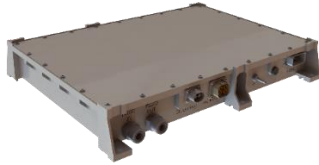


INSTALLATION INSTRUCTIONS

BCN25-700-8 25kW CHARGER



AC INPUT* 266-332 / 460-575 VAC, 3W+PE; max.40 A; 50/60 Hz
Signal Battery DC INPUT 10.5-32 VDC; max.2 A
DC OUTPUT: 250-800 VDC; 37.5 A; 25 kW

SAFETY APPROVALS:



UL2202 CSA:170351



*Input selection is automatic; no manual change is required.

IMPORTANT SAFETY INSTRUCTIONS

SAVE THESE INSTRUCTIONS — This manual contains important instructions that should be followed during maintenance of the unit.

These component level chargers are intended exclusively for installation within other equipment by an industrial assembly operation or by professional installers. Component chargers are to be installed in end-use equipment according to the requirements of the safety standard used for that equipment.

INSTALLATION

Installation category II. For reference see also the Specification with CAN communication manual (available on request) and Datasheet (on webpage).

FUSING

The Charger must be properly fused to main safe operation in end use. It is essential to keep following fusing in final application.

AC INPUT: Maximum 50 A type B UL approved circuit breaker shall be provided by EVSE (Electric Vehicle Supply Equipment) charge station installation

DC OUTPUT: 50 A: HINODE ELECTRIC Co., Ltd. PN: 1000GH-50UL external fuse shall be used to protect DC Output wiring

12/24 V BATTERY: 3 A Automotive (Car) external fuse shall be used to protect 12/24V circuits

CAUTION



CAUTION - To reduce the risk of electric shock, connect only to properly grounded outlets.

CAUTION - Do not use this product if there is any damage to the unit.

CAUTION - Risk of electric shock. Do not remove cover or attempt to open the enclosure. No user serviceable parts inside. Refer servicing to qualified service personnel.



CAUTION - Hot Surfaces – The Charger is to be installed so that it is not expected to be contacted by person.

This Charger is designed to be operated only with lithium-ion battery systems.

High voltage; Turn off the Charger before disconnecting any terminal. Discharge power terminals or wait 5 minutes before servicing. Do not turn on Charger when any terminal is not connected.

Warranty void if seal broken or removed sticker.

Do not operate Charger without proper cooling. Do not apply cold coolant in the hot unit – risk of chassis crack! The coolant should be supplied from the beginning of unit's operation.



WARNING - Battery must not be connected directly to the Output – external pre-charging circuit is required!

WARNING - This Charger is not provided with a GFDI device at HV-DC side. This Charger must be used with an external GFDI device as required by the Article 690 of the National Electrical Code for the installation location.

Mounting holes are designed to support Charger only and cannot be used to support other assemblies.

ENVIRONMENTAL CONDITIONS:

TRANSPORTATION Ambient Temperature Range: -40°C to +85°C

& STORAGE: Relative Humidity Range: SAE J1455

Altitude: Non-operating up to 12200 m (18.6 kPa)

Operating up to 2000 m (78.4 kPa)

OPERATION: Ambient Temperature Range: -40°C to +65°C

Coolant Temp. Range: -40°C to +65°C

Relative Humidity Range: SAE J1455

IP65 and IP67, NEMA Type 4X and Type 6

*watertight when all mating connectors are installed

SERVICING

In case of failure, the Charger must be returned to a Bel Fuse Authorized Service Centre for repair, with a Bel Fuse pre-assigned RMA number. Refer servicing to the vehicle manufacturer.

LIMITED WARRANTY

Bel Fuse warrants each Charger 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. Bel Fuse 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.

NUCLEAR AND MEDICAL APPLICATIONS

Products are not designed, intended for use in, or authorized for use as critical components in life support systems, equipment used in hazardous environments, or nuclear control systems without the express written consent of the respective divisional president.

TECHNICAL REVISIONS

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



belfuse.com/power-solutions

CONNECTOR DESCRIPTION

AC INPUT

Charger side: MFG: Amphenol; PN: PL084 X 41-6
Mating connector: MFG: Amphenol; PN: PL184 X 41-6

Use copper conductors only with an insulation rating of 120 °C, 6 mm²,
OD 6.4-7 mm.
Follow connector MFG instructions for correct connector assembly.

We highly recommend using screened connecting cables (e.g. Coroplast,
FHRLR2GCB2G or H&S, FLR91XC33X-1x6 T150).

Note: HVIL pins shall be shorted on mating part.

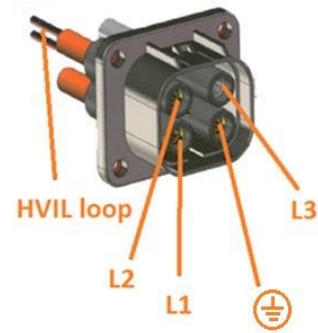


Fig. 1: AC input connector, Charger side

DC OUTPUT

Charger side: MFG: Amphenol; PN: PL 082 X-61-6
Mating connector: MFG: Amphenol; PN: PL 182 X-61-6

Use copper conductors only with an insulation rating of 120 °C, 6 mm²,
OD 6.4-7 mm.
Follow connector MFG instructions for correct connector assembly.

We highly recommend using screened connecting cables (e.g. Coroplast,
FHRLR2GCB2G or H&S, FLR91XC33X-1x6 T150).

Note: HVIL pins shall be shorted on mating part.

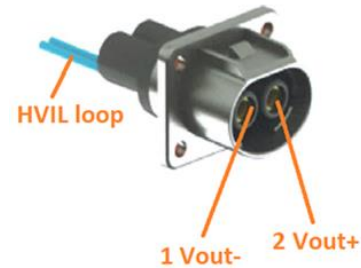


Fig. 2: DC output connector, Charger side

Wire of protective earth PE screwed to grounding stud (located on the
chassis) needs to be 10 mm². Cable lug suitable for M6 needs to be used.



SIGNAL

Charger side: MFG: TE Connectivity; PN: 776087-1 + 770520-1
Mating connector: MFG: TE Connectivity; PN: 770680-1 + 770854-1, max.
2 Amps per pin (wire AWG 20)

We recommend using screened connecting cables or put on cables (close
to chassis) the ferrite bead Wurth 74271221 or similar.

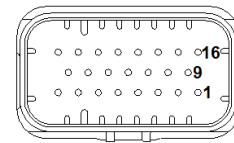
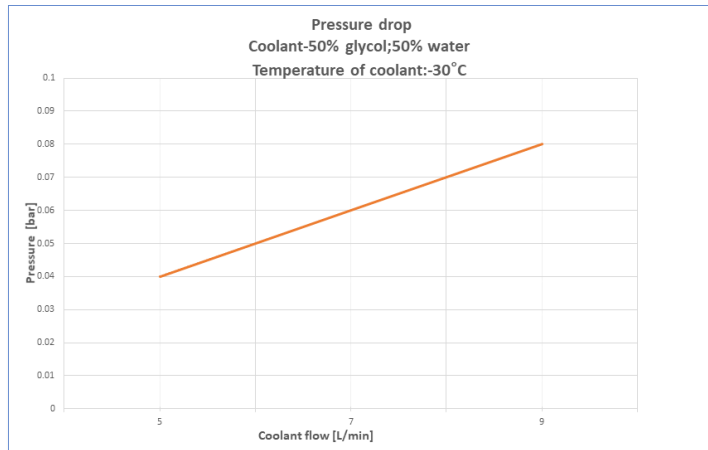
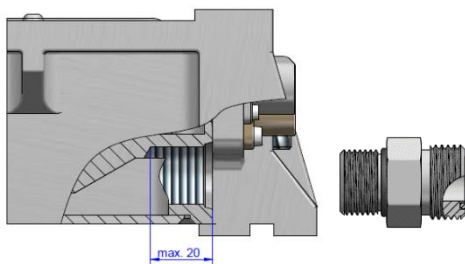


Fig 3: Signal connector, unit side

PIN	NAME	SIGNAL REFERENCE	FUNCTION	LOW LEVEL HIGH LEVEL	Vmax Imax
1	LED_OUT	24V_RTN	Charger status LED	Current source	VBAT_IN-1.5 V 50 mA
2	VBAT_IN	24V_RTN	24V battery voltage input	10.5-32 Vdc	32 V 2 A
3	CANH_1		CAN Bus H	-	-27 to 40 Vdc 15 mA
4	CANL_1		CAN Bus L	-	-27 to 40 Vdc 15 mA
5	HVIL_OUT		HVIL output from AC and DC connector	Open loop	32 V 60 mA
6	HVIL_IN		Input for HVIL loop	Power by 10.5-32 Vdc	32 V
7	Control Pilot	24V_RTN	SAE J1772	Blocked by SW	SAE J1772 compatible
8	Proximity Detection	24V_RTN	SAE J1772	Blocked by SW	SAE J1772 compatible
9	24V_RTN	-	Return for 24V battery and signals	-	-
10	ADR0_IN	24V_RTN	Address bit 0	Pulled-up to H L: connect to 24V_RTN	3.3 to 32 Vdc
11	ADR1_IN	24V_RTN	Address bit 1	Pulled-up to H L: connect to 24V_RTN	3.3 to 32 Vdc
12	EVSE_WAKE_OUT	24V_RTN	Signal to wake up Vehicle Control Unit (VCU module)	0 VBAT_IN-1.5 V	VBAT_IN-1.5 V 200 mA
13	KEY_SWITCH_IN	24V_RTN	Power supply of CAN and Bias converter Enable	OFF: <3.5 V ON: 7.7 - 32 V	32 V 0.5 mA
14	CAN_BAUD_RATE_IN	24V_RTN	Open – 500 kbps; Grounded – 250 kbps	Pulled-up to H L: connect to 24V_RTN	3.3 to 32 Vdc
15	NA				
16	NA				
17	NA				
18	CANH_2		CAN Bus H	-	-27 to 40 Vdc 15 mA
19	CANL_2		CAN Bus L	-	-27 to 40 Vdc 15 mA
20 - 23	NA				

COOLANT REQUIREMENTS

The Charger shall be liquid cooled.
 Maximum Inlet Coolant Temperature: +65°C
 Coolant Medium/Mixture: 50/50 Ethylene Glycol/Water
 Min. Coolant Flow: 0.08 l/s (1.32 GPM) (5 l/min)
 Max. Coolant Flow: 0.15 l/s (2.38 GPM) (9 l/min)
 Max. coolant pressure: 15 psi ~ 1 bar ~ 100 kPa



COOLANT CONNECTION

Inlet/Outlet Coolant Connection: SAE fittings 7/8-14 UNF to 1-14UNF (Bel P/N: XYA.00042.0 - included, or Parker P/N: 10F5OMLOSS)
 Torque max. 95 Nm



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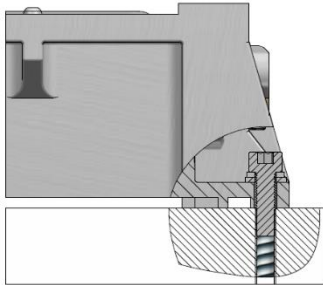
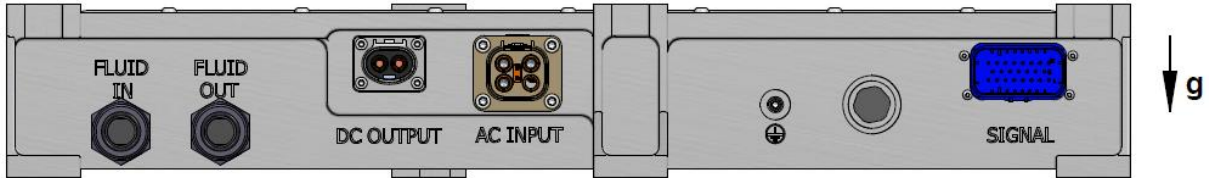
MOUNTING REQUIREMENTS

Charger shall be mounted securely on the supporting frame by all 6pcs of self-locking screws. Mounting holes are designed to support charger only (up to 4 pieces are stackable) and cannot be used to support other assemblies. The charger should be installed horizontally, with horizontally aligned housing cover. Deviating installation may lead to insufficient cooling.

Recommended screw size is M8 (or equivalent).

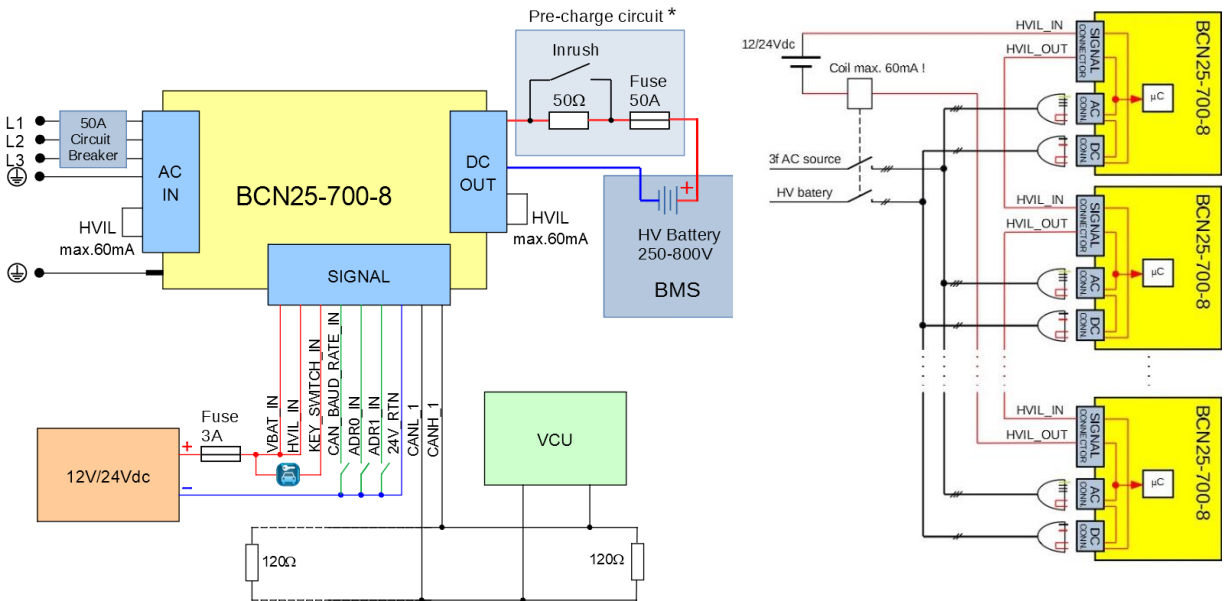
Recommended tightened torque 20Nm.

Customer is responsible to ensure and test safety and reliability of mounting in final application.



- Screw M8 (not included)
- Spring/Lock washer (not included)
- Flat washer (not included)

RECOMMENDED MINIMUM WIRING DIAGRAM AND HVIL CIRCUIT:



* - External pre-charge circuit is required only, if there is not a part of Battery Management System (BMS)

Note: In this connection, CAN_BAUD_RATE_IN is open => CAN baud rate = 500 kbps;
 ADR0_IN and ADR1_IN are open => CAN address = 0xD4