PDRC416FR-KNX / PDRC816FR-KNX / PDRC1216FR-KNX
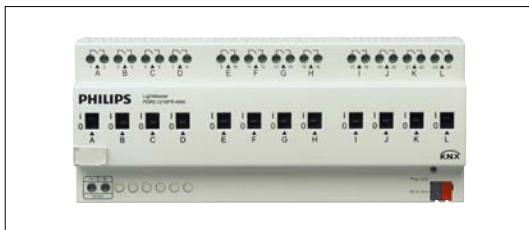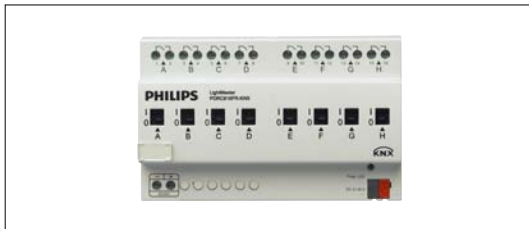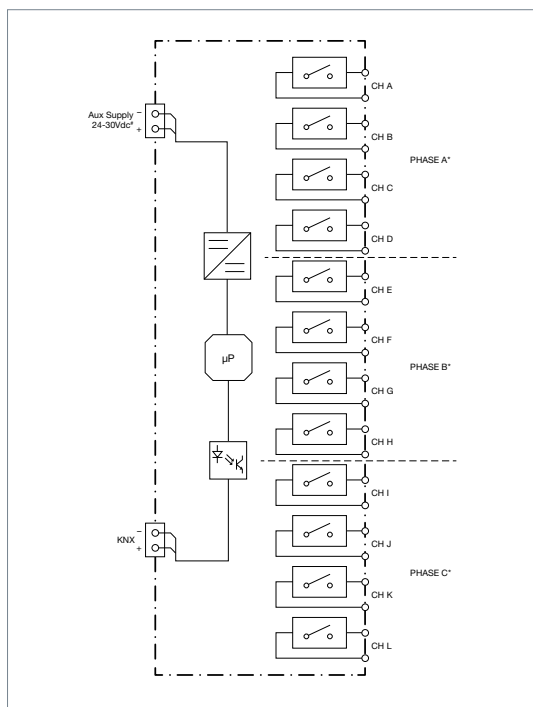
LightMaster Relay Actuator

INSTALLATION MANUAL

Features

- Designed to control various types of switched load.
- Mains Switched Outputs with lighting load rated latching relays, separately controllable via the KNX network.
- The power circuit is a "feed through" design and is electrically equivalent to a 4, 8 or 12 pole contactor.
- Manual Overrides for each output.
- Simple Installation – DIN rail mounting facilitates installation.

Important Notes

Special Programming – This device is designed for professional KNX installation only and will only operate in basic modes unless programmed via a computer. If programming is required, contact your local agent for details.

Check Connections – Re-tighten all connections after installation.

Output Circuit – The load on the switched circuits must not exceed the specified capacity of 16A, these circuits should be fed via a 16A fuse/circuit breaker.

Load Type and Supply – Refer Product Specifications

Mounting Location – Install in a dry, well-ventilated location indoor only. Controllers may emit some mechanical noise. Take this into account when deciding the mounting location.

KNX Data Cable – Use approved KNX TP1 data cable. Segregate from mains cable as per KNX installation recommendations and local wiring rules. Connect devices in a 'daisy chain'. Do not cut or terminate live cables.

Installation – Device must be installed by KNX certified personnel and cabled in accordance to the standards detailed on the official KNX Association website.

Electrical Diagram

WARNING

- Risk of electric shock
- Do not cut or terminate live wires. De-energize and isolate all supply, load and control wiring prior to installation or servicing. Do not expose this device to rain or moisture. The device is only suitable for indoor installations. Re check all wiring terminations prior to energizing the device. Installation, programming and maintenance must be carried out by qualified personnel only.
- Do not connect KNX TP I bus or AUX supply to mains or load wiring
- Do not connect KNX TP I bus to AUX supply
- KNX TPI bus and AUX supply are SELV and they must be isolated and segregated from mains and other wiring as per the local wiring rules and KNX installation recommendations.

WARNING
ISOLATE FROM MAINS SUPPLY PRIOR TO INSTALLATION OR SERVICING. NO USER SERVICEABLE PARTS INSIDE. INSTALLATION AND SERVICE BY QUALIFIED PERSONNEL ONLY

* Warning: Channels within a group of 4 must be on the same supply phase feed
Note # Auxiliary input is only available on 8 and 12 channel products

Installation Steps

1. Isolate Load Supply, KNX bus and Aux Supply prior to installation and wiring.

2. Mount the device on a DIN rail inside an approved electrical enclosure.

3. Check total load per channel to ensure current not exceeding 16A nominal or 500A inrush (whichever comes first). Protection devices (fuses/ circuit breakers) are to be fitted on each incoming supply feed. These devices may require derating for high inrush current loads, consult the manufacturer.

4. Connect supply and load cables to each channel. Single feed can be shared between two or more channels providing 16A limit per feed. Device is suited for some delta supplies, refer Product Specification section. Do not energize the supply.

5. Connect KNX TP1 bus cables. Ensure correct cable type and lengths. Ensure required cable segregation to other circuits.

6. Connect Aux Supply if required (8 and 12 ch models only). Ensure correct polarity and required segregation to other circuits.

7. Re-check all terminations prior to energizing.

8. Energize supply and KNX bus. Check load supply, KNX bus voltage and Aux supply using a multimeter. Load supply shall be within the load specification, KNX bus shall be between 21-30Vdc, Aux supply shall be between 24-30Vdc.
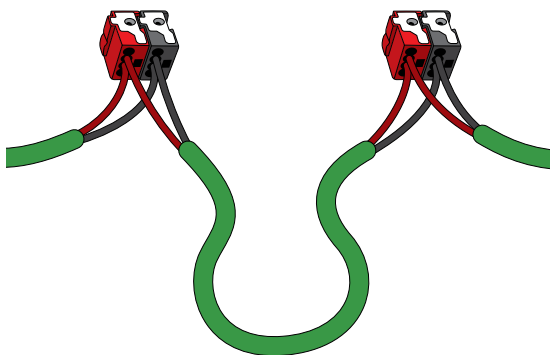
KNX Bus Permanent Connections

Product Specifications

Control Supply: From KNX Bus 15mA @ 21 - 30VDC
Additional supply required for synchronous switching (8 and 12 ch only)

Outputs: 4/8/12 x Switched feed thru outputs at 16A Relays

Rated switch current:16A lighting load, Max inrush 500A

Rated switching voltage: 250V AC Supply**
4 Ch model suitable for 1 Phase only (star) or 2 Phase (delta), 8 Ch model can accommodate up to 2 Phase (star) or 3 Phase (delta)
12 Ch model can accommodate up to 3 Phase (star or delta)
** Warning: Relay channels within a group of 4 must be on the same supply phase feed for star supply.

Supported supplies and wiring schemes: Single phase 100-240V, 3 phase 400/230V star and 100-120/208-240 delta 50/60Hz AC supply not exceeding 250Vac phase-to-ground and across load supply terminals. All live feeds must be protected with fuses / circuit breakers rated 16A or less. Relay open contact voltage must not exceed 250Vac. Supply over-voltage (surge) must not exceed 4kV, as per IEC category III classification.

Control IO: KNX TP1 control port

User Controls: Manual Over-ride switch for each channel, KNX LED & button programming

KNX Terminals: KNX Bus Spring Terminals – Wago 243 (Red / Grey) 0.6 – 0.8mm Diameter Single Core KNX Cable

Aux Supply Terminals: Spring Terminals – Wago 243 (Yellow / White) 0.6 – 0.8mm Diameter Single Core Wire
(8 and 12 ch only)

Output Terminals: Line In, Line Out for each channel
1 x 2.5mm^2 max conductor size

Compliance: CE, KNX

Environment: -5º to 45ºC operating ambient temperature, -25º to 55ºC storage temperature, 0% to 90% RH non condensing

Construction Dimensions: H 90mm x W 72 / 144 / 216mm x D 64mm

Housing Material: Nylon (PA66), UL94-V0 rated

PHILIPS

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