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PS device series from Beckhoff: compact and universal 24/48 V DC power supplies

Optimized convection cooling delivers long service life, reliability and high efficiency

The three new PS power supply series comprise a total of 18 devices. The 1- and 3-phase DIN-rail mountable power supply units are very compact and supply output currents from 2.5 to 40 A. With a temperature-optimized device design, these power supplies ensure excellent convection cooling, long service life, maximum reliability and up to 96.3 % efficiency. The versatile PS series features a wide-range input and comes with a number of different technical approvals, making it suitable for worldwide and universal use in 24 and 48 V DC applications.

With the PS device series, Beckhoff offers high-quality power supplies for almost all applications in both the 24 V and 48 V DC range, including motion control applications with stringent requirements for handling back EMF (electromagnetic force). Excellent convection, minimized power loss and high efficiency of up to 96.3 % optimize the service life and reliability of the devices. The peak power capability of up to 150 % makes it possible to provide up to 1.44 kW output power for short periods of time. Together with the space-saving design and high immunity to transients and overvoltages, this allows efficient and cost-effective use even in harsh industrial environments. In addition, the power supplies can switch off circuit breakers quickly and accurately through a precise tripping function to avoid unnecessary machine downtime.

**Beckhoff Automation
GmbH & Co. KG**
Huelshorstweg 20
33415 Verl, Germany
Phone: +49 5246 963-0
E-Mail: info@beckhoff.com
www.beckhoff.com

Press contact
Silke Franke
Vera Schnatmeyer
Phone: +49 5246 963-140
E-Mail: press@beckhoff.com
www.beckhoff.com/press

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The power supply portfolio includes the following device series:

- PS1000 with six 1-phase power supply units for smaller and cost-sensitive applications (24 V DC, 2.5/3.8/5/10/20 A, efficiency up to 95.2 %)
- PS2000 with five 1- and 3-phase power supply units for standard applications (24/48 V DC, 5/10/20 A; efficiency up to 96.3 %, 120 % permanent output power)
- PS3000 with seven 1- and 3-phase power supply units for demanding applications (24/48 V DC, 10/20/40 A, efficiency up to 95.4 %, 150 % output power for 4 s)

The UL-approved power supplies can also be used in highly specialized industries, e.g., with approvals according to SEMI 47 (semiconductor industry) or DNV GL (shipbuilding). They can also be used in hazardous areas requiring explosion protection (Class I Division 2, IECEx and ATEX).

Optimized design to manage heat and back EMF

The devices are specifically designed with good convection cooling properties in mind. The number of components has been minimized to allow sufficient space for air convection. In addition, components that are particularly temperature-sensitive and prone to rapid aging are placed at the bottom of the unit, i.e. as close as possible to incoming cool air. This temperature-optimized design means that the components used are subjected to less thermal stress, thus achieving a long service life. In addition, components that are subject to less stress retain their technical characteristics for longer, and the influence of external heat is minimized. All of these features also improve reliability.

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Due to the high tolerance to electrical feedback, the power supply units are ideally suited for motion applications. They also have exceptional peak power capability to operate motors, capacitors and other loads that require more power at start-up than in the nominal range. In most cases, the power supplies from a lower and more cost-effective power class in the portfolio will be adequate for this purpose.

➔ www.beckhoff.com/power-supply

Press picture:



Picture caption:

The three new PS device series of 24/48 V power supplies from Beckhoff cover a wide range of applications, including demanding motion control applications.

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