INSTALLATION INSTRUCTION

PES2200-12-080xD series

DC-DC Front-End Power Supply

READ THIS CAREFULLY BEFORE INSTALLATION!	VOR DER INSTALLATION BITTE FOLGENDE SICHERHEITSHINWEISE BEACHTEN!	LEGGERE ATTENTAMENTE PRIMA DELL'INSTALLAZIONE!	A LIRE ATTENTIVEMENT AVANT L'INSTALLATION!
Before operating, read this document thoroughly and retain it for future reference. Non-respect of these instructions may reduce performances and safety of the devices and cause danger for people and property. The products must be installed, operated, serviced and maintained by qualified personnel in compliance with applicable standards and regulations. Do not open the device, it does not contain replaceable components, the tripping of the internal fuse (if included) is caused by an internal failure. Do not repair or modify the device, if malfunction or failure should occur during operation, send unit to the factory for inspection. No responsibility is assumed by Bel Power Solutions for any consequences deriving from the use of this material.	Lesen Sie dieses Dokument vor der Inbetriebnahme sorgfältig durch und bewahren Sie es zum späteren Nachschlagen auf. Die Nichtbeachtung dieser Anweisungen kann die Funktion und Sicherheit der Geräte beeinträchtigen und birgt Gefahren für Personen und Eigentum. Die Geräte müssen von qualifiziertem Personal unter Einhaltung der geltenden Normen und Vorschriften installiert, betrieben, gewartet und instand gehalten werden. Öffnen Sie das Gerät nicht, es enthält keine austauschbaren Komponenten, das Auslösen der internen Sicherung (falls vorhanden) ist stets auf tiefergehende Fehler im Schaltkreis zurück zu führen. Reparieren oder modifizieren Sie das Gerät nicht. Sollte während des Betriebs eine Fehlfunktion oder ein Defekt auftreten, schicken Sie das Gerät zur Überprüfung ins Werk. Bel Power Solutions übernimmt keine Haftung für die Folgen, die sich aus dem Einsatz dieses Gerätes ergeben.	Prima dell'installazione, leggere attentamente questo documento istruzioni e conservarle per future consultazioni. L'inosservanza delle presenti istruzioni può compromettere le caratteristiche e la sicurezza dell'apparecchio e causare pericolo per le persone e le cose. Il prodotto deve essere installato, utilizzato e riparato da personale qualificato e nel rispetto delle normative vigenti. Non aprire il prodotto, esso non contiene componenti sostituibili, il guasto del fusibile interno (se previsto) è causato da un guasto interno. Non tentare di riparare o modificare il prodotto, se durante il funzionamento si verificano guasti o anomalie, inviarlo al produttore per il controllo. Bel Power Solutions non si assume nessuna responsabilità per qualunque conseguenza derivante dall'uso di questo materiale.	Lire ces instructions avant l'installation, conserver ce manuel pour référence future. Défaut de se conformer à ces instructions peut affecter les caractéristiques et la sécurité du dispositif, et causer du danger aux personnes ou aux biens. Les produits doivent être installés, exploités et entretenus par du personnel qualifié et en conformité avec les règlements. N'ouvrez pas le produit, il ne contient aucune pièce réparable, le déclenchement du fusible interne (le cas échéant) est causé par un défaut interne. Ne pas essayer de réparer ou modifier le produit ; si des défaillances se produisent pendant le fonctionnement, retourner le produit au fabricant pour inspection. Bel Power Solutions n'assume aucune responsabilité des conséquences éventuelles découlant de l'utilisation des produits.
CAUTION	**ACHTUNG**	**ATTENZIONE**	**AVVERTISSEMENT**
RISK OF BURNS, EXPLOSION, FIRE, ELECTRICAL SHOCK, PERSONAL INJURY. Never carry out work on live parts! Danger of fatal injury! The product's enclosure may be hot, allow time for cooling product before touching it. Do not allow liquids or foreign objects to enter into the products. To avoid sparks, do not connect or disconnect the device before having previously turned-off input power and wait for internal capacitors discharge (minimum 2 minutes).	**GEFAHR VON VERBRENNUNGEN, EXPLOSIONEN, FEUER, STROMSCHLAG, PERSONENSCHÄDEN.** Führen Sie niemals Arbeiten an spannungsführenden Teilen durch! Gefahr von tödlichen Verletzungen! Das Gehäuse des Gerätes kann heiß sein, lassen Sie Zeit zum Abkühlen des Gerätes, bevor Sie es berühren. Lassen Sie keine Flüssigkeiten oder Fremdkörper in die Geräte eindringen. Um Überschläge zu vermeiden, schließen Sie das Gerät nicht an oder trennen Sie es nicht ohne vorher die Eingangsspannung abgeschaltet zu haben, und warten Sie die Entladung der internen Kondensatoren ab (mindestens 2 Minuten).	**RISCHIO USTIONI, ESPLOSIONE, INCENDIO, SCOSSA, LESIONI GRAVI.** Non effettuare mai operazioni sulle parti sotto tensione! Pericolo di lesioni letali! Il contenitore può scottare, lasciar quindi raffreddare il dispositivo prima di toccarlo. Non far entrare liquidi o oggetti estranei nel dispositivo. Per evitare scintille, non collegare o scollegare l'apparecchiatura prima di avere tolto tensione di ingresso e prima che sia avvenuta la scarica dei condensatori interni (min. 2 minuti).	**RISQUE DE BRULURES, EXPLOSION, INCENDIE, ELECTROCUTION, DOMMAGE AUX PERSONNES.** Ne jamais effectuer des opérations sur les parties sous tension! Danger de mort! Le boîtier peut produire des brûlures, le laisser refroidir avant de toucher l'appareil. Ne faire pas pénétrer des liquides ou des corps étrangers dans l'appareil. Pour éviter des étincelles, ne pas connecter ou déconnecter l'équipement jusqu'à ce que la tension d'entrée a été supprimée et avant qu'il n'ait eut lieu la décharge des condensateurs internes (minimum 2 minutes).
INTENDED USE	**BESTIMMUNGSGEMÄSSER BETRIEB**	**USO PREVISTO**	**UTILISATION**
These are component type devices for internal installation within system equipment. They are isolated from hazardous voltages and with outputs under 60 Vdc or connected to protective earth. The devices can be used for general applications such as ITE network/servers, industrial and medical. This product may cause interference if used in residential areas. Such use must be avoided unless the user takes special measures to reduce electromagnetic emissions to prevent interference to the reception of radio and television broadcast. Do not use these devices in applications where malfunction may cause injury or death. Please see full spec of unit for further details.	Dies sind Komponenten für die interne Installation in Systemgeräten. Sie sind gegen gefährliche Spannungen isoliert und haben Ausgänge unter 60 VDC oder sind mit Schutzerde verbunden. Die Geräte können für allgemeine Anwendungen wie ITE-Netzwerke / Server, Industrie und Medizin verwendet werden. Dieses Gerät ist nicht für den Betrieb in Wohnräumen konzipiert. Für den Betrieb in solchen Umgebungen müssen zusätzliche EMV Schutzmassnahmen erbracht werden. Verwenden Sie diese Geräte nicht in Anwendungen, bei denen eine Fehlfunktion zu Verletzungen oder zum Tod führen kann. Weitere Informationen finden Sie in der vollständigen Spezifikation des Geräts.	I dispositivi sono di tipo componente per l'installazione all'interno dell'apparecchiatura. Sono isolati da una tensione pericolosa e hanno tensione in uscita sotto 60Vdc o sono collegati a terra protettiva. I dispositivi son per l'utilizzo generale per applicazioni come rete ITE/ server, industriali e medici. Questo prodotto può causare interferenze se usato in aree residenziali. Tale uso deve essere evitato a meno che l'utente non prenda misure speciali per ridurre le emissioni elettromagnetiche atte ad evitare interferenze alla ricezione alle trasmissioni radiotelevisive. Non utilizzare in applicazioni in cui un eventuale guasto può comportare rischio di lesioni o di morte. Vedere le specifiche complete del dispositivo per ulteriori dettagli	Ce sont des types de composant pour une installation interne d'équipement de système. Ils sont isolés des tensions dangereuses et avec des sorties inférieures à 60 Vdc ou connectés au terre de protection. Les appareils peuvent être utilisés pour des applications générales telles que les réseaux / serveurs ITE, industriels et médicaux. Ce produit peut provoquer des interférences s'il est utilisé dans un environnement résidentielles. Nous ne recommandons pas son utilisation dans de telles conditions à moins que l'utilisateur prenne des mesures spécifiques pour réduire les émissions électromagnétiques afin d'éviter les interférences avec les systèmes à réception tel que radio et de télévision. Ne pas utiliser ces dispositifs dans une application où un dysfonctionnement pourrait entraîner le risque des blessures ou de mort. Pour de plus amples informations, se référer à la fiche technique du produit
ENVIRONMENTAL CHARACTERISTICS	**UMGEBUNGSBEDINGUNGEN**	**CARATTERISTICHE AMBIENTALI**	**CARACTÉRISTIQUES ENVIRONMENTALES**
Installation in a Pollution Degree 2 environment. Do not use in wet area or subject to moisture. Carefully recycle the product and related batteries according to local regulations.	Installation in einer Umgebung mit Verschmutzungsgrad 2. Nicht in nassen Bereichen oder unter Feuchtigkeit verwenden. Das Gerät und die zugehörigen Batterien sind entsprechend den lokalen Vorschriften zu recyceln bzw. zu entsorgen.	Usare in ambienti con Grado di Inquinamento 2. Non far funzionare l'apparecchio in un ambiente umido o soggetto a formazione di condensa. Riciclare il prodotto e le batterie collegate, nel rispetto delle normative locali vigenti.	Utiliser les produits dans des environnements avec degré de pollution 2. Ne pas employer l'appareil dans un environnement humide ou soumis à la condensation. Recycler les produits et les batteries, conformément à la réglementation locale.



Model Options:
PES2200-12-080ND
PES2200-12-080RD
PES2200-12-080NDSxxx
PES2200-12-080RDSxxx

PES2200-12-080NDS483
Please observe loading conditions!

DC INPUT:	- 48 to - 60 V ⎓, 52 A
DC OUTPUT:	V1:12 V, 183 A, 2200W max. Vsb:12V, 3.5A, 42W max
DC INPUT:	- 48 to - 60 V ⎓, 52 A
DC OUTPUT:	V1: 12.2 V, 180 A, 2200W max. Vsb:12V, 3.5A, 42W max
SAFETY APPROVALS:	Approved to the latest edition of the following standards: IEC/EN 62368-1, CSA/UL 62368-1, IEC/EN 60950-1

CAUTION:

These component level power supplies are intended exclusively for installation within other equipment by an industrial assembly operation or by professional installers. This is a Class 1 power supply; the unit must be properly connected to earth ground in end use. A component power supply should be installed in end-use equipment according to the requirements of the safety standard used for that equipment. This power supply is not designed to be operated outside of an enclosure which provides a means of mechanical, electrical, and fire protection. To maintain SELV/ES1 requirements, the output should not be connected together in any manner which causes the total output voltage to exceed 60VDC.

PROTECTIVE EARTHING

The Power Supply must be properly grounded to mains protective earthing termination at end use.

WARNING

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

声明 – 此为 A 级产品，在生活环境中， 该产品可能会造成无线电干扰。 在这种情况下， 可能需要用户对其干扰采取切实可行的措施。

POWER SUPPLY CORD SET

A power supply cord set is not provided with the power supply. A power supply cord set, complying with the national regulations of the country in which the product is to be sold, shall be provided with the end-use equipment.

LOADING CONDITIONS

Model	Rated Mains DC Voltage	Vo1/Io1
PES2200-12-080ND PES2200-12-080RD PES2200-12-080NDSxxx PES2200-12-080RDSxxx	-48 to -60 V	12 V/183 A
PES2200-12-080NDS483		12.2 V/180 A

ENVIRONMENTAL CONDITIONS:

CHARACTERISTICS	CONDITION	VALUE
Ambient temperature	Transportation and storage	-40 °C to +70 °C
	Operation	-5 °C to +55 °C
Relative humidity	Transportation and storage	5 % to 95 %, non-condensing
	Operation	5 % to 85 %, non-condensing
Altitude	Transportation and storage	To 15200 m
	Operation	To 3050 m (Maximum operating altitude 5000 meters and the Maximum operating temperature to 40°C.)

FUSING

CAUTION: Fuses are incorporated in power supply, Fuse F101 is rated F 80 A, 170V ⎓.

SERVICING

In case of failure, the Power Supply must be returned to a Service Center authorized by Bel Power Solutions. There are no user-serviceable parts in the Power Supply.

LIMITED WARRANTY

Bel Power Solutions warrants each power supply 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 a Bel Power Solutions Authorized Service Center for repair with a Bel Power Solutions pre-assigned RMA number.

Bel Power Solutions 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.

NUCLEAR AND MEDICAL APPLICATIONS

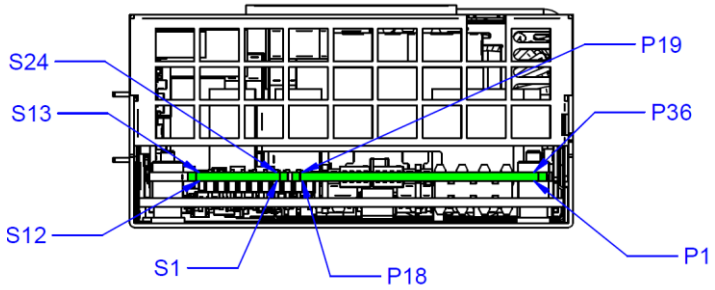
Bel Power Solutions products are not designed, intended for use in, or authorized for use as critical components in life support systems, equipment used in hazardous environments, or nuclear control systems without the express written consent of the respective divisional president of Bel Power Solutions.

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.

OUTPUT CONNECTOR PIN ASSIGNMENT

For Main Output Pins, see section 16 of Datasheet BCD.00983.



PIN	SIGNAL NAME	DESCRIPTION	MATING SEQUENCE
P1 ~ P10 P29 ~ P36	GND	Power and signal ground (return)	
P11 ~ P18 P19 ~ P28	V1	+12VDC main output	
S1	A0	I^2C address selection input	
S2	A1	I^2C address selection input	
S3, S4	VSB	+12V Standby positive output	
S5	Hot_ Standby	Hot standby Bus	
S6	ISHARE	Analog current share bus	
S7	VIN_OK _H	Input OK signal output, active-high	
S8	PRESENT_L	Power supply seated, active-low	
S9	A2	I^2C address selection input	
S10 ~ S15	GND	Power and signal ground (return)	
S16	PWOK_H	Power OK signal output, active-high	
S17	V1_SENSE	Main output positive sense	
S18	V1_SENSE_R	Main output negative sense	
S19	SMB_ALERT_L	SMB Alert signal output, active-low	
S20	PSON_L	Power supply on input, active-low	
S21, S22	VSB	+12V Standby positive output (as pins S3, S4)	
S23	SCL	I^2C clock signal line	
S24	SDA	I^2C data signal line	

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OPERATING CONDITION	LED SIGNALING
LED	
Output ON and OK	Solid GREEN
No DC power to all power supplies	OFF
DC present / Only 12VSB on (PS off) or PS in Hot standby state	1Hz Blink GREEN
DC cord unplugged; with a second power supply in parallel still with DC input power.	OFF
Power supply warning events where the power supply continues to operate; high temp, high power, high current, slow fan.	1Hz Blink YELLOW
Power supply critical event causing a shutdown; failure, OCP, OVP, Fan Fail	Solid AMBER
Power supply in FW upload mode	2Hz Blink GREEN

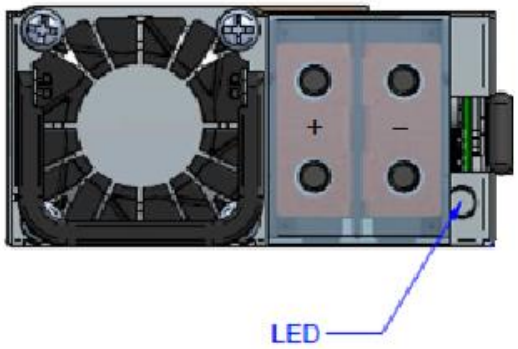


Figure 1. Front view

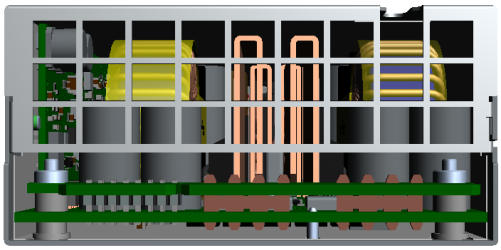


Figure 2. Rear view

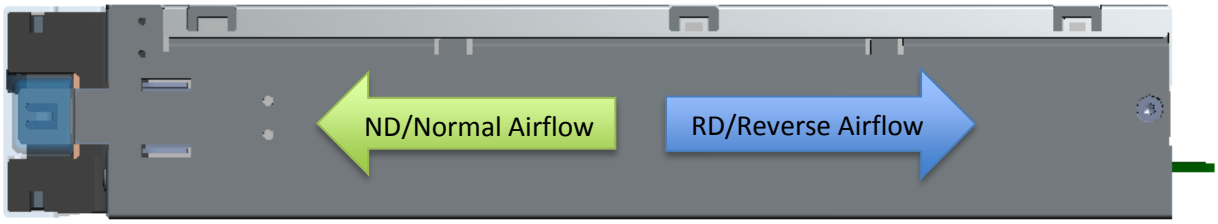


Figure 3. PES2200-12-080xD series Side view and Airflow direction

Additional information about characteristics and application of the products is available from the Bel Power Solutions web site at belfuse.com/power-solutions.