HIRSCHMANN
A BELDEN BRAND

Description and Operating Instructions IP67 Power Supply 150W

PC150/xx/48V-IP67

Order No.

943 968-001
943 968-101

For supplying power to Hirschmann Power over Ethernet products of the OCTOPUS family.

The PC150/36V/48V-IP67 power unit supplies an output voltage of 48 VDC from an input voltage of 24-48 VDC.

The PC150/72V/48V-IP67 power unit supplies an output voltage of 48 VDC from an input voltage of 72-110 VDC.

- Permitted ambient temperature -40 to +70 °C (in accordance with EN50155 for max. 10 minutes up to +85 °C).
- No additional cooling element necessary, voltage transformer is integrated into cooling element.
- 150 W power output.
- Class I equipment.
- IP67 enclosure type.
- Conforms to EN50155 class C1 S2.
- Output has short-circuit protection.
- Input has polarity reversal protection.
- Integrated fuse, exchangeable.
- Secondary line has suitable connectors for OCTOPUS supply voltage.

EN

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Hirschmann can accept no responsibility for damages, resulting from the use of the network components or the associated operating software. In addition, we refer to the conditions of use specified in the license contract.

You can get the latest version of this manual on the Internet at:
https://www.doc.hirschmann.com

Certified usage

Please observe the following:

⚠ **Warning**
The device may only be employed for the purposes described in the catalog and technical description, and only in conjunction with external devices and components recommended or approved by Hirschmann. The product can only be operated correctly and safely if it is transported, stored, installed and assembled properly and correctly. Furthermore, it must be operated and serviced carefully.

⚠ Safety instructions

- **Please read carefully this safety instructions!**
  Before you start working on the power module, read the operating instructions completely. Make sure that you understood everything. Please follow all notes.
- Installation and elimination of errors have to be made only by electrical qualified persons. Switch all wires to be mounted idle. Make sure to prevent unintentional switch-on.
- As long as the unit is activated, it is not allowed to make any changes of the installation.
- Operate with the connecting terminals only without voltage.
- Inside the unit are components and conductors which can store perilous high voltage – also in the case of errors. The inappropriate use might result in an electric shock or serious burns.

CE marking

The devices comply with the regulations of the following European directive:

2011/65/EU and 2015/863/EU (RoHS)
Directive of the European Parliament and of the Council on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

2014/30/EU (EMC)
Directive of the European Parliament and the council for standardizing the regulations of member states with regard to electromagnetic compatibility.

Additional for PC150/72V/48V-IP67:
2014/35/EU
Directive of the European Parliament and of the Council on the harmonisation of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits.

The EU declaration of conformity is kept available for the responsible authorities in accordance with the above-mentioned EU directives at:

Hirschmann
Automation and Control GmbH
Stuttgarter Straße 45-51
D-72654 Neckartenzlingen
www.hirschmann.com

The product can be used in the residential sphere (residential sphere, business and trade sphere and small companies) and in the industrial sphere.

- Interference immunity:
  EN 61000-6-2
- Radio interference level:
  EN 55032

Security: EN 61010-1

⚠ **Warning!**
This is a Class A device. This equipment may cause radio interference if used in a residential area; in this case it is the operator´s responsibility to take appropriate measures.

The precondition for compliance with EMC limit values is strict adherence to the construction guidelines specified in this description and operating instructions.

CE marking

The devices comply with the regulations of the following directive:

S.I. 2012 No. 3032
Restriction of the Use of Certain Hazardous Substances in Electrical and Electronical Equipment Regulations

S.I. 2016 No. 1091
Electromagnetic Compatibility Regulations

Additional for PC150/72V/48V-IP67:
2014/35/EU
S.I. 2016 No. 1101
Electrical Equipment (Safety) Regulations

UK CA

The UKCA declaration of conformity is kept available for the responsible authorities at:

Belden UK Ltd.
1 The Technology Centre, Station Road
Framlingham, IP13 9EZ, United Kingdom

The product can be used in the residential sphere (residential sphere, business and trade sphere and small companies) and in the industrial sphere.

- Interference immunity:
  EN 61000-6-2
- Radio interference level:
  EN 55032

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⚠ **Warning!**
This is a Class A device. This equipment may cause radio interference if used in a residential area; in this case it is the operator´s responsibility to take appropriate measures.

The precondition for compliance with EMC limit values is strict adherence to the construction guidelines specified in this description and operating instructions.

FCC Note:

This device complies with part 15 of FCC rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

♺ **Recycling Note:**
After its use, this product has to be processed as electronic scrap and disposed of according to the prevailing waste disposal regulations of your community / district / country / state.

1. Device description

1.1 DIMENSIONS

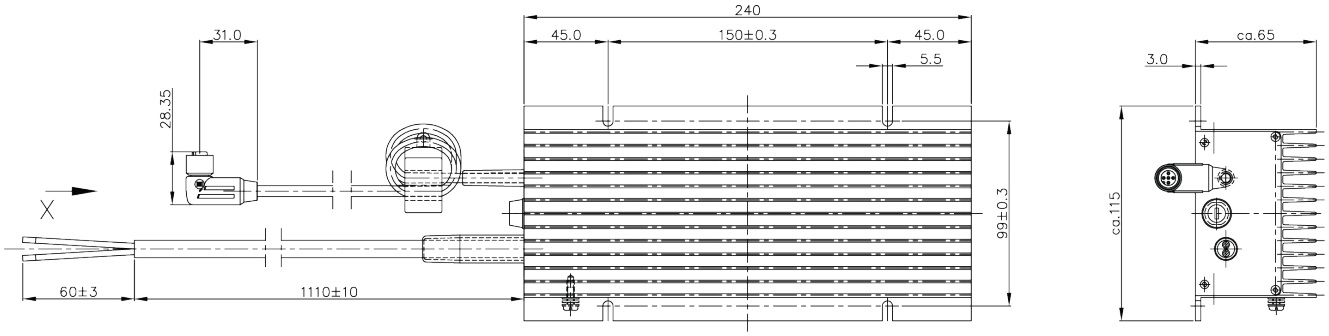

Fig. 1: Dimensions of the PC150/36V/48V-IP67 and PC150/72V/48V-IP67 power supply units in mm

1.2 PIN ASSIGNMENTS

Pin assignment primary cable

Number	Assignment
1	+IN
2	-IN

Pin assignment secondary cable

1 = brown	48 V
2 = white	n.C.
3 = blue	0 V
4 = black	n.C.
5 = grey	n.C.

2. Installation

2.1 INSTALLATION OF THE DEVICE

Convection cooling is sufficient for cooling the device.

⚠ **Warning!**
When installing the device, make sure the cooling element of the device remains free, as otherwise damage can occur through overheating.
The clearance to the cooling element of the device housing must be at least 2 cm (0.79 in).

⚠ **Warning!**
To make sure that the housing of the power supply fulfills the fire protection requirements according to EN 61010-1
☐ mount the device completely on a metal plate or on a metal surface.
☐ or use a fire protection housing according to EN 61010-1

⚠ **Warning!**
To meet the fire protection reqirements according to EN 45545-2, observe the following:
The device is compliant to the requirements of EN 45545-2 (2015), Hazard Level HL1 and HL2.
For applications with HL3 installation in a cabinet item 4.2h of EN 45545-2 is required.

2.2 ATTACHING THE FERRITE

A ferrite, incorporated into the secondary cable, is included in the delivery.

Fig. 2: Ferrite mounted on the secondary cable of the device

2.3 CONNECTING THE SUPPLY VOLTAGE AND MOUNTING THE PROTECTIVE CONDUCTOR

☐ Connect the protective conductor (see chapter 1.2 “Pin assignments”), before you set up the other connections.

When removing the connections, you remove the protective conductor last.

☐ Connect the supply voltage. Pay attention to the connections (see chapter 1.2 “Pin assignments”).

2.4 DISCONNECTING FROM THE MAINS VOLTAGE

☐ Make sure that the disconnecting device is easily accessible so that the device can be disconnected from the mains voltage.

If you disconnect the device from the mains voltage using
– the plug in the socket
– an on/off switch
it must be easily accessible.

2.5 LIMITED ACCESS

☐ The device is intended to be installed in an operating site with limited access. Make sure that qualified personnel exclusively has access to the device.

3. Further Support

3.1 TECHNICAL QUESTIONS

In the event of technical queries, please contact your local Hirschmann distributor or Hirschmann office.

You can find the addresses of our distributors on the Internet:
www.hirschmann.com

A list of local telephone numbers and email addresses for technical support directly from Hirschmann is available at
https://hirschmann-support.belden.com.

This site also includes a free of charge knowledge base.

The current training courses to technology and products can be found under
https://www.belden.com/solutions/customer-innovation-center.

3.2 HIRSCHMANN COMPETENCE CENTER

In the long term, excellent products alone do not guarantee a successful customer relationship. Only comprehensive service makes a difference worldwide. In the current global competition scenario, the Hirschmann Competence Center is ahead of its competitors on three counts with its complete range of innovative services:

– Consulting incorporates comprehensive technical advice, from system evaluation through network planning to project planning.

– Training offers you an introduction to the basics, product briefing and user training with certification.

– Support ranges from the first installation through the standby service to maintenance concepts.

With the Hirschmann Competence Center, you have decided against making any compromises. Our client-customized package leaves you free to choose the service components you want to use.

Internet: https://www.belden.com/solutions/customer-innovation-center

4. Technical data

Input PC150/36V/48V-IP67

Rated voltage range	24 V DC to 48 V DC
Rated input current	8.0 A DC to 3.8 A DC
Power failure bridging	min. 10 ms across entire voltage range
Polarity reversal protection	Yes, via longitudinal diode
Fuse (exchangeable)	16 A (T)
Connection type	Lapp Cable Olflex 150, Cable cross-section 2 x 2.5 mm^2 2 x terminal sleeve

Input PC150/72V/48V-IP67

Rated voltage range	72 V DC to 110 V DC
Rated input current	2.4 A DC to 1.5 A DC
Power failure bridging	min. 10 ms across entire voltage range
Polarity reversal protection	Yes, via longitudinal diode
Fuse (exchangeable)	6,3 A (T)
Connection type	Lapp Cable Olflex 150, Cable cross-section 2 x 2.5 mm^2 2 x terminal sleeve

Efficiency

PC150/36V/48V-IP67	> 80%
PC150/72V/48V-IP67	> 80%

Output

Output voltage	48 V DC (0 to +2% accuracy), safety low voltage (SELV) IEC 60950-1
Output current (max.)	3,2 A
Connection type	Lumberg Automation RKT 5-228 5-pin, cable cross-section 5 x 0.5 mm^2

Safety

Standards	IEC/EN 61010-1, VDE 0411-1, IEC/EN61131-2
Class of protection	Class I equipment
Enclosure type	IP 67
Insulation resistance	Primary – secondary: 2000 V AC Primary – housing: 1000 V AC Secondary – housing: 1500 V AC
Insulation resistance	> 500 Megaohm

Approvals

Standards	IEC/EN 61010-1 VDE 0411-1
IEC/EN61131-2:2007	CE Declaration – programmable logic controllers
EN50155 Class S1 C2	Railway applications – electronic systems in railway vehicles (environmental requirements)

Operating Conditions

Operating temperature	-40 to +70 °C (-40 to +158 °F) permanently -40 to +85 °C (-40 to +185 °F) for max. 10 minutes
Storage temperature	-55 to +85 °C (-67 to +185 °F)

Protection and monitoring

Current limitation	Yes, permanent short-circuit protection
High voltage test	Routine testing in series

EMC: emitted interference - radiated

EN50022	Class A	30 MHz to 230 MHz, max. 40 dB (µV)/m quasi-peak, 10 m distance 230 MHz to 1000 MHz, max. 47 dB (µV)/m quasi-peak, 10 m distance 1000 MHz to 2000 MHz, max. 56 dB (µV)/m, average, 3 m distance
FCC47 CFR Part 15	Class A	30 MHz to 88 MHz, max. 39 dB (µV)/m, quasi-peak, 10 m distance 88 MHz to 216 MHz, max. 43.5 dB (µV)/m, quasi-peak, 10 m distance 216 MHz to 960 MHz, max. 46.5 dB (µV)/m, quasi-peak, 10 m distance 960 MHz to 2,000 MHz, max. 49.5 dB (µV)/m, quasi-peak, 10 m distance

EMC: emitted interference - line related / Power Port DC

EN50155	Class A	0.15 MHz to 0.5 MHz, max. 99 dB (µV)/m, quasi-peak 0.5 MHz to 30 MHz, max. 93 dB (µV)/m, quasi-peak

EMC: interference immunity- radiated

IEC/EN61000-4-3	Electromagnetic field 80 to 2700 MHz	 20 V/m

EMC: interference immunity- line related

IEC/EN61000-4-2	Electrostatic discharge Contact discharge Air discharge	 6 kV 8 kV
IEC/EN61000-4-4	Fast transients (burst) Power input	 4 kV
IEC/EN61000-4-5	Voltage surges Power input Power input	 1 kV line / line 2 kV line/earth
IEC/EN61000-4-6	Line-conducted interference voltages 150 kHz to 80 MHz	 10 V

Mechanical components

Dimensions - without cables (W x H x L)	115 mm x 65 mm x 240 mm
Weight	3,100 g
Housing material	Aluminum, UL94-V0
Casting compound	Polyurethane

Vibration resistance

IEC60068-2-6 Test Fc EN61373, category 1	Test level according to IEC61131-2 Class A (broadband noise), installation according to EN50155

Shock resistance

IEC60068-2-27 Test Ea EN61373, category 1	Test level according to IEC61131-2 Class A (broadband noise), installation according to EN50155

Scope of delivery

Power supply unit incl. ferrite on secondary cable, startup instructions and dispatch note for returning product

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Technical support:
https://hirschmann-support.belden.com

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