echo™

wireless • batteryless • self powered

DESIGNED FOR LIFE

contents

welcome to echo™...

Imagine switch technology that needs no wiring, uses no batteries and is effortless to install and commission. Sounds good? Well you'll like the sound of echo.™

Echo™ is an innovative range of entirely wireless, batteryless and self powered switches, only available from MK Electric.

Wireless – instant switch installation and location flexibility, reducing disruption and cost.

Batteryless – low maintenance and low running costs makes echo™ a very versatile and sustainable option.

Self Powered – using innovative technology to 'harvest' energy.

Backed by MK Electric's proven track record for quality and reliability.

Echo™ is the future of the switch.

Request a demonstration now by registering at www.switchonmk.com

WIRELESS BATTERYLESS SELF-POWERED

echo – five reasons why...

1: wireless

Instant switch installation and location/relocation flexibility means less cost, less time and less disruption.

2: batteryless

Low maintenance, low running costs. Eliminates nuisance and waste, making echo the sustainable option.

3: flexible

Free from the constraints of wiring, echo is easy to locate, relocate and can be fixed to almost any material. So change is much simpler to manage.

4: compliance

Supports Building Regulation compliance and has been manufactured excluding the hazardous substances restricted by RoHS.

5: innovation

Utilising innovative, proven technology, the switches are self powered and can work at ranges of up to 300 metres.

All with the quality and reliability associated with the MK Electric name.

echo – freedom from the constraints of wiring

So, think about the benefits that can bring both you and the end user.

It's a state-of-the-art, modern and stylish idea. But it's also hugely practical. Echo switches don't need wiring to the mains. So work, man-hours, and materials are reduced, and costs go down.

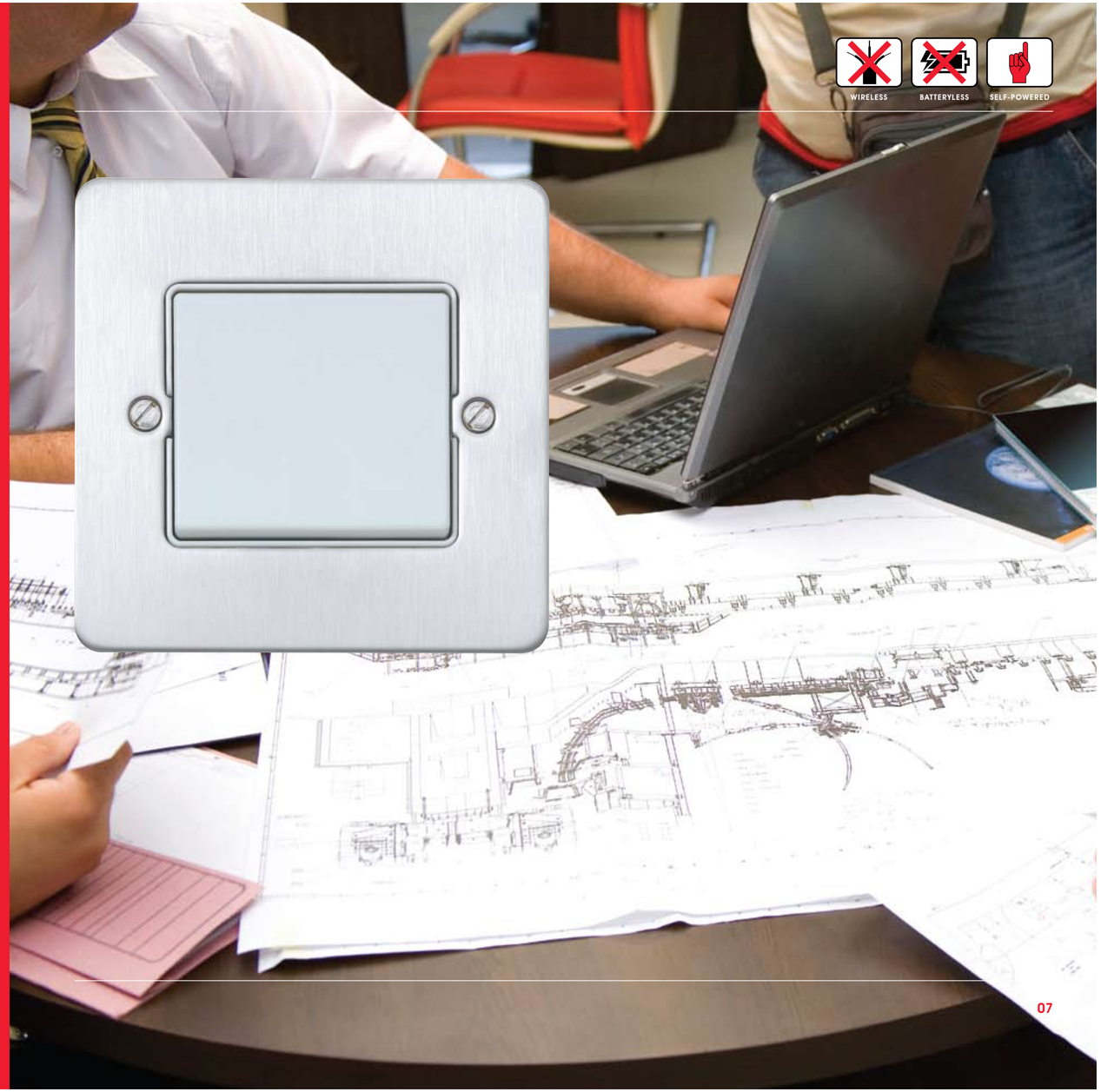
Wireless offers the benefits of instant switch installation and total location flexibility – resulting in reduced costs and disruption as well as improved speed and ease of installation which are invaluable for areas needing to rearrange space periodically, e.g. commercial offices, or those where the invasive channelling of walls isn't permitted or feasible, such as historic buildings or glass partition walls.

No need to run cables – saving material costs and installation times

No need to channel walls, run cables or conduit

No need to plaster, redecorate or repair walls

The back of the switch shows no wiring terminals



echo – no batteries required

Batteryless means low maintenance and low running costs, as well as eliminating the nuisance factor.

Negating the need to buy, fit or replace batteries, saving material costs.

Maintenance can also be a costly on-going issue, both to diagnose any potential issue and to resolve them.

Without batteries the nuisance factor is removed.

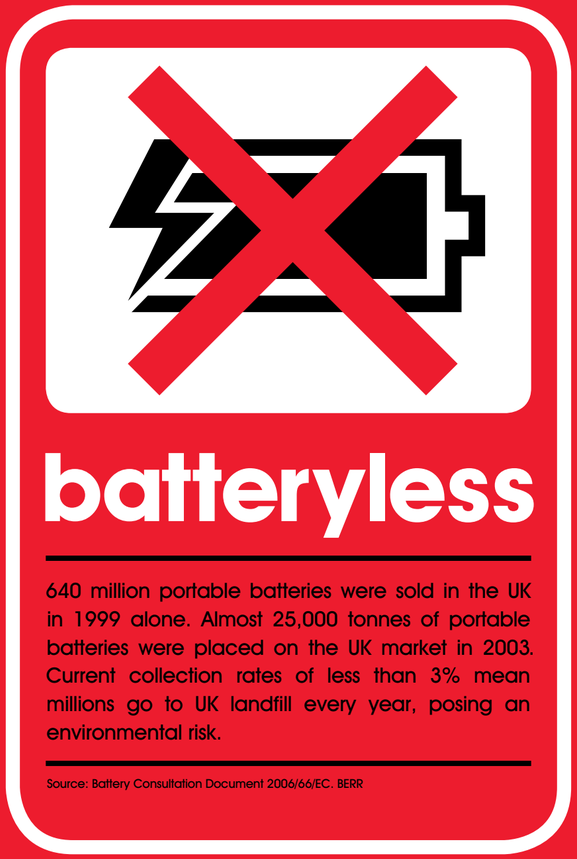
Disposing of batteries is no longer a concern, providing a more sustainable option to suit your environment.

No need to buy, fit or replace batteries, saving material costs

No need for expensive, time consuming maintentance issues

The majority of batteries in the UK ultimately end up in landfill

Masterseal (GRY) 1G switch transmitter. Manufactured excluding the hazardous substances restricted by RoHS



batteryless

640 million portable batteries were sold in the UK in 1999 alone. Almost 25,000 tonnes of portable batteries were placed on the UK market in 2003. Current collection rates of less than 3% mean millions go to UK landfill every year, posing an environmental risk.

Source: Battery Consultation Document 2006/66/EC. BERR

echo is completely flexible

Wireless, batteryless and self-powered. What could be simpler and more flexible to the needs of your environment?

Wireless means total location flexibility. Invaluable when space needs to be re-arranged periodically, e.g. commercial offices. Office 'churn' is often costly, disruptive and time consuming, vastly reduce this with switches free from the constraints of wiring.

Echo is ideal for applications where the invasive channelling of walls isn't permitted, such as listed buildings or historic buildings – houses, conversions, etc, or where it isn't feasible such as glass partion walls or exposed brick walls.

Simply mount directly on to the wall or mount on a back box in the traditional manner. Or even with adhesive pads.* Fitting or relocating them doesn't need to damage walls or disrupt the building. Creating new space layouts – becomes much easier and less costly.

If a range of up to 300 metres in an open field and 30m in a typical building isn't enough, a repeater is available to extend the range. The echo remote control is also available for additional useability.

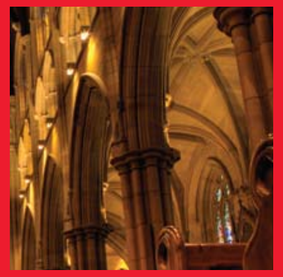
The range of potential applications is limitless.

**Logic Plus and Aspect versions only*

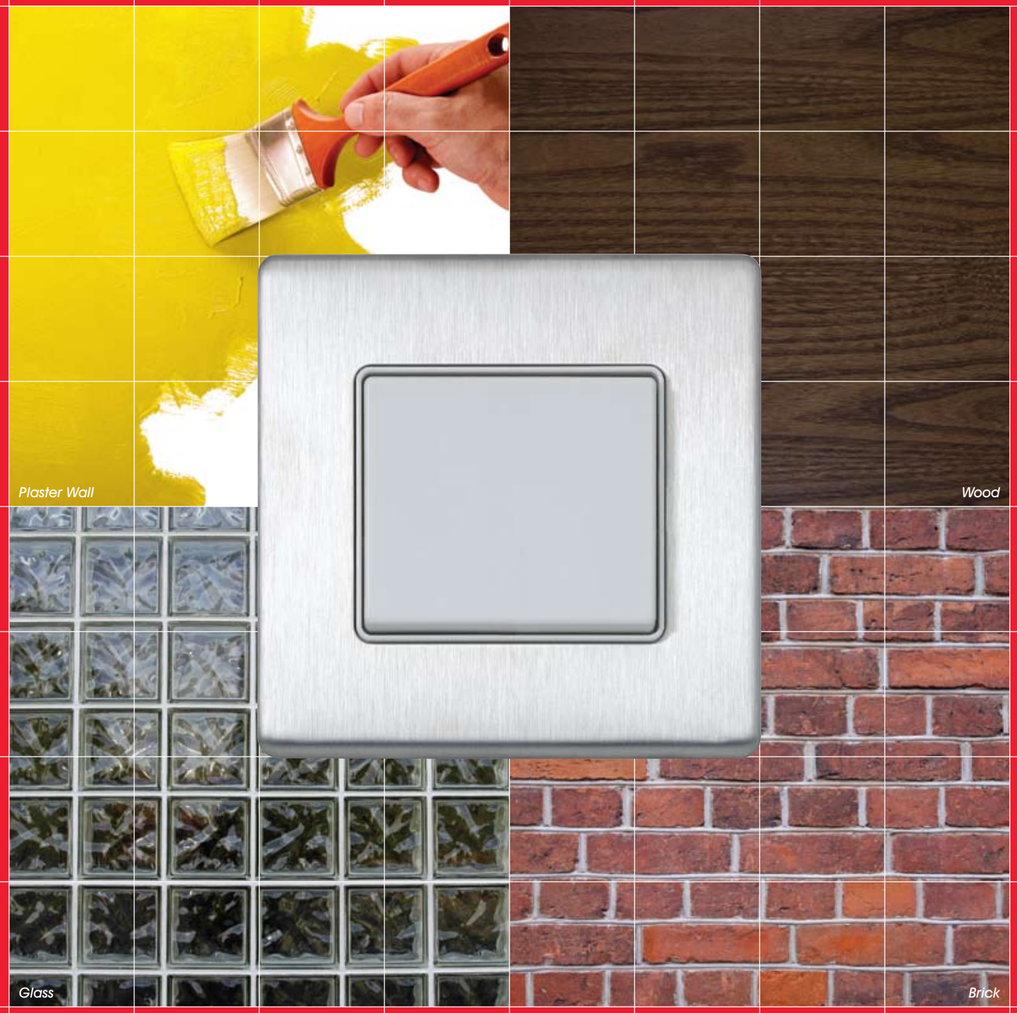
Listed & Historic Buildings

Glass Partion Walls

Open Plan Office



Churches and Cathedrals



echo – working with your building

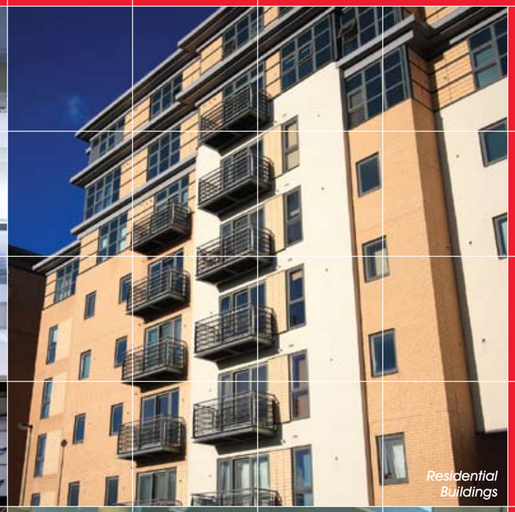
Echo aids compliance to the Building Regulations, such as **Part L** by providing localised control of lighting, integration with lighting management systems and other networks covering areas like heating and air conditioning.

They also help with meeting **Part M** requirements, thanks to their immense adaptability in choice of positioning, their wide, easy-to-operate rockers and choice of finishes to ensure front plates contrast visually with their background.

They do not cause any interference so there's peace of mind if you have DECT, PMR or WLAN systems for example.

The echo range has been manufactured excluding the hazardous substances restricted by RoHS. (www.rohs.gov.uk)

No wires, no batteries, no maintenance, easy re-working without cabling, all help make them highly efficient in both installation and use, as well as exceptionally versatile.



echo – switching for the future

Technology that is transforming light operation with its ability to 'self power'.

Essentially, it works by 'harvesting' energy from the actual act of flicking the switch.

Coverage is up to 30 metres in typical buildings, with repeaters available for simple coverage extension or to get around impervious materials like granite and steel.

One receiver can be operated by up to as many as 30 switches and one switch can activate as many receivers as you need.

Switches can be assigned or unassigned to a switch receiver when in 'learn' mode extremely easily and quickly, time and time again.

All it takes is the power of a single finger.

Echo switch (transmitter) – harvesting power directly from your finger

10A and small load switch receivers – simply wire to the lighting circuit

The field strength indicator helps you determinae signal strength to aid positioning of the switch

Echo switches can also be operated using a remote control

innovative

Pressing the rocker creates a small amount of electrical energy, sufficient to transmit a radio signal to a switch receiver, which is wired into the lighting circuit – thereby turning the light on or off. The switch is then aligned to the receiver by putting it into learn mode & pressing the rocker. The switch itself doesn't house energy – the energy is created by the push of the rocker.

The advantages of using echo switches in a commercial environment are considerable.

Businesses move, grow and change – and their premises with them. Re-shaping a building's layout is notoriously costly, labour intensive and disruptive.

Wireless, batteryless and self powered echo eliminates completely the need to run cables or channel walls, which reduces disruption, cuts costs and perhaps most important of all commercially, helps shrink timescales.

Echo's secure 868MHz frequency assures immunity against interference, proven with systems such as DECT, PMR and WLAN etc.

If coverage of up to 30m in a typical building isn't enough, an echo repeater provides simple coverage extension. A field strength indicator is available to simplify installation by testing the signal strength from proposed positioning of the echo switch and receiver module.

one

New offices to design – need to consider sustainability, long term costs and keep within tight timescales?

Echo vastly reduces material costs and installation times are almost immediate, no batteries for a more sustainable solution. Making it ideal for buildings with a high 'churn' rate for a flexible building.

two

Need lighting for glass offices and partition walls?

Echo's Logic Plus and Aspect switches are wireless, batteryless and can be easily mounted to glass (or any wall type), using the supplied adhesive pads for a flawless installation.

three

Need to ensure your building complies to the Building Regulations?

Total location flexibility for localised control of lighting, aiding compliance to Part L. Wide rockers and a comprehensive range of finishes ensures Part M requirements are met.

four

Office space need to be re-arranged periodically?

Echo eliminates disruption, time and cost of switch relocation. Switches can simply be moved and re-programmed.

The advantages of using echo switches in residential environments are substantial, offering freedom and flexibility in layout and design.

Echo is a range of entirely wireless, batteryless and self powered switches offering a truly innovative and versatile solution to the home.

Adding or moving switches is effortless, wireless means instant installation and ensures user safety as accessing the mains is not required.

Batteryless means low cost and low maintenance, as the nuisance factor of buying, fitting, replacing and disposing of batteries is eliminated.

All this offers the additional benefit of being able to locate switches in bathrooms. Logic Plus and Aspect versions can be mounted to any wall type using adhesive pads.

one

Building a new residential development – want innovative and flexible solutions for your clients?

Echo is an innovative range of entirely wireless, batteryless and self powered switches. No wires means instant installation and total location flexibility.

two

Want to add new switches but don't want the hassle of having to redecorate?

Adding switches couldn't be simpler – wireless echo means there's no need to run cables or channel walls, eliminating the disruption, cost and time required to redecorate.

three

Want to control lighting remotely?

The echo remote control can be programmed to provide simple and quick control of your lighting requirements.

four

Want to control lighting in your bathroom?

Echo switches are wireless and so do not require a mains supply, ideal for locating inside of the bathroom. Logic Plus and Aspect versions can be simply mounted to any wall type – glass, brick, etc. – using adhesive pads.

echo – at home in the home

Echo – perfect for applications where the invasive channelling of walls is not feasible or is not permitted.

The adaptability of echo provides for the optimum siting of switches for ideal usage and control, making them the first choice for specialised locations.

Clear examples include listed or historic buildings, where the lack of any requirement to run cables and channel walls is invaluable to preserve the fabric of the building.

Batteryless means costly and disruptive maintenance issues are reduced. Less battery waste makes echo the sustainable option.

But it's not hard to think of other uses – on oilrigs, for example, marine applications, exhibition stands, static homes, portable offices and laboratories.

And we're sure you'll have plenty of ideas of your own for other advantageous applications.

Oil Rigs

Cruiseliners & Ships

Exhibition Halls

Laboratories

the uses for echo are simply limitless

Historic Buildings

Conservatories

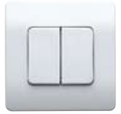
Hospitals

Static Homes

Echo offers you a great range, capturing the stylish finishes of MK's wiring device products with truly exceptional safety, quality and reliability. All backed up by MK Electric's electronic products 10-year guarantee.

Logic Plus


K4786 WHI


K4789 WHI

Finishes	1G Switch Transmitter	2G Switch Transmitter
White	K4786 WHI	K4789 WHI
Graphite	K4786 GRA	K4789 GRA
Surface Mounted Pattress	K4710P	K4710P

Chroma Plus


K4766 PCR


K4767 PCR

Finishes	1G Switch Transmitter	2G Switch Transmitter
Polished Chrome	K4766 PCR	K4767 PCR

Albany Plus


K4766 SAB


K4767 MCO

Finishes	1G Switch Transmitter	2G Switch Transmitter
Matt Chrome	K4766 MCO	K4767 MCO
Brushed Stainless Steel	K4766 BSS	K4767 BSS
Satin Brass	K4766 SAB	K4767 SAB

Aspect**


K23476 BSS B


K23477 CHA B

Finishes	1G Switch Transmitter	2G Switch Transmitter
Brushed Stainless Steel	K23476 BSS*	K23477 BSS*
Polished Brass	K23476 PBR*	K23477 BSS*
Polished Chrome	K23476 POC*	K23477 POC*
White	K23476 WHI W	K23477 WHI W
Charcoal	K23476 CHA B	K23477 CHA B
Satin Chrome	K23476 SCR W	K23477 SCR W

Edge


K134676 POC W


K13477 PBR B

Finishes	1G Switch Transmitter	2G Switch Transmitter
Brushed Stainless Steel	K13476 BSS*	K13477 BSS*
Polished Brass	K13476 PBR*	K13477 PBR*
Silver Anodised Aluminium	K13476 SAA*	K13477 SAA*
Polished Chrome	K13476 POC*	K13477 POC*
White	K13476 WHI W	K13477 WHI W
Black	K13476 BLK B	K13477 BLK B
Antique Bronze	K13476 ABR B	K13477 ABR B

WIRELESS BATTERYLESS SELF-POWERED

Metalclad Plus


K3786 WHI


K3787 ALM

Finishes	1G Switch Transmitter	2G Switch Transmitter
Aluminium	K3786 ALM	K3787 ALM
White	K3786 WHI	K3787 WHI

Masterseal


55400 GRY


55406 WHI

Finishes	1G Switch Transmitter	2G Switch Transmitter
Grey	55400 GRY	55406 GRY
White	55400 WHI	55406 WHI

Masterseal Enclosure for Small Load Receiver

Grey	55000 GRY	55000 GRY
White	55000 WHI	55000 WHI

Masterseal Enclosure for 10A Receiver

Grey	55001 GRY	55001 GRY

Switch Receivers


K5418R


K5413R

Small Load Switch Receiver	K5418R
10A Switch Receiver	K5413R

Accessories


K5414R


K5419R


K5417R

Remote Control	K5417R
Field Strength Indicator	K5419R
Repeater	K5414R
Adhesive Pad (Aspect & Logic Plus)	KPAD

How to Order

Answer

Switch Receiver Module(s):
What current loading is required?
Tip: Refer to page 25 for loading detail and then select a small load or 10A Switch Receiver

Switch Transmitter:
How many Switch Transmitters are needed for your building?
Tip: You can choose up to 30 per Switch Receiver. Think about flexibility, useability and Part L requirements

Switch Transmitter:
Which aesthetic would you like? Logic Plus, Aspect etc.
Tip: MK's wiring device ranges offer a finish to suit any interior

Accessories:
Want to ensure sufficient signal strength prior to installation?
Tip: Save time and money by using a Field Strength Indicator

Accessories:
Do you want a Remote Control?
Tip: A Remote Control adds a greater level of versatility

Accessories:
Want certainty that range isn't an issue?
Tip: Echo switches transmit up to a 30m range in a typical building. Metal or granite can attenuate the signal. A Repeater will extend the range to overcome obstacles

KEY
*Add 'W' suffix for WHITE inserts and 'B' suffix for BLACK inserts.
**Pattress is supplied to aid mounting direct to the wall surface. When mounting to back box, the pattress is not required
All Echo products (excl. K5419R) comply to BS EN 60669-2-1

Mounting Switch Transmitters:
- All can be mounted directly to the wall surface – screws supplied.
- All can be mounted to back boxes – screws supplied.
- Logic Plus and Aspect type switches can also be mounted using supplied adhesive pads

basic setting up

Echo switch (transmitters) can be assigned or unassigned to a switch receiver simply and quickly – time and time again.

Switch receiver modules can be operated by up to 30 MK echo switches.

Echo switches can operate any number of switch receivers.

Switch receivers' memories are 'empty' when dispatched, ready for setting.

To eliminate inadvertent programming, when in 'learn mode', the switch receiver sensitivity is reduced to approximately 5 metres from the echo switch.

A field strength test should be carried out to ensure a successful installation.

Switch receiver

- Press and hold down the LRN button on the surface of the switch receiver – after 0.3 seconds Programming Mode is activated.
- The switch receiver relay will operate and the load connected to it will cycle (one second) on and off for visual confirmation. On the 10A switch receiver an LED is also provided so even with no load connected a visual feedback is given.
- Hold and press the CLR button for 2 seconds to delete the receivers memory. The switch receiver is now ready for programming.

NOTE: For further information regards product installation, please visit www.switchonmk.com to view or download the Echo Installers Guide.

Echo switch

- Any switch can be assigned to a switch receiver.
- Press and release the rocker – the switch receiver relay will stop for approximately 4 seconds to confirm receipt of the command before resuming recycling of the load.
- Switches can be un-assigned in the same way. If wanting to un-assign one switch transmitter from a group, while the switch receiver relay is cycling, press the rocker of the unit no longer needed and this will now be un-assigned.
- During the one second cycling of the relay, additional echo switches can be programmed to assign (or un-assign) as required.
- The programming mode is left by re-pressing the LRN button, or after 30 seconds of no activity the receiver exits the Programming Mode automatically.

WIRELESS BATTERYLESS SELF-POWERED

switch receiver

Module dimensions:
Length: 175.5mm
Width: 50.3mm
Height: 33.25mm

10A Switch Receiver – K5413R

Module dimensions:
Length: 47.4mm
Width: 34.6mm
Height: 28.8mm

Small Load Switch Receiver K5418R

Switch receiver modules are controlled by radio signals from the echo switch.

Up to 30 echo switches can control a switch receiver module – this is due to the receivers built in memory, in the 'learn mode.'

Switch receiver loads

MK is introducing a 10A switch receiver, which is intended to make life simple because it can be treated in exactly the same way as any other 10A MK switch. The 10A unit complies with BS EN60669-2-1. As with all our products, this must be installed in accordance with lighting manufacturer's recommendations.

A further small load switch receiver is also available. This unit is small, compact and can switch 400W of tungsten filament loads, 360W of fluorescent load with conventional ballasts and 40W of compact fluorescents.

Switch receiver installation

The 10A switch receiver is a robust IP4X unit which contains cable clamps and fits through 4 inch diameter apertures and can be screw mounted.

The small load switch receiver can be mounted either in a back box – non metallic with 40mm depth minimum – or close to the lighting load in the ceiling void.

Echo switch (transmitter)

Available to complement MK's wiring devices ranges – see page 22-23 for details.

MK Edge products may be screwed to a back box in the normal manner.

All other products may also be screwed to a back box as normal, or screwed to a wall using the screws and wall plugs provided.

Logic Plus and Aspect variants can also be installed in the manner described above, or instead, simply 'stuck' to the wall surface using adhesive pads.

Each switch can operate any number of switch receivers.

NOTE: For further information regards product installation, please visit www.switchonmk.com to view or download the Echo Installers Guide.

range information

MK echo works at a frequency of 868.3 MHz.

The signal will attenuate between the echo switch (transmitter) and switch receiver. This means that the further the signal has to travel the more the signal intensity decreases, thus restricting range.

Range is also affected by what materials are present around the product, for example, metal does not allow radio signals to pass through it. So check where you are installing the product because you might need to install repeaters.

In open air the range can be up to 300 metres

However, in places such as halls, the Logic Plus switch transmitters would have a range of up to 100 metres. This range could be attenuated by concrete or brick walls, reducing it to 30 metres.

Decorative variants with metal frontplates, have a range of up to 30 metres in areas such as halls. Attenuation could reduce this.

Other factors that could affect range:

- Switch transmitter mounted on metal surfaces (Up to 30% loss of range).
- False ceilings with panels of metal or carbon fibre.
- Mounting transmitter or receiver on floor or close to floor or towards corner.
- Devices transmitting RF signals such as computers, audio and video equipment, or electronic gear controls for lamps. A minimum distance of 0.5m should be kept.

Field strength indicator tests the strength of the radio signal from the echo switch prior to installation.

Position the echo switch at its desired mounting position and the field strength indicator at the desired position of the switch receiver, then press the switch rocker.

A GREEN light confirms a sufficient radio signal, RED indicates there is an insufficient signal and positioning needs to be adjusted.

Repeater

The repeater can be used to extend the reception distance of an echo switch. All that is needed is a 250 volt a.c. 50Hz supply.

If a switch receiver is required to be mounted at a distance and in an environment that offers poor reliability in switch receiver operation, then a repeater can be used physically positioned somewhere between the switch transmitter and the switch receiver.

The repeater is not designed to directly switch a load but will receive transmissions from any echo switch and relay them on to an MK switch receiver.

Repeaters do not have to be assigned to be able to operate within the circuit, unlike switch receivers. As long as a signal from an echo switch is received, the repeater will relay exactly that signal such that only the correct switch receiver will be activated.

Only one repeater can be used in any circuit.

NOTE: For further information regards product installation, please visit www.switchonmk.com to view or download the Echo Installers Guide.

frequently asked questions

What products do I need for an echo system?
An echo switch transmitter and a switch receiver – the latter would be wired to the lighting circuit. See page 22-23 for more details.

How many switch receivers will an echo switch operate?
A switch receiver can be set to be operated by up to 30 echo switch transmitters.

How many echo switches can operate a switch receiver?
An echo switch can operate any number of switch receivers for endless flexibility.

What is the signal range echo switches can transmit?
Echo switches transmit to switch receivers within a range of 30 metres in a typical building. (Up to 300 metres in an open field). Building materials will affect the signal.

Can the signal pass through all materials?
The signal is attenuated to varying degrees by materials such as metal or granite, in such instances the repeater can be used to 'boost' the radio signal strength.

How can I be sure there is sufficient signal strength?
MK's field strength indicator tests the radio signal strength from the echo switch to switch receiver prior to installation – saving you time and money.

Will MK echo interfere with other systems?
Echo does not interfere with systems such as DECT, WLAN, PMR, etc.

How is the switch receiver wired into the lighting circuit?
Wire the receiver into the lighting circuit, similar to a transformer/ballast.

Is MK echo RoHs compliant?
The echo range falls outside of the scope of RoHS. However MK have expressly designed all echo products using material free from the hazardous substances restricted by RoHS.

Does the MK echo range come with a guarantee?
Like all MK Electronic products, MK echo also has a comprehensive 10 year product guarantee as standard.

What type of switch contacts are in the products?
Receiver relay contacts are μ gap.

What are the terminal capacities of the switch receivers?
Small load switch receiver – 1.5mm^2 single stranded
10A switch receiver – 1mm^2 to 2x2.5mm^2

How is the system affected in the event of a power loss?
Switch Receivers are mains failure sensitive, i.e. they will function under all normal conditions but will switch off in the event of a power cut or dramatic interruption in mains voltage.

Where can I find out more installation information?
Go to www.switchonmk.com to download the 'Echo Installers Guide.'

Can I see a product demonstration?
Yes, go to www.switchonmk.com to register for a demonstration.

Where can I obtain further information?
Contact technical services +44 (0) 1268 563 720.

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