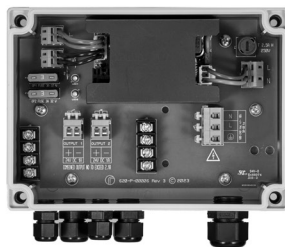


VARIO2 PSU rayTEC®

Installation and Set Up Guide



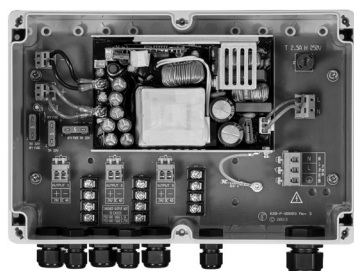
PSU-VAR2-20W-1



PSU-VAR2-50W-2



PSU-VAR2-100W-3



PSU-VAR2-150W-3

Contents

Page 2	1. Safety	
Page 3	1.1 Safety Requirement – Maximum Conductor Lengths / Termination Requirements	
Page 4	1.2 Explanation of Graphical Symbols on the Product	
Page 4	2. Installation	
Page 4	2.1 Mount the PSU	
Page 4	2.2 Connections to the PSU	
Page 5	2.2.1 Mains electrical supply input connection	
Page 5	2.2.2 Illuminator Cable / aux Power Output Connections inside the PSU	
Page 6	2.2.3 Customer Signal Cable Connections inside the PSU	
Page 6	2.2.4 Conduit Connection (Mains electrical supply input)	
Page 7	2.2.5 Cable Gland Plugs	
Page 7	2.2.6 PSU Lid Attachment	
Page 8	3. Specifications Table	
Page 10	4. Troubleshooting	
Page 10	4.1 Warranty	

1. Safety

Safety related details in this installation guide are in English language. If another language is required to understand the instructions, please arrange for an appropriate translation before proceeding

WARNINGS

Product Installation and maintenance must be by a suitably skilled person / qualified electrician



Isolate mains electrical supply input before removing PSU lid / cover



Mains electrical supply input to PSU and all wiring to be in accordance with the relevant regional codes and regulations



Maximum length limit and fixing of conductors inside the PSU must be complied with when connecting cables, to maintain the safety approval of the product - see Fig 1.1



This equipment must be earthed



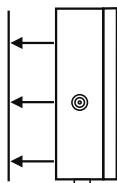
A suitably rated Residual Current Protective Device (RCD) must be used in the Mains electrical supply input to this product



A suitable external current limiting / overcurrent protective device must be used



The Mains electrical supply input to the PSU shall be fitted with an all pole disconnect device (device not included)



Mount PSU
to flat surface



PSU must be orientated in the vertical plane with cable glands at the bottom, lid facing outwards

NOTE: Any connections made to the PSU must be tight and secure and provide an environmental seal. All cable glands must be tightened and a plug fitted if no cable installed

NOTE: This equipment is not suitable for use in locations where children are likely to be present



1.1 Safety Requirement – Maximum Conductor Lengths / Termination Requirements

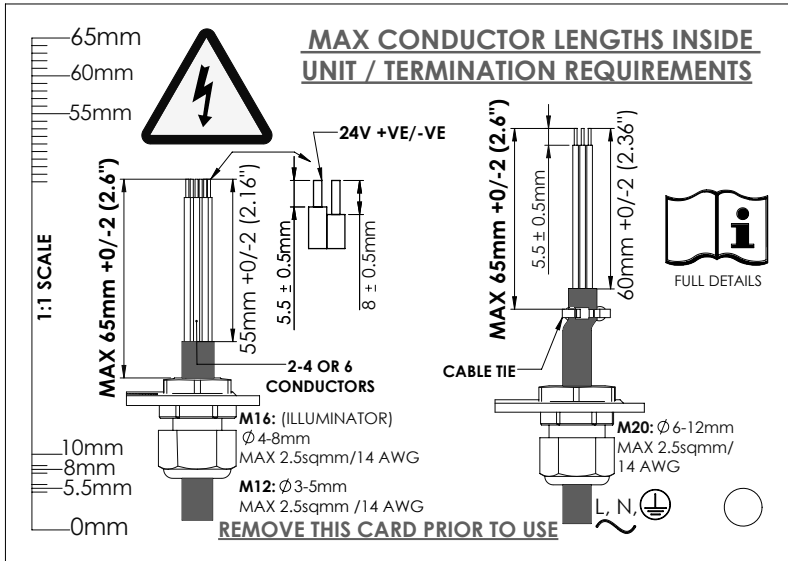
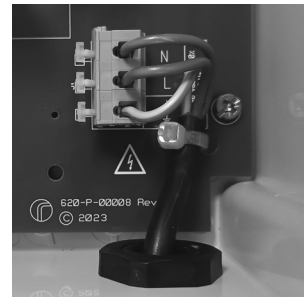
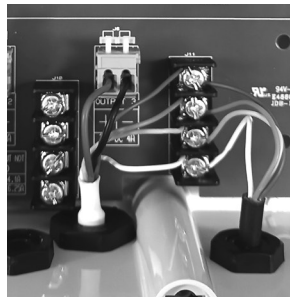


Fig 1.1

NOTE: The above Max conductor length and Termination requirements must be complied with for the product safety approval to be maintained

NOTE: Where required conductors on the cable supplied with the illuminator will need to be reduced in length



NOTE: Mains electrical supply input conductor colours in photo nominal - dependent on installation supply

NOTE: All conductors fitted to be attached securely

1.2 Explanation of Graphical Symbols on the Product



AC Voltage



Class 1 Insulation;
Protective Earth



WEEE (Electronic
Waste to be re-cycled)

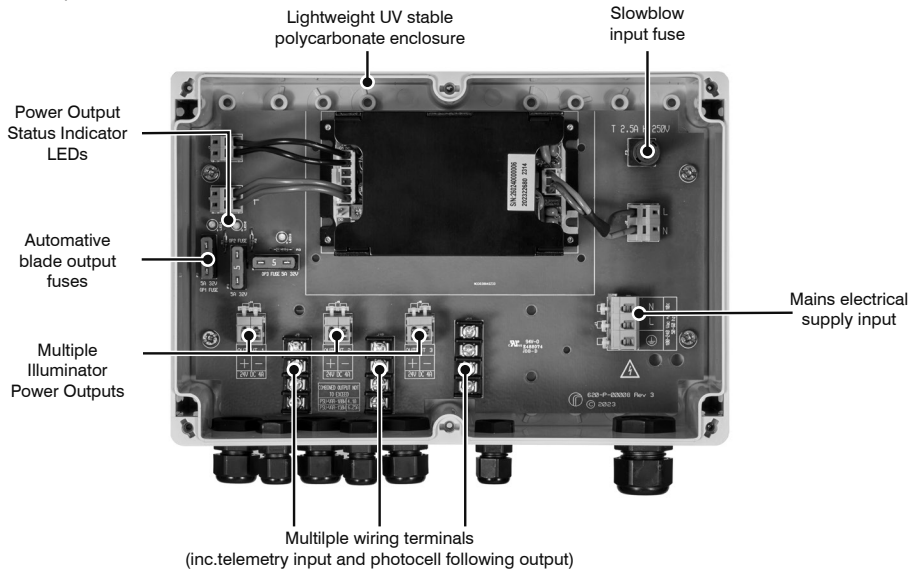
2. Installation

2.1 Mount the PSU

- Mount the PSU on a flat, vertical surface in the correct orientation, see illustration in section 1
- Cable glands to be on the underside of the product when installed
- A screw pack is provided with the PSU
 - 3.5mm x 40mm Pozi-Pan Screw – Stainless Steel (A2) Qty 4
- Before mounting the PSU the customer/ installer must ensure that the mounting material is suitable and the correct fixings are used to securely attach the PSU
- Product packaging base has holes present to act as a drilling template

2.2 Connections to the PSU

Example PSU-VAR2-150W-3



NOTE: For the VARIO2 and VARIO2 POE Premium illuminators to come on automatically via the Photocell the telemetry wires (orange and purple conductors in illuminator cable) must be joined /shorted

NOTE: Some other Illuminators may respond differently to telemetry and photocell functions, please check the relevant illuminator Installation Guide



2.2.1 Mains Electrical Supply Input Connection

All cable conductors must not exceed the maximum length specified and be attached securely to maintain the safety of the product – see Safety section / Fig 1.1

Cable Gland: M20

Cable outer diameter range: 6mm to 12mm (0.24" to 0.47")

Max conductor size: 2.5mm² / 14 AWG

Earth conductor length from cable sheath to be equal to length of L and N conductors from cable sheath

Connect Mains electrical supply input power using terminal block provided. Depress lever on relevant terminal, insert wire and release lever. Ensure connection is secure

Secure the Mains electrical supply input cable to the PCB by tightening the cable tie around it. The max length requirement between the cable tie and the conductor ends must be complied with to maintain the safety approval of the product - See Fig 1.1

Cut out and discard the excess cable tie

All connections, including cable glands to be checked as tight and secure



2.2.2 Illuminator Cable / aux Power Output Connections

All cable conductors must be terminated to the maximum length specified and be attached securely to maintain the safety of the product – see Safety section / Fig 1.1

Cable Gland: M16

Cable outer diameter range: 4mm to 8mm (0.16" to 0.31")

Max conductor size: 2.5mm² / 14 AWG

The illuminator cable has 6 colour coded conductors

Red and Black Conductors (Illuminator Power):

Connect 24V DC power using power output connectors

- Red conductor connected to +ve terminal on the PSU illuminator output connector 24V DC
- Black conductor connected to -ve terminal on the PSU illuminator output connector 24V DC

Depress lever on the relevant connector terminal, insert wire and release lever. Ensure connection is secure.

Orange and Purple Wires (Telemetry Input):

Allows the VARIO2 and VARIO2 POE Premium illuminators to be turned on and off from a separate external Volt free/dry contact; TTL input. Or they need to be electrically joined together / short circuited for the illuminators to come on automatically via the photocell. Please see the illuminator installation guide

White and Yellow Wires (Photocell Following Contact):

Allows the photocell state output (Daylight or darkness) from the illuminator to be used as a signal if required (Volt free output; Non polarity sensitive)

NOTE: Some other Illuminators may respond differently to telemetry and photocell functions, please check the relevant illuminator installation guide

Any remaining unused control wires inside the PSU should be securely connected to the 4 way screw terminal block

PSU-VAR2-20W-1 spare 8W aux 24V DC power only output:

The above conductor length requirements and 24V DC connector details apply

All connections to be checked as tight and secure



2.2.3 Customer Signal Cable Connections

All cable conductors must not exceed the maximum length specified and be attached securely to maintain the safety of the product – see Safety section / Fig 1.1

Cable Gland: M12

Cable outer diameter range: 3mm to 6.5mm (0.12" to 0.25")

Conductor size: 0.34mm² to 2.5mm² / 22AWG to 14AWG

Allows the customer to connect to the illuminator signal wires to turn the illuminator(s) On/Off separately and use the photocell state (Day/Night) signal from the illuminator – Refer to illuminator Installation Guide for full operation details

All connections to be checked as tight and secure



2.2.4 Conduit Connection (Mains electrical supply input)

If a conduit connection is used instead of the M20 gland for the Mains electrical supply input cable, it is the installers responsibility to ensure the following:

- IP66 / Environmental seal rating to be maintained between the conduit and the PSU enclosure and at the other end of the conduit
- If Metal conduit being used, it must be earthed in accordance with local regulations or code

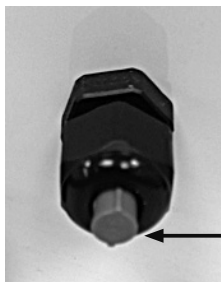
All connections to be checked as tight and secure to the manufacturer's recommendations

2.2.5 Cable Gland Plugs

The VARIO2 PSUs have cable gland plugs fitted to a number of the cable glands. The plugs are present to maintain the environmental sealing of the unit if the gland is not in use

If the installer is required to re-install these plugs for any reason the following assembly process is required

- Mount the plug into the cable gland as shown below



NOTE: Make sure the plug is positioned within the gland, so it is protruding with the bottom of its side ribs located against the front of the main body of the gland

**(M12 glands - Locate the gland nut first)
(M16 glands - Tighten the gland nut slightly first)**

- Tighten the cable gland whilst maintaining the level of the protrusion of the plug from the front of the gland

All connections to be checked as tight and secure

2.2.6 PSU Lid Attachment

Make sure the 'Maximum Conductor Length' detail card is removed from inside the unit before re-fitting the PSU lid

Lid fixing screws to be tightened, so the lid is tight and secure and the unit is environmentally sealed

3. Specifications Table

Illuminator Configurations	PSU-VAR2-20W-1 (small)	PSU-VAR2-50W-2 (medium)	PSU-VAR2-100W-3 (large)	PSU-VAR2-150W-3 (x-large)
Illuminators	1 x VARIO 2 series Plus aux output (max 8w)	up to 2 x VARIO 4 series up to 2 x VARIO 6 series 1 x VARIO 8 series	up to 3 x VARIO 4 series up to 3 x VARIO 6 series up to 2 x VARIO 8 series	up to 3 x VARIO 8 series
Other Illuminator options		up to 4 x VARIO 2 series *	up to 8 x VARIO 2 series * up to 4 x VARIO 4 series * up to 4 x VARIO 6 series * 1 x VARIO 16 series	up to 6 x VARIO 4 series* up to 6 x VARIO 6 series * 1 x VARIO 16 series

Please note: for medium, large and x-large PSUs powering an increased number of VARIO illuminators, the total power of the illuminators must not exceed the PSU max output

*illuminator output cables may also need to be commoned together to suit the number of available glands.

Mixed model sizes of VARIO illuminators can be powered from the same PSU
e.g. PSU-VAR2-50W-2 can also run 2 x VARIO 2 series and 1 x VARIO 4 series.

Input	100-230V AC +/-10%			
Frequency	50-60Hz			
In Rush	45A (230V AC)	100A (230V AC)	150A (230V AC)	80A (230V AC)
Input Fuse Type	20mm, slow blow, user replaceable			
Input Fuse Rating	1A	2.5A	2.5A	2.5A
Max PSU Consumption	25W	57W	110W	170W
Max PSU Output	20W	50W	100W	150W
Output Voltage	24V DC			
Output Fuse Type	Automotive, blade, user replaceable			
Output Fuse Rating	3A	3A	5A	5A
Operating and storage Temperature	-40 to +50°C (-40 to 122°F)			
Telemetry and Photocell Following output wiring	Quick and easy wiring for VARIO input and output connections - 4-way robust terminal for telemetry input and photocell following output			

Illuminator Configurations	PSU-VAR2-20W-1 (small)	PSU-VAR2-50W-2 (medium)	PSU-VAR2-100W-3 (large)	PSU-VAR2-150W-3 (x-large)
Status LEDs	Status LEDs to indicate status of each output			
Glands	1x M20, 2x M16, 1x M12, IP66	1x M20, 2x M16, 2x M12, IP66	1xM20, 3x M16, 3x M12, IP66	
Enclosure construction	Lightweight UV stable polycarbonate with integrated sealing gasket			
PSU Dimensions (excluding glands)	180 x 130 x 60 mm (7.1 x 5.1 x 2.4 inch)		244 x 164 x 90 mm (9.6 x 6.5 x 3.5 inch)	
Mounting hole positions	163mm x 113mm (6.44" x 4.47")		229mm x 130mm (9.02" x 5.12")	
Weight	0.65kg (1.44lb)		1.24kg (2.74lb)	1.52kg (3.36lb)
IP Rating	IP66			

4. Troubleshooting

Ensure all investigations and tests are undertaken by a skilled person

Ensure safe working practices are followed at all times

- Check that the output status LED indicators in the PSU for the power out connector(s) are illuminated (if not check the output fuses. Replace the fuses as necessary.)

If the output LEDs in the PSU are illuminated check that 24V DC is present on the output power terminals

- Ensure the telemetry wires (orange and purple conductors in the illuminator cable) are joined /shorted or closed contact input (zero volt) is applied (VARIO2 and VARIO2 POE Premium products)
- Check photocell is working. Cover illuminator photocell fully, illuminator should turn on

NOTE: Some other illuminators may respond differently to telemetry and photocell functions, please check the relevant illuminator Installation Guide

- If longer cables used, ensure sufficient voltage is provided to allow for drops across the cable

For further fault finding refer to the Illuminator Installation Guide.

If the problem persists, please call Raytec for further assistance. Note down:

- Nature of the problem
- Model and serial number of PSU and illuminator

4.1 Warranty

All VARIO2 PSUs are provided with a 5-year warranty. Contact Raytec for more details. Please detail the model and serial number of the PSU and illuminators you are using



Raytec Global (excluding Americas)

Tel: +44 (0) 1670 520055
sales@raytecled.com

Raytec Ltd.
Unit 15 Wansbeck Business Park, Rotary Parkway
Ashington, Northumberland, NE63 8QW, United Kingdom

raytecled.com

Raytec Americas

Tel: +1 613 270 9990
ussales@raytecled.com

Raytec Systems Inc.
800-300 Terry Fox Drive, Ottawa, Ontario
2K 0E3, Canada