

PULS *Today*



Current News on DIN-Rail Power Supplies

December 2009, Global issue

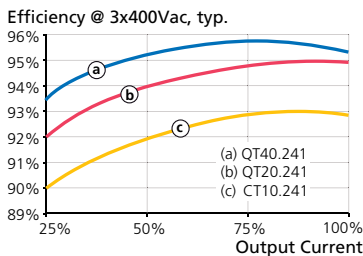
- Complete: 3-phase DIMENSION Series
- Highlights: 960W 1-phase / 3-phase Units
- Flexible: Power Systems with Standard Units
- China: Company-owned Plant Opened



COMPLETION: THE NEW POWER SUPPLIES FOR 3-PHASE-SYSTEMS

In addition to a considerable number of new innovations, reducing costs has been a key focus in developing these units. This relates both to the costs of the unit itself as well as the system costs for the user. A high level of efficiency plays a critical role as ever. Minimal losses are a basic requirement for constructing small and reliable units. For example, the width of the 40A unit has been successfully reduced from 275mm to just 110mm. This not only saves cabinet costs, but also reduces the costs of cooling, electricity and logistics. An important contribution to increasing the high efficiency is provided by the Mosfet synchronous rectifiers in the power supply output stages. PULS has a clear advantage here thanks to its many years of experience and pioneering breakthroughs in this field.

PULS was also the first to succeed in maintaining high efficiency over a broad output power range. With typical loads, this reduces the heat generation and increases the reliability on all devices in the control cabinet. The low weight of the units reduces the mechanical stress on the DIN-rail and makes the units more immune to mechanical shocks and vibrations. All units (except QT20) also have integrated input fuses included and can be connected directly to the industry-standard 32A CEE outlets. This reduces space and costs for additional circuit breakers and wiring. The 100W and 120W devices just require two phases on the input. This makes narrow units possible, without compromise and the need for additional terminals that would otherwise make the unit larger.



Order. No.	Output	η	WxHxD (mm)	Further Variants
ML100.200	24V 4,2A	89.5%	73x75x103	NEC Class 2 Version
CT5.241	24V 5A	90.4%	40x124x117	12V Output
CT10.241	24V 10A	92.8%	62x124x117	48V Output
QT20.241	24V 20A	95.0%	65x124x127	36V or 48V Output
QT40.241	24V 40A	95.4%	110x124x127	48V Output



ATEX APPROVED POWER SUPPLIES

For use in hazardous locations, the PULS DC/DC converters in the CD5 series have already been successfully approved for ATEX. These units have been tested according to EN 60079-15 and can be used in Zone 2, category 3G hazardous systems. Due to a number of requests, a selection of power supplies has also been ATEX-approved. Unlike with DC/DC converters, a separate order number is required for these power supplies since changes in the design had to be conducted. Please speak to us if you have interesting applications or customer requests.

DC-UPS FOR LONG BUFFER TIMES

Security systems and remote applications often require buffer times up to 72 hours. This requires large batteries. Traditionally DC-UPS's cannot handle these, because they are designed for smaller batteries to buffer PLC's or industrial PC's for machines or systems.



PULS offers the module allows batteries between 17 and 130Ah. Thanks to the unique "1-Battery-

Concept" from PULS, only one single 12V-battery is required to buffer 24V circuits. This avoids the need for matched batteries and ensures the longest possible service life of the battery.



DC/DC CONVERTER WORKS FROM A 12V DC-SUPPLY-BUS

For 12V applications, a new 32mm wide DC/DC converter has been added to the CD5 series. The input voltage can vary between 8.4V and 16.2V. The output is galvanically isolated and supplies 24V, 4A.



3-Phasen
24V, 40A

HIGH-TECH CUBE 1

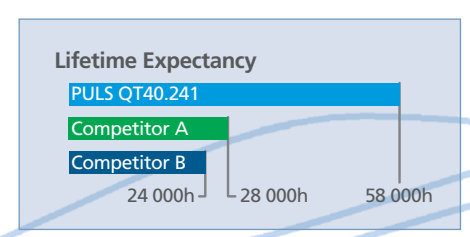
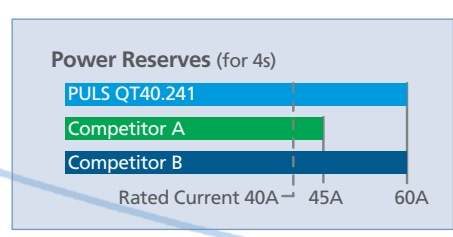
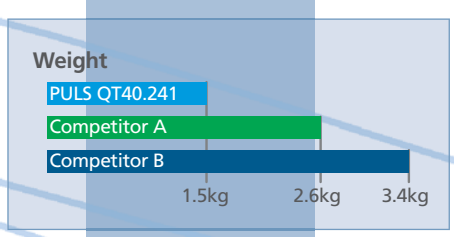
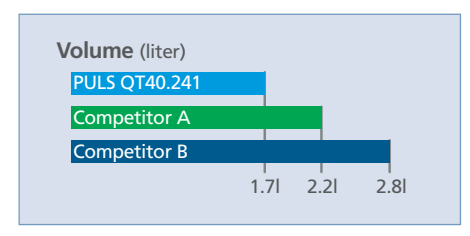
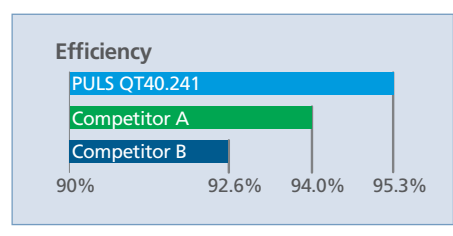
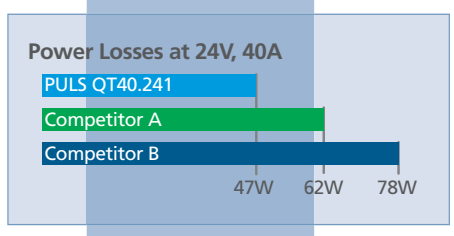
QT40 WITH RECORD-BREAKING EFFICIENCY OF 95.3%

No.

Unmatched in Efficiency, Reliability and Compactness

The use of a total of 3 microcontrollers opens up an exceptional combination of features in this high-tech device:

- Extremely compact and lightweight, just 110mm wide and 1.5kg in weight
- Integrated input fuses allow a direct connection to mains-branches up to 32A
- Minimal power losses so there is less heat development in the control cabinet
- High efficiency value maintained from low to full load
- Active PFC for low input current consumption and stable performance on asymmetrical supply networks
- Long service life due to low temperatures on the electrolytic capacitors
- Large power reserves, 60A for 4s at full output voltage
- No input inrush current surge
- Active filtering of incoming input transients
- Current sharing feature for parallel use
- Full output power between -25°C and +60°C
- DC-OK relay contact for remote monitoring
- Shut-down input for remote shut-down



At 3x400Vac, 40A load and +40°C ambient temperature
Capacitor lifetime acc. to manufacturer's specification



PULS now offers a special service called "Add-on Power" that puts together complete power systems by utilizing standard units with custom mechanics and wiring. This means that a reliable custom system can be built with comprehensively tested high volume units. If it is not possible to provide the solution for an application using standard units alone, modifications or customer-specific developments can also be integrated in collaboration with the company MGV which is a member of the PULS group. Thanks to the comprehensive range of power supplies, DC/DC converters and accessory units, many applications can be implemented. The strengths of PULS and MGV are fully revealed in this program: Mechanical and electrical design, testing laboratories and manufacturing all from one source. This means that even complex projects can be implemented efficiently and the risks of custom designs can be avoided.



1001 Applications...

Standard + Custom = ADD-ON Power

Examples of realized projects:

RADIO TRANSMISSION FOR EMERGENCY CALL SYSTEMS

WIND MILLS

SAFETY FOR TRAFFIC IN TUNNELS

In this branch of industry, 19-Inch rack power supplies are used as standard. These units have now become non stock and expensive thereby creating a desire for more cost-effective alternatives.

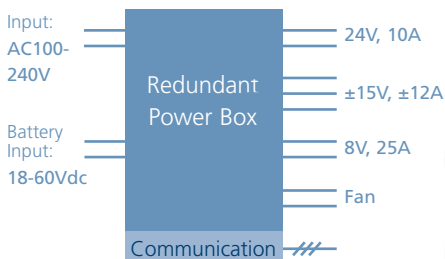
The PULS solution: For each system two QS10.121, QS20.241 and a modified DC/DC converter with 8V output voltage was utilized. Additionally, the whole system must have the ability to be powered by batteries instead of AC supply. Therefore, a special front-end module was developed. The power supply units were installed in plug-in housings with integrated fans. From the users' point of view, this system behaves like a 19-Inch rack power supply system.

The task was to generate a stable 24V control voltage with 3A from a heavily



The challenge here was to create a fully redundant and battery buffered power supply system with output voltages of 29V, 4A and 12V, 5A. The devices used were two QS10.241, two UB10.241 (24V DC-UPS) and a modified DC/DC-converter to boost the 24V to the two special voltages. The whole system was installed in a custom-made housing.

fluctuating supply voltage between 30 and 72Vdc. The technical challenges were the size, the broad operating temperature range of -40°C to +70°C as well as the high shock and vibration requirements. This was achieved by modifying the ML70.100 power supply.



WONDER CUBE 2

QS40.244: 1-PHASE 24V 40A

In countries with mains voltages of 100V (Japan) or 120V (USA), higher voltages such as 200V, 208V or 240V are frequently also available for larger systems and are readily used due to the lower current consumption. Power supplies optimized for these input voltages have advantages in terms of dimensions, weight and costs. Why carry around an input voltage range down to 85V when you don't need it? PULS has therefore developed the QS40.244 which in the 1-phase range has virtually the same positive features as 3-phase power supplies.

- AC 200-240V +/-15% input voltage range
- Low heat generation thanks due to an excellent efficiency of 94.6%
- 50% (1440W) power reserve for dynamic loads
- Low input current thanks to active PFC
- Minimal input inrush current surge
- Integrated input fuses, suitable for 32A mains networks
- Integrated DC-OK relay contact
- Integrated shut-down input
- Current sharing feature for parallel use

For applications that also need to be supplied with AC 100V or AC 120V, a wide range version will soon be available with an input range of AC 100-240V.

► FACTS

Input:	AC 200-240V
Output:	24V, 40A
Capacity:	960W Continuous Power 1440W Peak Power
Dimensions:	125x124x127mm (WxHxD)



PULS AND E-T-A – ELECTRONIC FUSES

Selective protection of load circuits can be required for allowing the use of small wire sizes or to isolate faulty circuits. Traditional miniature circuit breakers (MCB's) have physical limits due to the required high tripping current for a quick release and the low voltage of only 24Vdc. Thereby they will only function up to a certain wire length. Even the best power supply cannot change the physics, even if some of our competitors might attempt to give this impression. PULS has always been striving for a clean solution. If the wire length is too long or the wire size is too small, electronic fuses can be of help. Comprehensive tests with units from the company E-T-A demonstrate excellent characteristics in combination with PULS power supplies. To make it simpler for the user, a selection of electronic fuses from E-T-A can be obtained from PULS. Specifically this is the ESX10-T series. These units don't just simply shut down, instead they first actively limit the load current for a specific period before switching off. This ensures an uninterrupted supply voltage for adjacent branches and avoids a faulty shut-down even with connected devices with large capacitors on the input. The ESX10-T single modules are extremely narrow, require just 12.5mm of space on the DIN rail and can be combined in any number. With PULS, these fuses are available with ampere values of 2A, 4A, 6A and 10A, both with and without signal contact. Connection bars for power and signal terminals are available for easy wiring.



E-T-A
Maßstab für Sicherheit





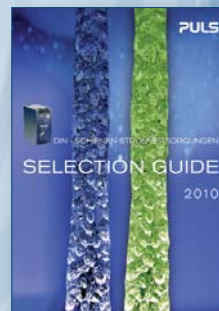
NEW MANUFACTURING PLANT IN CHINA

PULS is leaving the leased site and entering a super-modern, company-owned manufacturing plant. Just one year after the construction contract was signed, production is now running smoothly at the company's own production site in China. The plant is located in the "Suzhou Industrial Park" around 80km west of Shanghai. On a total area of 5500 square meters (60.000sq ft), it offers sufficient space for manufacturing areas and offices. The building is in the typical PULS design and is just as economical and efficient to run as our power supplies. A vast range of economical and environmentally friendly individual measures were implemented. This not only has a beneficial effect on the environment, but also reduces the on-going operating costs. Projections have enabled us to anticipate a saving of up to 70% in comparison to other standard industrial buildings in this region. The technical production equipment matches the same high quality of that in our other factories. This fulfills the essential requirements for manufacturing innovative DIN-rail power supplies. PULS is the only German power supply manufacturer with its own manufacturing site in China and can therefore offer seamless quality control and reliability down the entire supply chain



NEW SELECTION GUIDE...

...includes all the latest preferential DIN-rail products from PULS across 16 pages. Here you will find the key technical data in a clear layout. The simple tables arranged by product group make it easy to find the right unit.



NEW MANAGEMENT FOR GERMAN SALES DEPARTMENT



With many years of sales experience in the power supply business, Rainer Veigel joined the PULS management team as the German Head of Sales. With its technically trained sales and applications engineers and inside sales members, our sales department will ensure smooth and rapid processing of enquiries and orders.

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