

INSTALLATION INSTRUCTION

P Series

90 - 192 Watt DC-DC Converters

OPERATION RANGE

Refer to product rating label for input and output ratings.

INSTALLATION

Connection to the system shall be made via the female connector H15 (standard) or H15S2; see Accessories datasheet: [Cassette Style Mating Connectors \(BCD20022\)](#). Other installation methods may not meet the safety requirements. Check for hazardous voltages before altering any connection. Pin no. 26 (PE) is a leading pin and is reliably connected to the case. For safety reasons it is essential to connect this pin to the protective earth.

The Vi- input pin (pin no.32) is internally fused. The fuse is designed to protect the converter against overcurrent caused by a failure, but may not be able to satisfy all requirements. External fuses in the wiring to one or both input pins Vi+, Vi- (pin no. 30 and/or pin no. 32) may therefore be necessary to ensure compliance with local requirements.

Notes:

- Do not open the converters, or warranty will be invalidated.
- If the inhibit function is not used, pin no. 28 (I) connect with pin no. 32 (Vi-), to enable the output(s).
- The outputs of units can be connected in parallel with outputs of other units with equal nominal output voltage - at compliance condition of parallel-connecting of units according to the [Product datasheet](#).
- Any output of unit can be connected in series with any other outputs. The maximum output current of series-connected outputs is limited by the output with the lowest current limit.
- If a tracking output (output Vo4 or Vo3) is not used, connect it in parallel to the respective regulated main output (output Vo4 parallel to the output Vo1, or output Vo3 parallel to the output Vo2).
- For single output models with option K, both output contacts for the same potential (no. 4-6 and no. 8-10) must always be used and connected in parallel to the load with large cross-sectional area wires or thick copper lands. The efficiency is lower with option K

For more details view the [Product datasheet](#) / Accessories datasheets (application notes) at belfuse.com/power-solutions and go to the respective Product or family part number listing.

PROTECTION DEGREE AND CLEANING LIQUIDS

The DC-DC converters correspond to protection degree IP40, provided the female connector is fitted to the converter. Since the converters are not hermetically sealed. In order to avoid possible damage, any penetration of liquids be avoided.

SENSE LINES

Important: Sense lines should always be connected! Incorrectly connected sense lines may activate the overvoltage protection resulting in a permanent short-circuit of the output.

For more details view the [Product datasheet](#) / Accessories datasheets (application notes) at belfuse.com/power-solutions and go to the respective Product or family part number listing.

CAUTIONS

The converters are components, intended exclusively for inclusion within other equipment by an industrial assembly process or by a professionally competent person. Installation must strictly follow the national safety regulations in respect of the enclosure, mounting, creepage, distances, clearances, markings and segregation requirements of the end-use application.

This is a Class A product. In a residential environment this product may cause radio interference in which case the user may be required to take adequate measures.

SAFETY OF OPERATOR-ACCESSIBLE OUTPUT CIRCUITS

If the output circuit of a DC-DC converter is operator accessible, it shall be an ES1 circuit according to the IEC 62368-1 3rd edition related safety standards. It is the sole responsibility of the installer to ensure the compliance with the relevant and applicable safety regulations.

If several outputs are connected in series, the resulting voltage may exceed the ES1 level and require additional safety measures in order to comply with international safety standards.

ISOLATION AND PROTECTIVE EARTHING

Pin no. 26 (⚡) is connected with the case. For safety reasons it is essential to connect this pin reliably to protective earth.

The electric strength test is performed in the factory as routine test in accordance with EN 62911 and IEC/EN 62368-1 3rd edition. The company will not honor any warranty claims resulting from incorrectly executed electric strength field tests. The resistance between earth connection and case ($<0.1 \Omega$) is tested as well.

FUSING

A fuse mounted inside the converter protects against further damage in case of failure. The fuse is not user-accessible. Reverse polarity at input will cause the fuse to blow.

Fuse Specification

Model	Fuse type	Reference	Rating
BP	very fast-blow	Littlefuse Pico 251	2x 10 A, 125 V
GP	very fast-blow	Littlefuse Pico 251	2x 10 A, 125 V
CP	very fast-blow	Littlefuse Pico 251	10 A, 125 V
DP	Very fast-blow	Littlefuse Pico 251	7 A, 125 V
EP	Very fast-blow	Littlefuse Pico 251	5 A, 250 V

SERVICING

The product(s) must be returned to the Authorized Bel Service Center for repair with a pre-assigned RMA number

LIMITED WARRANTY

The company warrants each power supply from P series of its manufacture for a period of two years from the date of original shipment. This warranty applies to defects in materials and workmanship that result in non-performance to published specifications. The product(s) must be returned to the Authorized Service Center for repair with a pre-assigned RMA number.

The company assumes no liabilities for consequential damages of any kind through the use or misuse of its products by any user. No other obligations are expressed or implied.

Please note that the specifications, terms, and conditions stated are subject to change without notice.

INPUT AND OUTPUT CONNECTOR DETAILS

Refer to the [Product datasheet](https://belfuse.com/power-solutions) at belfuse.com/power-solutions.

MECHANICAL DIMENSIONS AND MOUNTING REQUIREMENTS

Refer to the [Product datasheet](https://belfuse.com/power-solutions) at belfuse.com/power-solutions

ALLOWED MOUNTING POSITION

Make sure that there is sufficient airflow available for convection cooling. This should be verified by measuring the case temperature TC at the specified measuring point, when the converter is operated in the end-use application: T_{cmax} should not be exceeded. Ensure that a failure of the converter does not result in a hazardous condition; See Thermal Considerations in the datasheet at belfuse.com/power-solutions.

NUCLEAR AND MEDICAL APPLICATIONS

These products are not designed or intended for use as critical components in life support systems, equipment used in hazardous environments, or nuclear control systems.

TECHNICAL REVISIONS

The appearance of products, including safety agency certifications pictured on labels, may change depending on the date manufactured. Specifications are subject to change without notice.