

INSTALLATION INSTRUCTION

Q Series

66 - 132 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; see Accessories datasheet: [Cassette Style Mating Connectors](#). Other installation methods may not meet the safety requirements.

The Q Series converters are provided with pin 26 (⊕), which is reliably connected to the case. For safety reasons it is essential to connect this pin to protective earth; see Safety of Operator-Accessible Output Circuits.

The Vi- input (pin 32) is internally fused (except converters with option F). This fuse is designed to protect in case of overcurrent and may not be able to satisfy all customer requirements. External fuses in the wiring to one or both input pins (no. 30 and/or no. 32) may be necessary to ensure compliance with local requirements.

Important:

- If the inhibit function is not used, pin 28 (i) must be connected with pin 32 (Vi-) to enable the output(s).
- Do not open the converters, or warranty will be invalidated.
- Long input, output and auxiliary lines, or lines with inductors, filters or coupling/decoupling networks may cause instabilities. See Input Stability with Long Supply Lines.

Due to high output currents, the Q1001/1101 models offer two internally parallel-connected contacts for both, the positive and the negative output path (pins 4/6 and pins 8/10). It is recommended to connect the load to both female connector pins of each path in order to keep the voltage drop to a minimum.

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

CLEANING LIQUIDS AND PROTECTION DEGREE

In order to avoid possible damage, any penetration of cleaning fluids must be prevented, since the power supplies are not hermetically sealed.

Protection degree (female connector fitted to the converter):

- IP 30: All models, except those with option P (potentiometer)
- IP 20: All models with option P.

SENSE LINES

Caution: Sense lines should always be connected. Incorrectly connected sense lines may cause an overvoltage at the output, which could damage the output load and activate the second control loop. The sense lines can handle only small currents.

For more details view the Data Sheet / App Notes link on the website at belfuse.com/power-solutions and go to the respective Product or family part number listing.

CAUTIONS

The Q Series converters are components, intended exclusively for inclusion within other equipment by an industrial assembly operation or by professional installers. Installation must strictly follow the national safety regulations in compliance to enclosure, mounting, creepage, clearance, casualty, 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 IEC 62368-1 3rd edition.

In 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.

However, it is the sole responsibility of the installer to ensure the compliance with the relevant and applicable safety regulations.

ISOLATION

The electric strength test is performed in the factory as routine test. The company will not honor warranty claims resulting from incorrectly executed electric strength field tests. The resistance of the earth connection to the case ($<0.1 \Omega$) is tested as well.

FUSING

An incorporated fuse in series to the negative input line protects against severe defects. The fuse is not externally accessible. Reverse polarity at the input will cause the fuse to blow.

Fuse Specification

Model	Fuse type	Reference and rating
BQ	very fast acting	2x Littlefuse 251, 10 A, 125 V
GQ	very fast acting	2x Littlefuse 251, 7 A, 125 V
CQ	very fast acting	Littlefuse 251, 10 A, 125 V
DQ	very fast acting	Littlefuse 251, 7 A, 125 V
EQ	very fast acting	Littlefuse 263, 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

For models with -9 and RoHS (suffix G) the company warrants each power supply of its manufacture for a period of five 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 datasheets](http://belfuse.com/power-solutions) at belfuse.com/power-solutions.

MECHANICAL DIMENSIONS AND MOUNTING REQUIREMENTS

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

ALLOWED MOUNTING POSITION

Make sure that there is sufficient air flow available for convection cooling. This should be verified by measuring the case temperature when the converter is installed and operated in the end-user application. The maximum specified case temperature $T_{C\ max}$ shall not be exceeded. Ensure that a converter failure (e.g. by an internal short-circuit) does not result in a hazardous condition.

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.