PULS

DIN-Rail Power Supplies

DIMENSION Products 2008

DIMENSION

DIMENSION Technology

The DIMENSION family of power supplies distinguishes itself from all others due to significant advances in technology and the implementation of a wide variety of technical improvements.
This new generation of power supplies offers impressive features which includes; compact size, powerful, efficient, reliable, durable, highly functional with the ease of integration and operation. The units have the capability of being used worldwide.

Broad Product Offering

PULS offers you everything – low featured units with only the essential functions or a premium product for more demanding applications. There are other units with semi-regulation, buffer modules, DC-UPS's and a large assortment of accessories. Thanks to the wide variety of options, you only pay for the features that your application requires.

Reduced Space Requirement

A vast reduction in power losses along with an ingenious thermal design allows for sizes smaller than ever. The small footprint enables large space reductions, so be creative and take advantage of the new possibilities.

Generous Power Reserves

Power supplies no longer have to be oversized to accommodate peak loads of dynamic current demands. Depending on the series, PULS guarantees a Power Boost of up to 25% or a Bonus Power® of 50%. In many cases, you can rely on the next smaller unit which can save you money.

Integrated Reliability

The same high quality standards apply to all devices. The service life of the electrolytic capacitors that PULS uses is specified according to the manufacturers datasheets which is at least a minimum of 50,000h. The MTBF figure is typically higher than 700,000h and we also provide a 3 year warranty.

DIMENSION Series at a Glance

C-Series

Power supplies for general applications

For users who are looking for power supplies in a compact housing, that are easy to use and offer high reliability. Focussing only on the essential aspects achieves significant price advantages.

Q-Series

Premium class power supplies

Suitable when you need state-of the art technology and flexibility for demanding tasks. With outstanding efficiency, 50% Bonus Power and many additional features this series is the „Best in Class“.

X-Series

3-Phase semi-regulated power supplies

The attractive alternative for supplying DC motors and other non-critical loads. Small compromises in the output voltage regulation and ripple voltage allow a cost efficient design with low power losses.

U-Series

Bridging of power outages

Back-up for minutes with a DC-UPS utilising only one 12V battery or for seconds with our battery-free buffer module with no battery wearout. This prevents downtime, loss of data and long restart sequences.

Y-Series

Decoupling modules with diodes

For building redundant power supply systems or to isolate sensitive load circuits with or without alarm signals.

Z-Series

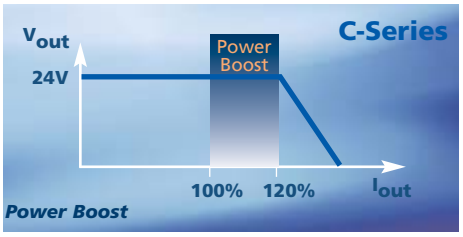
Mounting brackets

For installation into low profile cabinets or for panel installation where there is no DIN-rail available.

Power Supplies and DC/DC-Converters

The C-Series includes all the essential basic functions and the devices have a power reserve of up to 20% (except CS3). This extra current may be used continuously at temperatures up to +45°C (+113°F). In addition to the auto-select input, you can also choose a single input version of 115V or 230V which is sufficient for many applications. This option supports regional applications and offers an additional cost saving without sacrificing functionality.

- 1-Phase input
- 20% Power reserve
- -25°C (13°F) to +60°C (+140°F) without derating



20% Extra output power for dynamic loads, continuous operation is available up to 45°C.

CD-Series	DC/DC Converters	CD5 12V 8A	CD5 24V 5A	CD5 24V 5A
DC Input voltage		**DC 24V**	**DC 24V**	**DC 48V**
	Range	18-32.4Vdc	18-32.4Vdc	36-60Vdc
Output Voltage		**12-15V**	**23-28V**	**23-28V**
Output Current	continuous	8-6.4A	5-4.3A	5-4.3A
Power Reserves	min.	+20%	+20%	+20%
Efficiency	typ.	88.2%	90.3%	90.3%
Power Losses	typ.	12.4W	12.9W	12.9W
Dimensions	WxHxD in mm	32x124x102	32x124x102	32x124x117
Order Number		**CD5.121**[9]	**CD5.241**[9] **CD5.241-S1**[8][9]	**CD5.242**[9]

8) with spring-clamp connection terminals, DC-OK-relay contact and Input-low contact 9) available Q1/2008

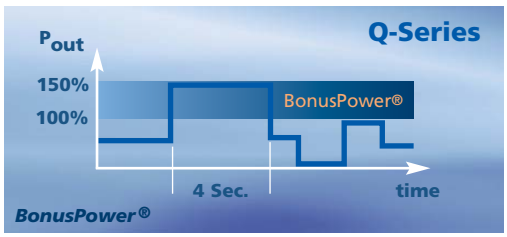
CS-Series		CS3 24V 3.3A	CS5 24V 5A	CS5 24V 5A	CS5 24V 5A	CS10 24V 10A	CS10 24V 10A	CS10 24V 10A	CS10 48V 5A
Output Voltage		**24-28V**	**24-28V**	**24-28V**	**24-28V**	**24-28V**	**24-28V**	**24-28V**	**48-52V**
Output Current	continuous	3.3-2.7A	5-4.3A	5-4.3A	5-4.3A	10-8.6A	10-8.6A	10-8.6A	5-4.6A
Output Power	continuous	80W	120W	120W	120W	240W	240W	240W	240W
Power Reserves	min.	–	+20%	+20%	+20%	+20%	+20%	+20%	+20%
Efficiency	120V typ.	88.0%	89.4%	90.0%	–	91.0%	91.3%	–	91.0%
	230V typ.	89.8%	90.2%	–	90.2%	91.6%	–	91.3%	91.6%
Power Losses	120V typ.	11.1W	14.5W	13.5W	–	23.7W	23.4W	–	23.7W
	230V typ.	9.1W	13.2W	–	13.2W	22.0W	–	23.4W	22.0W
AC Input voltage		**100-240V**	**115/230V**	**100-120V**	**200-240V**	**115/230V**	**100-120V**	**200-240V**	**115/230V**
	tolerance	±10%	-22%/+15%	±10%	±10%	-22%/+15%	±10%	±10%	-22%/+15%
		Wide Range	Auto Select	–	–	Auto Select	–	–	Auto Select
Power Factor	120/230V typ.	0.61/0.56	0.56/0.47	0.59/–	–/0.5	0.59/0.51	0.57/–	–/0.52	0.59/0.51
Hold-up Time	120/230V typ.	29/120ms	80/78ms	80ms/–	–/78ms	46/47ms	46ms/–	–/45ms	46/47ms
Inrush Current Limitation		NTC	active	NTC	NTC	active	NTC	NTC	active
EN 61000-3-2 (PFC Norm)		yes	no	not applicable	yes	*see 3*)	not applicable	no	no
Dimensions	WxHxD in mm	32x124x102	32x124x117	32x124x117	32x124x117	60x124x117	60x124x117	60x124x117	60x124x117
Order Number		**CS3.241**	**CS5.241** **CS5.241-C1**[2] **CS5.241-S1**[1]	**CS5.243**	**CS5.244**	**CS10.241** **CS10.242**[3] **CS10.241-S1**[1]	**CS10.243**	**CS10.244**	**CS10.481**

1) with spring-clamp connection terminals 2) conformal coated PC-board 3) CS10.242 fulfills EN 61000-3-2

Premium Power Supplies

The wide variety of features and an active PFC (QS5 and higher) gives you everything you could want. These high-tech-devices combine 50% power reserves, immunity against mains fluctuations between 60Vac and 300Vac (1-Ph units) with an outstanding efficiency. The uniquely designed spring-clamp terminals are easy to use while offering a reliable and long-lasting connection.

- Wide-range AC input (85-276Vac)[4]
- Wide-range DC input (88-375Vdc)[4]
- 50% Power reserve
- -25°C (13°F) to +60°C (+140°F) without derating
- Lowest inrush current surge[4]
- DC-OK relay contact (except for QS3)
- Active harmonic correction (PFC)
- Quick-connect spring-clamp terminals



150% Output power available up to 4 seconds

Q-Series		QS3 24V 3.4A	QS5 24V 5A	QS10 24V 10A	QS10 12V 15A	QS10 30V 8A	QS10 48V 5A
Output Voltage		**24-28V**	**24-28V**	**24-28V**	**12-15V**	**28-32V**	**48-56V**
Output Current	continuous	3.4-3A	5-4.5A	10-9A	15-13.5A	8.6-7.5A	5-4.3A
Output Power	continuous	80W	120W	240W	180W	240W	240W
Power Reserves	min.	+50%	+50%	+50%	+50%	+50%	+50%
Efficiency [6]	typ.	90.0%	92.7%	93.0%	91.8%	93.0%	92.0%
Power Losses [6]	typ.	9.1W	9.4W	18.1W	16.1W	18.1W	20.9W
AC Input voltage		**100-240V**	**100-240V**	**100-240V**	**100-240V**	**100-240V**	**100-240V**
	tolerance	±15%	-15%/+10%	±15%	±15%	±15%	±15%
Power Factor [7]	typ.	0.53/0.47	0.99/0.91	0.98/0.92	0.98/0.92	0.98/0.92	0.98/0.92
Hold-up Time [7]	typ.	41/174ms	34/65ms	27/28ms	32/32ms	22/23ms	27/28ms
DC Input Voltage		88-375Vdc	88-360Vdc	88-375Vdc	88-375Vdc	88-375Vdc	88-375Vdc
Dimensions	WxHxD in mm	32x124x102	40x124x117	60x124x117	60x124x117	60x124x117	60x124x117
Order Number		**QS3.241**	**QS5.241**	**QS10.241**	**QS10.121**	**QS10.301**	**QS10.481**

4) except QS20.244 5) see datasheet 6) at 230Vac, 3x400Vac or 600Vdc 7) at 120/230Vac, 3x400/480Vac or 600Vdc

Q-Series		QS20 24V 20A	QS20 24V 20A	QS20 36V 13A	QS20 48V 10A	QT20 (3 Ph) 24V 20A	QT20 (3 Ph) 36V 13A	QT20 (3 Ph) 48V 10A	QTD20 (DC) 24V 20A
Output Voltage		**24-28V**	**24-28V**	**36-42V**	**48-55V**	**24-28V**	**36-42V**	**48-55V**	**24-28V**
Output Current	continuous	20-17A	20-17A	13.3-11.4A	10-8.7A	20-17.5A	13.3-11.4A	10-8.7A	20-17.5A
Output Power	continuous	480W	480W	480W	480W	480W	480W	480W	480W
Power Reserves	min.	+50%	+50%	+50%	+50%	+50%	+50%	+50%	+25%[5]
Efficiency [6]	typ.	93.9%	94.5%	94.0%	94.3%	95.0%	94.8%	95.4%	95.0%
Power Losses [6]	typ.	31.4W	28.3W	30.6W	29.0W	25.3W	26.3W	23.1W	25.2W
AC Input voltage		**100-240V**	**200-240V**	**100-240V**	**100-240V**	**3x380-480V**	**3x380-480V**	**3x380-480V**	**–**
	tolerance	±15%	±15%	±15%	±15%	±15%	±15%	±15%	–
Power Factor [7]	typ.	0.95/0.9	– /0.5	0.95/0.9	0.95/0.9	0.94	0.94	0.94	–
Hold-up Time [7]	typ.	32/51ms	– /46ms	32/51ms	32/51ms	22ms	22ms	22ms	22ms
DC Input Voltage		88-375Vdc	–	88-375Vdc	88-375Vdc	use QTD20.241	–	–	360-900Vdc[5]
Dimensions	WxHxD in mm	82x124x117	70x124x127	82x124x127	82x124x127	65x124x127	65x124x127	65x124x127	65x124x127
Order Number		**QS20.241**	**QS20.244**	**QS20.361**	**QS20.481**	**QT20.241**	**QT20.361**	**QT20.481**	**QTD20.241**

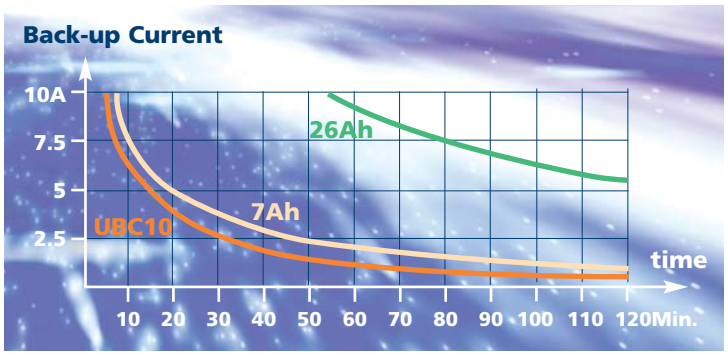
4) except QS20.244 5) see datasheet 6) at 230Vac, 3x400Vac or 600Vdc 7) at 120/230Vac, 3x400/480Vac or 600Vdc

DC-UPS

During black-outs of the mains voltage, the DC-UPS delivers with the help of a battery, the DC load current without any interruptions. A unique feature of this system is that only one 12V battery is required, as the UPS module boosts the 12V to a 24V level. This saves space and makes paired batteries unnecessary. Another unique feature is the stabilsed output voltage in buffer mode, which has no declining voltage characteristic as with many other DC-UPS systems. The UBC-Series is very compact due to the integrated battery. The UB10-Series is flexible in choosing battery sizes, since the battery is connected as an external module.

UB-Series		UB10 24V 10A	UBC10 24V 10A
Battery		**extern**	**intern (5Ah)**
Voltage Range		**24-28V**	**24-28V**
Output Current	Normal Mode	15A	15A
	Buffer Mode	10A (15A for 5s)	10A (15A for 5s)
Input Current	Charging Mode	typ. 1.1A	typ. 1.1A
Allowed Battery Sizes		3.9-27Ah (12V)	–
Dimensions	WxHxD in mm	49x124x117	123x124x119
Order Number	**DC-UPS**	**UB10.241** **UB10.245**[10)]	**UBC10.241**
Battery Modules	12V 7Ah 12V 26Ah	UZK12.071 UZK12.261	

10) with an additional 12V output



Typical back-up time

Buffer Modules

The buffer units are supplementary devices that bridge the gap of short power interruptions.
When the power supply provides a suitable voltage, the capacitors of the buffer unit will be charged. When there is a voltage failure, this stored energy is released in a regulated process to the load. The buffer modules are simply connected with two lines parallel to the load circuit.Thanks to the utilised electrolytic capacitors, the buffer units are maintenance-free and can be used even at ambient temperatures up to +70°C.

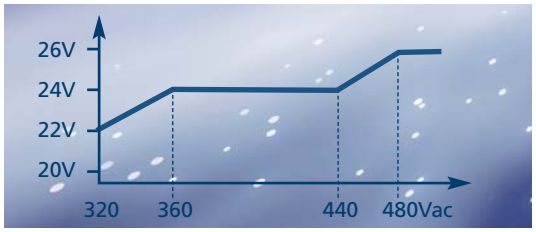
UF-Series		24V 20A	UF20 48V 20A
Voltage Range		**24-28V**	**48-56V**
Buffer Current		20A	20A
Charging Time	typ.	18s	21s
Buffer Current	min.	200ms at 20A	100ms at 20A
	typ.	310ms at 20A	150ms at 20A
	typ.	43s at 0.1A	21s at 0.1A
Dimensions	WxHxD in mm	64x124x102	64x124x102
Order Number		**UF20.241**	**UF20.481**

3-Phase Semi-Regulated Power Supplies

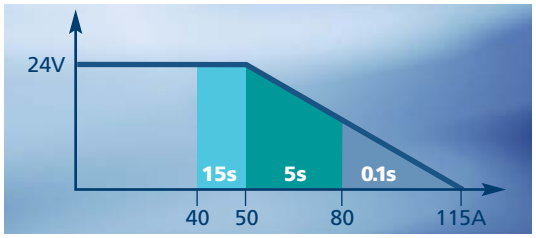
Power supplies in the Dimension X-Series include a new and innovative concept for generating a DC voltage from a three phase input. The X-Series is the ideal power supply for drive systems, DC motors, heaters and valves that do not require very high degree of regulation on the output voltage. These devices do not achieve the precision of a fully regulated switched-mode power supply but they are significantly better in output voltage regulation than transformer power supplies. These units are lightweight at only 1.4kg (3lb.) and deliver 960W of constant power and an additional 25% extra power for dynamic loads. In an overload condition the unit switches off after a certain period of time to protect the system.

- 3-Phase input
- Alternative to 50Hz transformers
- 25% Power reserve
- -25°C (-13°F) to +60°C (+140°F) without derating
- No inrush current surge
- Efficiency up to 96%
- Shutdown in case of overload
- Simple diagnostics

X-Series	3-Ph	XT40 24V 40A	XT40 36V 26A	XT40 48V 20A	XT40 72V 13A
Output Voltage		**24V**	**36V**	**48V**	**72V**
Output Current	contin.	40A	26.6A	20A	13.3A
	up to 15s	50A	33.3A	25A	16.7A
Ripple & Noise	max.	1.5Vpp	2Vpp	2.5Vpp	3Vpp
Efficiency	typ.	95.5%	95.5%	96.0%	95.5%
Power Losses	typ.	45.2W	45.2W	40.0W	45.2W
Dimensions	WxHxD in mm		96x124x157		
3x 400V Version		**XT40.241**	**XT40.361**	**XT40.481**	**XT40.721**
3x 480V Version		**XT40.242**	**XT40.362**	**XT40.482**	**XT40.722**



Regulation of output voltage



Power reserves and overload behaviour

Y Diode- and Redundancy Modules

Y-Series	Diode	YR2 2x10A	YRM2 2x10A
Voltage Range		**10-60V**	**24-60V**
Number of Inputs		2	2
Number of Outputs		1	1
Output Current	max.	25A	25A
Alarm Signal		–	relay contacts
Alarm Threshold		–	21.5V
Connection Terminals		spring terminals	screw terminals
Dimensions	WxHxD in mm	32x124x102	32x124x117
Order Number		**YR2.DIODE**	**YRM2.DIODE**

Z Accessories

	Wall/Panel Mount Bracket
ZM1.WALL	for C-, Q-, U-, Y-Series

	Side Mount Bracket
ZM11.SIDE	for CS3, CS5, QS3, YR2, YRM2
ZM12.SIDE	for QS5
ZM13.SIDE	for CS10, QS10
ZM14.SIDE	for QT20, QTD20, UF20
ZM15.SIDE	for QS20 [4)]

4) except QS20.244

PULS

Success with Innovation and Quality

Everything starts with an idea! PULS is the only organisation solely focussed on DIN-Rail power supplies which allows Bernhard Erdl and his experienced team to develop premium pioneer products. The outstanding performance of the SilverLine and MiniLine families of products has quickly made them a market standard and the DIMENSION series is poised to extend this success. In 2006 the innovative performance of PULS' new line was honoured with the prestigious Frost & Sullivan Technology Leadership Award.

DIMENSION products are unusually compact and many features were specifically developed with long service life and high reliability in mind. The compactness of the unit creates additional space, giving end users more design freedom. A well thought-out design with many unique strengths gives the DIMENSION its lead, making it a valuable component and not restricted just to technology oriented systems integrators and suppliers.

We manufacture the products with very high quality standards in our own factories in the Czech Republic. The first of these factories was opened in 1998; in 2007 an innovated modern building was added. As many of our customers are increasingly using foreign operations to manufacture their products, PULS has established subsidiaries in the key economic regions of the world to provide local service and distribution.

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www.pulspower.com

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