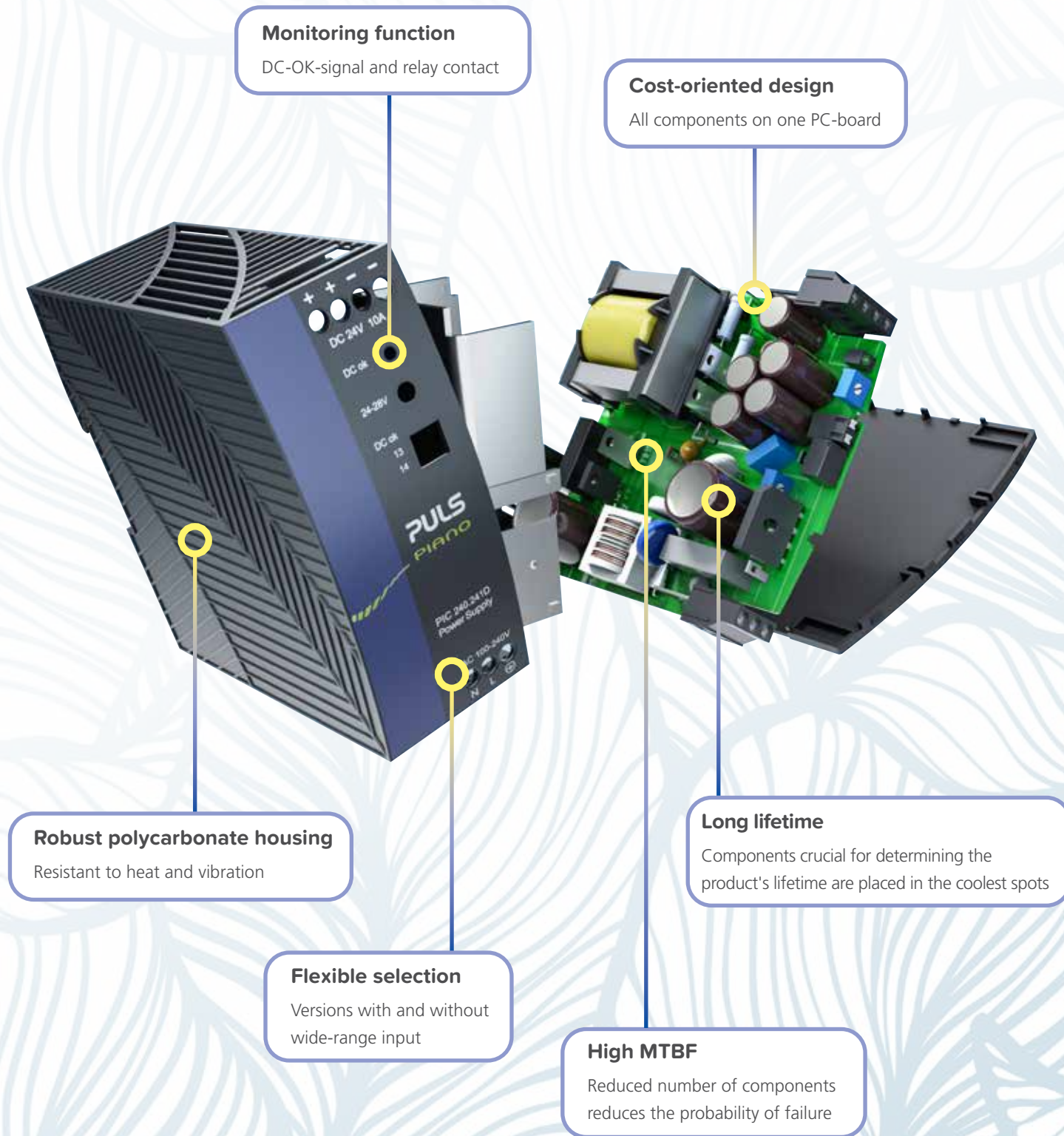


Well-engineered.
Down to the smallest detail.



Innovation. PIANO mini.

Minimum size. Maximum effect.

The modern circuit design requires little space. 90W can be integrated into a housing with only 36 x 90 x 91mm. The high efficiency ensures lower power losses – even at no-load (< 0.5W).

Push-in or screw terminals

Users have the choice between push-in and screw terminals. The push-in terminals facilitate time-saving installation without tools, and are extremely reliable in the event of shock and vibrations.

36W



PIM36
available soon

60W



PIM60

90W



PIM90
also available as
NEC Class 2 version

Redundancy module



PIANO PIRD20.241

- Two inputs with common output
- Two diodes (common cathode)
- DC 12-28V \pm 25% wide-range input
- Full output power between -40°C and +55°C
- Width only 39mm
- Simple wiring: Distributor terminal for negative pole available

Benefits

Secure your system with the PIRD20.241. This diode redundancy module with basic functionality is the perfect complement to the PIANO DIN rail power supplies. Useful to build cost-effective 1+1 redundancy systems.

PULS

PIANO

DIN rail power supplies | 36 - 480W | 1-phase



Simplicity. Without compromises.



Price advantage thanks to basic functionality

High efficiency, lifetime and reliability

Robust and light-weight polycarbonate housing

PIANO

The PIANO product family has been developed for users who require a **simple and reliable** power supply.

The focus of PIANO power supplies is on the **core features**: Efficiency, lifetime, reliability and size. Expensive additional functions, such as power reserves, were deliberately omitted. This allows a **cost-oriented design** without compromising on quality.

PIANO power supplies are **perfectly suited** for a wide variety of applications.

More demanding applications can be realised using the fully equipped DIMENSION products.

Technical data

	36W PIM36	60W PIM60		90W PIM90		120W PIC120		240W PIC240		480W PIC480		
Output	Output current, nominal	1.5A	5A	2.5A	3.8A	3.8A	5A	5A	10A	10A	20A	10A
	Output voltage, nominal	24V	12V	24V	24V	24V	24V	24V	24V	24V	24V	48V
	DC output voltage range	24-28V	12-15V	24-28V	24-28V	24-28V	24-28V	24-28V	24-28V	24-28V	24-28V	48-56V
	Hold-up time, typ. at 230V _{ac}	161ms	114ms	113ms	119ms	119ms	33ms	50ms	33ms	32ms	30ms	27ms
Input	AC input voltage, nominal	100-240V	100-240V	100-240V	100-240V	100-240V	200-240V	100-120V ¹⁾ 200-240V ¹⁾	200-240V	100-240V	200-240V	100-240V
	AC input voltage range	90-264V	90-264V	90-264V	90-264V	90-264V	180-264V	90-132V ¹⁾ 180-264V ¹⁾	180-264V	90-264V	180-264V	90-264V
	Power factor, typ.	0.46	0.49	0.47	0.45	0.45	0.54	0.54	0.52	0.93	0.99	0.97
	Input inrush current, typ. AC (+40°C)	TBD	31A	35A	40A	40A	28A	33A	48A	26A	26A	35A
	Operational temperature range	-10°C to +70°C	-10°C to +70°C	-10°C to +70°C	-10°C to +70°C	-10°C to +70°C	-10°C to +70°C	-10°C to +70°C	-10°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
Efficiency		> 90%	90.7%	91.8%	93.8%	93.8%	90.5%	92.3%	91.4%	95.2%	95.7%	95.3%
MTBF SN 29500, IEC61709 at +40°C		TBD	TBD	TBD	TBD	TBD	1720kh	1379kh	791kh	822kh	482kh	704 kh
Minimum lifetime expectancy at +40°C and 100% load		115 kh 100Vac	89 kh 100Vac	115 kh 100Vac	102 kh 100Vac	102 kh 100Vac	47kh	83kh	38kh	74kh	51kh	102kh
												138 kh
Mechanical data	Dimensions WxHxD	22.5x90x91mm	36x90x91mm	36x90x91mm	36x90x91mm	36x90x91mm	39x124x124mm	39x124x124mm	49x124x124mm	49x124x124mm	49x124x124mm	59x124x127mm
	Weight	138g	225g	220g	270g	270g	350g	370g	550g	540g	620g	810g
	DC-OK relay contact	-	-	-	-	-	.241C yes/.242C no	yes	yes	yes	yes	yes
	Connection terminals	push-in	PIM60.121: push-in PIM60.125: screw	PIM60.241: push-in PIM60.245: screw	push-in	screw	screw	screw	screw	screw	screw	screw
Order number	PIM36.241	PIM60.121 PIM60.125	PIM60.241 PIM60.245	PIM90.241	PIM90.245 PIM90.245-L1 2)	PIC120.241C PIC120.242C	PIC120.241D	PIC240.241C PIC240.241D	PIC480.241C PIC480.241D 3)	PIC480.481D 3)		

General data for all versions:

Power reduction 2.5%/°C from +55°C (PIC480.241C: 1.7%/°C)

Humidity 5% to 95% r.h.

Installation height (with derating) 0 to 2,000m (up to 5,000m)

Shock test 30g 6ms, 20g 11ms in accordance with IEC60068-2-27

Warranty 3 years

Standards and approvals

CE

UL LISTED

IECEE CB Scheme

DNV-GL dnvgl.com/af

ABS

EAC

Annotations

1) Auto-select 2) NEC Class 2 version 3) With aluminum housing 4) PIM36.241, PIM60.121 / -125, PIM60.241 / -245, PIM90.241 / -245 / -245-L1, PIC480.241D, PIC480.481D in preparation

5) PIC120.241C, PIC120.242C, PIC240.241C 6) PIC480.481D in preparation

All values are valid at 230 Vac, 50Hz, +25°C ambient temperature after a warm-up time of 5 minutes, unless stated otherwise.

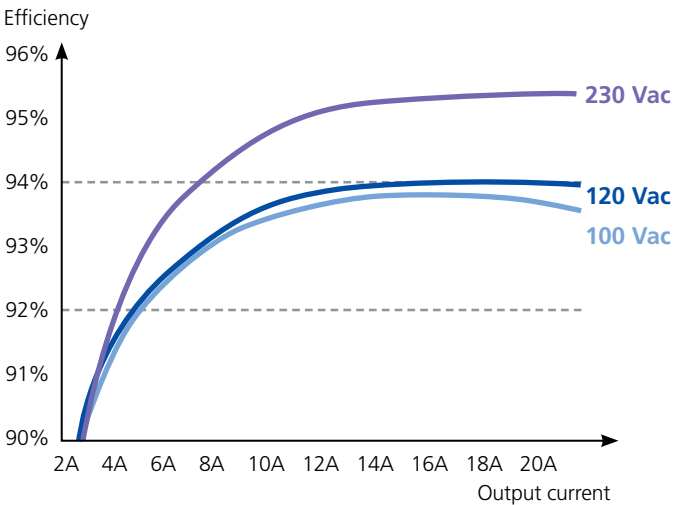
All technical data is subject to change without notice.

At a glance

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Reduce costs

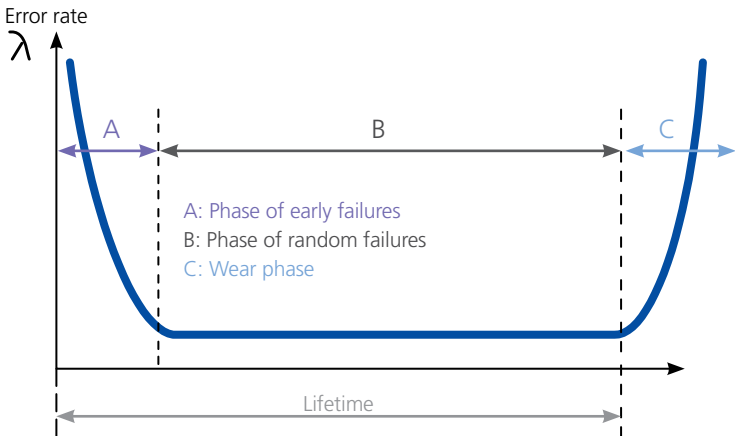
- High efficiency**
Low power losses lead to a long lifetime and continuously reduced operating costs.
- Compact design**
Its narrow width saves costly space in the system.
- Single-board design**
All components are assembled on one PC-board. The cost savings in the production and testing process are reflected in the prices of the products.



⌚

Extend availability

- High reliability**
PIANO power supplies are characterised by a high MTBF and thus a low failure rate in phase B (see graph).
- DC-OK**
The DC-OK signal and the relay contact (PIC devices) for remote monitoring facilitate maintenance and increase system availability.



🔒

Increase safety

- Robust polycarbonate**
Due to very high efficiency values the housing is not needed for heat dissipation. This allows the use of light-weight plastic housings. The material has proven to be very reliable throughout all stress tests (shock, vibration, temperature).
- High immunity**
The devices can withstand powerful input transients up to to 230% of the nominal input voltage. This high immunity is ensured across the entire load range.

