DANLERS

Controls for Lighting & HVAC

Energy Saving

Security

Convenience

Product Catalogue

March 2007

DANLERS
Controls for Lighting & HVAC

Welcome

Welcome to the DANLERS catalogue. We hope you find it clear and informative. Feel free to call us if you require any further information. We will be pleased to help you.

Bienvenue

Nous vous souhaitons la bienvenue à la consultation du catalogue DANLERS. Nous espérons que vous le trouverez clair et informatif. Si vous avez des questions quelconques, n'hésitez pas à nous contacter. Nous ferons tout notre possible pour vous aider.

Willkommen

Willkommen beim DANLERS-Katalog. Wir hoffen, dass Sie ihn klar und informativ finden. Wenn Sie irgendwelche Fragen haben, wenden Sie sich bitte jederzeit an uns. Wir werden Ihnen in jeder Hinsicht behilflich sein.

Bienvenido

Bienvenido al catálogo DANLERS. Confiamos que lo halle fácil de leer e informativo. Si desea hacernos alguna pregunta, le rogamos no vacilar en contactarnos. Haremos lo que esté a nuestro alcance para servirle.

Benvenuti

Benvenuti al catalogo DANLERS. Ci auguriamo che lo troviate chiaro e informativo. Se vi occorrono chiarimenti vi preghiamo di mettervi in contatto con noi. Faremo del nostro meglio per aiutarvi.

Tony Kay
Managing Director

Electronic controls

DANLERS Limited design and manufacture a range of high quality electronic switches, for the control of lighting, heating, ventilation and air conditioning. Energy saving, security and convenience are among the many benefits brought by DANLERS controls.

The products are straightforward to install and generally use the existing wiring, making them equally suitable for retrofitting or for new installations. The energy saving products include relays with special high surge contact material. These products are designed to switch 6 amps (1500W at 230VAC) of any type of load, including fluorescent lights and fans.

Design solutions

Often special versions of our products can be made to suit customers' needs, and DANLERS also design and manufacture bespoke versions for other Original Equipment Manufacturers.

Customer service

We pride ourselves on giving personal service and prompt response to customers' needs. Please ring us should you require further catalogues or display boards for trade counters or show rooms. This brochure is also available in an A4 format.

Quality Assurance

- DANLERS Limited is an ISO9001 accredited company.

- Every product is tested after manufacture as standard.

- All relevant DANLERS products carry the CE mark.

- All DANLERS electronic switches comply with Directive 93/68/EEC (Electrical Equipment Safety Regulations 1994) and with Standard EN 60669-2-1 (Electronic Switches).

- DANLERS dimmer switches also meet Standard BS EN 55014: 1993.

- DANLERS products enable compliance with the requirements of the Building Regulations Approved Documents L2A and L2B for the Conservation of Fuel and Power and with the recommendations of the 2nd tier document:- BRE Digest 498 - "Selecting Lighting Controls".

- Many of the DANLERS energy saving products are listed on the Energy Technology List and therefore qualify for the Enhanced Capital Allowance Scheme run by the Carbon Trust.

- The Carbon Trust is also able to offer interest free loans to fund energy saving projects. For terms and conditions please visit www.carbontrust.co.uk

- All products are manufactured by DANLERS in the U.K. except for the radio remote controls which are manufactured in Austria and the U.K..

- Our warranty extends to two years from the date of manufacture.

ESTA

Qualified for **Energy Technology List**
www.eca.gov.uk
Authorised User No. 00064

CE

MOODY
INTERNATIONAL CERTIFICATION
UKAS QUALITY MANAGEMENT
Registration No. 879
ISO 9001: 2000

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PRODUCT RANGE INDEX

PIR occupancy switches

For automatic control of lighting (or other loads). Ideal for energy saving. Comprising passive infra-red person detector, adjustable photocell override, adjustable time lag. Loading up to 6 amps (1500W) of any type of load, including fluorescent lights and fans. Various versions for ceiling or wall mounting.

Ancillary products

Ceiling sockets for plug-in ceiling controls. Ceiling sockets with slave relays for controlling optional extra circuits.

PIR occupancy switches with daylight linked dimming

PIR occupancy switches with automatic dimming to compensate for changes in ambient light level. For fluorescent loads with high frequency ballasts.

Daylight linked dimmers

For automatic dimming to compensate for changes in ambient light level. For fluorescent loads with high frequency ballasts.

Manual high frequency dimmers

Manual push dimmers for fluorescent loads with 1 to10VDC high frequency ballasts. Fit plaster depth (16mm) wall box.

Ceiling photocell switches

Adjustable photocells for controlling indoor lighting. Ideal for energy saving. Loading up to 6 amps (1500W) of any type of load, including fluorescent lights.

Radio remote controls

Remote control switching and dimming. Hand held or wire-free wall mounted senders. Receiver switches and dimmers for indoor or outdoor mounting. Signals can pass through walls. Easily programmed - for simple or complex control set-ups.

PRODUCT RANGE INDEX

Active infra-red remote controls PAGES **34-35**

Remote control switching and dimming for shorter range "line of sight" applications. Hand held senders and indoor mounted receivers.

Time lag switches PAGES **36-39**

Ideal for energy saving. Adjustable time lags. Loading up to 6 amps (1500W) of any type of load, including fluorescent lights and fans. Versions for wall boxes or grid plates.

Outdoor security switches PAGES **40-41**

Outdoor PIR switch with adjustable photocell override.
Adjustable outdoor photocell switches.

New style dimmers PAGES **42-45**

Push and rotary dimmers, in stylish white plates. Versions for tungsten, mains halogen and dimmable transformer loads.
Versions up to 1000W.
No need to derate for mains halogen lamps.
1, 2, 3 and 4 gang plates.

Soft start dimmers PAGES **46-47**

Push button action, in stylish white plates or grid versions. Soft start dimming for tungsten, mains halogen and dimmable transformer loads.
Multi-way switching AND dimming using matching slaves.
Versions up to 630W.
No need to derate for mains halogen lamps.

HVAC controls PAGES **48-49**

(For Heating, Ventilation and Air Conditioning)
PIR thermostat controls combine PIR person detector with room thermostat. Versions for heating and cooling loads.
Heater boost switch. Selectable time lag. Ideal for energy saving on electric heater loads.
Fan speed control.

Bespoke / O.E.M. products PAGES **49-51**

Products for other Original Equipment Manufacturers. Bespoke PIR occupancy switches, Time lag switches and Adaptor box with plug. Controls with low voltage inputs and with low voltage, volt-free or open collector outputs. A range of Dimmer modules and Time lag modules for other manufacturers to assemble onto their own plates.

PIR occupancy switches

The DANLERS range of Passive infra-red occupancy switches is designed for the automatic control of lighting, heating, ventilation or air conditioning loads.

The PIR switch will switch on the connected load automatically when an area is occupied, and then switch it off automatically when the area has been vacant for a chosen duration. This has the benefits of reduced energy bills and automatic control. When being used to control lighting, the built-in photocell can be used to keep the lights off on bright days.

PIR occupancy switches are ideal for:

- Offices
- Factories
- Warehouses
- Schools
- Leisure centres
- Hospitals
- Canteens
- Staff rooms
- Corridors and stairwells
- Residential homes
- Military accommodation
- Student accommodation
- Toilet blocks
- Changing rooms
- Plus many other uses

PIR occupancy switch functions

Simple adjustment spindles

Each PIR occupancy switch in the DANLERS range has a passive infra-red quad person detector. This detects the movement of a warm body, moving within its detection zone. When such a movement is detected the load is switched on. There is a time lag function, which is adjustable by a spindle in the side of the product. The time lag is the time that must elapse with no movement detected before the PIR occupancy switch will switch off.

There is a built-in adjustable photocell override, which can be used to keep lights off when there is sufficient daylight available. The photocell can only be used in this way if the amount of natural daylight exceeds the level of the artificial lights. The photocell can be set to inactive when controlling heating, ventilation or air conditioning. The photocell also is adjusted by a spindle in the side of the product.

Each PIR occupancy switch contains a relay suitable for switching any type of load, including fluorescent lights and fans.
Any number of PIR occupancy switches may be wired in parallel, to control the same load. (There are, however, minimum load restrictions with the WAPIR model only.)

The PIR occupancy switches require a mains supply.

Function demonstrated with the lighting in an office

PIR switch brings lights on – only when needed
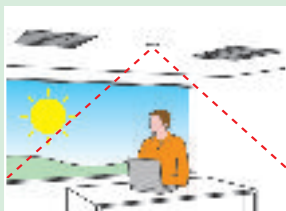
Enough daylight, Occupied – Lighting OFF
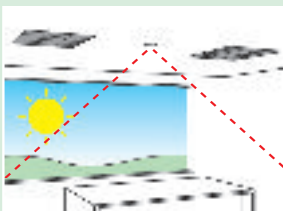
Enough daylight, Unoccupied – Lighting OFF

Night, Occupied – Lighting ON
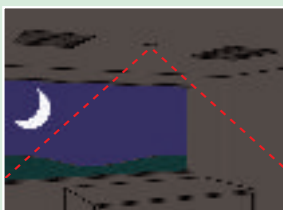
Night, Unoccupied – Lighting OFF

PIR OCCUPANCY SWITCHES

PIR occupancy switch specifications

PIR detector

Passive infra-red quad detector.

Adjustable time lag

Time lag adjustable in 9 steps (approximate values):

10 seconds	1.25 minutes	10 minutes
20 seconds	2.5 minutes	20 minutes
40 seconds	5 minutes	40 minutes

Adjustable photocell

"Inhibit on" photocell. The photocell will inhibit the lights from switching on when somebody enters an area with plenty of ambient light. However, if somebody is already occupying an area and the lights are switched on, the lights will remain on while the area is occupied, regardless of any increase in the ambient light level. This is to avoid any nuisance switching off when somebody is in the middle of a task or meeting.

Range 100-1000 lux (and inactive), falling on the working plane.

Loading

All models can switch up to 6 amps (1500W at 230VAC) of any type of load, including fluorescent lights and fans. For the WAPIR model only, there are some minimum load requirements, detailed on page 19.

Wiring in parallel

Several PIR switches can be wired in parallel to control the same load. Again for the WAPIR only there are some minimum load requirements, detailed on page 19.
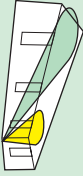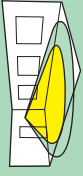
Walk test

(Relevant to all models except WAPIR)

When the mains supply is initially connected to the PIR occupancy switch it goes through its Walk Test. This means it switches on for about 1 minute, then switches off and enters its automatic mode. If a manual wall switch is feeding the PIR occupancy switch (see wiring diagrams on appropriate product pages) then it will go through the Walk Test each time the wall switch is switched on.

By wiring the manual wall switch in the alternative position, the supply to the PIR occupancy switch is uninterrupted and it remains in automatic mode. It does not go through its Walk Test each time the wall switch is switched on.

Selecting the appropriate PIR occupancy switch

CEILING MOUNTED

360° detection zone						120° directional detection zone	Long range directional narrow beam
Flush mounted (false or plasterboard ceilings)				Surface mounted (solid ceilings)		Surface mounted	Surface mounted
Hard wired	Hard wired	Hard wired	Plug and socket	Hard wired	Plug and socket	Plug and socket	Plug and socket
CEFL PIR	CEFL PIR SEALED	CEFL PIR 10A	CEFLP PIR + CESO	CESF PIR	CELO + CESO SQ	CEDR 6P + CESO	CEDR 6PLR + CESO
Page 12	Page 12	Page 12	Page 12	Page 13	Page 14	Page 16	Page 17

WALL MOUNTED

120° detection zone	
Plaster depth (16mm) wall box	
Needs neutral wire	No neutral wire needed
WACE PIR	WAPIR
Page 18	Page 19

PIR OCCUPANCY SWITCHES

Application diagram

The diagram illustrates PIR occupancy switch siting within a typical office/factory facility. The coloured zones emanating from the controls show strong detection zones (darker tints with solid coloured line) and secondary detection zones (lighter tint with broken coloured line).

BOARDROOM

OFFICE

OFFICE

OFFICE

OFFICE

CORRIDOR

OPEN PLAN OFFICES

RECEPTION

Ceiling flush mounted **CEFL PIR** spaced every 5 metres to cover the reception and open plan office and control the lights. The **CEFL PIR** can be wired in groups in parallel, to control the lighting in zones. Small offices are covered by a single ceiling flush mounted **CEFL PIR.**

In the small offices the wall switch has been replaced by a wall mounted **WAPIR**.

Long range directional **CEDR 6PLR** to detect people in the 25 metre corridor and the racking storage aisles.

Ceiling plug-in **CELO** mounted on BESA box on ceiling conduit. Spaced at 5 metre intervals to control the lights in the machine shop.

Scale
0   5m   10m

TOILETS

TOILET LOBBY

SHOWER ROOM

OPEN STAIRCASE

STAIRWELL

FACTORY AREA

MACHINE SHOP

HIGH BAY RACKING

HIGH BAY RACKING
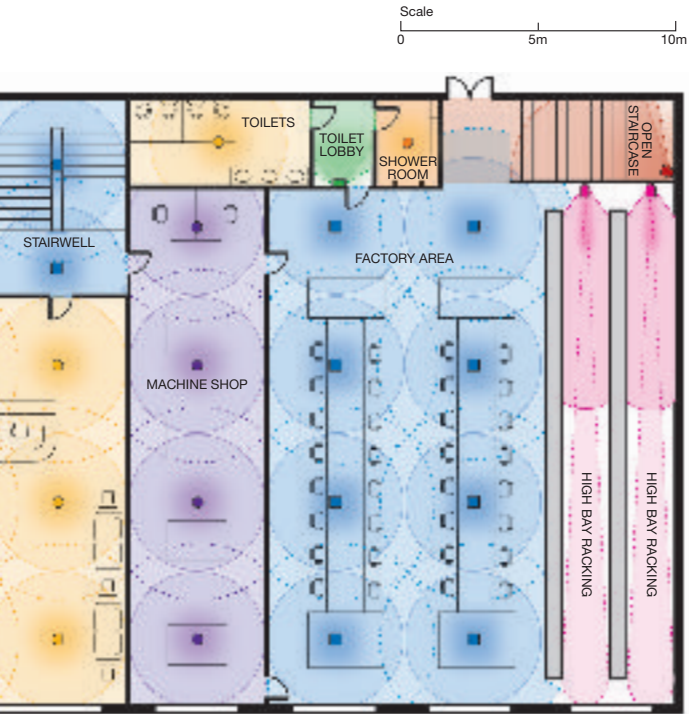
In the toilets a ceiling flush mounted **CEFL PIR** has been wired in parallel with a wall mounted **WACE PIR** in the lobby, to control the lighting in both rooms together.
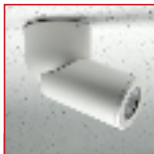
In the shower room a **CEFL PIR SEALED** is protected against light splashes and condensation.

Two ceiling surface mounted **CESF PIR** (one on each landing) wired in parallel to control the lighting in the stairwell.

Ceiling surface mounted **CESF PIR** spaced every 5 metres to give total coverage of the open plan factory area.

Ceiling directional **CEDR 6P** covers the open staircase.

PIR OCCUPANCY SWITCHES

These neat and unobtrusive models are ideal for flush mounting through suspended or plasterboard ceilings.

Ceiling flush-mounted PIR switch

Order code:
CEFL PIR

Specification

Detection zone:	360° (see page 13 for diagrams)
Time lag range:	10 seconds to 40 minutes in 9 steps
Photocell range:	100 to 1000 lux, and inactive
Loading:	up to 6 amps (1500W) of any type of load (including fluorescent lights and fans)
Dimensions:	72 diameter x 68mm

Please see page opposite for detection diagrams

Order code:
CEFLP PIR

Special versions

Plug and socket version: CEFLP PIR

Model CEFLP PIR is provided with a plug suitable for the CESO Ceiling socket, shown on page 15.

CESO on a BESA box

Loading: Up to 6 amps (1500W) of any type of load (including fluorescent lights and fans)

Order code:
CEFL PIR SEALED

Splash-proof version: CEFL PIR SEALED

Model CEFL PIR SEALED is protected against light splashes and condensation, when installed in the ceiling. Ideal for bathrooms, shower rooms, etc.

Loading: Up to 6 amps (1500W) of any type of load (including fluorescent lights and fans)
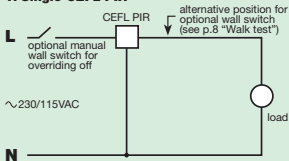
Order code:
CEFL PIR 10A

10 amp version: CEFL PIR 10A

Model CEFL PIR 10A is suitable for switching up to 10 amps (2500W) of any type of load (including fluorescent lights and fans).
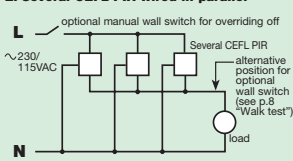
Dimensions (mm) and wiring diagrams

side — 2m cable
65 / 57 / 3
61
72

plan
38
72
Requires 63 or 64mm (2.5") diameter hole in a false or plasterboard ceiling

1. Single CEFL PIR

L
CEFL PIR
optional manual wall switch for overriding off
alternative position for optional wall switch (see p.8 "Walk test")
~230/115VAC
load
N
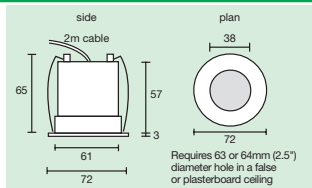
2. Several CEFL PIR wired in parallel

L
optional manual wall switch for overriding off
Several CEFL PIR
~230/115VAC
alternative position for optional wall switch (see p.8 "Walk test")
load
N

PIR OCCUPANCY SWITCHES

These surface-mounted models are ideal for solid ceilings.

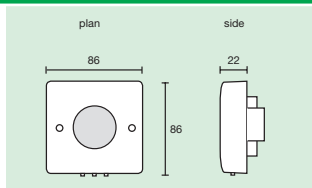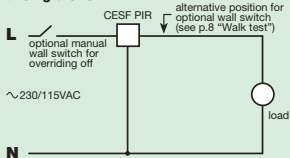## Ceiling surface-mounted PIR switch

Order code:
CESF PIR

Specification

Detection zone:	360°
Time lag range:	10 seconds to 40 minutes in 9 steps
Photocell range:	100 to 1000 lux, and inactive
Loading:	up to 6 amps (1500W) of any type of load (including fluorescent lights and fans)
Dimensions:	86 x 86 x 22mm

Can be mounted on a square
pattress box, order code: **PABO**.

Dimensions (mm) and wiring diagrams

plan   side

86   22

86

3. Single CESF PIR

L

optional manual
wall switch for
overriding off

∿230/115VAC

CESF PIR   alternative position for
optional wall switch
(see p.8 "Walk test")

load

N

4. Several CESF PIR wired in parallel

L   optional manual wall switch for overriding off

∿230/
115VAC   Several CESF PIR

alternative
position for
optional
wall switch
(see p.8
"Walk test")

load

N
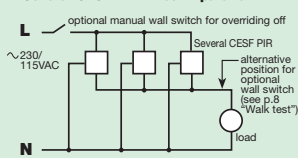
Detection diagrams for CEFL PIR and CESF PIR

**Plan view of
detection zone**
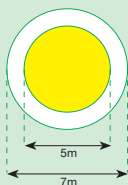
5m

7m

○ Strong detection zone
i.e. person moving arm

○ Secondary detection
zone i.e. person walking

**PIR Quad detector
gives 124 detection
areas within the zone**

Perspective view of detection zone

Recommended
mounting height
between 2.2
and 5m

PIR occupancy switch

Strong detection zone

Secondary detection zone

5m

7m
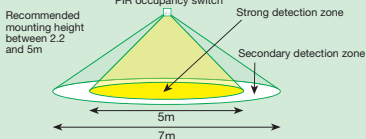
Several PIR occupancy switches
In open plan areas
For best coverage the
PIR occupancy
switches should be
spaced every
5m in either
direction
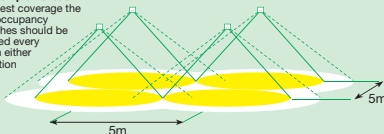
5m

5m

13

PIR OCCUPANCY SWITCHES

These surface-mounted models are ideal for solid ceilings.

Ceiling surface-mounted plug-in PIR switch

Order code: **CELO**
Requires socket,
order code: **CESO SQ**
or **CESO**
(see page 15)

The CELO has a built-in plug
suitable for the CESO SQ Ceiling
socket (or CESO Ceiling socket).
CESO SQ can be mounted on a
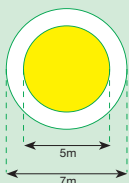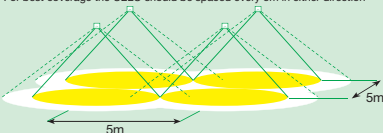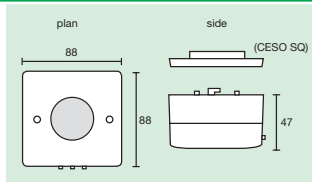square pattress box (or CESO can
be mounted on a BESA box).

Specification

Detection zone:	360°
Time lag range:	10 seconds to 40 minutes in 9 steps
Photocell range:	100 to 1000 lux, and inactive
Loading:	up to 6 amps (1500W) of any type of load (including fluorescent lights and fans)
Dimensions:	88 x 88 x 47mm

Detection diagrams

Plan view of detection zone

5m
7m

Strong detection zone
i.e. person moving arm

Secondary detection
zone i.e. person walking

**PIR Quad detector
gives 124 detection
areas within the zone**

Perspective view of detection zone

Recommended
mounting height
between 2.2
and 5m

CELO   Strong detection zone

Secondary detection zone

5m
7m
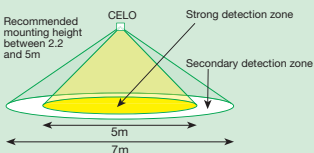
Several PIR occupancy switches
In open plan areas
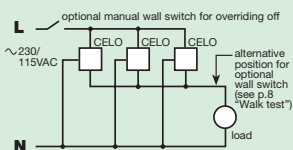For best coverage the CELO should be spaced every 5m in either direction
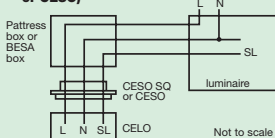
5m
5m

Dimensions (mm) and wiring diagrams

plan   side

(CESO SQ)

88
88   47

5. Single CELO

CELO   alternative position for
optional wall switch
(see p.8 "Walk test")

L
optional manual
wall switch for
overriding off

∼230/115VAC

load

N
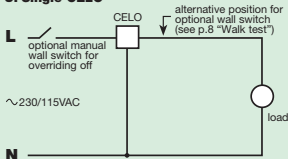
6. Several CELO wired in parallel

L   optional manual wall switch for overriding off

∼230/
115VAC   CELO   CELO   CELO

alternative
position for
optional
wall switch
(see p.8
"Walk test")

load

N

**7. Ceiling mounted socket (CESO SQ
or CESO)**

L N

Pattress
box or
BESA
box

SL

CESO SQ
or CESO   luminaire

L N SL   CELO   Not to scale

14

Sockets for plug-in ceiling controls

Ceiling socket: CESO

For use with DANLERS plug-in ceiling controls. Can be mounted on a BESA box.

Dimensions:	74 diameter x 13mm

Also available as a square socket. Can be mounted on a square pattress box.
Order code: **CESO SQ**

Dimensions:	87 x 87 x 13mm

Order code: **CESO**

Slave relays for plug-in ceiling controls

Order code:
CESL or CE2SL

Ceiling socket with slave relay: CESL

Ceiling socket with slave relay with isolated changeover contacts. Enables the switching of an additional circuit with its own supply, e.g. the corridor lights outside an office; or a separate low voltage control circuit.

Dimensions:	87 x 87 x 41mm

Ceiling socket with double slave relay: CE2SL

Ceiling socket with a double slave relay with isolated changeover contacts. Enables the switching of two additional circuits, each with its own supply, e.g. the corridor lights outside an office, plus the extractor fans inside the office. Also ideal for controlling two separate low voltage control circuits.

Dimensions:	87 x 87 x 41mm
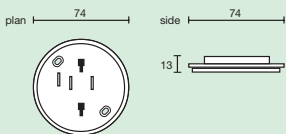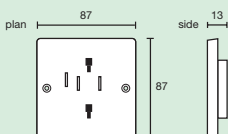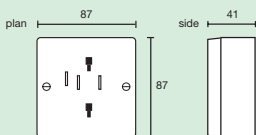
Dimensions (mm) and wiring diagrams

CESO

plan ⊢— 74 —⊣ side ⊢— 74 —⊣

13

CESO SQ

plan ⊢— 87 —⊣ side ⊢ 13 ⊣

87

CESL / CE2SL

plan ⊢— 87 —⊣ side ⊢ 41 ⊣

87

8. Ceiling mounted socket (CESO or CESO SQ)

BESA box or pattress box

CESO or CESO SQ

L N SL DANLERS Control

SL

luminaire

Not to scale

9. Plug-in control plus slave relay with volt free changeover contacts (CESL) controlling one extra circuit

separate circuit

SL_2 C_2 SL_2
N/O   N/C

L_1

optional manual wall switch for overriding off

CESL plus plug-in control

SL_1

load

∿230/115VAC

N_1

10. Plug-in control plus double slave relay with volt free changeover contacts (CE2SL) controlling two extra circuits

separate circuit   separate circuit

SL_2 C_2 SL_2 SL_3 C_3 SL_3
N/O   N/C   N/O   N/C

L_1

optional manual wall switch for overriding off

CE2SL plus plug-in control

SL_1

load

∿230/115VAC

N_1
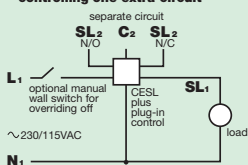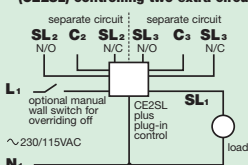
PIR OCCUPANCY SWITCHES

These directional PIR switches plug into a ceiling mounted socket. The socket can be mounted on a BESA box.

Ceiling directional PIR switches

Standard range
Order code:
CEDR 6P
Requires socket,
order code:
CESO
(see page 15)

Standard range version

Designed to give a directional view of the activity to be monitored.
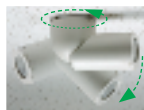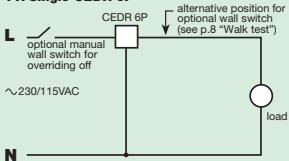Detection angle 120°.
Can be rotated and lowered to a 45° angle.

Specification

Time lag range:	10 seconds to 40 minutes in 9 steps
Photocell range:	100 to 1000 lux, and inactive
Loading:	up to 6 amps (1500W) of any type of load (including fluorescent lights and fans)
Dimensions:	see below

Detection diagrams

Standard range CEDR 6P

CEDR 6P
60°
120°
Strong Detection Zone
Secondary Detection Zone
5m
10m
Plan view

CEDR 6P
60°
120°
Strong Detection Zone
Secondary Detection Zone
5m
10m
Side elevation

Dimensions (mm) and wiring diagrams

(CESO)
side
74
64
60
102

11. Single CEDR 6P
L
CEDR 6P
alternative position for optional wall switch (see p.8 "Walk test")
optional manual wall switch for overriding off
∿230/115VAC
load
N
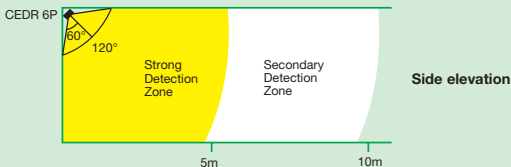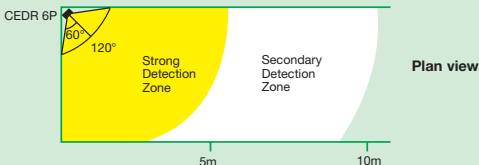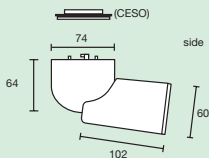
12. Several CEDR 6P wired in parallel
L
optional manual wall switch for overriding off
Several CEDR 6P
∿230/115VAC
alternative position for optional wall switch (see p.8 "Walk test")
load
N
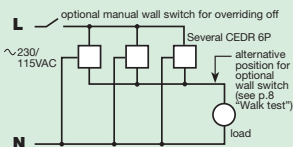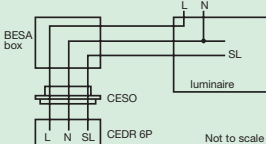
13. Ceiling mounted socket (CESO)
L N
BESA box
SL
luminaire
CESO
L N SL CEDR 6P
Not to scale

PIR OCCUPANCY SWITCHES

These directional PIR switches plug into a ceiling mounted socket. The socket can be mounted on a BESA box.

Ceiling directional PIR switches

Long range
Order code:
CEDR 6PLR
Requires socket,
order code:
CESO
(see page 15)

Long range version

With a long range, narrow detection beam. Designed for corridors and storage aisles. Can be rotated and lowered to a 45° angle.
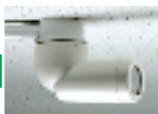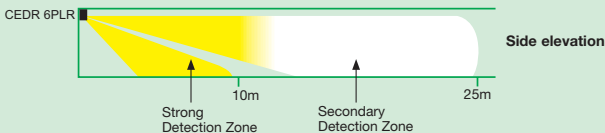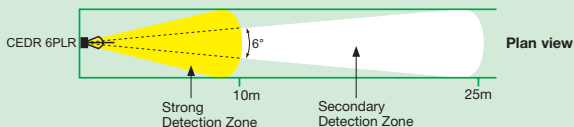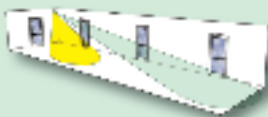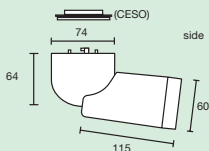
Specification

Time lag range:	10 seconds to 40 minutes in 9 steps
Photocell range:	100 to 1000 lux, and inactive
Loading:	up to 6 amps (1500W) of any type of load (including fluorescent lights and fans)
Dimensions:	see below

Detection diagrams

Long range CEDR 6PLR

Ideal mounting height between 2.2 and 3m

CEDR 6PLR   6°   **Plan view**

10m   25m

Strong Detection Zone   Secondary Detection Zone

CEDR 6PLR   **Side elevation**

10m   25m

Strong Detection Zone   Secondary Detection Zone

Dimensions (mm) and wiring diagrams

(CESO)   side
74
64   60
115

14. Single CEDR 6PLR

CEDR 6PLR   alternative position for optional wall switch (see p.8 "Walk test")

L   optional manual wall switch for overriding off

∼230/115VAC

load

N
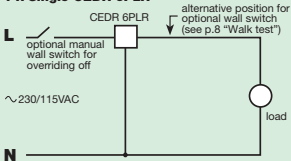
15. Several CEDR 6PLR wired in parallel

L   optional manual wall switch for overriding off

∼230/115VAC   Several CEDR 6PLR   alternative position for optional wall switch (see p.8 "Walk test")

load

N

16. Ceiling mounted socket (CESO)

L N

BESA box

SL

luminaire

CESO

L N SL   CEDR 6PLR   Not to scale

17
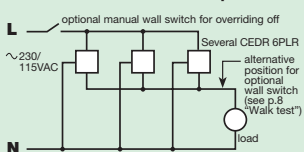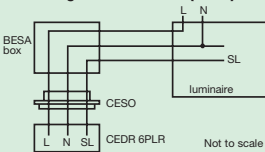
PIR OCCUPANCY SWITCHES

The WACE PIR is suitable for either wall or ceiling mounting. It fits either into a plaster depth (16mm) wall box or onto a ceiling mounted square pattress box. It requires a neutral wire.

Wall or ceiling mounted PIR switch

Order code:
WACE PIR

Applications

Suitable for stairwells, corridors, toilet lobbies, etc.

Specification

Detection zone:	120°
Time lag range:	10 seconds to 40 minutes in 9 steps
Photocell range:	100 to 1000 lux, and inactive
Loading:	up to 6 amps (1500W) of any type of load (including fluorescent lights and fans)
Dimensions:	86 x 86 x 22mm. Wall box depth 16mm

Detection diagrams

Wall mounted PIR

Ideal mounting height between 1 and 1.8m

Plan view

WACE PIR 60° 120° Strong Detection Zone — Secondary Detection Zone
5m 10m

Side elevation

WACE PIR 45° 90° Strong Detection Zone — Secondary Detection Zone
5m 10m

Dimensions (mm) and wiring diagrams

Requires 16mm box

plan 86 86
side 22

17. Single WACE PIR

L
WACE PIR
∿230/115VAC
load
N
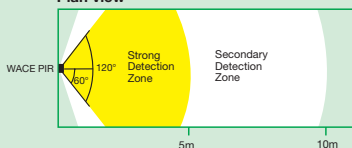
18. Several WACE PIR wired in parallel eg. in a stairwell

L
∿230/115VAC
Several WACE PIR
load
N
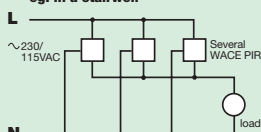
PIR OCCUPANCY SWITCHES

*The WAPIR model replaces an existing wall switch – no neutral wire is needed.
It fits into a plaster depth (16mm) wall box. The WAPIR model also has a manual
override off switch on the front of the plate.*

Wall mounted PIR switch

Order code: **WAPIR**

Applications

The WAPIR requires a permanent live supply, and
should only be used in applications where the lights
would not be on for more than 12 hours per day.
This is to allow its rechargeable battery enough time
to recharge itself from the mains supply.
The WAPIR is suitable for small offices, meeting
rooms, tutoring rooms, etc.
The override off button enables the lights to be held
off during video presentations, etc.
For wall mounting only.

Specification

Detection zone:	120°
Time lag range:	10 seconds to 40 minutes in 9 steps
Photocell range:	100 to 1000 lux, and inactive
Maximum Load:	1500W (6 amps) of any type of load (including fluorescent lights and fans)
Minimum Load:	40W resistive or 100W inductive, or for wiring in parallel 50W resistive or 120W inductive per WAPIR in the circuit. Load capacitors (order code **CAPLOAD**) can be supplied to augment small loads
Dimensions:	86 x 86 x 22mm. Wall box depth 16mm

Detection diagrams

Wall mounted PIR

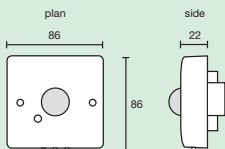Ideal mounting height
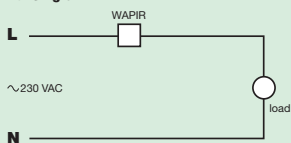between 1 and 1.8m

Plan view
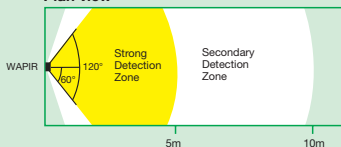
Side elevation
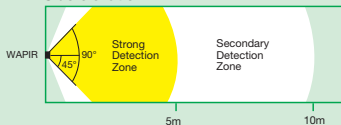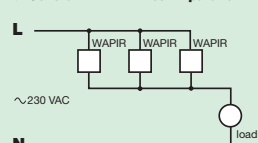

Dimensions (mm) and wiring diagrams

Requires 16mm wall box

19. Single WAPIR

20. Several WAPIR wired in parallel

19

PIR OCCUPANCY SWITCHES WITH DIMMING

Bring lights on – only when area is occupied. Automatically dim lights according to ambient light level, to maintain constant brightness of between 100 and 1000 lux (adjustable). Adjustable time lag before switching off. For suspended or plasterboard ceilings.

PIR occupancy switches with daylight linked dimming

CEFL PIR DD 10VDC is suitable for dimmable ballasts with 1-10VDC input. CEFL PIR DD DSI is suitable for DSI dimmable ballasts.

Specification

Detection zone:	360°
Time lag range:	10 seconds to 40 minutes in 9 steps
Photocell range:	100 to 1000 lux, falling on the working plane
Loading:	CEFL PIR DD 10VDC: varies according to make and model of ballasts. Can control up to 20mA, eg. 20 ballasts at 1mA. (Control current of ballast is usually specified at 1-10V terminals.) CEFL PIR DD DSI can control up to 10 DSI ballasts.
Dimensions:	72 diameter x 68mm (see page 21)

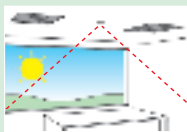Order code:
CEFL PIR DD 10VDC
CEFL PIR DD DSI
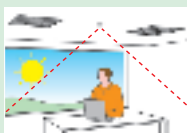
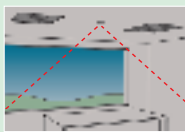Enough daylight, Occupied
– Lighting OFF
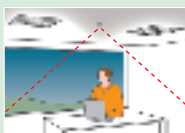
Reduced daylight, Occupied
– Lighting DIMMED
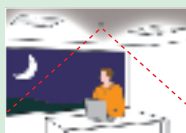
Night, Occupied
– Lighting ON

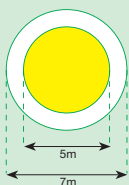Enough daylight, Unoccupied
– Lighting OFF

Reduced daylight,
Unoccupied – Lighting OFF
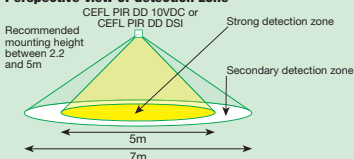
Night, Unoccupied
– Lighting OFF

Detection diagrams

Plan view of detection zone

5m
7m

Strong detection zone
i.e. person moving arm

Secondary detection
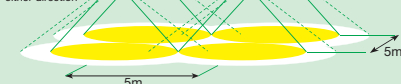zone i.e. person walking

**PIR Quad detector
gives 124 detection
areas within the zone**

Perspective view of detection zone

CEFL PIR DD 10VDC or
CEFL PIR DD DSI

Recommended
mounting height
between 2.2
and 5m
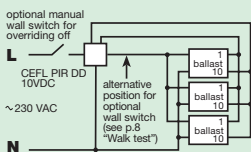
Strong detection zone

Secondary detection zone

5m
7m

Several PIR occupancy switches

In open plan areas: For best coverage the CEFL PIR DD 10VDC or
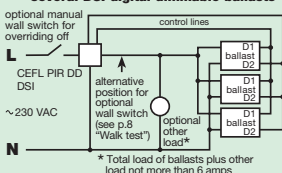CEFL PIR DD DSI should be spaced
every 5m in
either direction

5m

5m

Wiring diagrams

**21. CEFL PIR DD 10VDC controlling
several 1-10VDC dimmable ballasts**

optional manual
wall switch for
overriding off

L

CEFL PIR DD
10VDC

alternative
position for
optional
wall switch
(see p.8
"Walk test")

~230 VAC

N

ballast
10

ballast
10

ballast
10

**22. CEFL PIR DD DSI controlling
several DSI digital dimmable ballasts**

optional manual
wall switch for
overriding off

control lines

L

CEFL PIR DD
DSI

alternative
position for
optional
wall switch
(see p.8
"Walk test")

~230 VAC

optional
other
load*

N

D1
ballast
D2

D1
ballast
D2

D1
ballast
D2

* Total load of ballasts plus other
load not more than 6 amps

DAYLIGHT LINKED DIMMERS

Automatically dim lights according to ambient light level to maintain a constant brightness of between 100 and 1000 lux (adjustable).
For suspended or plasterboard ceilings.

Daylight linked dimmers

Order codes:
CEFL PH DD 10VDC
CEFL DD 10VDC
CEFL DD DSI

Manual wall switch retained for overriding OFF

Specification

Photocell range: 100 to 1000 lux, falling on the working plane

Loading: CEFL PH DD 10VDC and CEFL DD 10VDC: varies according to make and model of ballasts. Can control up to 20mA, eg. 20 ballasts at 1mA. (Control current of ballast is usually specified in 1-10V terminals.)
CEFL DD DSI can control up to 10 DSI ballasts.

CEFL PH DD 10VDC has on/off switching and dimming, and is suitable for dimmable ballasts with 1-10VDC input

Wiring diagram: see diagram 23 below

Dimensions: 72 diameter x 68mm

CEFL DD 10VDC has dimming only, and is suitable for dimmable ballasts with 1-10VDC input

Wiring diagram: see diagram 24 below

Dimensions: 72 diameter x 68mm

CEFL DD DSI has dimming only, and is suitable for DSI dimmable ballasts

Wiring diagram: see diagram 25 below
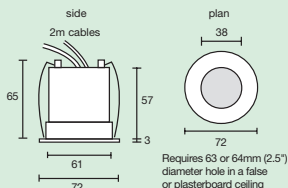
Dimensions: 72 diameter x 68mm

Enough daylight
– Lighting OFF

Reduced daylight
– Lighting DIMMED

Night
– Lighting ON

Dimensions (mm)

CEFL PIR DD 10VDC, CEFL PIR DD DSI
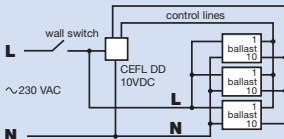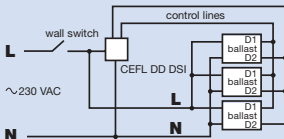**(See page 20)**

side
2m cables
65
57
3
61
72

plan
38
72
Requires 63 or 64mm (2.5")
diameter hole in a false
or plasterboard ceiling

Dimensions (mm)

CEFL PH DD 10VDC, CEFL DD 10VDC
CEFL DD DSI

side
2m cables
65
57
3
61
72

plan
24
72
Requires 63 or 64mm (2.5")
diameter hole in a false
or plasterboard ceiling

Wiring diagrams

23. CEFL PH DD 10VDC controlling
several 1-10VDC dimmable ballasts

wall switch
control lines
L
CEFL PH DD 10VDC
ballast 1 10
ballast 1 10
ballast 1 10
~230 VAC
N
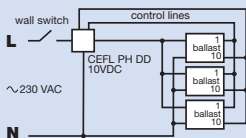
24. CEFL DD 10VDC controlling
several 1-10VDC dimmable ballasts

wall switch
control lines
L
CEFL DD 10VDC
ballast 1 10
ballast 1 10
ballast 1 10
~230 VAC
L
N
N

25. CEFL DD DSI controlling
several DSI dimmable ballasts

wall switch
control lines
L
CEFL DD DSI
ballast D1 D2
ballast D1 D2
ballast D1 D2
~230 VAC
L
N
N

Push on, push-off, with rotary dimming control.
*For dimmable ballasts with 1-10VDC input.*

High frequency dimmers
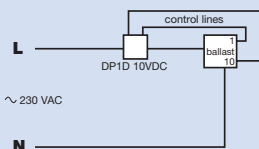
Order code:
DP1D 10VDC
DP1D 10VDC MB

Specification

DP1D 10VDC:	for one or two ballasts
Wiring diagram:	see diagram 26
Dimensions:	**86 x 86 x 12mm** Wall box depth 16mm

DP1D 10VDC MB:	for multiple ballasts
Wiring diagram:	see diagram 27
Loading:	varies according to make and model of ballasts. Can control up to 20mA, eg. 20 ballasts at 1mA. (Control current of ballast is usually specified at 1-10V terminals.)
Dimensions:	86 x 86 x 12mm Wall box depth 16mm

Dimensions (mm) and wiring diagrams

front   side

86   12

86
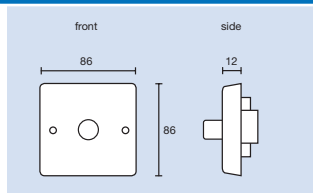
26. DP1D 10VDC dimming a single 1-10VDC ballast

control lines

L

DP1D 10VDC

ballast
1
10

∼ 230 VAC

N

27. DP1D 10VDC MB dimming several 1-10VDC ballasts

control lines

L

DP1D 10VDC MB

ballast
1
10

ballast
1
10

ballast
1
10

∼ 230 VAC

N
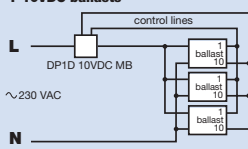
For lighting energy saving in offices, factories, sports halls and so on.

Ceiling photocell switches

CEFL PH and CEPH NO
Switch the lights on when there is not sufficient ambient light available, and off when there is sufficient ambient light available.

CEFL PHRE and CEPH RE
These 'Re-set' versions switch the lights off when there is sufficient ambient light, but require the wall switch to be operated in order to switch on. In this way the lights only switch on when they are demanded.

Built-in differential ensures the artificial lights do not affect the photocell. Built-in time delay of 1 minute avoids unnecessary switching.

Specification
CEFL PH and CEFL PHRE: For flush mounting into false or plasterboard ceilings

CEPH NO and CEPH RE: For surface mounting onto solid ceiling. Plugs into CESO SQ Ceiling socket (or CESO Ceiling socket). CESO SQ can be mounted on a square pattress box (or CESO can be mounted on a BESA box).

Photocell range:	switches on at between 100 and 1000 lux falling on the working plane
Loading:	up to 6 amps (1500W) of any type of load (including fluorescent lights)
Wiring diagram:	see diagram 28 below. For CEPH NO and CEPH RE also see diagram 29
Dimensions:	CEFL PH and CEFL PHRE: 72mm diameter x 68mm CEPH NO and CEPH RE: 86 x 86 x 47mm

Order code:
CEFL PH
CEFL PHRE

Order code:
CEPH NO
CEPH RE
Requires socket, order code:
CESO
(see page 15)
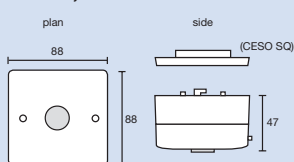
Enough daylight
– Lighting OFF

Night
– Lighting ON

Manual wall switch retained for overriding OFF
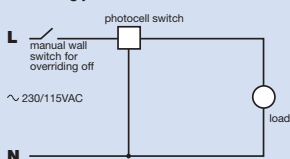
Dimensions (mm) and wiring diagrams

CEFL PH, CEFL PHRE

side
plan
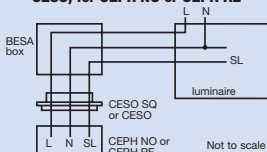2m cable
24
65
57
3
61
72
72

Requires 63 or 64mm (2.5") diameter hole in a false or plasterboard ceiling

CEPH NO, CEPH RE

plan
side
(CESO SQ)
88
88
47

28. Ceiling photocell switch

L
photocell switch
manual wall switch for overriding off
~ 230/115VAC
load
N
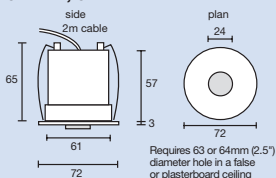
29. Ceiling mounted socket (CESO SQ or CESO) for CEPH NO or CEPH RE

L N
BESA box
SL
luminaire
CESO SQ or CESO
L N SL
CEPH NO or CEPH RE
Not to scale

Radio remote control senders and receivers

These products are used for the remote control switching or dimming of lighting or other loads. The wire-free senders are available as hand held or wall mounted versions. A receiver switch or receiver dimmer is wired into the existing circuit to control the connected load. The sender signals can pass through walls, so the receivers can be mounted out of sight, if desired. Inside a typical building the receivers can work at an approximate range of 30-50 metres. In free air the range is approximately 100-150 metres.

AN EXAMPLE BUILDING

Radio receivers

External receiver switch for outside lights.

Display cabinet lamps or standard desk lamps can be controlled via a plug-in dimmer receiver.

Receiver switches and receiver dimmers for the lighting circuits can be concealed behind a false ceiling.
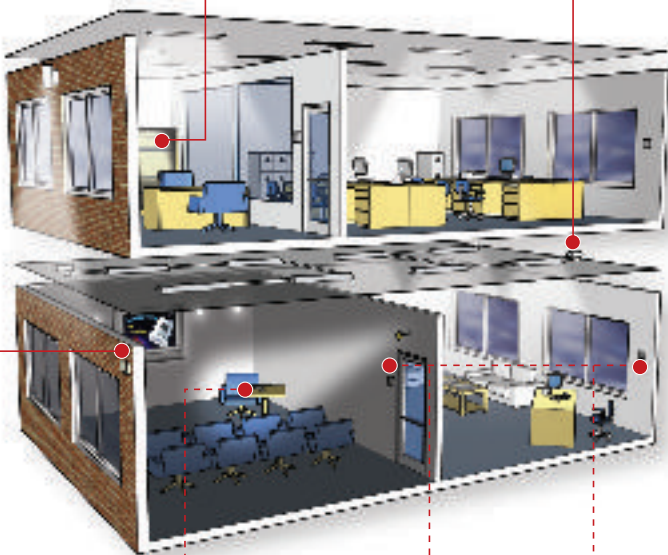
Wire-free radio senders

12 channel hand sender to control ceiling lights, spot lights and screen. For security reasons a caretaker can use another 12 channel hand sender to control all the lights inside the building and the outside security lights.

All lights can also be controlled by wire-free wall mounted senders.

RADIO REMOTE CONTROLS

Radio remote control functions

Each button on each sender sends a unique coded signal – every channel is unique. A simple set-up procedure enables any chosen receiver to respond to the signal from any chosen sender button. The sender button then controls the receiver (and its connected load). This simple procedure is repeated, creating links between various sender buttons and various receivers. As shown, almost any control set-up is possible - from a single room to an entire building.

A For the simplest set-up of all, one receiver can be controlled by one sender.

Sender   Receiver

B
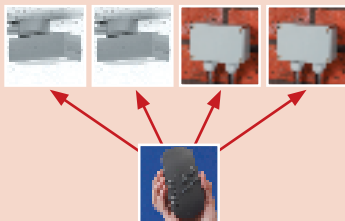
Any receiver can be programmed to respond to the unique coded signal from any sender button. Hence, if desired, a sender button can control any number of receivers simultaneously.

C
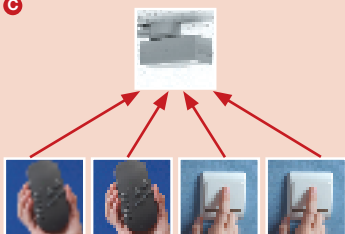
Also a receiver can be controlled by up to 15 sender buttons.

D
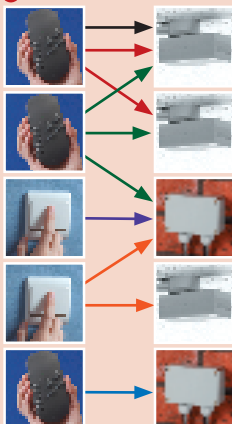
These control combinations can in turn be mixed and matched, making it possible to have almost any control set-up desired, from the simplest single room to an entire building. In the above control set-up, one button on the left hand sender controls the first receiver. A different button on the left hand sender controls the first and second receivers simultaneously, and so on.

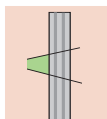## Typical penetration of radio signals

Effects of barriers on signal range

The radio signals cannot pass through the entire length of walls. The radio signals achieve a range of approximately 30-50m inside a building; 100-150m in free air.
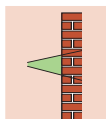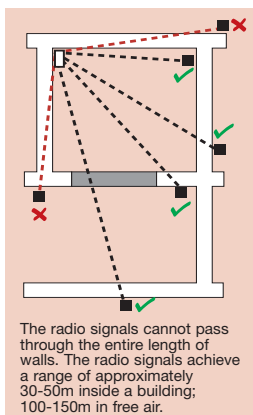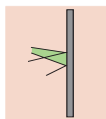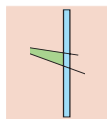
Brick walls: approx. 60-90% penetration
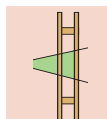
Timber framework with sandwich plasterboards: approx. 80-95% penetration
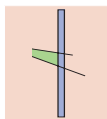
Reinforced concrete: approx. 20-60% penetration

Metal walls: approx. 0-10% penetration

Conventional glass: approx. 70-90% insulating glass (with vaporised metal coat): approx. 30-60% penetration

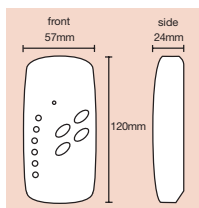Plastics: approx. 80-95% penetration

Radio remote control wire-free hand senders

12 channel hand held sender: HASE 12RF

Sends on 12 unique channels.
Complete with two AAA batteries.

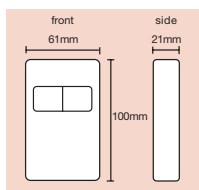
front 57mm
side 24mm
120mm

Specification

Signal range:	Up to 150m in free air
Carrier frequency:	868MHz (CE Approved, Licence Free)
Dimensions:	120 x 57 x 24mm

1 channel hand held sender: HASE 1RF

Sends on 1 unique channel.
Complete with CR2430 battery.

front 61mm
side 21mm
100mm

Order code:
HASE 1RF

Specification

Signal range:	Up to 100m in free air
Carrier frequency:	868MHz (CE Approved, Licence Free)
Dimensions:	100 x 61 x 21mm

Radio remote control wire-free wall senders

Wire-free wall mounted senders

Wire-free. No wall box needed.
Complete with CR2430 battery(ies).

Specification

Signal range:	Up to 100m in free air
Carrier frequency:	868MHz (CE Approved, Licence Free)
WASE 1RF series:	Sends on 1 unique channel.
Dimensions:	80 x 80 x 15mm (matt finishes) 82 x 86 x 15mm (metallic effect finishes)
WASE 2RF series:	Sends on 2 unique channels.
Dimensions:	80 x 80 x 15mm (matt finishes) 82 x 86 x 15mm (metallic effect finishes)
WASE 4RF series:	Sends on 4 unique channels.
Dimensions:	151 x 80 x 15mm (matt finishes) 153 x 86 x 15mm (metallic effect finishes)

2 channel wall sender

4 channel wall sender

Wall senders can be mounted on any fixed surface, using the pre-fixed adhesive strips.

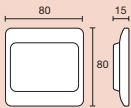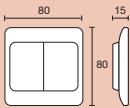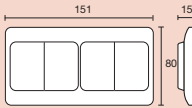**Also available: SLSE 1RFSO Slave sender**
See page 33 for details.
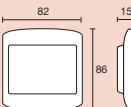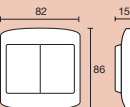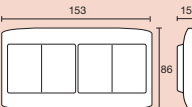
Radio remote control wire-free wall senders

Matt finishes

	1 channel	2 channel	4 channel
White			
Order code:	**WASE 1RF WHI**	**WASE 2RF WHI**	**WASE 4RF WHI**
Black			
Order code:	**WASE 1RF BLK**	**WASE 2RF BLK**	**WASE 4RF BLK**
Dimensions in mm	front 80 / side 15 / 80	front 80 / side 15 / 80	front 151 / side 15 / 80

Metallic effect finishes

	1 channel	2 channel	4 channel
Silver			
Order code:	**WASE 1RF SIL**	**WASE 2RF SIL**	**WASE 4RF SIL**
Light bronze			
Order code:	**WASE 1RF LBZ**	**WASE 2RF LBZ**	**WASE 4RF LBZ**
Dark bronze			
Order code:	**WASE 1RF DBZ**	**WASE 2RF DBZ**	**WASE 4RF DBZ**
Dimensions in mm	front 82 / side 15 / 86	front 82 / side 15 / 86	front 153 / side 15 / 86

Radio receiver switches

Order code:
WACE RFS

Wall or ceiling mounted switch: WACE RFS

Hard wired.
Can be mounted on a 35mm box.
Can be mounted out of sight.
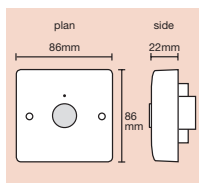
plan | side
86mm | 22mm
86 mm

Specification

Loading:	up to 6 amps (1500W) of resistive load or up to 1 amp (250W) of inductive load
Wiring diagram:	see diagram 30 below
Dimensions:	86 x 86 x 22mm
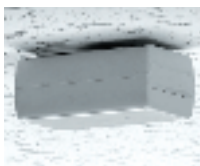
Order code: **CERF S6A**
Requires socket, order code:
CESO or **CESO SQ**
(see page 32)

Plug-in switch: CERF S6A

Plugs into a Ceiling socket (shown on p.32).
Can be mounted out of sight.
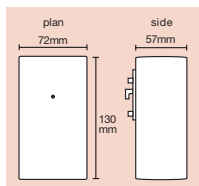
plan | side
72mm | 57mm
130 mm

Specification

Loading:	up to 6 amps (1500W) of any type of load, including fluorescent lights and fans
Wiring diagram:	see diagram 30 below
Dimensions:	130 x 72 x 57mm

Order code:
CERF S6ASO
Requires socket, order code: **CESO**
(see page 32)

Shown with a plug-in luminaire/ chandelier

Plug-in chandelier switch: CERF S6ASO

Plugs into a Ceiling socket (shown on p.32) in place of a ceiling rose.
Also has its own built-in socket to suspend a plug-in luminaire/ chandelier.

(CESO)
side | 36mm
116mm
plan
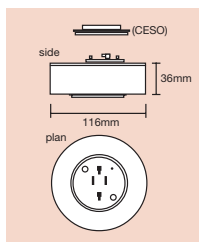
Specification

Loading:	up to 6 amps (1500W) of any type of load, including fluorescent lights and fans
Wiring diagram:	see diagram 30 below
Dimensions:	116 (diameter) x 36mm

Wiring diagram

30. Remote control switching

L
receiver switch
~ 230 VAC
load
wire-free sender
N

Radio receiver switches

Plug-in adaptor switch: PORF S8A

Plugs into a 3 pin mains socket and has its own 3 pin socket for a mains powered plug-in device.
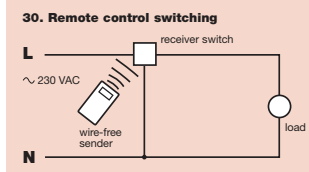
Order code:
PORF S8A

Ideal for table lamps or displays

front 60mm | side 48mm | 138 mm
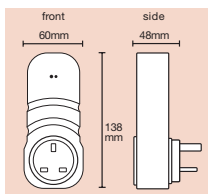
Specification

Loading:	up to 8 amps (2000W) of resistive load or up to 1 amp (250W) of inductive load
Wiring:	plugs into 13 amp mains socket
Dimensions:	138 x 60 x 48mm

Exterior switch: EXRFS

Hard wired. Outdoor mounted. Weatherproof to IP54 rating.
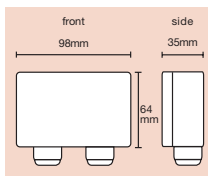
Order code:
EXRFS

front 98mm | side 35mm | 64 mm

Specification

Loading:	up to 6 amps (1500W) of resistive load or up to 1 amp (250W) of inductive load
Wiring diagram:	see diagram 31 below
Dimensions:	98 x 64 x 35mm

Blind/motor control switch: WACE RF2S

Hard wired. Wall or ceiling mounted. Twin actuator switch. Enables blinds to be opened, closed or adjusted to any position required. To be factory pre-programmed by DANLERS to work with specific blinds or motors. Can be mounted on a 35mm box. Can be mounted out of sight.

Order code:
WACE RF2S

plan 86mm | side 22mm | 86 mm
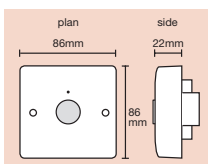
Specification

Loading:	up to 6 amps (1500W) of resistive or inductive load
Wiring diagram:	see diagram 32 below
Dimensions:	86 x 86 x 22mm

Wiring diagram

31. Remote control switching

L
receiver switch
∼ 230 VAC
wire-free sender
load
N

32. Blind/motor control switch

L
WACE RF2S
SL_2
SL_1
Example loads: up/down motors, or open/close motors
∼ 230 VAC
wire-free sender
$load_1$
$load_2$
N

Radio receiver dimmers

Wall or ceiling mounted dimmer WACE RFD250W

Hard wired. Can be mounted on a 35mm box. Can be mounted out of sight.

Order code:
WACE RFD250W

Specification

Loading:	up to 250W of resistive, mains halogen or dimmable electronic transformer loads only
Dimming technology: trailing edge	
Wiring diagram:	see diagram 33 on page 31
Dimensions:	86 x 86 x 22mm

plan — 86mm · 86mm
side — 22mm
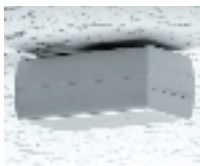
Plug-in dimmer: CERF D400W

Plugs into a Ceiling socket (shown on p.32). Can be mounted out of sight.

Order code:
CERF D400W

Specification

Loading:	up to 400W of resistive, mains halogen or dimmable electronic transformer loads only
Dimming technology: trailing edge	
Wiring diagram:	see diagram 33 on page 31
Dimensions:	130 x 72 x 57mm

plan — 72mm · 130mm
side — 57mm

Plug-in chandelier dimmer: CERF D250WSO

Plugs in to a Ceiling socket (shown on p.32) in place of a ceiling rose. Also has its own built-in socket to suspend a plug-in luminaire/chandelier.

Order code:
CERF D250WSO

Shown with a plug-in luminaire/ chandelier

Specification

Loading:	up to 250W of resistive, mains halogen or dimmable electronic transformer loads only
Dimming technology: trailing edge	
Wiring diagram:	see diagram 33 on page 31
Dimensions:	116 (diameter) x 36mm

(CESO)
side — 36mm — 116mm
plan

Exterior dimmer: EXRF D250W

Hard wired. Outdoor mounted. Weatherproof to IP54 rating. (A 400W version is also available - please call for details.)

Order code:
EXRF D250W

Specification

Loading:	up to 250W of resistive, mains halogen or dimmable electronic transformer loads only
Dimming technology: trailing edge	
Wiring diagram:	see diagram 33 on page 31
Dimensions:	98 x 64 x 35mm

front — 98mm · 64mm
side — 35mm

Radio receiver dimmers

Plug-in adaptor dimmer: PORF D250W

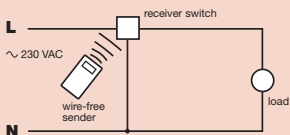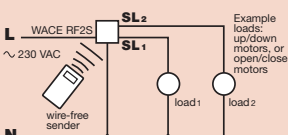Plugs into a 3 pin mains socket and has its own 3 pin socket for a mains powered plug-in device. Ideal for table lamps or displays.

Order code:
PORF D250W

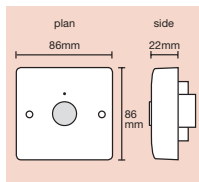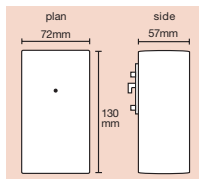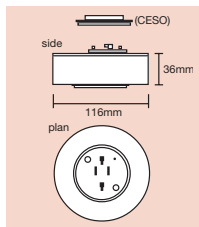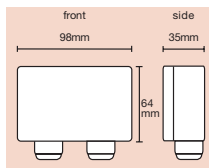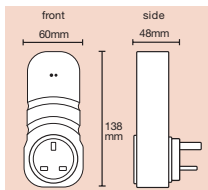front 60mm · side 48mm · 138 mm

Specification

Loading:	up to 250W of resistive, mains halogen or dimmable electronic transformer loads only
Dimming technology:	trailing edge
Wiring:	plugs into 13 amp mains socket
Dimensions:	138 x 60 x 48mm

Build-in dimmer: CERF D10VDC MB

Ideal for building into a luminaire or gear tray. For controlling dimmable ballasts with a 1-10VDC analogue input.

Order code:
CERF D10VDC MB

plan 151mm 34 mm · side 28 mm
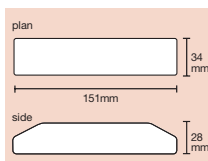
Specification

Loading:	varies according to make and model of ballasts. Can control up to 20mA, eg. 20 ballasts at 1mA. (Control current of ballast is usually specified at 1-10V terminals.)
Wiring diagram:	see diagram 34 below
Dimensions:	151 x 34 x 28mm

Dimming for wire wound or toroidal transformers: WACE RFS MOM

This momentary slave switch can be used as a slave to a Soft start dimmer for dimming wire-wound transformers (see p.46 for Soft start dimmers). The WACE RFS MOM must be factory pre-programmed by DANLERS as a package to work with one or more Radio senders. Can be mounted on a 35mm box. Can be mounted out of sight.

Order code:
WACE RFS MOM

plan 86mm 86 mm · side 22mm
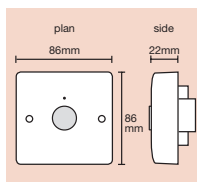
Specification

Loading:	according to Soft start dimmer chosen
Wiring diagram:	see diagram 35 below
Dimensions:	86 x 86 x 22mm

Wiring diagrams

33. Remote control dimming

L
~ 230 VAC
receiver dimmer
load
wire-free sender
N

34. CERF D10VDC MB controlling several 1-10VDC dimmable ballasts

CERF D10VDC MB
control lines
L
~ 230 VAC
ballast 1 10
ballast 1 10
ballast 1 10
wire-free sender
N

35. Soft start dimmer with remote control

L
~ 230 VAC
WACE RFS MOM
soft start dimmer
wire-free sender
load
N
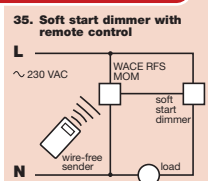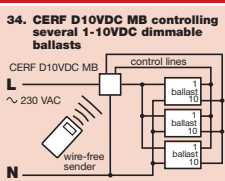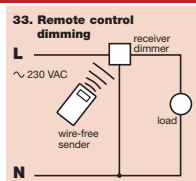
Sockets and slave relays

Order code: **CESO**

Ceiling socket: CESO

For DANLERS plug-in switches or dimmers. Can be mounted on a BESA box.

Wiring diagram:	see **diagram 36 below**
Dimensions:	**74 diameter x 13mm**

Also available as a square socket. Can be mounted on a square pattress box.
Order code: **CESO SQ**

Dimensions:	**87 x 87 x 13mm**

Order code:
CESL or CE2SL

Ceiling slave relay: CESL

For DANLERS plug-in switches only. Provides an extra 1-pole isolated changeover contact. Enables the switching of an additional circuit with its own supply, e.g. the corridor lights outside an office; or a separate low voltage control circuit.

Loading:	up to 6 amps of any type of load, including fluorescent lights and fans
Dimensions:	87 x 87 x 41mm

Ceiling double slave relay: CE2SL

For DANLERS plug-in switches only. Provides extra 2-pole isolated changeover contacts. Enables the switching of two additional circuits, each with its own supply, e.g. the corridor lights outside an office, plus the extractor fans inside the office. Also ideal for switching two separate low voltage control circuits.

Loading:	(each circuit) up to 6 amps of any type of load, including fluorescent lights and fans
Dimensions:	87 x 87 x 41mm

Dimensions (mm) and wiring diagrams
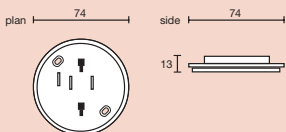
CESO

CESO SQ
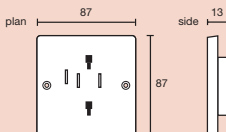
CESL / CE2SL
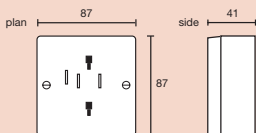
36. Ceiling mounted socket (CESO or CESO SQ) for plug-in ceiling controls
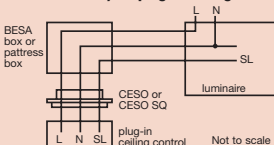
37. Plug-in control plus slave relay with volt free changeover contacts (CESL) controlling one extra circuit
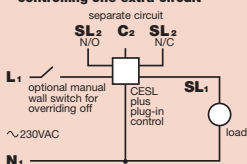
38. Plug-in control plus double slave relay with volt free changeover contacts (CE2SL) controlling two extra circuits
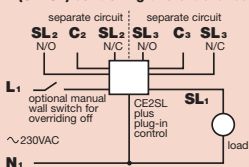
RADIO REMOTE CONTROLS

Order code:
SLSE 1RFSO

Slave sender: SLSE 1RFSO

For use with a DANLERS plug-in control, such as a PIR occupancy switch or Photocell switch. When the plug-in control switches on, the slave sender emits an "ON" radio signal. When the plug-in control switches off, the slave sender emits an "OFF" radio signal. These signals can be used to switch other remote circuits on and off via Radio receiver switches or dimmers (shown on pages 28 to 31).

The SLSE 1RFSO is hard wired. Requires mains power supply. Sends on 1 unique channel.

Specification

Signal range:	Up to 100m in free air
Carrier frequency:	868MHz (CE Approved, Licence Free)
Dimensions:	87 x 87 x 41mm

Block diagram

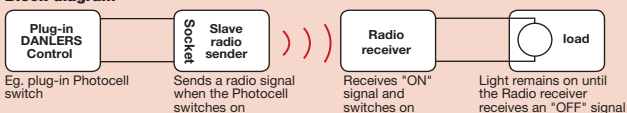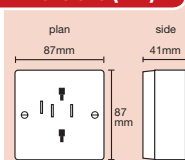| Plug-in DANLERS Control	Socket	Slave radio sender	)))	Radio receiver		load
Eg. plug-in Photocell switch		Sends a radio signal when the Photocell switches on		Receives "ON" signal and switches on		Light remains on until the Radio receiver receives an "OFF" signal

Dimensions (mm)

plan   side
87mm   41mm
87 mm

Wiring diagram

39. Radio slave sender and radio receiver

DANLERS plug-in control
L
SLSE 1RFSO
L₁
Radio receiver
load
N
N₁
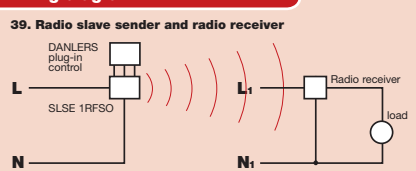
Customised functions and scene-setting

By special order DANLERS can supply packages of Senders and Plug-in receivers which are factory pre-programmed to perform specified functions. The table lists the special functions that are available, plus examples of how these functions may be used. Even packages which perform several different functions can be supplied. Call us to discuss your particular requirements.

Special switching function	Example application
Time delay ON	For a special stage effect
Time delay OFF	A courtesy light for leaving a building
Time delay OFF with warning	Demand for lighting for few minutes in a stock cupboard, with flashing prompt to re-press the sender before the lights go out
Momentary ON	To sound a doorbell
Flashing	To give an alert signal (e.g. testing in progress)
Motor control	To open and close blinds, screens or shutters

Special dimming function	Example application
Gradual dimming or brightening	Theatre house lights
Select a pre-set lamp brightness	To set a mood for restaurant lighting
Gradual dim to pre-set level	To give comfortable background lighting in a conference
Soft start switch on	To give a subtle switch on effect for a hotel room

For simple remote control set-ups with on/off switching, using Active infra-red hand held senders and wall or ceiling mounted receiver switches. The hand senders have a range of approximately 10 metres, line of sight.

Infra-red remote control switching

Order code:
CEFL AIR

A mains supply interrupt for a few seconds can be used to reset the switches to off.

The CEFL AIR can be flush mounted through a false or plasterboard ceiling.

The WACE AIR can be wall mounted or ceiling surface mounted on a 16mm (plaster depth) box.

Multi-channel switching

It is possible to have a multi-channel arrangement to control several different circuits of lights.

Each receiver would switch its own circuit. Each receiver can be set to receive on one of four channels (A, B, C or D).

Order code:
WACE AIR

The hand senders work on different combinations of channels (as indicated in the order codes).

CEFL AIR
side — 2m cable
65mm — 57mm — 3mm
61mm
72mm
plan — 24mm

Requires 63 or 64mm (2.5") diameter hole in a false or plasterboard ceiling

WACE AIR
86mm — 22mm
86mm
front / plan — side

Specification

Loading:	up to 6 amps of any type of load (including fluorescent lights and fans)
Dimensions:	CEFL AIR: 72 diameter x 68mm
	WACE AIR: 86 x 86 x 22mm
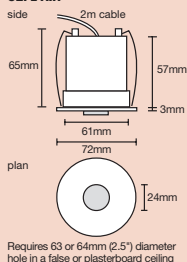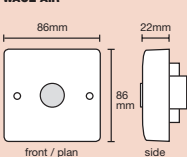
Order codes:
HASE A
HASE BC
HASE ABCD

Hand senders

Range of approximately 10 metres, line of sight. Hand senders send coded signals to switch the remote control switches on and off.

Available with various combinations of channels, as in order codes.

front — side
61mm — 21mm
100mm

Each hand sender requires two AA batteries.

Dimensions:	100 x 61 x 21mm
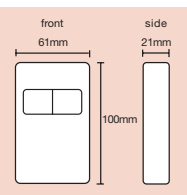
Wiring diagram

40. Remote control switching

L — receiver switch
~ 230/ 115 VAC
wire-free sender
load
N

Remote switching and dimming can be achieved by using a momentary receiver switch as a slave to a Soft start dimmer.
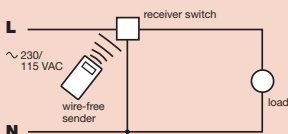
Infra-red remote control dimming

Order code:
CEFL AIR MOM

Order code:
WACE AIR MOM

Suitable for dimming tungsten, mains halogen or dimmable transformer loads.

Loading for Soft start dimmers is shown on page 47.

The CEFL AIR MOM can be flush mounted through a false or plasterboard ceiling.

The WACE AIR MOM can be wall mounted or ceiling surface mounted on a 16mm (plaster depth) box.

CEFL AIR MOM

side — 2m cable
65 mm — 57mm — 3mm
61mm
72mm
plan
24mm

Requires 63 or 64mm (2.5") diameter hole in a false or plasterboard ceiling

WACE AIR MOM

86mm — 22mm
86 mm
front / plan — side
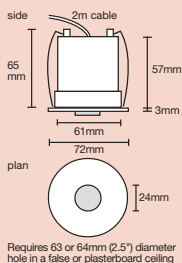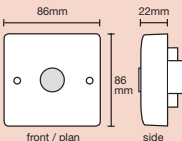
Specification

Loading:	according to Soft start dimmer chosen
Dimensions:	CEFL AIR MOM: 72 diameter x 68mm
	WACE AIR MOM: 86 x 86 x 22mm

Wiring diagram

41. Remote control dimming

L

~ 230 VAC

Hand Sender

Momentary slave switch (infra-red receiver)

L

SL — S

Soft start dimmer

L

V — Load

(Wire-wound transformer load illustrated)

N

N

Selecting the appropriate time lag switch

These electronic Time lag switches are designed to switch lights, or other loads, on for a limited time only, and to switch off automatically after a time lag has elapsed. They bring energy saving benefits and are ideal for use in stairwells, store rooms and in many other applications.

Functions

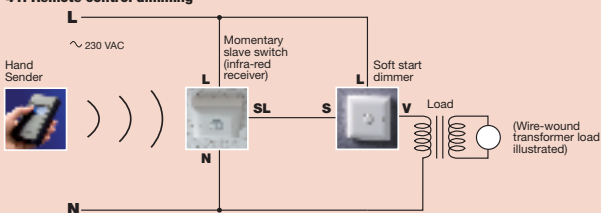Pressing the button brings the lights on in the normal way; then the lights will switch off automatically after a time lag has elapsed. The time lag settings can be adjusted by a spindle on the bottom edge of the product. These time lag switches can be used for multi-way switching, using the slave push buttons.

	2 wire versions No neutral wire needed		3 wire versions (live, neutral and switched line)		Slave switches (mains rated, normally open push buttons)
Adjustable time lags:	1-10 minutes	1-120 minutes	2-20 minutes	12-120 minutes	
Single push button	TLSW 10		TLSW A20	TLSW A120	SS 1SL
Single illuminated push button	TLSW 10 ILM		TLSW A20 ILM	TLSW A120 ILM	
Double push button					SS 2SL
Module for MK Grid Plus		GRTL MK			SSGS MK
Module for MK Grid Plus, illuminated push button		GRTL MK ILM			
Module for Crabtree grid		GRTL CB			SSGS CB
Module for Crabtree grid, illuminated push button		GRTL CB ILM			
Module for Eurodata plates		GRTL EU			SSGS EU
Module for Eurodata plates, illuminated push button		GRTL EU ILM			

Time lag switches - 2 wire versions

Order code:
TLSW 10

Order code:
TLSW 10 ILM

TLSW 10,
TLSW 10 ILM
No neutral wire needed

Direct replacements for existing wall switches.
No neutral wire is needed. Hence they are very quick and inexpensive to install.

The TLSW 10 ILM has an illuminated push button for easy location in the dark. Alternative colour options for the illuminated push button are available, depending on order quantity.
Please call us to discuss your requirements.

Specification

The time lag is adjustable from 1 to 10 minutes.

Maximum load:	6 amps (1500W) of any type of load (including fluorescent lights and fans)
Minimum load:	40W, or for wiring in parallel 40W per time lag switch in the circuit. Load capacitors (order code CAPLOAD) can be supplied to augment small loads
Dimensions:	86 x 86 x 12mm. Wall box depth 16mm

Slave push buttons

These are normally open (or push to make) push buttons. They can be used as slave switches to operate a time lag switch, as shown in the appropriate wiring diagrams.

SS 1SL is a 1 gang version on a square plate.

SS 2SL is a 2 gang version, with 2 push buttons on a square plate.

These square plated versions both fit into a plaster depth (16mm) wall box (dimensions as above).

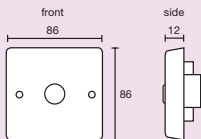Also available as grid modules (for dimensions see page 39):

SSGS MK for MK Grid Plus, requires a 35mm deep wall box.

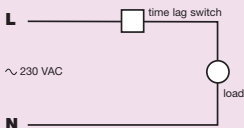**SSGS CB** for Crabtree grid, requires a 40mm deep wall box.

SSGS EU for Eurodata plates, requires a 35mm deep wall box.
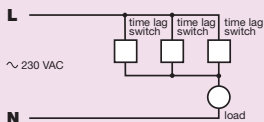
Dimensions (mm) and wiring diagrams

TLSW 10, TLSW 10 ILM

front — 86 — side — 12 — 86

42. Single time lag switch with no neutral wire (e.g. TLSW 10)

L — time lag switch
~ 230 VAC
load
N

43. Several TLSW 10 wired in parallel e.g. in a stairwell

L — time lag switch   time lag switch   time lag switch
~ 230 VAC
load
N

44. TLSW 10 with slave push buttons

L — time lag switch
~ 230 VAC
slave switches (normally open push buttons)
load
N

Time lag switches - 3 wire versions

Order code:
TLSW A20
TLSW A120

Order code:
TLSW A20 ILM
TLSW A120 ILM
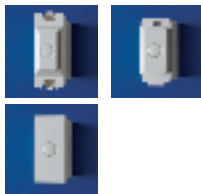
These 3 wire versions are economical switches which need neutral wires.

The TLSW A20 ILM and TLSW A120 ILM have illuminated push buttons for easy location in the dark. Alternative colour options for the illuminated push buttons are available, depending on order quantity. Please call us to discuss your requirements.

Specification

The time lags are adjustable:

TLSW A20:	2 to 20 minutes
TLSW A20 ILM:	2 to 20 minutes
TLSW A120:	12 to 120 minutes
TLSW A120 ILM:	12 to 120 minutes

Loading:	Up to 6 amps (1500W) of any type of load (including fluorescent lights and fans). No minimum load.
Dimensions:	86 x 86 x 12mm Wall box depth 16mm

Slave push buttons

These are normally open (or push to make) push buttons. They can be used as slave switches to operate a time lag switch, as shown in the appropriate wiring diagrams.

SS 1SL is a 1 gang version on a square plate.

SS 2SL is a 2 gang version, with 2 push buttons on a square plate.

These square plated versions both fit into a plaster depth (16mm) wall box (dimensions as above).

Also available as grid modules (for dimensions see page 39):

SSGS MK for MK Grid Plus, requires a 35mm deep wall box.

SSGS CB for Crabtree grid, requires a 40mm deep wall box.

SSGS EU for Eurodata plates, requires a 35mm deep wall box.

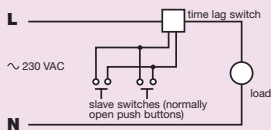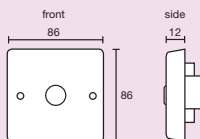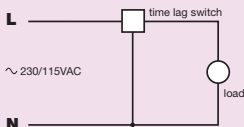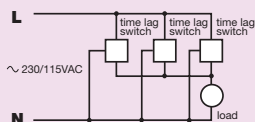### Dimensions (mm) and wiring diagrams

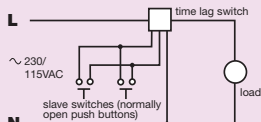**TLSW A20, TLSW A120, TLSW A20 ILM, TLSW A120 ILM,**

45. Single time lag switch with neutral wire (e.g. TLSW A20)

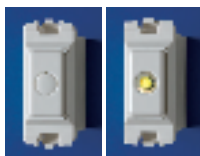**46. Several time lag switches with neutral wires, wired in parallel**

47. Time lag switch with neutral wire, with slave push buttons

Grid time lag switches - 2 wire versions

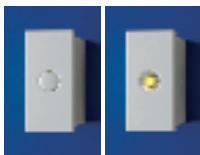**For MK Grid Plus**
Order code:
GRTL MK
GRTL MK ILM

For Crabtree grid
Order code:
GRTL CB
GRTL CB ILM

For Eurodata plates
Order code:
GRTL EU
GRTL EU ILM

DANLERS manufacture three versions, one to suit the MK Grid Plus, one to suit the Crabtree grid and one to suit Eurodata plates. They may be placed in any position on the appropriate grid or plate. These grid time lag switches can be wired in parallel to operate the same load.

They can also be operated by slave push buttons, as listed on page 38 (see wiring diagram 50 below).

The GRTL MK ILM, GRTL CB ILM and GRTL EU ILM have illuminated push buttons for easy location in the dark. Alternative colour options for the illuminated push buttons are available, depending on order quantity.
Please call us to discuss your requirements.

Specification

|	
Time lag:	1 to 120 minutes (adjustable)
Max. load:	6 amps (1500W) of any type of load (including fluorescent lights and fans).
Min. load:	40W, or for wiring in parallel 40W per grid time lag switch in the circuit. Load capacitors (order code CAPLOAD) can be supplied to augment small loads
Dimensions:	module for MK Grid Plus: 59 x 24 x 34mm, wall box depth of 35mm
Dimensions:	module for Crabtree grid: 51 x 24 x 38mm, wall box depth of 40mm
Dimensions:	module for Eurodata plates: 50 x 25 x 38mm, wall box depth of 35mm

MK Grid Plus

Crabtree grid

Eurodata plate
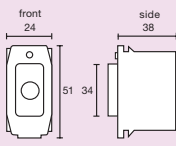
Dimensions (mm) and wiring diagrams

GRTL MK, GRTL MK ILM
Requires wall box depth of 35mm

front 24
side 34
59 30
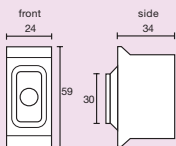
GRTL CB, GRTL CB ILM
Requires wall box depth of 40mm

front 24
side 38
51 34

GRTL EU, GRTL EU ILM
Requires wall box depth of 35mm

front 25
side 38
50

48. Single Grid time lag switch

L
~ 230VAC
N
time lag switch
load
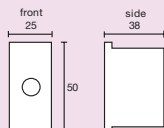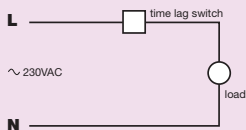
49. Several Grid time lag switches wired in parallel

L
~ 230VAC
N
time lag switch time lag switch time lag switch
load
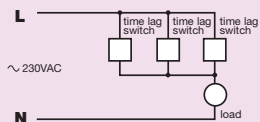
50. Single Grid time lag switch with slave push buttons

L
~ 230 VAC
N
grid time lag switch
slave slave
(normally open push buttons)
load
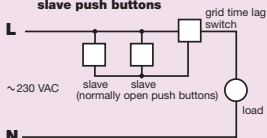
Compact person detector

An outdoor PIR switch which turns on lights at night when somebody approaches. Welcomes friends; deters intruders. Ideal for security and convenience. A compact design for controlling new or existing outdoor lights.

Order code:
COPD

Functions and features

Switches lights on when somebody is detected.
Switches lights off when nobody has been detected for a chosen period.
The photocell can be set so that lights do not switch on during the day, if required.
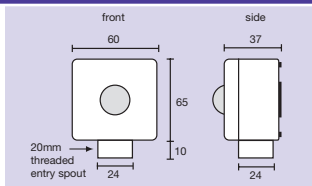Compact polycarbonate moulding.
Vandal resistant.

Specification

Weatherproof:	IP54 rating
Detection range:	up to 10m
Detection angle:	120°
Time lag:	2 to 20 minutes (adjustable)
Photocell range:	10 lux to infinite lux (adjustable)
Loading:	up to 6 amps (1500W) of tungsten or up to 4 amps (1000W) of fluorescent or discharge
Dimensions:	75 x 60 x 37mm

Exterior wall mounted PIR switch

Strong detection zone (5m)

Secondary detection zone (10m)

Dimensions (mm) and wiring diagrams

front
60
side
37
65
10
20mm threaded entry spout
24
24

51. COPD outdoor PIR switch

L
COPD
optional manual switch for overriding off
~ 230/115VAC
load
N

Twilight and Dusk switches

Order code:
TWSW

Twilight switch: TWSW

Switches outdoor lights on at dusk and off at dawn. Ideal for all night security.

Features

Adjustable photocell.
Compact polycarbonate moulding.
Vandal resistant.

Specification

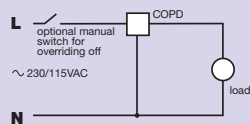| Weatherproof:	IP54 rating
Photocell range:	10 lux to infinite lux (adjustable)
Loading:	up to 6 amps (1500W) of tungsten or up to 4 amps (1000W) of fluorescent or discharge
Dimensions:	75 x 60 x 37mm

Order code:
DUSW

Dusk switch: DUSW

Switches lights on at dusk and off after a chosen period. Ideal for outdoor lighting during the evening, for security and convenience.
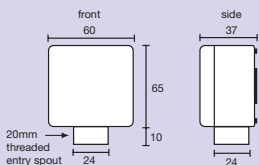
Features

Adjustable photocell.
Adjustable time lag before switching off.
Compact polycarbonate moulding.
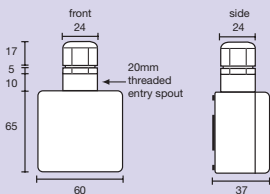Vandal resistant.

Specification

Weatherproof:	IP54 rating
Photocell range:	10 lux to infinite lux (adjustable)
Time lag:	2 to 16 hours (adjustable)
Loading:	up to 6 amps (1500W) of tungsten or up to 4 amps (1000W) of fluorescent or discharge
Dimensions:	75 x 60 x 37mm

Dimensions (mm) and wiring diagrams

TWSW Twilight switch

front
60
side
37
65
10
20mm threaded entry spout
24
24

DUSW Dusk switch

front
24
side
24
17
5
10
20mm threaded entry spout
65
60
37

52. Outdoor photocell switches TWSW or DUSW

L
optional manual switch for overriding off
DANLERS control
~ 230/115VAC
load
N
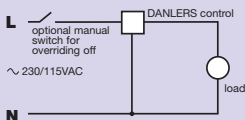
New style dimmers

A range of dimmers with elegant modern styling. Dim lights to any brightness. Versions are available for tungsten loads and for dimmable low voltage inductive loads.

MAINS HALOGEN DIMMING ✓

All versions are suitable for mains halogen (e.g. GU10) lamps, without the need for derating.

Specification

|	
Material:	White polycarbonate
Wiring diagrams:	see page 44 (diagram 53) for 1 way switching
	see pages 44-45 (diagrams 54-65) for 2 way or intermediate switching
Rotary dimmers:	rotary on/off switching, rotary dimming control. 1 way only
Push dimmers:	push on, push off, with rotary dimming control. 1 or 2 way switching
Dimensions:	square plates: 86 x 86 x 12mm see below see tables on page 43 for wall box depths
	rectangular plates: 146 x 86 x 12mm see below see tables on page 43 for wall box depths

Dimensions (mm)

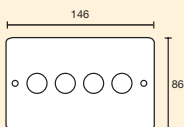**Square plated dimmer switches (1 gang switch illustrated)**

front   side

86   12

86
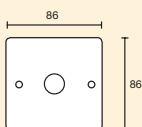
Rectangular plated dimmer switches (4 gang switch illustrated)

front   side

146   12

86

New style dimmers

Tungsten rotary dimmers

Suitable for resistive loads only.
Suitable for mains halogen lamps, without the need for derating.

Number of Gangs		Order code	Min. and Max. wattage	Max. No. of transformers	Wall box depth (mm)
1	○	**DR1D 250W**	40 – 250W	-	16
1	○	**DR1D 400W**	60 – 400W	-	16
2	○ ○	**DR2D 250W**	40 – 250W/gang	-	16

Tungsten push dimmers

Suitable for resistive loads only.
Suitable for mains halogen lamps, without the need for derating.

1	○	**DP1D 250W**	40 – 250W	-	16
1	○	**DP1D 400W**	60 – 400W	-	16
1	○	**DP1D 630W**	60 – 630W	-	40
1	○	**DP1D 1000W**	60 – 1000W	-	25
2	○ ○	**DP2D 250W**	40 – 250W/gang	-	16
3	○ ○ ○	**DP3D 250W**	40 – 250W/gang	-	16
4	○ ○ ○ ○	**DP4D 250W**	40 – 250W/gang	-	16

Low voltage push dimmers

For dimmable wire-wound transformer inductive loads.
Not suitable for fluorescent loads.

1	○	**DP1D 250WI**	60 – 250W	6	16
1	○	**DP1D 400WI**	60 – 400W	8	40
1	○	**DP1D 630WI**	60 – 630W	12	25
2	○ ○	**DP2D 160WI**	40 – 160W/gang	4/gang	16

Low voltage push dimmers

For dimmable electronic transformer inductive loads.
Not suitable for fluorescent loads.

1	○	**DP1D 250WIET**	40 – 250W	4	16
1	○	**DP1D 400WIET**	60 – 400W	6	16
1	○	**DP1D 630WIET**	60 – 630W	8	40
1	○	**DP1D 1000WIET**	60 – 1000W	12	25
2	○ ○	**DP2D 250WIET**	40 – 250W/gang	4/gang	16
3	○ ○ ○	**DP3D 250WIET**	40 – 250W/gang	4/gang	16
4	○ ○ ○ ○	**DP4D 250WIET**	40 – 250W/gang	4/gang	16

DIMMERS

Wiring diagrams - New style dimmers

53. 1-way switching and dimming

L
∿ 230 VAC
N
dimmer
load
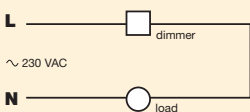
2-WAY CIRCUIT

54. Existing 2-way circuit
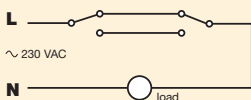
L
∿ 230 VAC
N
load

Dimming circuits with 2-way switching

The lights can be switched on and off and dimmed at the dimmer switch.

At the other switch the lights can be switched on and off only, at the brightness level which is set by the dimmer switch.

55.

L
∿ 230 VAC
N
dimmer
load

or
56.

L
∿ 230 VAC
N
dimmer
load

INTERMEDIATE CIRCUIT

57. Existing intermediate circuit
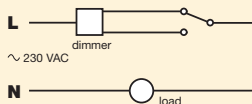

L
∿ 230 VAC
N
load

Dimming circuits with multi-way switching

The lights can be switched on and off and dimmed at the dimmer switch.

At the other switches the lights can be switched on and off only, at the brightness level which is set by the dimmer switch.

58.

L
∿ 230 VAC
N
dimmer
load

or
59.

L
∿ 230 VAC
N
dimmer
load

Wiring diagrams - New style dimmers

ALTERNATIVE 2-WAY CIRCUIT

60. Existing alternative 2-way circuit
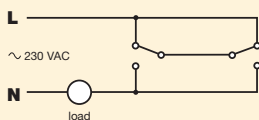
L
∿ 230 VAC
N
load

Alternative dimming circuits with 2-way switching

The lights can be switched on and off and dimmed at the dimmer switch.
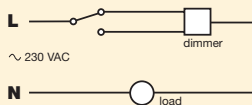
At the other switch the lights can be switched on and off only, at the brightness level which is set by the dimmer switch.
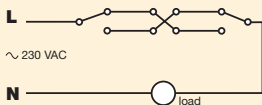
61.

L
∿ 230 VAC
dimmer
N
load

or
62.

L
∿ 230 VAC
dimmer
N
load

ALTERNATIVE INTERMEDIATE CIRCUIT

63. Existing alternative intermediate circuit
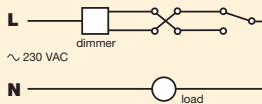

L
∿ 230 VAC
N
load

Alternative dimming circuits with multi-way switching

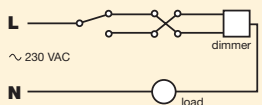The lights can be switched on and off and dimmed at the dimmer switch.

At the other switches the lights can be switched on and off only, at the brightness level which is set by the dimmer switch.

64.
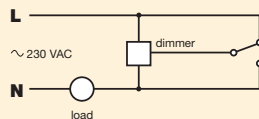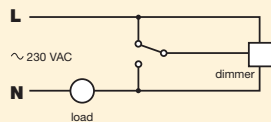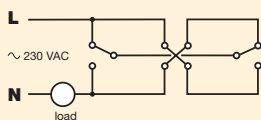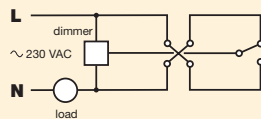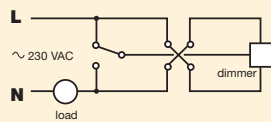

L
dimmer
∿ 230 VAC
N
load

or
65.

L
∿ 230 VAC
dimmer
N
load

Soft start dimmers

These dimmers can be used to dim lights from several locations. They are suitable for dimming mains and/or dimmable transformer low voltage lamps.

MAINS HALOGEN DIMMING ✓

All versions are suitable for mains halogen (e.g. GU10) lamps, without the need for derating.

Functions

Slim buttons give an easy press action. Holding the button down dims or brightens the light to any level. A quick press switches off. Another press returns the lamp softly to its previous brightness. These dimmers can also be used to control the speed of fans and motors.

Special Features

The soft start feature prolongs the bulb life. These dimmers automatically switch off in the event of transformer instability, protecting the dimmer and the transformer.

Multi-way switching and dimming can be achieved from any position by using the matching slave switches (the SS–SL and SS GS models).

The grid module versions fit any position on the appropriate grid or plate system.

Dimensions

Square plates:	86 x 86 x 12mm, see table on page 47 for wall box depths
MK grid dimmer:	59 x 24 x 34mm, wall box depth of 35mm
Crabtree grid dimmer:	51 x 24 x 38mm, wall box depth of 40mm
Eurodata grid dimmer:	50 x 25 x 38mm, wall box depth of 35mm

Dimensions (mm)

Square plated dimmer switches (1 gang switch illustrated)

front 86 · 86
side 12
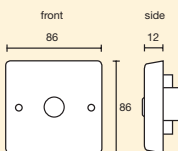
Dimmer module for MK Grid Plus. Requires box depth of 35mm

front 24
side 34 · 59 · 30
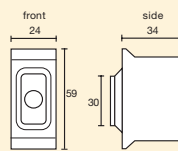
Dimmer module for Crabtree grid. Requires box depth of 40mm

front 24
side 38 · 51 · 34
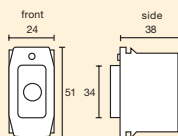
Dimmer module for Eurodata plate. Requires box depth of 35mm

front 25
side 38 · 50
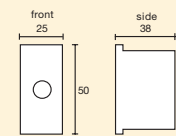
Order codes:
**DSS1D 250W,
DSS1D 400W,
DSS1D 630W,
SS 1SL** (slave switch)

Order codes:
**DSS2D 250W,
SS 2SL** (slave switch)

For MK Grid Plus.
Order codes:
**DSSGD MK400W,
SSGS MK** (slave switch)

For Crabtree grid.
Order codes:
**DSSGD CB400W,
SSGS CB** (slave switch)

For Eurodata plates.
Order codes:
**DSSGD EU400W,
SSGS EU** (slave switch)

Soft start dimmers

Order code		Min. and Max. wattage Resistive, mains halogen or dimmable electronic transformer inductive	Min. and Max. wattage Dimmable wire-wound or toroidal transformer inductive	Max No. of trans-formers	Wall box depth (mm)
DSS1D 250W	○	40 – 250W	40 – 160W	4	16
DSS1D 400W	○	60 – 400W	60 – 250W	6	16
DSS1D 630W	○	60 – 630W	60 – 400W	8	35
DSS2D 250W	○ ○	40 – 250W /gang	40 – 160W /gang	4/gang	16
DSSGD MK400W	○	60 – 400W	60 – 250W	6	35
DSSGD CB400W	○	60 – 400W	60 – 250W	6	40
DSSGD EU400W	○	60 – 400W	60 – 250W	6	35

For loading of Grid dimmers on multi-gang plates, the following limits also apply:

2 gang plates:	maximum for total plate – 630W
3 or 4 gang plates:	maximum for total plate – 1000W
6, 8, 9 or 12 gang plates:	maximum per row – 1000W
18 or 24 gang plates:	maximum per row – 1200W

Restriction:	not suitable for fluorescent loads

Wiring diagrams

66. 1-way switching and dimming
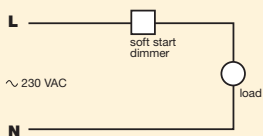
67. Multi-way switching and dimming (lights can be switched and dimmed from any position)

68. Example of an existing 2-way circuit

69. Replace the 2-way switches with a Soft start dimmer and a Slave, as shown

For heating, ventilation and air conditioning

Order code: **WAPIR TH**

PIR thermostat control for heating: WAPIR TH

For the automatic control of electric heating loads. The passive infra-red person detector detects whether somebody is present in the vicinity. If somebody is present the heating is controlled by the thermostat. If nobody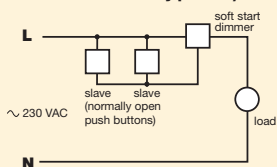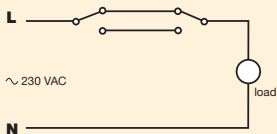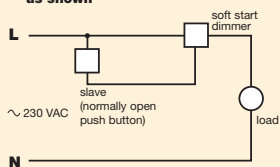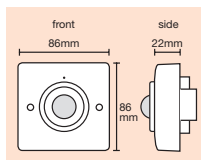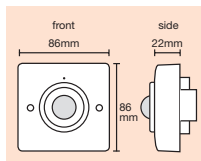 is present the room temperature is allowed to drop to a lower base level. This base level or 'set-back temperature' is also adjustable. For wall mounting only.

Specification

|	
Detection zone:	120°, see page 19 (as WAPIR)
Thermostat range:	15 to 25ºC
Set-back temperature:	5 to 14ºC
Loading:	up to 13 amps (3000W) of any type of heating load
Dimensions:	86 x 86 x 22mm. Wall box depth: 25mm

Order code: **WAPIR TC**

PIR thermostat control for cooling: WAPIR TC

For the automatic control of electric cooling loads. The passive infra-red person detector detects whether somebody is present in the vicinity. If somebody is present the cooling is controlled by the thermostat. There is a 'deadzone' adjustment and a run-on time adjustment to avoid excessive switching of the cooling load. If nobody is present the room temperature is allowed to rise to a higher ceiling level which is also adjustable. For wall mounting only.

Detection zone:	120°, see page 19 (as WAPIR)
Thermostat range:	15 to 25ºC
Offset temperature:	differential of 2 to 10ºC or disabled
Deadzone adjustment:	1, 2, 3, 4 or 5ºC
Run-on time:	0 minutes or 5 minutes
Loading:	up to 13 amps (3000W) of any type of cooling load
Dimensions:	86 x 86 x 22mm. Wall box depth: 25mm

Order code: **TLSW HB**
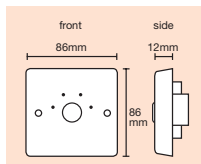
Heater boost switch: TLSW HB

For control of electric heating loads. Switches heating load on for a limited time only. Pressing the button selects each time lag choice in turn. The heating then remains on for the chosen time lag before switching off automatically. The button can also be used at any time for selecting a different time lag or for switching off.

Selectable time lag:	1/4 hr, 1/2 hr, 1 hr, 2 hrs
Loading:	Up to 13 amps (3000W) of resistive load, or 6 amps (1500W) of inductive load
Dimensions:	86 x 86 x 12mm. Wall box depth: 25mm

Wiring diagram

70. PIR Thermostat or Heater boost switch controlling a heating or cooling load

48
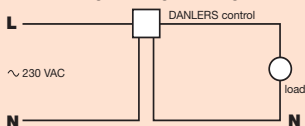
For heating, ventilation and air conditioning

Order code: **FASP**

Fan speed control: FASP

Controls the speed of fans and motors. Push-on, push-off, with rotary speed control. Can be used for one or two way switching. Not suitable for control of fans or motors which are synchronous (designed to be constant speed).

front   side
86mm   12mm
86 mm

Specification

Minimum load:	40W
Maximum load:	250W
Dimensions:	86 x 86 x 12mm. Wall box depth: 16mm

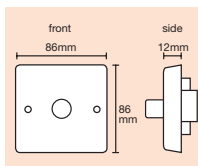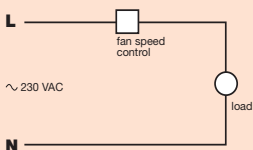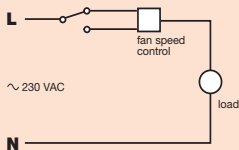### Wiring diagrams

71. Fan speed control (FASP)

L

fan speed control

∼ 230 VAC

load

N

72. Fan speed control circuit with 2-way switching

L

fan speed control

∼ 230 VAC

load

N

BESPOKE PRODUCTS

Bespoke PIR occupancy switches

Special versions of various DANLERS products can be supplied to Original Equipment Manufacturers or other customers. Please call us to discuss your requirements. Here are some examples:

Low Voltage PIR occupancy switches

We stock various 24V (a.c. or d.c.) versions of our PIR occupancy switches and Photocell switches, ideal for low voltage control systems. 12V versions can also be supplied, depending on the quantity required. To special order we can also supply PIR occupancy switches with volt-free outputs or with open collector outputs.

Pre-wired controls

We can supply various bespoke pre-wired controls for use with marshalling box control systems.

Time lag switches

Time lag switches with fixed time lags, or with different time lag ranges, can be supplied, depending on the quantity required.

Bespoke time lag switches

Adaptor box with plug

We can also supply our square plated hard wired controls mounted on a special adaptor box with a plug, suitable for our ceiling sockets (CESO and CESO SQ) and our ceiling slave relays (CESL and CE2SL).

Adaptor box with plug

Rotary and push dimmer modules

Dimmer modules and time lag modules are available for other Original Equipment Manufacturers to mount on their own wall plates. Our range includes dimmer modules with rotary or push mechanical switches, and to suit resistive or inductive loads. For mains halogen lamps follow the resistive wattages in the tables below.

Rotary switch dimmer modules for resistive loads
For wiring diagram see page 44 (diagram 53).

Order code	Min. and Max. wattage - resistive	Min. and Max. wattage - inductive	Dimensions (mm)
DRD 250W	40 – 250W	Not suitable	64x25x21
DRD 400W	60 – 400W	Not suitable	64x25x21

Push switch dimmer modules for resistive loads
For wiring diagrams see pages 44 and 45 (diagrams 53-65).

Order code	Min. and Max. wattage - resistive	Min. and Max. wattage - inductive	Dimensions (mm)
DPD 250W	40 – 250W	Not suitable	64x25x21
DPD 400W	60 – 400W	Not suitable	64x25x21
DPD 630W	60 – 630W	Not suitable	64x44x42
DPD 1000W	60 – 1000W	Not suitable	104x50x24

Push switch dimmer modules for dimmable wire-wound transformer low voltage loads. For wiring diagrams see pages 44 and 45 (diagrams 53-65).

Order code	Min. and Max. wattage - resistive	Min. and Max. wattage - inductive	Max. no. of transformers	Dimensions (mm)
DPD 250WI	60 – 400W	60 – 250W	6	64x25x21
DPD 400WI	60 – 630W	60 – 400W	8	64x44x42
DPD 630WI	60 – 1000W	60 – 630W	12	104x50x24

Push switch dimmer modules for dimmable electronic transformer low voltage loads. For wiring diagrams see pages 44 and 45 (diagrams 53-65).

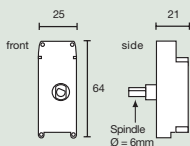| Order code	Min. and Max. wattage - resistive	Min. and Max. wattage - inductive	Max. no. of transformers	Dimensions (mm)
DPD 250WIET	40 – 250W	40 – 250W	4	64x25x21
DPD 400WIET	60 – 400W	60 – 400W	6	64x25x21
DPD 630WIET	60 – 630W	60 – 630W	8	64x44x42
DPD 1000WIET	60 – 1000W	60 – 1000W	12	104x50x24

Push switch module, no dimming (any type of load). 1 or 2 way switching.
For wiring diagrams see pages 44 and 45 (diagrams 53-65).

Order code	Min. and Max. wattage - resistive	Min. and Max. wattage - inductive	Dimensions (mm)
DPS 1500W	0-1500W	0-1500W	64x25x21

Dimensions (mm)

Various push and rotary dimmer modules and push switch module: above products measuring 64x25x21mm

front 25 21 side
64
Spindle
Ø = 6mm

Various push dimmer modules: above products measuring 64x44x42mm

front 44 side 42
64
Spindle
Ø = 6mm
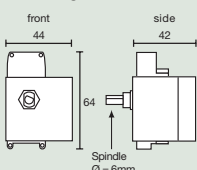
Various push dimmer modules: above products measuring 104x50x24mm

front 50 24 side
104
Spindle
Ø = 6mm
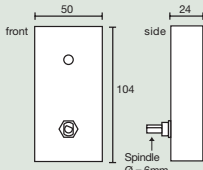
Soft start and HF dimmer modules

Soft start dimmer modules

These modules have the same functions and features as the Soft start dimmers, shown on pages 46-47. For wiring diagrams see page 47 (diagrams 66-69).

Order code	Min. and Max. wattage: resistive, mains halogen or dimmable electronic transformer inductive	Min. and Max. wattage: dimmable wire-wound or toroidal transformer inductive	Max. no. of transformers	Dimensions (mm)
DSS 250W	40 - 250W	40 – 160W	4	64x25x31
DSS 400W	60 – 400W	60 – 250W	6	64x25x31
SS SL	Slave switch module. Suitable for DANLERS Soft start dimmers and Soft start dimmer modules. Also suitable for DANLERS Time lag switches.			

High frequency dimmer modules

For dimmable high frequency ballasts taking a 1-10VDC input. Push on, push off, with rotary dimming control. Based on 1-10VDC High frequency dimmers shown on page 22. For wiring diagrams see page 22 (diagrams 26-27).

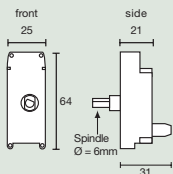| Order code	Number of ballasts	Dimensions (mm)
DPD 10VDC	1 or 2	64x25x21 + terminal block
DPD 10VDC MB	Multiple (number depending upon make of ballast) Can control up to 20mA, eg. 20 ballasts at 1mA. (Control current of ballast is usually specified at 1-10V terminals.)	64x26x28

Time lag modules

These modules have adjustable time lag functions. They require 3 wire connections: live, neutral and switched line. For wiring diagrams see page 38 (diagrams 45-46).

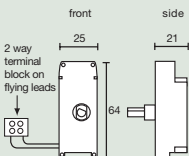Loading: up to 6 amps (1500W) of any type of load, including fluorescent lights and fans.

Order code	Time lag range	Dimensions (mm)
TL A20	2 – 20 minutes	64x25x31
TL A120	12 – 120 minutes	64x25x31

Dimensions (mm)

Soft start dimmer or time lag modules

front side
25 21

64
Spindle Ø = 6mm
31

DPD 10VDC

front side
25 21

2 way terminal block on flying leads
64

DPD 10VDC MB

front side
26 24

64
28
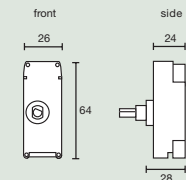
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