supply	
Power Source	Battery
Rated voltage	4.5V
Batteries	3 x 1.5V AAA / LR03
Battery Type	Alkaline <i>Note: Not suitable for NiMH or NiCd rechargeable batteries</i>
Battery Capacity	1200mA or greater
Typical battery life	Up to 1 year <i>Note: Based on normal operation of 8 events per day and ambient temperature of 20-25°C. Additional operation and lower temperatures will reduce life</i>
Low battery signal	LED behind the lens flashes after movement is detected

RF Performance	
RF operating frequency	
LPIR1U	868.4MHz for use in UK, Ireland, UAE
LPIR1S	868.4MHz for use in Singapore
LPIR1M	868.1MHz for use in Malaysia
LPIR1H	919.8MHz for use in Hong Kong
RF Specification	
RF range	Up to 50m (open field)
Modulation	FM
Radiated power	<1mW

Mechanical and Environmental	
Dimensions	
95(h) x 95(w) x 101(d)mm	
Weights	
185g (excluding batteries)	
Temperature and Humidity	
Operating	0°C to +45°C
Storage	-20°C to +60°C
Humidity	95% (non condensing)



Certification and Approvals

Certification	
CE marked	Yes
EU Directives	LVD, EMC and R&TTE
LVD	IEC 60950-1
EMC	ETSI EN 301489-1 / 3
R&TTE	ETSI EN 300220-1 / 2
Local Regional and Other Approvals	
UK, Ireland	None required
UAE	TRA
Singapore	IDA
Malaysia	CMST
Hong Kong	None required
Zensys	Z-Wave® compliant and interoperable

Zensys

Z-Wave® device type

- Basic class: Routing Slave
- Generic class: Binary Sensor
- Specific class: Routing Binary Sensor

Z-Wave® command classes

- Association, (S)
- Battery, (S)
- Basic, (C)
- Binary sensor, (S)
- Configuration, (S)
- Manufacturer specific, (S)
- Version, (S)
- Wake Up

Where: S = Supported, C = controlled

Associations

Control modes:	Can control a group only
No of groups:	One
No of Associations:	5

Note: Associations cannot be made to Channel 2 of MK Astral™ 2 Gang switches and dimmers.

Note: Only one PIR can be used per group.

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Inclusion

To include the device in a system press the TAMPER switch under the back cover.

Exclusion

To exclude the device from a system press the TAMPER switch under the back cover.

Association

To create associations using a controller press the TAMPER switch under the back cover.

Disassociation

To remove associations using a controller press the TAMPER switch under the back cover.

SUC/SIS updates

Periodic and routine update will be requested every 4 hours.

Note: Only available if SUC/SIS in network.

Z-Wave® compatibility

MK Astral™ products are tested and certified as Z-Wave® compliant and are designed to work with other manufacturers Z-wave® compliant and interoperable products. Z-Wave® products of other types and applications can be added to the system and will act as repeaters if they support this functionality. This enables the system to grow and expand to other application areas as your needs develop.

Note: Please refer to www.mkelectric.co.uk for the latest data and information

LDBC1 DBMZ DC Blind Controllers



LDBC1U	DBMZ DC Blind Controller, 868.4MHz, UK/UAE
LDBC1S	DBMZ DC Blind Controller, 868.4MHz, Singapore
LDBC1M	DBMZ DC Blind Controller, 868.1MHz, Malaysia
LDBC1H	DBMZ DC Blind Controller, 919.8MHz, Hong Kong
LDBC1I	DBMZ DC Blind Controller, 865.2MHz, India

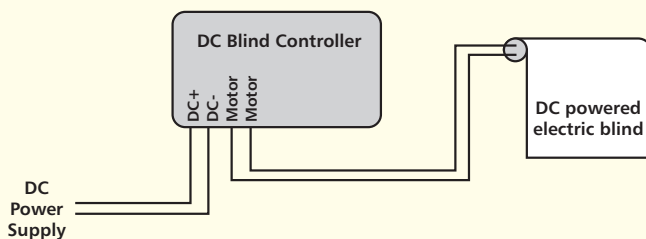
Features and Benefits

Single channel controller for use with DC powered motorised blinds.

Note: Motor supplied with blind and not supplied by MK.

- Up to 50m RF range (open field)
- On board control of blind
- Self calibrating during use
- DC Powered

Installation



Important

Upper and Lower end stops of blind must be set and locked before calibration, (see blind instructions).

Operation and Detection

Using on board buttons

- Press OPEN to raise the blind
- Press CLOSE to lower the blind
- Press either button to stop the blind at its current position

From another MK Astral™ Controller

- Press On/Dim-up to raise the blind
- Press Off/Dim-down to lower the blind
- To set the blind to an intermediate position - hold the dim-up/down button down and release to stop when the blind is in position

Command Status Indications

Motor Status LED

- Red: Calibration required
- Green: Calibration activated and in progress

Zensys Status LED

- Green flash: Receipt of valid Z-Wave® command
- Red flash: Error

Note: During normal operation there is no indication of command

success/failure on the product as with other MK Astral™ products.

Program Buttons and Functions

Program buttons

LEARN button on side of unit

Program functions

Calibration

Reversal of motor direction control

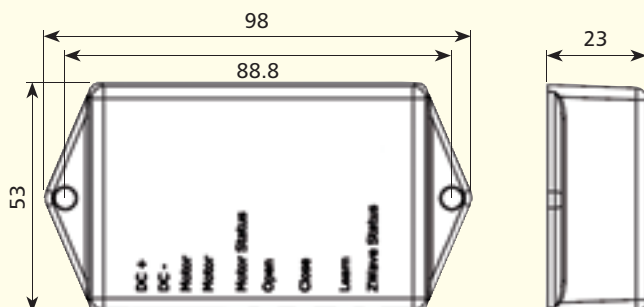
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Power Supply	
Power Source	DC
Rated voltage	8 - 30V
Rated load current:	5A
Power Consumption	<1W in standby

RF Performance	
RF operating frequency	
LDBC1U	868.4MHz for use in UK, Ireland, UAE
LDBC1S	868.4MHz for use in Singapore
LDBC1M	868.1MHz for use in Malaysia
LDBC1H	919.8MHz for use in Hong Kong
LDBC1I	865.2MHz for use in India
RF Specification	
RF range	Up to 50m (open field)
Modulation	FM
Radiated power	<1mW

Mechanical and Environmental	
Dimensions	
53(h) x 98(w) x 23(d)mm	
Weights	
65g	
Temperature and Humidity	
Operating	0°C to +45°C
Storage	-20°C to +60°C
Humidity	95% (non condensing)



Certification and Approvals	
Certification	
CE marked	Yes
EU Directives	LVD, EMC and R&TTE
LVD	EN 60335-1 EN 60335-97
EMC	EN 61326 IEC 61000-6-1 IEC 61000-3-2 IEC 61000-3-3 ETSI EN 300683
R&TTE	ETSI EN 300220
Local Regional and Other Approvals	
UK, Ireland	None required
UAE	TRA
Singapore	IDA
Malaysia	CMST
Hong Kong	None required
India	None required
Zensys	Z-Wave® compliant and interoperable

Zensys

Z-Wave® device type

- Basic class: Routing Slave
- Generic class: Multi-Level Switch
- Specific class: Multi-Position Motor

Z-Wave® command classes

- All Switch, (S)
- Basic, (C)
- Configuration, (S)
- Version, (S)
- Multi Level Switch, (S)
- Scene Activation, (S)
- Scene Actuator Configuration, (S)
- Manufacturer specific, (S)

Where: S = Supported, C = controlled

Inclusion

To include the device from a system press the LEARN button.

Exclusion

To exclude the device from a system press the LEARN button.

Association

To create associations using a controller press the LEARN button.

Disassociation

To remove associations using a controller press the LEARN button.

Configuration Command Class**Parameter 1: Device calibration status**

Read:	0	device not calibrated
	1	device calibrated
Write:	0	no action
	1	start calibration process

Parameter 2: Motor Direction Setting

Read:	0	normal
	1	reversed
Write:	0	set to normal and start calibration
	1	set to reverse and start calibration

Z-Wave® compatibility

MK Astral™ products are tested and certified as Z-Wave® compliant and are designed to work with other manufacturers Z-wave® compliant and interoperable products. Z-Wave® products of other types and applications can be added to the system and will act as repeaters if they support this functionality. This enables the system to grow and expand to other application areas as your needs develop.

Note: Please refer to www.mkelectric.co.uk for the latest data and information

LPTSM1 AN148 Plug-Through Switch



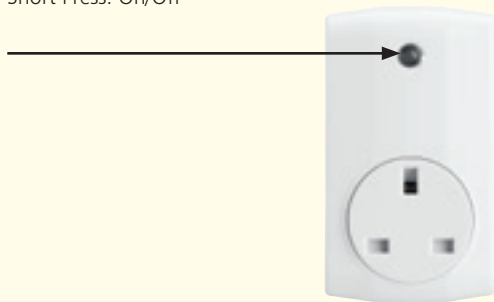
Features and Benefits

- Allows control of plug in stand and table lamps
- Load status indicator
- Mains powered
- Internal fuse protection against overload or short circuit
- Low standby power consumption
- Up to 30m RF range (open field)
- Responds to system All_Off commands

Note: This product does not participate in MK Astral™ Holiday mode

Operation

Short Press: On/Off



Command Status Indications

- Red** Load ON
- 10 Red flashes** Switch module controlled by LPIR1 SP103 PIR and tamper switch activated.

Note: Load flashes at same time.

LPTSM1U	AN148 Plug-Through Switch Module, 868.4MHz, UK/UAE
LPTSM1S	AN148 Plug-Through Switch Module, 868.4MHz, Singapore
LPTSM1M	AN148 Plug-Through Switch Module, 868.1MHz, Malaysia
LPTSM1H	AN148 Plug-Through Switch Module, 919.8MHz, Hong Kong

Program Buttons and Functions

Program buttons

Normal operation button on front of module

Program functions

Not applicable

Power Supply

Power Source	Mains
Rated voltage	220 - 240Vac / 50Hz
Power Consumption	<1.2W in standby

Load Specification:

Suitable for use with the following load types and load ratings.

GLS / Incandescent, Tungsten Filament	25 - 600W
Mains Tungsten Halogen	25 - 600W

RF Performance

RF operating frequency

LPTSM1U	868.4MHz for use in UK, Ireland, UAE
LPTSM1S	868.4MHz for use in Singapore
LPTSM1M	868.1MHz for use in Malaysia
LPTSM1H	919.8MHz for use in Hong Kong

RF Specification

RF range	Up to 30m (open field)
Modulation	FM
Radiated power	<1mW

Mechanical and Environmental

Dimensions

104(h) x 60(w) x 47(d)mm (excluding plug pins)

Weights

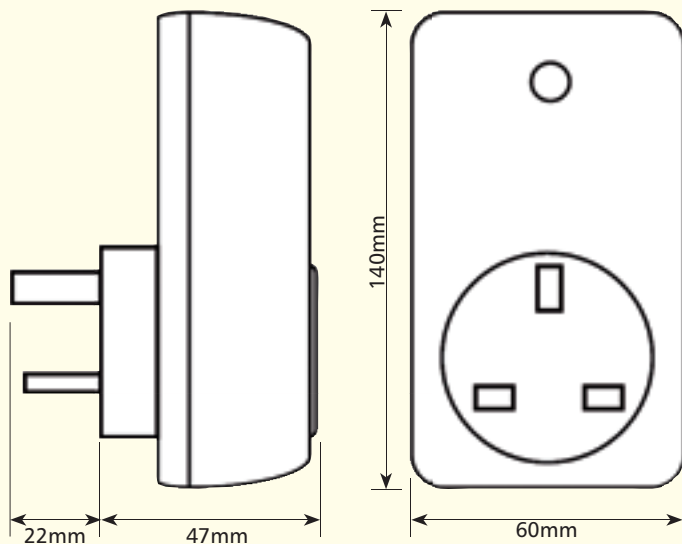
145g

Temperature and Humidity

Operating 0°C to +45°C

Storage -20°C to +60°C

Humidity 95% (non condensing)



Certification and Approvals

Certification

CE marked	Yes
EU Directives	LVD, EMC and R&TTE
LVD	IEC 61058-1 BS 1363
EMC	ETSI EN 301489-1 / 3
R&TTE	ETSI EN 300220-1 / 2

Local Regional and Other Approvals

UK, Ireland	None required
UAE	TRA
Singapore	IDA
Malaysia	CMST
Hong Kong	None required
Zensys	Z-Wave® compliant and interoperable

Zensys

Z-Wave® device type

- Basic class: Slave
- Generic class: Binary Switch
- Specific class: Binary Power Switch

Z-Wave® command classes

- Alarm, (S)
- All Switch, (S)
- Basic, (S)
- Binary switch, (S)
- Manufacturer specific, (S)
- Protection, (S)
- Version, (S)

Where: S = Supported, C = controlled

Associations

The product cannot control other Z-Wave® devices.

Inclusion

To include the device in a system press the OPERATION BUTTON on the front of the module.

Exclusion

To exclude the device from a system press the OPERATION BUTTON on the front of the module.

Association

To create associations using a controller press the TAMPER OPERATION BUTTON on the front of the module.

Disassociation

To remove associations using a controller press the OPERATION BUTTON on the front of the module.

Protection Command Class Parameters

Allows local control of the lamp at the module to be disabled.

Setting	Description
0	Local operation possible
2	Local operation disabled - module can only be controlled remotely

Alarm Command Class Parameters

On receipt of an Alarm Report, (Alarm Type 0x01 and Level 0x11), the indicator and load will flash on and off for 10s.

SUC/SIS updates

Network updates from SUC/SIS devices are not required or applicable to slave devices.

Z-Wave® compatibility

MK Astral™ products are tested and certified as Z-Wave® compliant and are designed to work with other manufacturers Z-wave® compliant and interoperable products. Z-Wave® products of other types and applications can be added to the system and will act as repeaters if they support this functionality. This enables the system to grow and expand to other application areas as your needs develop.

Note: Please refer to www.mkelectric.co.uk for the latest data and information

LPTDM1 AD131 Plug-Through Dimmer



LPTDM1U	AD131 Plug-Through Dimmer Module, 868.4MHz, UK/UAE
LPTDM1S	AD131 Plug-Through Dimmer Module, 868.4MHz, Singapore
LPTDM1M	AD131 Plug-Through Dimmer Module, 868.1MHz, Malaysia
LPTDM1H	AD131 Plug-Through Dimmer Module, 919.8MHz, Hong Kong

Features and Benefits

- Allows control of plug in stand and table lamps
- Load status indicator
- Mains powered
- Internal fuse protection against overload or short circuit
- Low standby power consumption
- Up to 30m RF range (open field)
- Responds to system All_Off commands

Note: This product does not participate in MK Astral™ Holiday mode

Operation

Short Press: On/Off

Long Press: Dim up/down



Command Status Indications

- Red** Load ON
- 10 Red flashes** Switch module controlled by LPIR1 SP103
PIR and tamper switch activated.
- Note: Load flashes at same time.

Program Buttons and Functions

Program buttons

Normal operation button on front of module

Program functions

Not applicable

Power Supply

Power Source	Mains
Rated voltage	220 - 240Vac / 50Hz
Power Consumption	<1.2W in standby

Load Specification:

Suitable for use with the following load types and load ratings.

GLS / Incandescent, Tungsten Filament	25 - 400W
Mains Tungsten Halogen	25 - 400W

RF Performance

RF operating frequency

LPTDM1U	868.4MHz for use in UK, Ireland, UAE
LPTDM1S	868.4MHz for use in Singapore
LPTDM1M	868.1MHz for use in Malaysia
LPTDM1H	919.8MHz for use in Hong Kong

RF Specification

RF range	Up to 30m (open field)
Modulation	FM
Radiated power	<1mW

Mechanical and Environmental

Dimensions

104(h) x 60(w) x 47(d)mm (excluding plug pins)

Weights

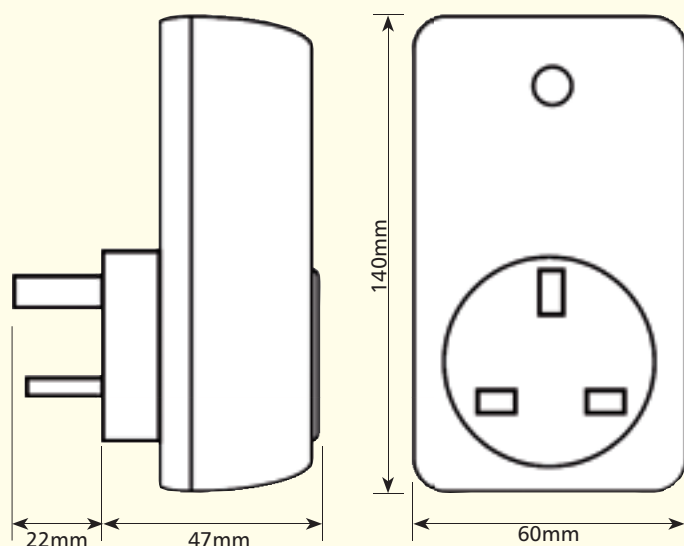
150g

Temperature and Humidity

Operating 0°C to +45°C

Storage -20°C to +60°C

Humidity 95% (non condensing)



Certification and Approvals

Certification

CE marked Yes

EU Directives LVD, EMC and R&TTE

LVD IEC 61058-1
BS 1363

EMC ETSI EN 301489-1 / 3

R&TTE ETSI EN 300220-1 / 2

Local Regional and Other Approvals

UK, Ireland None required

UAE TRA

Singapore IDA

Malaysia CMST, ST

Hong Kong None required

Zensys Z-Wave® compliant and interoperable

Zensys

Z-Wave® device type

- Basic class: Slave
- Generic class: Multilevel Switch
- Specific class: Multilevel Power Switch

Z-Wave® command classes

- Alarm, (S)
- All Switch, (S)
- Basic, (S)
- Multilevel switch, (S)
- Manufacturer specific, (S)
- Protection, (S)
- Version, (S)

Where: S = Supported, C = controlled

Associations

The product cannot control other Z-Wave® devices.

Inclusion

To include the device in a system press the OPERATION BUTTON on the front of the module.

Exclusion

To exclude the device from a system press the OPERATION BUTTON on the front of the module.

Association

To create associations using a controller press the TAMPER OPERATION BUTTON on the front of the module.

Disassociation

To remove associations using a controller press the OPERATION BUTTON on the front of the module.

Protection Command Class Parameters

Allows local control of the lamp at the module to be disabled.

Setting	Description
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SUC/SIS updates

Network updates from SUC/SIS devices are not required or applicable to slave devices.

Z-Wave® compatibility

MK Astral™ products are tested and certified as Z-Wave® compliant and are designed to work with other manufacturers Z-wave® compliant and interoperable products. Z-Wave® products of other types and applications can be added to the system and will act as repeaters if they support this functionality. This enables the system to grow and expand to other application areas as your needs develop.

Note: Please refer to www.mkelectric.co.uk for the latest data and information