

# INSTALLATION INSTRUCTION

## TET4000-48-069RA Series AC-DC 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!
<p>Before operating, read this document thoroughly and retain it for future reference.</p> <p>Non-respect of these instructions may reduce performances and safety of the devices and cause danger for people and property.</p> <p>The products must be installed, operated, serviced and maintained by qualified personnel in compliance with applicable standards and regulations.</p> <p>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.</p> <p>Do not repair or modify the device, if malfunction or failure should occur during operation, send unit to the factory for inspection.</p> <p>No responsibility is assumed by Bel Power Solutions for any consequences deriving from the use of this material.</p>	<p>Lesen Sie dieses Dokument vor der Inbetriebnahme sorgfältig durch und bewahren Sie es zum späteren Nachschlagen auf.</p> <p>Die Nichtbeachtung dieser Anweisungen kann die Funktion und Sicherheit der Geräte beeinträchtigen und birgt Gefahren für Personen und Eigentum.</p> <p>Die Geräte müssen von qualifiziertem Personal unter Einhaltung der geltenden Normen und Vorschriften installiert, betrieben, gewartet und instand gehalten werden.</p> <p>Öffnen Sie das Gerät nicht, es enthält keine austauschbaren Komponenten, das Auslösen der internen Sicherung (falls vorhanden) ist stets auf tieferegehende Fehler im Schaltkreis zurück zu führen.</p> <p>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.</p> <p>Bel Power Solutions übernimmt keine Haftung für die Folgen, die sich aus dem Einsatz dieses Gerätes ergeben.</p>	<p>Prima dell'installazione, leggere attentamente questo documento istruzioni e conservarle per future consultazioni.</p> <p>L'inservanza delle presenti istruzioni può compromettere le caratteristiche e la sicurezza dell'apparecchio e causare pericolo per le persone e le cose.</p> <p>Il prodotto deve essere installato, utilizzato e riparato da personale qualificato e nel rispetto delle normative vigenti.</p> <p>Non aprire il prodotto, esso non contiene componenti sostituibili, il guasto del fusibile interno (se previsto) è causato da un guasto interno.</p> <p>Non tentare di riparare o modificare il prodotto, se durante il funzionamento si verificano guasti o anomalie, inviarlo al produttore per il controllo.</p> <p>Bel Power Solutions non si assume nessuna responsabilità per qualunque conseguenza derivante dall'uso di questo materiale.</p>	<p>Lire ces instructions avant l'installation, conserver ce manuel pour référence future.</p> <p>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.</p> <p>Les produits doivent être installés, exploités et entretenus par du personnel qualifié et en conformité avec les règlements.</p> <p>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.</p> <p>Ne pas essayer de réparer ou modifier le produit ; si des défaillances se produisent pendant le fonctionnement, retourner le produit au fabricant pour inspection.</p> <p>Bel Power Solutions n'assume aucune responsabilité des conséquences éventuelles découlant de l'utilisation des produits.</p>
<b>CAUTION</b>	<b>ACHTUNG</b>	<b>ATTENZIONE</b>	<b>AVVERTISSEMENT</b>
<p><b>RISK OF BURNS, EXPLOSION, FIRE, ELECTRICAL SHOCK, PERSONAL INJURY.</b></p> <p>Never carry out work on live parts! Danger of fatal injury!</p> <p>The product's enclosure may be hot, allow time for cooling product before touching it.</p> <p>Do not allow liquids or foreign objects to enter into the products.</p> <p>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).</p>	<p><b>GEFAHR VON VERBRENNUNGEN, EXPLOSIONEN, FEUER, STROMSCHLAG, PERSONENSCHÄDEN.</b></p> <p>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.</p> <p>Lassen Sie keine Flüssigkeiten oder Fremdkörper in die Geräte eindringen.</p> <p>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).</p>	<p><b>RISCHIO USTIONI, ESPLOSIONE, INCENDIO, SCOSSA, LESIONI GRAVI.</b></p> <p>Non effettuare mai operazioni sulle parti sotto tensione! Pericolo di lesioni letali!</p> <p>Il contenitore può scottare, lasciar quindi raffreddare il dispositivo prima di toccarlo.</p> <p>Non far entrare liquidi o oggetti estranei nel dispositivo.</p> <p>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).</p>	<p><b>RISQUE DE BRULURES, EXPLOSION, INCENDIE, ELECTROCUTION, DOMMAGE AUX PERSONNES.</b></p> <p>Ne jamais effectuer des opérations sur les parties sous tension! Danger de mort!</p> <p>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.</p> <p>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).</p>
<b>INTENDED USE</b>	<b>BESTIMMUNGSGEMÄßER BETRIEB</b>	<b>USO PREVISTO</b>	<b>UTILISATION</b>
<p>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.</p> <p>Do not use these devices in applications where malfunction may cause injury or death. Please see full spec of unit for further details.</p>	<p>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.</p> <p>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.</p>	<p>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.</p> <p>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</p>	<p>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.</p> <p>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</p>
<b>ENVIRONMENTAL CHARACTERISTICS</b>	<b>UMGEBUNGSBEDINGUNGEN</b>	<b>CARATTERISTICHE AMBIENTALI</b>	<b>CARACTÉRISTIQUES ENVIRONNEMENTALES</b>
<p>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.</p>	<p>Installation in einer Umgebung mit Verschmutzungsgrad 2.</p> <p>Nicht in nassen Bereichen oder unter Feuchtigkeit verwenden.</p> <p>Das Gerät und die zugehörigen Batterien sind entsprechend den lokalen Vorschriften zu recyceln bzw. zu entsorgen.</p>	<p>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.</p>	<p>Utiliser les produits dans des environnements avec degré de pollution 2.</p> <p>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.</p>

**OPTIONS based on P/N Suffix:**

- Blank** → Standard PSU
- S441** → AC INPUT = only 200 – 250 V $\sim$   
V1: 54.5 V $\equiv$ , 73 A max.
- H, S510** → AC INPUT = 100-127V $\sim$ , 200 – 277 V $\sim$   
DC INPUT = 240 – 380 V  $\equiv$ , 22 A

**AC INPUT:** 200 – 250 V $\sim$ , 25 A, 50/60 Hz  
100 – 127 V $\sim$ , 25 A, 50/60 Hz

**DC OUTPUT S:** V1: 48 – 58 V $\equiv$ , 83 A max.  
V2: 12 V $\equiv$ , 5 A  
Maximum Output Power: 4060 W

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

**SAFETY APPROVALS**

Approved to the latest edition of the following standards:  
UL/CSA 62368-1, IEC 62368-1 and CE Mark.

**INSTALLATION**

For details and mechanical drawings, access the AC-DC Data Sheet/App Notes link on the website at [www.belfuse.com/power-solutions](http://www.belfuse.com/power-solutions) and go to the respective TET4000 listing.

**CAUTION**

These component level power supplies are intended exclusively for installation within other equipment by an industrial assembly operation or by professional installers. These are Class 1 power supplies; 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 outputs should not be connected together in any manner which causes the total output voltage to exceed 60 VDC.

**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，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。

**PROTECTIVE EARTHING**

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

**FUSING**

**CAUTION: DOUBLE POLE/NEUTRAL FUSING.** Fuses F1 and F2 are rated 30 A, 500 V (fast acting).

**ENVIRONMENTAL CONDITIONS:****TRANSPORTATION & STORAGE:**

Ambient Temperature Range: -40 °C to +70 °C

Relative Humidity Range: 5% to 95% RH Non-Condensing  
Altitude: to 10 000 m ASL

**OPERATION:**

Ambient Temperature Range: 0°C to +45°C (at 4060 W load)\*  
+45°C to +55°C (at 3060 W load)\*  
Relative Humidity Range: 10% to 90% RH Non-Condensing



Altitude, People's Republic of China (PRC): 仅适用于海拔 2000m 以下地区安全使用  
Altitude, other countries: to 4000 m ASL\*

\* For the details about power derating check the product datasheet.

**SERVICING**

In case of failure, the Power Supply must be returned to our Authorized Service Center. There are no user serviceable parts in the Power Supply.

**LIMITED WARRANTY**

The company 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 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.

**NUCLEAR AND MEDICAL APPLICATIONS**

This product was not designed, intended for use in, or authorized for use as critical components in equipment used in hazardous environments, or nuclear control systems without the express written consent of the respective divisional president of the company.

**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.

**INPUT, OUTPUT AND SIGNAL CONNECTOR DETAILS**

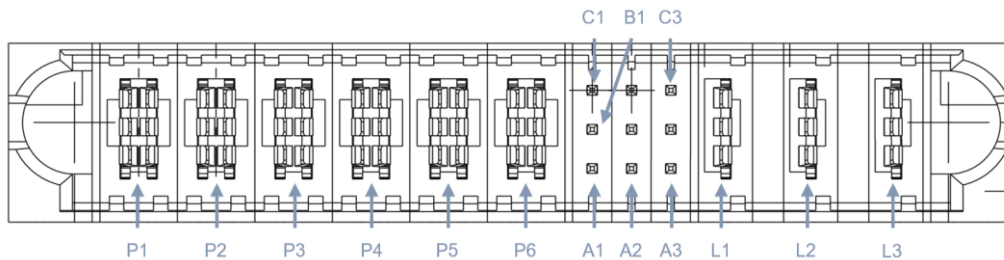


Figure 1 PSU rear side connector, view from mating side

**INPUT, OUTPUT AND SIGNAL CONNECTOR – PINOUT**

PIN	SIGNAL NAME	DESCRIPTION	MATING SEQUENCE
L1	PE	Protective Earth	1
L2	N	AC or HV DC input line (Neutral)	2
L3	L	AC or HV DC input line (Line)	2
P1, P2, P3	GND	Power and ADDR0, ADDR1 return	1
P4, P5, P6	V1	+54.5 V main output	2
A1	PSKILL	Power supply kill input (lagging pin); active-high	3
B1	ACOK_L	Output signaling input voltage within operating range; active-low	2
C1	SGND	Isolated GND. CAN, PSKILL and DIGOUT are referred to it.	2
A2	ADDR0	Analog input for PSU address setting	2
B2	CAN_H	CAN-Interface, High <sup>1</sup>	2
C2	CAN_L	CAN-Interface, Low <sup>2</sup>	2
A3	ADDR1	Analog input for Shelf address setting <sup>3</sup>	2
B3, C3	VSB	+12 V Standby output	2

<sup>1</sup> With future I2C implementation will be optionally SDA

<sup>2</sup> With future I2C implementation will be optionally SCL

<sup>3</sup> With future I2C implementation will be optionally used as digital bidirectional share bus



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## MECHANICAL DIMENSIONS

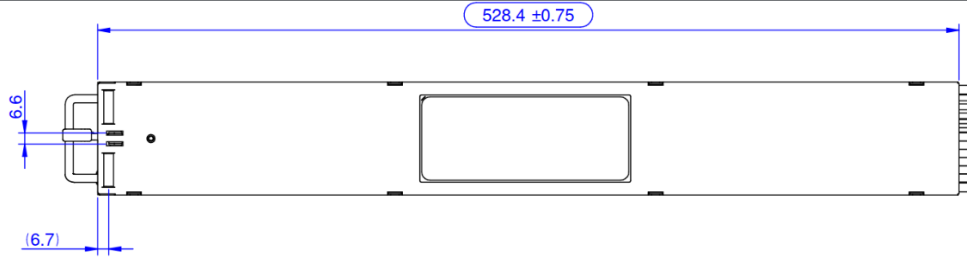


Figure 2. Top view

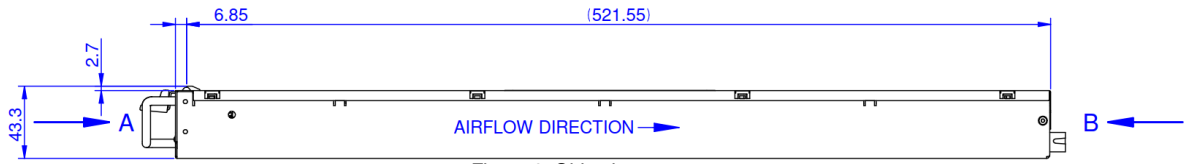


Figure 3. Side view

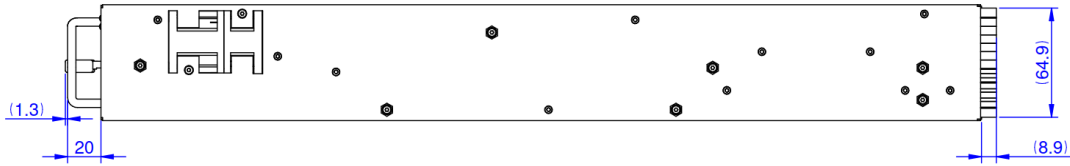


Figure 4. Bottom view

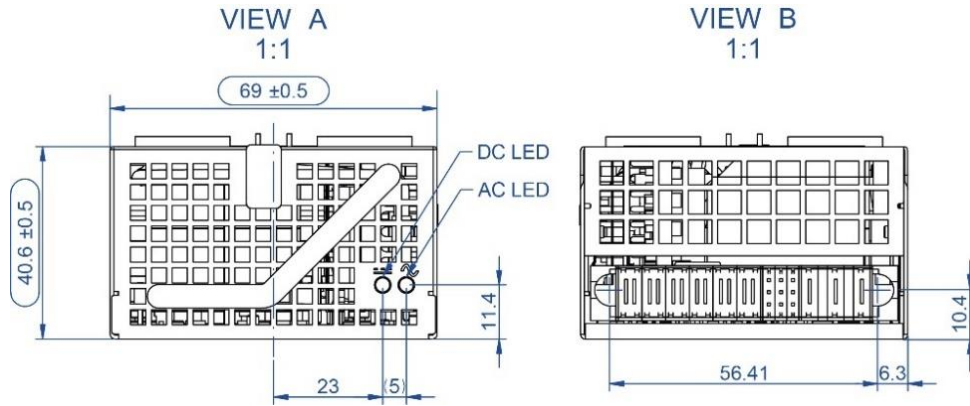


Figure 5. Front and Rear view