

The Puls logo is located in the top right corner of the page. It consists of the word "PULS" in a bold, white, sans-serif font. The background of the entire page is a dynamic, abstract image of light trails in shades of blue, teal, and yellow, creating a sense of motion and energy.

PULS

DIN RAIL POWER SUPPLIES

# AT A GLANCE

# PULS – The Technology Leader

## Reliable and Future-Proof Partner

PULS is the only company worldwide which focuses fully on DIN rail power supplies. As a result, our experienced team continues to pioneer the technological advancements of DIN rail power supplies making us the recognized technology leader in the industry who often also sets the market's standards.

All PULS power supplies are developed in Germany and the entire value chain is under our direct control. Both our factories, located in Czech Republic and China, are identically equipped, organized and managed - and in our customer audits, their above-average standard is emphasized over and over again. Our offering has proven to be especially attractive as a result of our combination of efficient, mid-sized structures and direct global support for our customers.

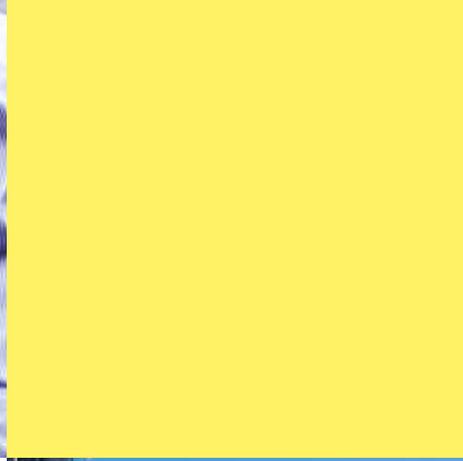
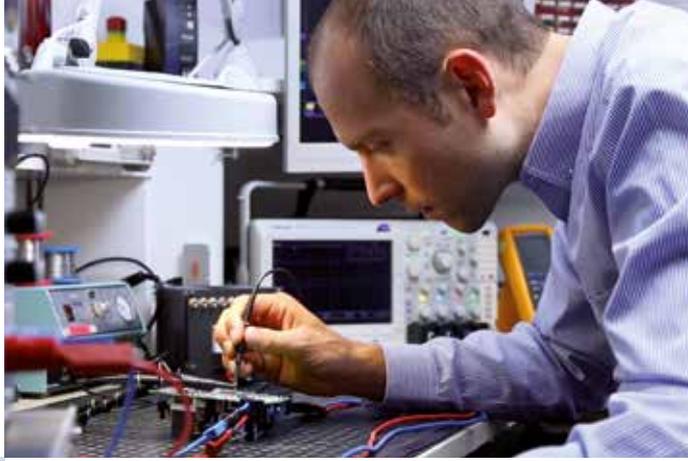
PULS has produced DIN rail power supplies since 1991 but from 1997 onwards we have focused our efforts exclusively in this field. Our major successes started off with the SilverLine range and has since continued and flourished with the DIMENSION, PIANO and MiniLine families. Our broad product portfolio is available directly from stock and offers a highly credible solution for virtually all applications. If our standard units do not fulfill the specific requirements for your particular application, we can offer a standard unit modification or - together with our subsidiary MGV - a Value-Add system solution in order to fit your individual needs.

The easy, uncomplicated installation of our products is important to us. Because of this, we pay great attention to providing a simple assembly and wiring-in process as well as extensive and informative data sheets and application notes. Our sales force receives ongoing technical training and our highly competent application specialists are available to you for further consultation.

The best enterprises and companies all over the world put their trust in our team and in our products. You too?

Yours  
Bernhard Erdl  
Founder and CEO





# Dependability

- High MTBF and long lifetime
- Outstanding energy efficiency
- Cool-Design for low temperatures
- Production-friendly setup
- Long product availability



# Products

- At the forefront of technology
- Unique efficiency approx. 95%
- Small and lightweight
- High peak output current
- Easy to use
- Wide product portfolio



# Focus

- All resources concentrated on DIN rail power supplies
- High-performance organisation structure
- Decades of competence



# Portfolio

## Power Supplies

### MiniLine



### PIANO



#### MiniLine ML-Series Compact and Installed in Seconds

These units, in their rugged plastic housing are highly efficient, compact, reliable and can be installed in seconds.

- 1- or 2-phase input
- 15-100W
- Several models with DC input
- Spring clamp terminals or screw terminals

#### PIANO PIC-Series Simply Good

For applications where basic functionality is requested. High reliability at a very attractive price.

- 1-phase input
- 120W and 240W
- Best-in-Class lifetime
- Robust plastic housing
- Large screw connection terminals
- DC-OK relay contact

## Supplementary Units

#### PISA-Series Protection Modules

The new and innovative solution to distribute and protect load circuits.

Low-price, space-saving alternative to electronic fuses.

#### Y-Series Redundancy Modules

For building redundant power supply systems or to isolate sensitive circuits. Increases the reliability and availability of the DC voltage with minimal power losses and voltage drops.

#### U-Series DC-UPS Systems

These modules improve safety and prevent downtime, loss of data and long restart sequences. If seconds, minutes, or hours of backup time are required, PULS Buffer Modules or DC-UPS controllers can provide a solution.

#### Z-Series Mounting Brackets

Accessories suitable for wall or panel mounting and panel brackets for side mounting.

# DIMENSION



## **DIMENSION Q-Series Premium Class Power Supplies**

Suitable when you need state-of-the-art technology and flexibility for demanding tasks. With high efficiencies, minimal losses, a compact housing and many other features, this series is Best-in-Class.

- 1- or 3-phase Input
- 80-960W
- 50% BonusPower
- AC and DC wide range input
- Low inrush current surge
- DC-OK relay contact
- Quick-connect spring-clamp terminals
- Active power factor correction (PFC)
- Comprehensive approval package

## **DIMENSION C-Series Effective Solution in a Compact Design**

Power Supplies for users looking for highly reliable power supplies in a compact housing. Focusing only on the essential features of the premium class achieves advantages in price.

- 1- / 2- / 3-phase input
- 80-480W
- 20% PowerBoost
- Low inrush current surge
- Large screw connection terminals

## **DIMENSION X-Series For Motors and Heavy Loads**

Efficient and cost saving 960W 3-phase power supplies with semi-regulation.



## Custom Built Solutions

### **Modifications and Value-Add System Solutions**

For special customer requests which may not be covered by standard products, PULS and MGV are offering solutions which combine modern technology with custom-designed needs.

# New Products

# PIANO

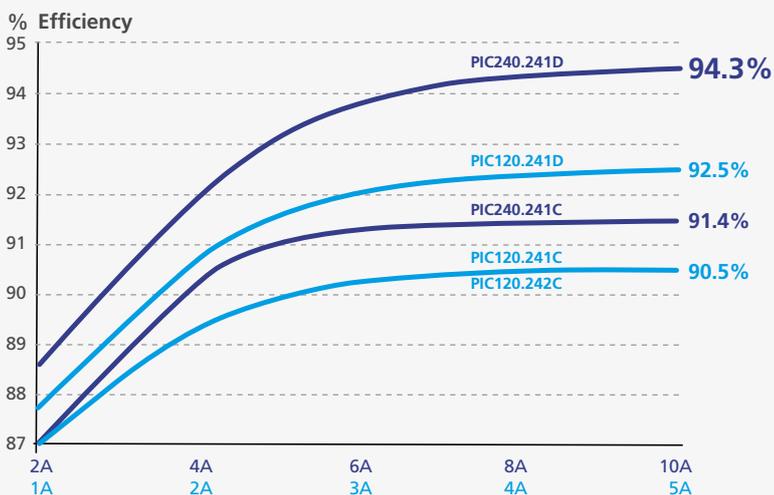
## Simply Good

120W/240W 1-phase power supplies

High Reliability, Lower in Price

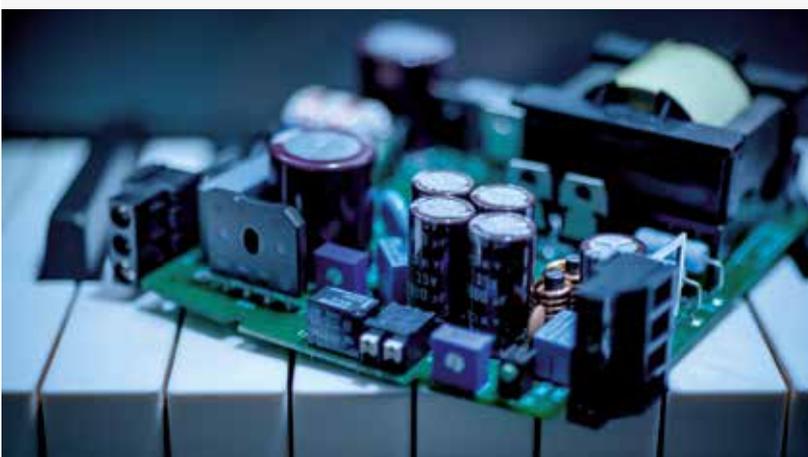


- Versions: 24V / 5A, 24V / 10A
- Best-in-Class reliability
- Best-in-Class lifetime
- Basic functionality
- Large, rugged screw terminals
- Full performance from -10°C to +55°C
- PIC240.241D: -25°C to +55°C
- Radio interference Class B
- DC-OK relay contact



### Best-in-Class Efficiency

At 230V, +25°C and full load



### The Single Board Concept

High quality manufacturing and lower production costs mean price savings for the user.

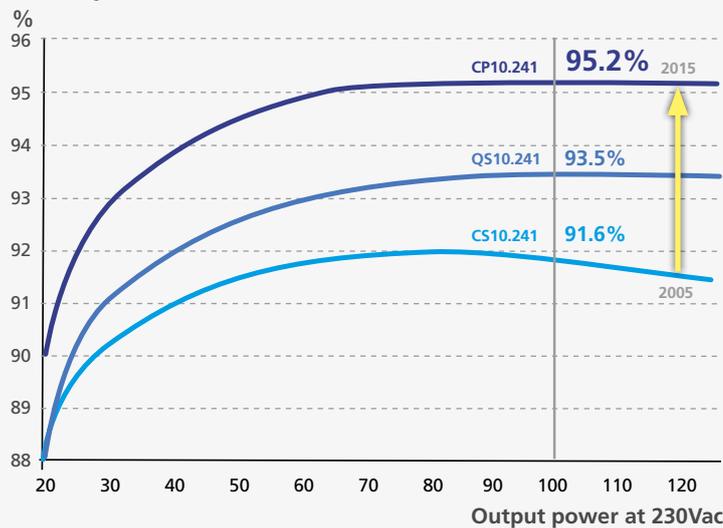
# CP10

## DIMENSION CP10

240W 1-phase power supplies  
High-End Innovation



### Efficiency



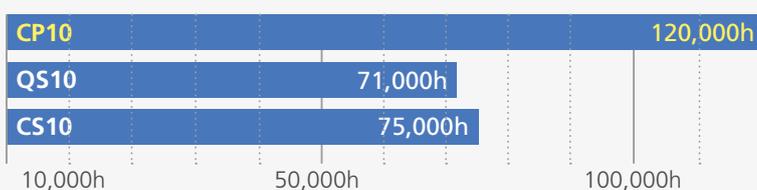
### 95,2% World Record in Efficiency

An efficiency level of 94% used to be seen as state-of-the-art. Through the replacement of traditional silicon with the new wide-bandgap material silicon carbide with a sophisticated LLC converter topology we now reach a record efficiency of 95,2%. This means a reduction of losses by 46% in comparison to CS10.

### Versions:

- 24V 10A
- 48V 5.4A
- 12V 16A

### Lifetime



The CP10 reaches a **minimum lifetime of 120,000 hours**, measured at +40°C ambient temperature and full load. Thus it is far above the usual market values.

### Size 2005 → 2015



### 39mm instead of 60mm!

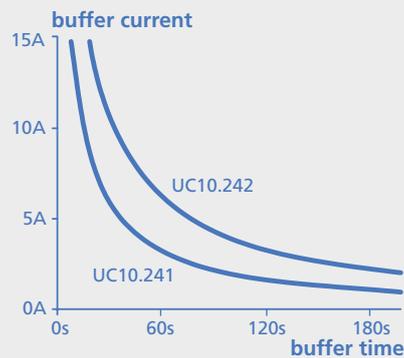
Due to an innovative circuit topology and a sophisticated thermal design the width has been reduced from previous 60mm to 39mm.

# New Products



Control unit  
with integrated  
energy storage

## UC10



## DC-UPS without Batteries 24V, 15A

- Built-in double layer capacitors as energy source – no replacement needed
- Operational lifetime expectancy typically over 10 years
- No generation of hydrogen as with VRLA batteries. Installation possible in enclosed control cabinets.
- Wide temperature range from -40°C to +60°C
- Supports PC-mode function for safe restart of PCs after power failure
- Two versions with different storage capacities – 6kWh and 12kWh



Control unit

## UB20

## DC-UPS, adjustable Voltage 24V, 20A / 30A

### 1-Battery-Concept

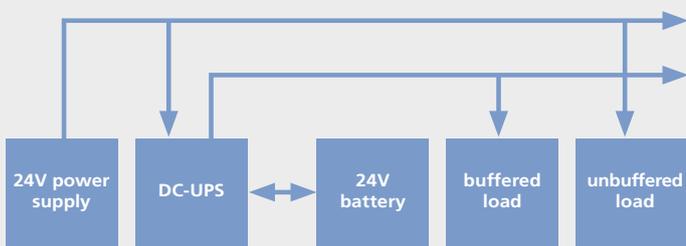
For longer battery lifetime: Each 12V battery is charged and monitored separately.

### Regulated Output Voltage

- Stable output voltage independent of the battery voltage
- Adjustable output voltage from 22.5V to 26V for battery mode

### Additional Features

- 50% BonusPower: 30A for max. 4s
- One control unit can be used for battery sizes from 3.9Ah to 150Ah
- High breaking capacity for branch protectors or for the startup of motors
- Smart battery diagnostic and monitoring functions



Battery module  
UZK24.121



QS5.241-60 QS10.241-60 CPS20.241-60



TESTED



## DIN Rail Power Supplies for Rail Vehicles

- Tested according to:
  - EN 50155 **Railways Applications – Electronic Equipment used on Rolling Stock** classified according to T3, TX, C2 and S2
  - EN 61373 **Rolling Stock Equipment – Shock and Vibration Tests** Cat. 1, Class B
  - EN 50121-3-2 **Electromagnetic Compatibility – Rolling Stock – Apparatus**
  - EN 45545-2 **Fire Protection on Railway Vehicle** classified according to Hazard Level HL3
- Input voltage: DC 110V (-30%/+40%), 0.1s 66Vdc (-40%)
- 100% higher buffer time than required in the railway standard EN 50155 (S2)
- All units with conformal coated circuit boards

	Power	DC-Input	AC-Input	EN 50155	Fire protection EN 45545-1	Conformal coated
QS5.241-60	100W	x		x	x	x
QS10.241-60	200W	x		x	x	x
CPS20.241-60	400W	x		x	x	x
QS10.241-C1	240W		x	x	x	x
CPS20.241-C1	480W		x	x	x	x
QT20.241-C1	480W		x	x	x	x

# Overview 1

## Power Supplies

### 100-240V AC/DC-Converters

Output		Order number	Output Range	Power	Width in mm	Input	Special Features
<b>5V</b>	3A	ML15.051	5-5.5Vdc	15W	22.5	AC 100-240V	
	5A	ML30.101	5-5.5Vdc	25W	45.0	AC 100-240V	
<b>12V</b>	1.3A	ML15.121	12-15Vdc	15W	22.5	AC 100-240V	
	2.5A	ML30.102	10-12Vdc	30W	45.0	AC 100-240V	very low output noise
	4.2A	ML50.102	12-15Vdc	50W	45.0	AC 100-240V	
	4.5A	ML60.121	12-15Vdc	54W	45.0	AC 100-240V	
	4.5A	ML60.122	12-15Vdc	54W	45.0	AC 100-240V	-40°C operation
	7.5A	ML100.102	12-15Vdc	90W	72.5	AC 100-120 / 220-240V	
	15A	QS10.121	12-15Vdc	180W	60.0	AC 100-240V	
	16A	CP10.121	12-15Vdc	192W	39.0	AC 100-240V	
	30A	CPS20.121	12-15Vdc	405W	65.0	AC 100-240V	
<b>±12V</b>	2.5A	ML30.106	±12-15Vdc	36W	45.0	AC 100-240V	dual-output voltage
<b>24V</b>	0.63A	ML15.241	24-28Vdc	15W	22.5	AC 100-240V	
	1.3A	ML30.100	24-28Vdc	30W	45.0	AC 100-240V	
	1.3A	ML30.241	24-28Vdc	30W	22.5	AC 100-240V	
	2.1A	ML50.100	24-28Vdc	50W	45.0	AC 100-240V	
	2.1A	ML50.101	24-28Vdc	50W	45.0	AC 100-240V	optimised for parallel use
	2.1A	ML50.109	24-28Vdc	50W	45.0	AC 100-240V	conformal coated
	2.1A	ML50.111	24-28Vdc	50W	45.0	AC 100-240V	with plug connector
	2.5A	ML60.241	24-28Vdc	60W	45.0	AC 100-240V	
	2.5A	ML60.242	24-28Vdc	60W	45.0	AC 100-240V	-40°C operation
	3A	ML70.100	24-28Vdc	72W	45.0	AC 100-120 / 220-240V	
	3.3A	CS3.241	24-28Vdc	80W	32.0	AC 100-240V	
	3.4A	QS3.241	24-28Vdc	80W	32.0	AC 100-240V	
	3.8A	QS5.DNET	24Vdc	91W	40.0	AC 100-240V	DeviceNet® approved
	3.9A	ML95.100	24-28Vdc	95W	72.5	AC 100-120 / 220-240V	NEC CLASS 2
	4.2A	ML100.100	24-28Vdc	100W	72.5	AC 100-120 / 220-240V	
	4.2A	ML100.109	24-28Vdc	100W	72.5	AC 100-120 / 220-240V	conformal coated
	5A	CS5.241	24-28Vdc	120W	32.0	AC 100-120 / 200-240V	
	5A	CS5.241-C1	24-28Vdc	120W	32.0	AC 100-120 / 200-240V	conformal coated
	5A	CS5.241-S1	24-28Vdc	120W	32.0	AC 100-120 / 200-240V	spring terminals
	5A	CS5.243	24-28Vdc	120W	32.0	AC 100-120V	
	5A	CS5.244	24-28Vdc	120W	32.0	AC 200-240V	
	5A	PIC120.241C	24-28Vdc	120W	39.0	AC 200-240V	DC-OK relay contacts
	5A	PIC120.241D	24-28Vdc	120W	39.0	AC 100-120/ 200-240V	DC-OK relay contacts
	5A	PIC120.242C	24-28Vdc	120W	49.0	AC 200-240V	
	5A	QS5.241	24-28Vdc	120W	40.0	AC 100-240V	
	5A	QS5.241-A1	24-28Vdc	120W	40.0	AC 100-240V	conformal coated, ATEX
	8A	QS10.DNET	24-24.5Vdc	192W	60.0	AC 100-240V	DeviceNet® approved

Output		Order number	Output Range	Power	Width in mm	Input	Special Features
<b>24V</b>	10A	CS10.241	24-28Vdc	240W	60.0	AC 100-120 / 200-240V	
	10A	CS10.241-S1	24-28Vdc	240W	60.0	AC 100-120 / 200-240V	spring-clamp terminals
	10A	CS10.242	24-28Vdc	240W	60.0	AC 100-120 / 200-240V	passive PFC
	10A	CS10.243	24-28Vdc	240W	60.0	AC 100-120V	
	10A	CS10.244	24-28Vdc	240W	60.0	AC 200-240V	
	10A	CP10.241	24-28Vdc	240W	39.0	AC 100-240V	
	10A	CP10.241-S1	24-28Vdc	240W	39.0	AC 100-240V	spring-clamp terminals
	10A	CP10.242	24-28Vdc	240W	39.0	AC 100-240V	enhanced DC input
	10A	PIC240.241C	24-28Vdc	240W	49.0	AC 200-240V	DC-OK relay contacts
	10A	PIC240.241D	24-28Vdc	240W	49.0	AC 100-240V	DC-OK relay contacts
	10A	QS10.241	24-28Vdc	240W	60.0	AC 100-240V	
	10A	QS10.241-A1	24-28Vdc	240W	60.0	AC 100-240V	conformal coated, ATEX
	10A	QS10.241-C1	24-28Vdc	240W	60.0	AC 100-240V	conformal coated
	10A	QS10.241-D1	24-28Vdc	240W	60.0	AC 100-240V	enhanced DC input
	20A	CPS20.241	24-28Vdc	480W	65.0	AC 100-240V	
	20A	CPS20.241-C1	24-28Vdc	480W	65.0	AC 100-240V	conformal coated
	20A	QS20.241	24-28Vdc	480W	82.0	AC 100-240V	
	20A	QS20.241-A1	24-28Vdc	480W	82.0	AC 100-240V	conformal coated, ATEX
	20A	QS20.241-C1	24-28Vdc	480W	82.0	AC 100-240V	conformal coated
	20A	QS20.244	24-28Vdc	480W	70.0	AC 200-240V	
40A	QS40.241	24-28Vdc	960W	125.0	AC 100-240V		
40A	QS40.244	24-28Vdc	960W	125.0	AC 200-240V		
<b>30V</b>	8A	QS10.301	28-32Vdc	240W	60.0	AC 100-240V	
<b>36V</b>	13.3A	CPS20.361	36-42Vdc	480W	65.0	AC 100-240V	
	13.3A	QS20.361	36-42Vdc	480W	82.0	AC 100-240V	
	26.7A	QS40.361	36-42Vdc	960W	125.0	AC 100-240V	
<b>48V</b>	1.1A	ML50.105	48-56Vdc	50W	45.0	AC 100-240V	
	2.1A	ML100.105	48-56Vdc	100W	72.5	AC 100-120 / 220-240V	
	5A	CS10.481	48-52Vdc	240W	60.0	AC 100-120 / 200-240V	
	5A	QS10.481	48-56Vdc	240W	60.0	AC 100-240V	
	5A	QS10.481-D1	48-56Vdc	240W	60.0	AC 100-240V	enhanced DC input
	5.4A	CP10.481	48-56Vdc	259W	39.0	AC 100-240V	
	10A	CPS20.481	48-56Vdc	480W	65.0	AC 100-240V	
	10A	QS20.481	48-55Vdc	480W	82.0	AC 100-240V	
	20A	QS40.481	48-54Vdc	960W	125.0	AC 100-240V	
	20A	QS40.484	48-54Vdc	960W	125.0	AC 200-240V	
<b>360-460V</b>	2.5A	PAS395	360-460Vdc	1025W	310.0	AC 220-240V	charger for electrochem. double-layer capacitors

# Overview 2

## Power Supplies

### 380-480V AC/DC-Converters

Output		Order Number	Output Range	Power	Width in mm	Input	Special Features
12V	8A	CT5.121	12-15Vdc	96W	40.0	2AC 380-480V	
24V	3.75A	ML90.200	24-28Vdc	90W	72.5	2AC 380-480V	NEC CLASS 2
	4.2A	ML100.200	24-28Vdc	100W	72.5	2AC 380-480V	
	5A	CT5.241	24-28Vdc	120W	40.0	2AC 380-480V	
	10A	CT10.241	24-28Vdc	240W	62.0	3AC 380-480V	
	20A	QT20.241	24-28Vdc	480W	65.0	3AC 380-480V	
	20A	QT20.241-C1	24-28Vdc	480W	65.0	3AC 380-480V	conformal coated
	40A	QT40.241	24-28Vdc	960W	110.0	3AC 380-480V	
	40A	XT40.241	24Vdc	960W	96.0	3AC 400V	semi-regulated
	40A	XT40.242	24Vdc	960W	96.0	3AC 480V	semi-regulated
36V	13.3A	QT20.361	36-42Vdc	480W	65.0	3AC 380-480V	
	26.6A	XT40.361	36Vdc	960W	96.0	3AC 400V	semi-regulated
	26.6A	XT40.362	36Vdc	960W	96.0	3AC 480V	semi-regulated
	26.7A	QT40.361	36-42Vdc	960W	110.0	3AC 380-480V	
48V	5A	CT10.481	48-56Vdc	240W	62.0	3AC 380-480V	
	10A	QT20.481	48-55Vdc	480W	65.0	3AC 380-480V	
	20A	QT40.481	48-54Vdc	960W	110.0	3AC 380-480V	
	20A	XT40.481	48Vdc	960W	96.0	3AC 400V	semi-regulated
	20A	XT40.482	48Vdc	960W	96.0	3AC 480V	semi-regulated
72V	13.3A	XT40.721	72Vdc	960W	96.0	3AC 400V	semi-regulated
	13.3A	XT40.722	72Vdc	960W	96.0	3AC 480V	semi-regulated

### DC/DC-Converters

Output		Order Number	Output Range	Power	Width in mm	Eingang	Special Features
5V	8A	SLD2.100	5-5.5Vdc	40W	49.0	DC 24V	
12V	8A	CD5.121	12-15Vdc	96W	32.0	DC 24V	
24V	3.8A	CD5.241-L1	24Vdc	92W	32.0	DC 24V	NEC CLASS 2
	4A	CD5.243	23-28Vdc	96W	32.0	DC 12V	
	4.2A	QS5.241-60	24-28Vdc	100W	40.0	DC 110	railway applications
	5A	CD5.241	23-28Vdc	120W	32.0	DC 24V	
	5A	CD5.241-S1	24-28Vdc	120W	32.0	DC 24V	with signal contacts
	5A	CD5.242	24-28Vdc	120W	32.0	DC 48V	
	8.3A	QS10.241-60	24-28Vdc	200W	60.0	DC 110	railway applications
	10A	CP10.242	24-28Vdc	240W	39.0	DC 110-300V	
	10A	QS10.241-D1	24-28Vdc	240W	60.0	DC 110-300V	
	16.3A	CPS20.241-60	24.5Vdc	400W	65.0	DC 110	railway applications
	20A	CPS20.241-D1	24-28Vdc	480W	65.0	DC 110-300V	
20A	QTD20.241	24-28Vdc	480W	65.0	DC 600V	for intermediate DC bus	
30.6V	4A	SLAD4.100	30.6Vdc	120W	40.0	DC 24V	AS-Interface®
48V	5A	QS10.481-D1	48-56Vdc	240W	60.0	DC 110-300V	
	10A	CPS20.481-D1	48-56Vdc	480W	65.0	DC 110-300V	

For more power supplies with DC-input see overview on page 29.

## Conformal Coated Power Supplies

Output		Order Number	Output Range	Power	Width in mm	Input	Special Features
24V	2.1A	ML50.109	24-28Vdc	50W	45.0	AC 100-240V	
	4.2A	ML100.109	24-28Vdc	100W	72.5	AC 100-120 / 220-240V	
	5A	CS5.241-C1	24-28Vdc	120W	32.0	AC 100-120 / 200-240V	
	5A	QS5.241-A1	24-28Vdc	120W	40.0	AC 100-240V	ATEX
	10A	QS10.241-C1	24-28Vdc	240W	60.0	AC 100-240V	
	10A	QS10.241-A1	24-28Vdc	240W	60.0	AC 100-240V	ATEX
	20A	CPS20.241-C1	24-28Vdc	480W	82.0	AC 100-240V	
	20A	QS20.241-A1	24-28Vdc	480W	82.0	AC 100-240V	ATEX
	20A	QS20.241-C1	24-28Vdc	480W	82.0	AC 100-240V	
	20A	QT20.241-C1	24-28Vdc	480W	65.0	3AC 380-480V	

## AS-Interface® Power Supplies

Output		Order Number	Output Range	Power	Width in mm	Input	Special Features
30V	2.8A	SLA3.100	30.5Vdc	85W	49.0	AC 100-120 / 220-240V	
	4A	SLA4.100	30.5Vdc	120W	73.0	AC 100-120 / 220-240V	
	4A	SLAD4.100	30.5Vdc	120W	40.0	DC 24V	DC/DC-converter
	8A	SLA8.100	30.5Vdc	240W	91.0	AC 100-120 / 220-240V	
	8A	SLA8.300	30.5Vdc	240W	129.0	3AC 400-500V	

## DeviceNet® Power Supplies

Output		Order Number	Output Range	Power	Width in mm	Input	Special Features
24V	3.8A	QS5.DNET	24Vdc	91W	40.0	AC 100-240V	NEC-CLASS-2
	8A	QS10.DNET	24-24.5Vdc	192W	60.0	AC 100-240V	NEC-CLASS-1

## Mounting Brackets

Order Number	Description
ZM1 - ZM3.WALL, ZM1.UBC10	mounting brackets for a direct wall or panel mounting without a DIN rail
ZM11.SIDE - ZM15.SIDE	brackets for sideways installation with or without a DIN rail

## Custom Built Solutions

Order Number	Description
Modifications	modified standard units – examples
Value-Add System Solutions	standard units with customised elements

# Overview 3

## Redundancy, Buffering, Protection

### Redundancy Modules

Order Number	Input / Output	Width in mm	Special Features
MLY10.241	12-48V, 2x5A / 10A	45	dual-input diode redundancy module
MLY02.100	12-48V, 2x5A / 10A	45	dual-input diode redundancy module
YR2.DIODE	12-48V, 2x10A / 20A	32	dual-input diode redundancy module
YRM2.DIODE	24-48V, 2x10A / 20A	32	dual-input diode redundancy module with signal contacts
YR40.241	24-28V, 2x20A / 40A	36	dual-input MOSFET redundancy module, for all power supplies
YR40.242	12-28V, 2x20A / 40A	36	dual-input MOSFET redundancy module, not for QT20, QTD20
YR40.245	12-28V, 1x40A / 40A	46	single-input MOSFET redundancy module, not for QT40
YR40.482	24-56V, 2x20A / 40A	46	dual-input MOSFET redundancy module, for all power supplies
YR80.241	24-28V, 2x40A / 80A	46	dual-input MOSFET redundancy module, for all power supplies
YR80.242	12-28V, 2x40A / 80A	46	dual-input MOSFET redundancy module, not for QT40

### DC-UPS and Batteries

Order Number	Output	Width in mm	Special Features
UB10.241	24V, 10A	49	DC-UPS control unit for external batteries 3.9-40Ah
UB10.242	24V, 10A	49	DC-UPS control unit for external batteries 17-130Ah
UB10.245	24V, 10A	49	DC-UPS with additional 12V output
UB20.241	24V, 20A	46	DC-UPS control unit for external batteries 3.9-130Ah
UBC10.241	24V, 10A	123	DC-UPS with integrated 5Ah battery
UBC10.241-N1	24V, 10A	123	same as UBC10.241, but battery not assembled

### DC-UPS and Buffer Modules with capacitor storage

Order Number	Ratings	Width in mm	Special Features
UC10.241	24V, 15A, 6kWs	126	DC-UPS with capacitor storage, typ. 9s at 15A
UC10.242	24V, 15A, 12kWs	198	DC-UPS with capacitor storage, typ. 18s at 15A
UF20.241	24V, 20A, 0.2kWs	64	electrolytic capacitor buffer module, typ. 310ms at 20A
UF20.481	48V, 20A, 0.2kWs	64	electrolytic capacitor buffer module, typ. 150ms at 20A

### Protection Modules

Order Number	Width in mm	Special Features
PISA11.401	45	4-channel protection module; Outputs: 4x1A
PISA11.402	45	4-channel protection module; Outputs: 4x2A
PISA11.403	45	4-channel protection module; Outputs: 4x3A
PISA11.404	45	4-channel protection module; Outputs: 4x4A
PISA11.406	45	4-channel protection module; Outputs: 4x6A
PISA11.410	45	4-channel protection module; Outputs: 4x10A
PISA11.203206	45	4-channel protection module; Outputs: 2x3A and 2x6A
PISA11.206212	45	4-channel protection module; Outputs: 2x6A and 2x12A
PISA11.CLASS2	45	4-channel protection module; Outputs: 4x NEC CLASS 2 listed as „Limited Power Source“, < 100VA per channel

# Custom Built Solutions

## Modifications

PULS and MGV are developing customised solutions for special requirements, which are not covered by standard power supplies.

You can use and benefit from the know-how of our development teams.



### DC/DC-converter for solar applications

- Input: 240-460Vdc
- Output: 24V
- Power: 480W



### DC/DC-converter

- Input: 48-72Vdc
- Output: 23-25Vdc / 3.1A / 72W
- Operational temperature: -40 to +70°C
- DC-OK signal



### DC/DC-converter with high DC-input voltage

- Input: 360-480Vdc
- Output: 24Vdc / 20A
- Operational temperature: -40 to +70°C
- Transient resistant input
- Signal contacts
- Return voltage immunity

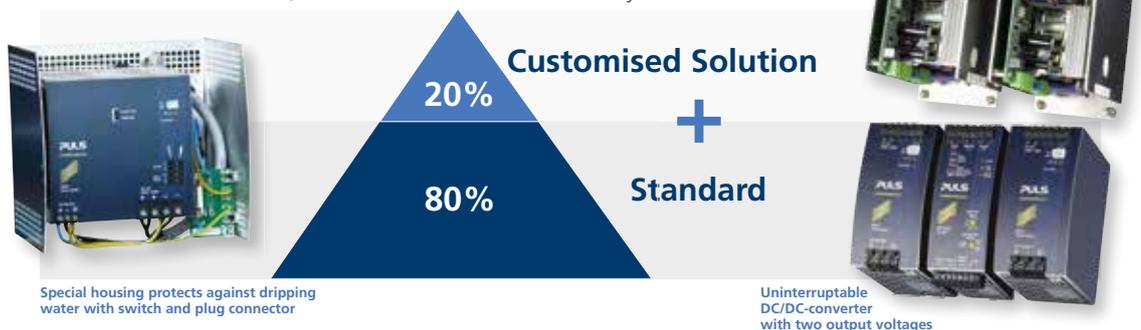


### Power Supply with two output voltages and fan

- Input: 3AC 400-480V
- Output: 162Vdc and 300Vdc
- Optimised for dynamic loads
- High lifetime expectation at +60°C environmental temperature because of integrated fan
- Communication interface

## Value-Add System Solutions

PULS and MGV are offering services to combine standard units with an assembly and wiring package to provide a complete power supply system. The purpose is to create reliable, customised solutions based on current proven production units. Because of the high percentage of existing standard units, you will receive a cost-effective, customised solution in a timely manner.



## PULS GERMANY

### HEADQUARTERS

PULS GmbH  
 Arabellastrasse 15  
 81925 München  
 Tel. +49 89 9278-0  
 info@pulspower.com  
 www.pulspower.com

### DELIVERY ADDRESS

PULS GmbH Return Center  
 c/o Kühne & Nagel  
 Obere Hauptstr. 228-230, Tor 18  
 09228 Chemnitz

## PULS WORLDWIDE

**Austria**  
 PULS Österreich  
 Bernreit 26  
 A-3163 Rohrbach  
 Tel. +43 27 64 32 13  
 otto.schreiner@puls-power.at  
 www.pulspower.at

**China**  
 PULS Trading (Suzhou) Co., Ltd.  
 No. 1 Rui' en Lane  
 Xingpu Road  
 215126 Suzhou Industrial Park  
 P.R. China  
 Tel +86 512 62881820  
 contact-sales-suzhou@pulspower.com  
 www.pulspower.cn

**France**  
 PULS SARL  
 24, Chemin des Verrières  
 Le Buclay  
 69260 Charbonnières-les-Bains  
 Tel. +33 478 66 89 41  
 puls@puls-power.fr  
 www.pulspower.fr

**North & South America**  
 PULS, L.P.  
 2560 Foxfield Road, Suite 280  
 St. Charles, IL 60174  
 Tel. +1 630 587 9780  
 info@puls-us.com  
 www.pulspower.us

**UK United Kingdom**  
 PULS UK Ltd.  
 Cranfield Innovation Centre  
 University Way  
 Cranfield  
 Bedfordshire, MK43 0BT  
 Tel. +44 1525 841001  
 sales@puls.co.uk  
 www.pulspower.com

**Switzerland**  
 PULS Electronic GmbH  
 Lindenrain 2  
 CH-5108 Oberflachs  
 Tel. +41 56 450 18 10  
 info@puls-power.ch  
 www.puls-power.ch

**Singapore**  
 PULS Pte Ltd.  
 1 Yishun Industrial Street 1  
 A'Posh Bizhub, #07-33  
 768160 Singapore  
 Tel. +65 6684 2310  
 contact-sg@pulspower.com  
 www.pulspower.sg

**Service for:**  
 Hong Kong, Indonesia,  
 India Subcontinent,  
 Japan, Malaysia, Middle East,  
 Philippines, South Korea,  
 Taiwan, Thailand,  
 Vietnam

## PULS PARTNERS

**Australia**  
 Control Logic Pty. Ltd.  
 Tel. +61 7 3623 1212  
 sales@control-logic.com.au  
 www.control-logic.com.au

**Belgium**  
 Elipse nv  
 Tel. +32 3 354 5180  
 info@elipse.eu  
 www.elipse.eu

**Czech Republic**  
 OEM Automatic, spol. s.r.o.  
 Tel. +420 241 484 940  
 info@oem-automatic.cz  
 www.oem-automatic.cz

**Denmark**  
 OEM Automatic Klitso A/S  
 Tel. +45 70 10 64 00  
 info@oemklitso.dk  
 www.oemklitso.dk

**Estonia**  
 OEM EESTI OÜ  
 Tel. +372 5059849  
 info@oem.ee  
 www.oem.ee

**Finland**  
 OEM Finland Oy  
 Tel. +358 207 499 499  
 info@oem.fi  
 www.oem.fi

**Hungary**  
 OEM Automatic Kft.  
 Tel. +36 23 880 895  
 info@oemautomatic.hu  
 www.oemautomatic.hu

**Iceland**  
 Samey ehf.  
 Tel. +354 51052-00  
 sala@samey.is  
 www.samey.is

**Italy**  
 Piero Bersanini S.p.A.  
 Tel. +39 02 268531  
 commerciale@  
 pierobersanini.com  
 www.pierobersanini.com

**Latvia**  
 OEM Automatic SIA  
 Tel. +372 5295114  
 info@oemautomatic.lv  
 www.oemautomatic.lv

**Luxembourg**  
 Elipse nv  
 Tel. +32 3 354 51 80  
 info@elipse.eu  
 www.elipse.eu

**Lithuania**  
 OEM Automatic UAB  
 Tel. +370 640 15878  
 info@oem.lt  
 www.oem.lt

**Netherlands**  
 Elipse nv  
 Tel. +32 3 354 51 80  
 info@elipse.eu  
 www.elipse.eu

**Norway**  
 OEM Automatic AS  
 Tel. +47 32 21 05-05  
 post@oem.no  
 www.oem.no

**Poland**  
 OEM Automatic Sp.z o.o.  
 Tel. +48 22 86327-22  
 info@pl.oem.se  
 www.oemautomatic.pl

**Portugal**  
 Electrónica Olfer, S.L.  
 Tel. +351 234 198 052  
 info@olfer.com  
 www.olfer.com

**Russia**  
 Alfa Engineering LLC  
 Tel. +7 495 2551614  
 info@alfai.ru  
 www.alfai.ru

**Russia**  
 Intelisys LLC  
 Tel. +7 916 346 74 32  
 info@intelisys.ru  
 www.intelisys.ru

**Slovakia**  
 OEM Automatic, s.r.o.  
 Tel: +421 332 400 160  
 info@oem-automatic.sk  
 www.oem.sk

**Slovenia**  
 Robotina d.o.o.  
 Tel. +386 5 689 20-20  
 info@robotina.si  
 www.robotina.si

**South Africa**  
 Current Automation  
 Tel. +27 11 462-4253  
 ca@rectifier.co.za  
 www.rectifier.co.za

**Spain**  
 Electrónica Olfer, S.L.  
 Tel. +34 91 484 08 50  
 info@olfer.com  
 www.olfer.com

**Sweden**  
 OEM Automatic AB  
 Tel. +46 75 242 41 00  
 info@aut.oem.se  
 www.oemautomatic.se

**Turkey**  
 Klemsan  
 Tel. +90 212 222 5200  
 info@klemsan.com.tr  
 www.klemsan.com.tr