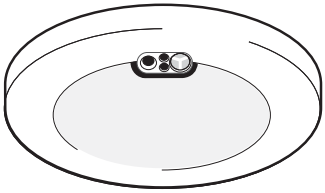
Whitecroft lighting

COMRG
COMMAND G SERIES



COMRGD
COMRGY
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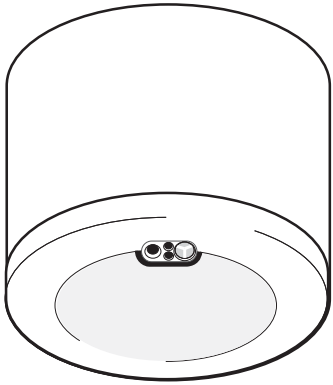
COMRGYTHETA



COMRGDSM
COMRGYSM

Regulating Presence Detector with photocell

Note: COMAHP required for commissioning

Installation and Commissioning Instructions

W4359

July 2016 - Rev F

COMMAND G Series with Regulating Photocell

Please note that THETA versions of these detectors for use with the CPDMTHETA 10 Port Hub or CFL variants do not offer Command Plus functionality and cannot be connected using Command Plus cable.

Only suitably qualified personnel should install this equipment.

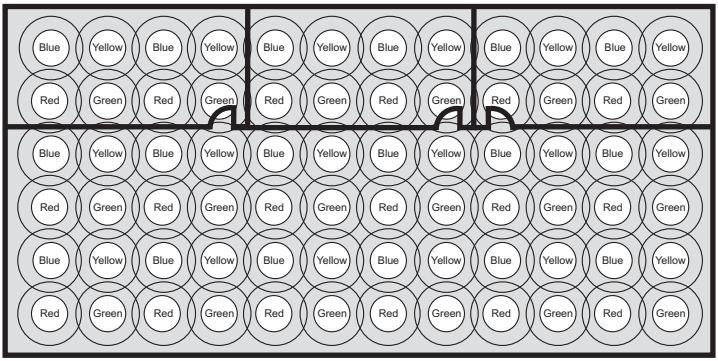
The COMRG is a high-performance, communicating presence detector which can be used as part of a full Command Plus System or as a stand-alone unit. The detector is equipped with a regulating photocell to control digital DSI or DALI ballasts (when using the detector's Digital Output) and a volt-free output for control of non-dimmable lighting loads. It incorporates OneSwitch Dimming, local manual operation of any controlled lighting load.

Location

This is an extremely sensitive movement detector; it is essential therefore that it be installed on a rigid surface that will not itself be subject to movement or vibration.

Please note that this detector is not recommended for applications where there are large surface areas of metal, e.g. metal ceiling or floor tiles, as unpredictable sensitivity may result.

The units are graded according to four variations in operating frequency. Each type can be identified by different colour-coding on the detector label and carton. For reliable operation it is essential that units of the same colour code do not occupy adjacent positions in open-plan areas or in adjoining rooms (see below).



Note: Should you need to order additional detectors for an existing installation and need specific colour-coded detectors, please add the following suffixes to the part number: Y = Yellow, B= Blue, G= Green, R = Red. (There is normally no need to specify the colour codes as orders are dispatched with a suitable colour-code mix.)

Fixing

Surface versions - The housing may be secured to a hard surface or a BESA box. The unit fits into the housing with a simple bayonet action.

Flush versions - Depth required behind ceiling: 62mm from front flange plus an allowance for the minimum bend radius of the cable. Sinking box fits into a 89mm diameter hole in ceiling tile or plasterboard ceiling. To avoid damage to ceiling tile, do not overtighten. Access above the ceiling is required for CFL or THETA variants.

Please note: Do not position this product on a pitch narrower than 5m.
Do not mount within 0.25m of a luminaire.

Electrical Connections

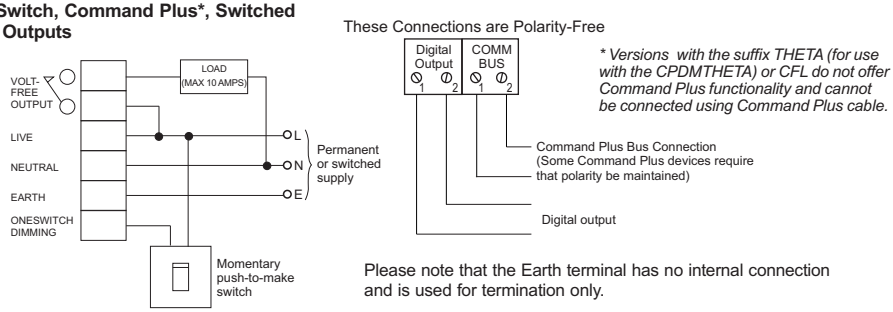
These COMRG detectors should be connected in accordance with the diagrams below. Both the Digital Output and Command Plus connections are polarity-free however other Command Plus products require that polarity be maintained. The Command Plus cable should be mains-rated, unscreened, twisted pair of at least 1.5mm CSA. For further information please refer to Wiring Application Guide AN4017. ***Please note that THETA versions of these detectors for use with the CPDMTHETA 10 Port Hub or CFL variants do not offer Command Plus functionality and cannot be connected using Command Plus cable.***

These detectors are designed to control up to 25 DSI or DALI luminaires, a switched load of up to 10 Amps or a combination of the two. When controlling DSI or DALI ballasts the ballast type must not be mixed. The DSI or DALI input terminals on the ballasts should be connected in parallel with each other and to the Polarity-Free Digital Output terminals on the rear of the detector. Each DSI or DALI luminaire is controlled completely by its digital input and therefore would normally have a permanent power supply. Turning the power off to some lights within a control circuit will not have affect the operation of those lights that remain powered up and under the control of the detector.

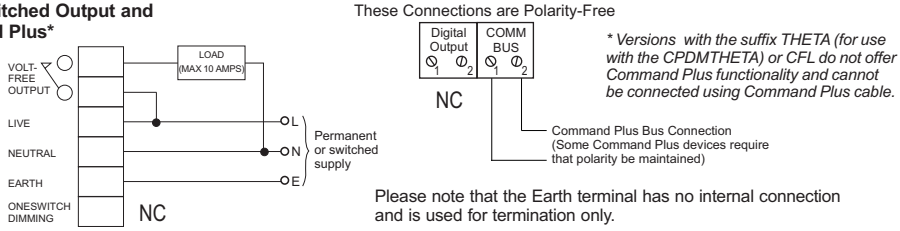
When switching via the volt-free output multiple detectors may be connected in parallel provided the controlled load does not exceed 10 Amps. If digital ballasts are also being controlled the digital outputs from each detector must not be mixed even if they are of the same type.

Wiring Examples

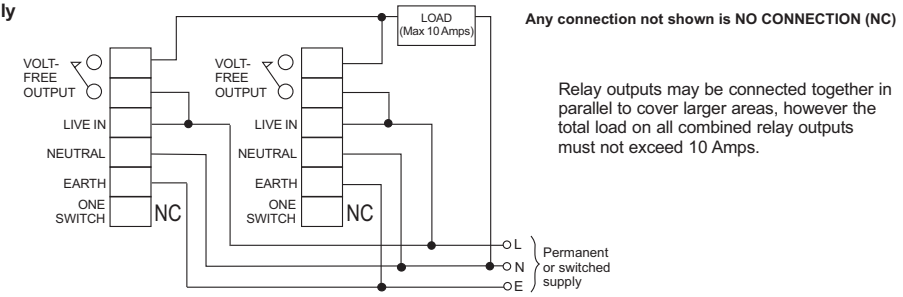
Using OneSwitch, Command Plus*, Switched and Digital Outputs



Using Switched Output and Command Plus*



2 x COMRG In Parallel, using Switched Output only



Commissioning

The units are supplied with the factory default settings shown below which render commissioning unnecessary in many applications. To make use of the programmable settings, an infrared commissioning tool is required (COMAHP). A ten-second time delay is selectable to aid commissioning.

Sensitivity to Movement

While the factory settings will be correct for many applications, the sensitivity can be adjusted if required.

ON Sensitivity: This sets the detector's range when the lights are ON. Choose setting from 1-100 where 1 is lowest and 100 is maximum. (Note: Choose the lowest level possible to give adequate detection.)

OFF Sensitivity: This sets the detector's range when the lights are OFF. Choose % setting from 10% to 100% where 10% = 10% of ON Sensitivity and 100% = same as ON Sensitivity. This is an approximation and should be tested on site during commissioning.

Like all programmable parameters, the sensitivity settings will be retained in the event of a power failure and can be re-programmed any number of times.

Factory Default Settings

These are the settings to which the units have been programmed before they leave the factory.

Parameter	Options	Default Setting	Options
Power up	On/Off	ON	Each of these settings can be re-programmed, if desired, by use of the infrared programming tool COMAHP.
Response	Auto, Manual/Bus, Manual only	AUTO	
Off Delay	1min-96hrs, 10 secs (walk test), Disabled	20 min	
On Sensitivity	0-100	19	
Off Sensitivity	100%-10% in 10% increments	100%	
Bus Connect	Yes/No	YES	
1st Zone	Address 1-100, -- (no zone), Comn 1-3	--	
2nd Zone	Address 1-100, -- (no zone), Comn 1-3	--	
3rd Zone	Address 1-100, -- (no zone), Comn 1-3	--	
4th Zone	Address 1-100, -- (no zone), Comn 1-3	--	
Corridor 1 Begin/End	0-100, --, Building	--	
Corridor 2 Begin/End	0-100, --, Building	--	
Global 1 Rx	Yes/No	NO	
Global 2 Rx	Yes/No	NO	
Manual I/P	Local/Share	LOCAL	
Start Lamps	Max/Min	MAX	
Entry Scene	Scenes 1-6	01	
Lamp Max	100%-10%	100%	
Dimming	Reg 100%-50%	Reg 100%	
Fade to Off	Yes/No	NO	
When Vacant	Off, 9 Exit Scenes (3 options x 3 durations)	OFF	
Bright-Out	Yes/No	NO	
Pcell Rly	Disabled/Passive/Active	Disabled	
Set-Point Low	0-1023	766	
Set-Point High	0-1023	1022	

Photocell Control

i) Regulating Photocell

Regulating photocell control tries to maintain a constant level of total illumination in the space controlled by dimming and brightening the controlled luminaires to compensate for changes in illumination from other sources.

With the photocell configured as DISABLED the Regulating Control module is influenced only by the BRIGHT-OUT setting. BRIGHT-OUT = YES allows it to hold-off the lights at the start of occupancy if natural light already exceeds SET-POINT LOW and to extinguish the lights during occupancy if total light, after the controlled luminaires have been dimmed to minimum, exceeds SET-POINT HIGH continuously for a period equal to the OFF DELAY . The lighting is restored immediately if the illumination level subsequently drops below SET-POINT LOW.

If the photocell is configured for ACTIVE or PASSIVE control of the relay switched load then the Regulating Control module adopts the decision made by the Switching Control module in the case of turn-on inhibit on entry, but still obeys the BRIGHT-OUT YES/NO setting with regard to turn-off during occupancy.

ii) Switching Photocell (PHOTOCELL: ACTIVE or PASSIVE)

Both ACTIVE or PASSIVE modes hold off the controlled lighting on entry when natural light is sufficient, i.e. SET-POINT LOW is exceeded, but only ACTIVE mode will extinguish the lighting if natural light increases sufficiently during occupancy, i.e. SET-POINT HIGH is exceeded continuously for a period equal to OFF DELAY. The lighting is restored immediately if the illumination level subsequently drops below SET-POINT LOW.

iii) Photocell DISABLED

If the photocell is configured as DISABLED for relay Switching Control it will have no effect on the control of that load, which will be ON continuously during periods of occupancy unless commanded OFF via manual switch or infrared control. The photocell readings are still available for use by the Regulating Control module while in this mode.

Programming the Photocell Set-points

The parameters SET-POINT LOW and SET-POINT HIGH programme the detector's photocell response The SET-POINTS can be manually programmed as numbers between 1 (darkest) and 1023 (brightest). This number is not scaled to correlate with 'lux' measurements made using a light meter, but nevertheless is a true representation of the light level perceived by the detector. To assist with finding the appropriate SET-POINT settings, the light level currently perceived by the photocell can be viewed on the COMAHP screen briefly, following a download operation. The number represents the light level read immediately before the download took place.

Tip: Turn the lights off using the COMAHP (UTILITIES / COMMAND/PLUS/GAMMA / IR REMOTE / COMHC) to measure the perceived light level with no contribution from the controlled lighting.

Alternatively the SET-POINTs can be configured semi-automatically;

i) The Primary Interest is the Regulating Control Output.

With the photocell configured as DISABLED:-

Using COMAHP (UTILITIES / COMMAND/PLUS/GAMMA / SET LIGHT LEVEL) or COMHC (+,- Scene 1) set the required light output from the controlled luminaires and then press and hold OK (COMAHP) or Scene 1 (COMHC) until the controlled lights "blink" to indicate that a new SET-POINT LOW has been stored and a calculated SET-POINT HIGH has also been inserted. Using the COMAHP the photocell can now be re-configured as ACTIVE or PASSIVE if required.

ii) The Primary Interest is the Switching Control Output
With the photocell configured as ACTIVE or PASSIVE:-

1) If the lights are not already on, switch them on manually by pressing 'UTILITIES / COMMAND/PLUS/GAMMA / IR REMOTE / COMHC / Luminaire+ / OK' (COMAHP) or "+" (COMHC). Fluorescent lights do not reach full output until up to 15 minutes after being switched on, so ensure that the lights are fully warmed up before continuing.
2) Wait until the time of day when the natural light level is at the point below which you ***would*** want the lights to be on, and above which you ***would not*** want the lights to be on.
3) Start the internal self-programming mechanism by pressing 'UTILITIES / COMMAND/PLUS/GAMMA / SET LIGHT LEVEL / OK' (COMAHP) or Scene 1 (COMHC). The detector takes a photocell reading, adds a small amount and stores the value in SET-POINT HIGH. Then it turns the lights off, makes another measurement and stores the value in SET-POINT LOW. The lights now switch on again to acknowledge a successful programming operation.

The two switching thresholds have now been set, and the difference between them is equal to slightly more than the contribution made by the electric lighting. This is the perfect amount of hysteresis to ensure that the lights will not oscillate.

OneSwitch

OneSwitch Dimming affords local control to the end-user whereby a simple, momentary, push-to-make wallswitch can be used to raise or lower the lighting level or toggle the output of the unit ON or OFF. A short press (less than 1 second) toggles all outputs from *both* OFF to *both* ON or from *either* ON to *both* OFF. A long press will ramp the digital output either up or down with no effect on the volt-free output. If the output prior to pressing the switch is above 90% the output will ramp down; if below 90% it will ramp up. If the latest press and the current press are within 5 seconds of each other it will ramp in the opposite direction.

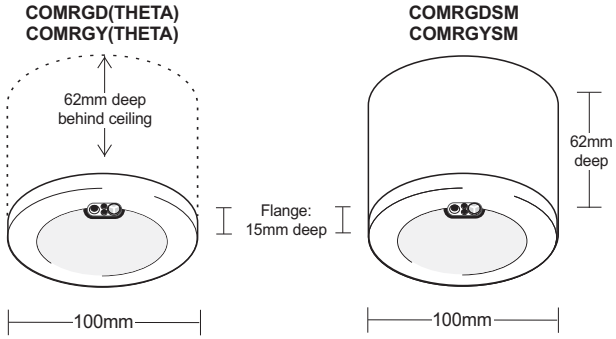
User Overrides

The end-user can configure a number of lighting scenes that can be recalled using a hand-held override. With a COMHC hand-held controller lighting can be overridden OFF or ON, or a set level can be chosen, affecting either the controlled group or, with a Command Plus system, the whole zone. Regulating and switched loads can be adjusted independently through a combination of OneSwitch Dimming and the COMHC.

Important Additional Notes

1. All terminals on this product are provided for final connections. It is not intended that the product be used as a junction box for looping cables.
2. A means for disconnection must be incorporated in the fixed wiring in accordance with the current wiring regulations.
3. Although nominally 12V, the dimming output is not SELV and therefore should be treated with the same respect as mains with regard to wiring practice. The 0V line of the dimming output is almost at Neutral potential.
4. The dimming control output should be connected only to the control input of the ballasts - never to other detectors.
5. Due to the fact that the photocell is on the ceiling looking down, it is not possible for measurements made with a lux meter on the working plane to remain constant when daylight illuminates the ceiling and the working plane to a differing extent. Therefore, products of this type should be regarded as capable of maintaining an APPROXIMATE light level only.
6. This equipment switches lights no more frequently than would a responsible human occupant. However, manufacturers of some lighting types (e.g. '2D' luminaires) may specify a maximum number of switching cycles in order to achieve a predicted lamp life. Please check with the manufacturer of the luminaires to ensure that they are compatible with automatic controls in this respect.
7. The detectors are extremely sensitive to movement; they must be mounted on a solid surface which has no movement whatsoever.

Dimensions



Technical Data

COMMAND PLUS CABLE : 1.5mm^2 unscreened twisted-pair (applicable when detector is used as part of a full Command Plus System): see Application Note AN4017
OPERATING VOLTAGE: 230V 50Hz (UK & Europe)
PRODUCT RATING AND RECOMMENDED CIRCUIT PROTECTION: 10 Amps
MAXIMUM RECOMMENDED LOAD (VOLT-FREE): 10 Amps
MAXIMUM RECOMMENDED LOAD (DSI/DALI): 25 Ballasts
MAXIMUM RECOMMENDED MOUNTING HEIGHT: 3.0m
RANGE: Approx 7m dia at 2.4m ceiling height
OFF DELAY: 1 min - 96 hours plus 10-second walk-test mode
PHOTOCELL: Passive/Active/Regulating adjustable 50-5000 lux
MATERIAL: Flame retardant PC
COLOUR: White RAL9010
WEIGHT: 243g (flush version), 251g (surface version)
IP RATING: 2X
OPERATING TEMPERATURE: 0°C to 40°C

FURTHER INFORMATION CONTACT
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