

PULS *Today*



Current News on DIN-Rail Power Supplies

December 2007 – Global Issue

- Strong: Power Supplies
- Smart: DC-UPS's
- Reliable: Redundant Modules
- Protected: Conformal Coated Supplies
- Compact: MiniLine with 400-480VAC

THE ENERGY PACK WITH 24V AND 20A

The newest device in the Dimension Q-Series only needs 82mm of space on the Din-rail for an output current of 20A @ 24V. The QS20.241 has a 1-Ph wide range input voltage and 93.9% efficiency. In addition, all the superior features of the DIMENSION Q-Series are also included:

- An additional 50% extra power for 4s
- Extremely low inrush current
- Active PFC
- DC OK signal contact
- High reliability
- DC input power: 88 - 375VDC
- Unique spring-clamp terminals
- SEMI F47 compliant
- Full output power between -25°C and +60°C

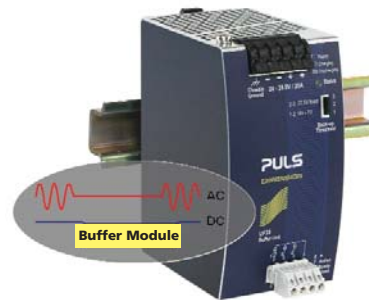


You can choose from three output voltages for the QS20 power supply; 24V, 36V or 48V. The QS20.244 has an input voltage range of 200-240VAC and does not use active power factor correction (PFC) but is ideal for users who are price conscious. The efficiency has been increased to 94.5% and the width is reduced down to 70mm.

BUFFER MODULES PREVENT SYSTEM CRASHES

Short-term interruptions in the power supply due to voltage fluctuations or overloads in adjacent circuits can cause malfunctions. Buffer modules are additional devices which step in during quick interruptions of these kinds. When the power supply is providing DC, the internal electrolytic capacitors are charged and store energy. When necessary, this energy is then released in a controlled manner to the load.

Both modules, UF20.241 (24V) and UF20.481 (48V), can supply load currents of up to 20A. There is a guaranteed buffer time of 200ms (310ms typical) for 20A @ 24V and 10A @ 48V and at lower currents this time period increases. Thanks to the electrolytic capacitors, the buffer modules do not need any maintenance, are simple to operate and require no control wires. Simply connect the Buffer Module in parallel with the load and eliminate those brief interruptions.



BUFFER 24VDC WITH A SINGLE 12V BATTERY

The UB10 Series DC-UPS only needs one single 12V battery to buffer 24V power. A boost converter has been integrated to eliminate the traditional two batteries connected in series and increases the battery voltage from 12V to 24V. With the "single battery concept", not only can the battery be managed in a more accurate way but a regulated output voltage is also provided in buffer operation. These properties enable the best utilization and longest possible service life of the battery. Once the battery is exhausted, you don't need to search for a match replacement battery which can be hard to find.

A comprehensive protection package is built in to the DC-UPS to detect reverse polarities, incorrect battery voltage and high temperature shutdown during extended overloads or short circuits at the output. The UB10 Series has different external battery modules available or comes complete in a compact unit (UBC10.241) with a built-in 12V, 5Ah battery

DC-UPS

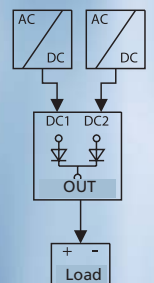


REDUNDANCY MODULES

Redundancy means "duplication for safety". In a nuclear power station there is a back-up system for each of the most important control systems; an airplane has two, even though one back-up would suffice as far as safety is concerned. In this case redundancy creates safety. Even if the effects of a failure in an industrial control system would not be that serious, redundant systems increase the system availability and prevent financial losses. For this purpose, PULS offers a variety of modules for the creation of redundant power systems. Our latest addition is the DIMENSION dual input redundancy module, YRM2.DIODE. Decoupling diodes isolate the two inputs from separate supplies and the input voltages are monitored. If a voltage falls below a specified level, the built in contacts can signal that a fault has occurred and that an investigation of the system is necessary.



1+1 Redundancy with YRM2.DIODE



C-Series

FIRST-RATE QUALITY – THE NEW DIMENSION C-SERIES

The DIMENSION C-Series power supplies are brand new and are aimed at users who get by with the basic features of a power supply and do not require the special functionality of the Q-Series. We have removed some of the high-end features but not the quality, reliability, size or power reserves. With regard to overload capability, there is a 20% power boost which may even be used for extended periods at temperatures below 45°C. No compromises were made in the limitation of the inrush current either. This undesirable effect seen in most switch-mode power supplies has been eliminated by means of a whole new circuit, which has been registered for a patent*. The C-Series are 1-Ph devices in the 80W, 120W and 240W performance categories.

For users who operate their systems in specific regions and not on a global scale, there are also single voltage units in 115V or 230V available, instead of the automatic 115/230 V range. The C-Series can save money without having to compromise on quality.

*) Published under DE 10 2006 014 297.7



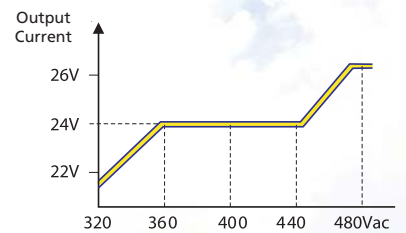
THE HIGH-PERFORMANCE DIMENSION X-SERIES - SUPPLIES MOTOR & POWER SYSTEMS

For the first time, DIMENSION X-Series power supplies provide an alternative to fully-regulated switch-mode supplies. An innovative concept for a new generation of DC voltage for three-phase power. This technology enables the smallest sizes, highest efficiencies and lower cost with only small compromises in the regulation, output ripple and buffer time.

The X-Series is typically used for all types of motors which need a high amount of energy but does not always need a precise output voltage.

Weighing only 1.4 kg, the lightweight unit provides 960W for continual operation and an additional 240W for peak loads. Along with the low weight are small dimensions which means trouble-free, easy installation on the DIN-rail.

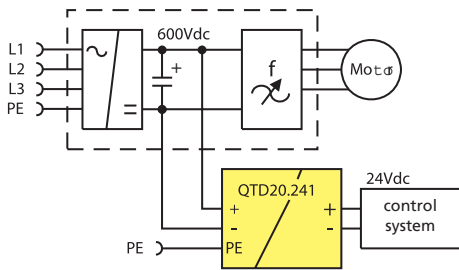
The X-Series are available with output voltages of 24V, 36V, 48V or 72VDC.



QTD20.241 – INTERMEDIATE BUS POWER SUPPLY



Intermediate buses are used in frequency converters and drives and allow access to the internal DC voltage. A normal drive system uses the mains voltage to feed the individual inverters and the connected motors. After a mains voltage failure, the motors act as generators and supplies energy back to the intermediate bus as long as the motor is spinning keeping the control systems and brakes active.



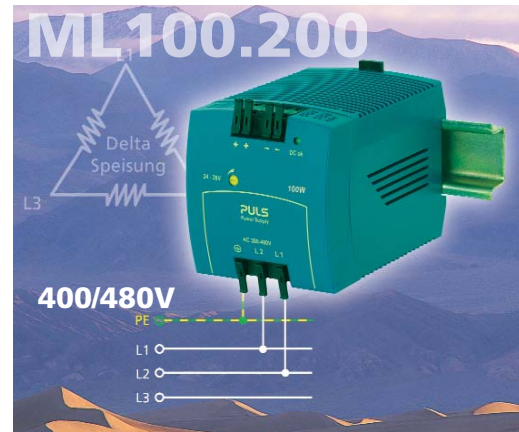
The intermediate bus usually has a high degree of interference

but the QTD20.241 DIMENSION power supply can handle these extreme conditions and is equipped with suitable filters and a rugged input stage. The QTD20 also has the safety devices necessary for a DC input integrated in the unit and is UL508 Listed.

NO NEUTRAL WIRE AVAILABLE?

There is often no neutral wire available in many machines and factory floor equipment so for the supply of control circuits you have to choose from either a three-phase power supply or a transformer power supply. The ML100.200 is now broadening the spectrum of switch-mode power supplies for use with three-phase voltage mains. Requiring only two legs of the three-phase system on the input, this unit can deliver an output power level of 100W (24V, 4.2 A) which saves space and cost due to less wiring and smaller safety devices.

The ML100.200 is cost-effective, extremely compact and light. It can be easily installed on a DIN-rail and at only 360g it is lightweight compared to AC control transformers which have been normally used to generate control voltages.



FOR SPECIAL ENVIRONMENTS – DEVICES WITH CONFORMAL COATING

In environmental conditions where you can expect to find dust, dirt, occasionally high humidity, vibrations or sudden changes in temperature, it is recommended to use a protective finish on the circuit board. This considerably improves operational safety protecting against short circuits which can be caused by foreign deposits and prevents corrosion of the circuit traces and solder connections. PULS offers a variety of products from the standard range with conformal coating. Simply ask us about them!

ML50.109	AC100-240V, 24V 2,1A
ML100.109	AC100-120/200-240V, 24V 4,2A
CS5.241-C1	AC100-120/200-240V, 24V 5A
QS10.241-C1	AC100-240V, 24V 10A
QS20.241-C1	AC100-240V, 24V 20A
SL10.309	3AC400-500V, 24V 10A
QT20.241-C1	3AC380-480V, 24V 20A

ALTERNATIVE INSTALLATION WITH OR WITHOUT THE DIN-RAIL

No DIN-rail available or is the device too deep for the cabinet? You can mount our devices directly to the back panel of the cabinet using our mounting bracket for a direct wall installation (ZM1.WALL) or the mounting brackets ZM11.SIDE to ZM15.SIDE are suitable for sideways installation.



for side mounting



for panel/wall mounting



THE GRAND OPENING IN CHOMUTOV CZECH REPUBLIC

On June 6, 2007 PULS officially opened our third Plant with a large celebration and an extensive program of supporting events. Along with PULS employees from all over the world, our customers, suppliers, members of the media and important political and economic figures also participated.



At this plant, 400 employees produce high-quality power supplies over an area of 6,200 square metres. The building itself is a showcase in the northern region of the Czech Republic. Its futuristic design is captivating and also incorporates many environmental friendly aspects. The machinery and test systems are highly automated and no expense was spared in building a factory that offers the highest level of quality.



FROST & SULLIVAN AWARD

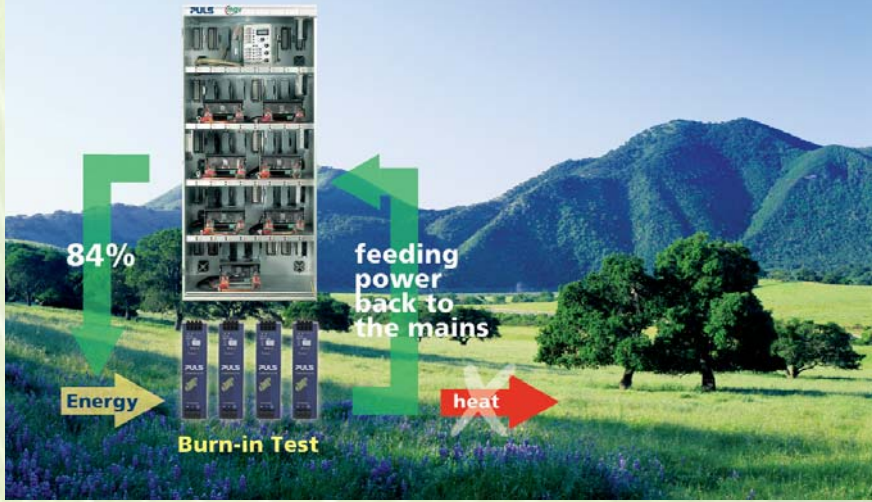
Frost & Sullivan's "Technology Leadership Award", highlights the company which is at the top of the league within its sector due to its technological expertise. PULS has been awarded this prize for continually striving to offer customers better value through innovative technology and first class products. We are extremely proud of this award and will also continue to impress the market in the future.

PULS also received the "Power Quality & Power Supplies Entrepreneurial Company of the Year" Award. Every year, this Frost & Sullivan Award is given to the company that has proven superior business services in its sector.

CHINA ISO 9001:2000 QUALIFIED

The team of auditors from TÜV Süd (technical monitoring association) from Shanghai spent two days carefully examining all processes in our plant in Suzhou. The audit was successfully completed and the company was praised for its systematic and extensive employee training scheme, which has contributed considerably to the standard of quality achieved.





ENERGY FED BACK INTO THE POWER SYSTEM INSTEAD OF THE AIR

All PULS power supplies receive a burn-in-test before delivery in order to eliminate any early failures. During these tests, the devices are operated for several hours at an increased temperature using nominal capacity. Up to now, the energy delivered by the power supply has been dissipated into useless energy quickly amounting to several hundred kilowatts which meant costly climate control were required for the production line. This naturally has an impact on the environmental balance so PULS is breaking new ground in this area. In cooperation with an external company, PULS has developed a complete system of electrical loads capable of feeding back energy which will soon to be used in our production in Chomutov. The energy supplied by those units being tested is converted and fed back into the power supply system. Losses can be reduced by 80-85% and are only caused by the efficiency level of the power supplies.

TESTING OF TWELVE DIN-RAIL POWER SUPPLIES

Power supplies are not as trivial as they might seem at first glance. The electronics project carried out by the journal "Zeitschrift Elektronik" (Electronics Journal), which closely examined twelve different DIN-rail power supplies from ten manufacturers, is proof of this.

PULS took part in the tests using the models QS10.241 and CS10.241. Both models achieved outstanding results in all categories. The areas in which exceptionally high marks were awarded include efficiency comparisons, wide temperature range, high overload reserves, compact size, excellent EMC properties, low surge currents and many others. You can download the 16-page copy of the whole electronics project at the following address:

www.pulspower.com > Products > Product News



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