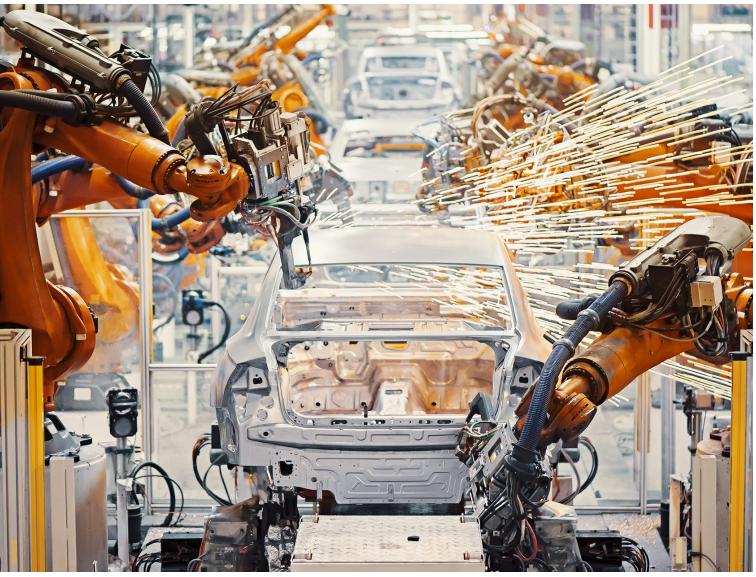
PULS

PIANO



DIN RAIL POWER SUPPLIES

36 W - 480 W | 1-PHASE

pulspower.us

Simplicity.
Without Compromise.

PIANO

36 W - 480 W | 1-Phase | 12 / 24 / 48 V Models

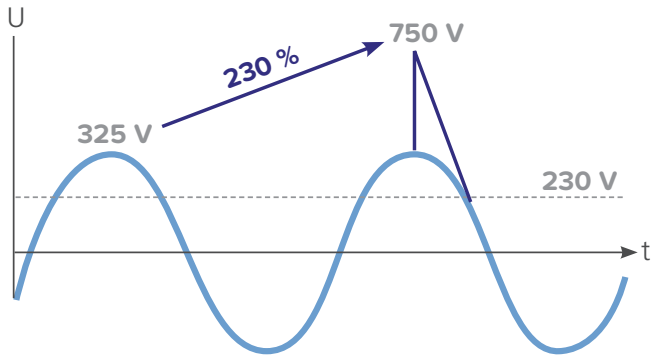
The PIANO product family is for users who prefer a basic, reliable power supply, but do not want to compromise on quality.

- **High Efficiency**
  The high efficiency values (up to 95.7 % at full load) lead to lower heat losses, make the power supplies more durable and reduce total energy costs for your system
- **Increased System Availability: High Reliability & High MTBF**
  PIANO power supplies are characterized by a high MTBF (Mean Time Between Failures) of up to 1.72 million hours
- **Flexibility:** Push-In or Screw Terminals
- **Longer Lifetimes:** Heat-sensitive components are placed in the coolest spots with free airflow for maximum cooling
- **DC-OK Relay Contact / Monitoring Function**
  The DC-OK signal and the relay contact for remote monitoring facilitates maintenance and increases availability (PIC Series)

Don't Worry About Safety Issues

High Immunity

PIANO power supplies can withstand powerful input transients up to 230% of the nominal input voltage. This electrical robustness is assured throughout the entire load range.



Minimum Size. Maximum Effect.

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

Robust Polycarbonate Housing

The high-grade polycarbonate housing enables a lightweight design, and due to very high efficiency values, the housing is not needed for heat dissipation. Polycarbonate is a very durable material which has proven to be very reliable throughout all stress tests — shock, vibration, temperature. All units also comply with the V0 class of inflammability.

Well-Engineered.
Down to the Smallest Detail.

Wide Range of Customer Choice

Push-in or Screw Terminals

With the PIANO Mini Series (PIM), users have the choice between push-in and screw terminals. Push-in terminals allow time-saving installation without tools and are very robust against shock and vibration. Some models offer NEC Class 2 approvals.

36 W

PIM36

60 W

PIM60

90 W

PIM90

also available in a NEC Class 2 version

PIRD20.241: Diode Redundancy Module

Secure Your System With Redundancy

This diode redundancy module with basic functionality is the perfect complement to the PIANO DIN rail power supplies.

It can be utilized to build cost-effective and reliable 1+1 redundancy systems.

Key Features

- Two inputs with common output
- Two diodes (common cathode)
- DC 12-28 V ± 25 % wide-range input
- Full output power between -40° C and +55° C
- Width: 39 mm | Weight: 280 g
- DC-OK relay contact
- Large screw terminals
- Easy Wiring: Distribution terminal for negative pole included

Technical Comparison

	36 W PIM36	60 W PIM60		90 W PIM90		120 W PIC120	240 W PIC240	480 W PIC480	
Output									
Output Current, Nominal	1.5 A	5 A	2.5 A	3.8 A	3.8 A	5 A	10 A	20 A	10 A
Output Voltage, Nominal	24 V	12 V	24 V	24 V	24 V	24 V	24 V	24 V	48 V
DC Output Voltage Range	24-28 V	12-15 V	24-28 V	24-28 V	24-28 V	24-28 V	24-28 V	24-28 V	48-56 V
Hold-Up Time	161 ms	114 ms	113 ms	119 ms	119 ms	50 ms	32 ms	27 ms	27 ms
Input									
AC Input Voltage, Nominal	100-240 V	100-240 V	100-240 V	100-240 V	100-240 V	100-120 V[1] 200-240 V[1]	100-240 V	100-240 V	100-240 V
AC Input Voltage Range	90-264 V	90-264 V	90-264 V	90-264 V	90-264 V	90-132 V[1] 180-264 V[1]	90-264 V	90-264 V	90-264 V
Power Factor (Typical)	0.46	0.49	0.47	0.45	0.45	0.54	0.93	0.97	0.97
Input Inrush Current, Typical AC (+40° C)	14 A / 40 A	31 A	35 A	40 A	40 A	33 A	26 A	35 A	35 A
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	-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 %	92.3 %	95.2 %	95.3 %	95.7 %
MTBF SN 29500, IEC61709 at +40° C	2081 kh	1673 kh	1982kh	1507 kh	1446 kh	1379 kh	822 kh	704 kh	704 kh
Minimum Lifetime Expectancy at +40° C and 100 % Load	161 kh	119 kh	148 kh	102 kh	102 kh	83 kh	74 kh	102 kh	138 kh
Mechanical Data									
Dimensions W x H x D	22.5 x 90 x 91 mm	36 x 90 x 91 mm	36 x 90 x 91 mm	36 x 90 x 91 mm	36 x 90 x 91 mm	39 x 124 x 124 mm	49 x 124 x 124 mm	59 x 124 x 127 mm	59 x 124 x 12 mm
Weight	138 g	225 g	220 g	270 g	270 g	370 g	540 g	810 g	810 g
DC-OK Relay Contact	-	-	-	-	-	yes	yes	yes	yes
Wiring Terminals	push-in	PIM60.121: push-in PIM60.125: screw	PIM60.241: push-in PIM60.245: screw	PIM90.241: push-in PIM90.245: screw	screw	screw	screw	screw	screw
Order Number	**PIM36.241** [2]	**PIM60.121 PIM60.125**	**PIM60.241** [2] **PIM60.245** [2]	**PIM90.241 PIM90.245**	**PIM90.245-L1** [2]	**PIC120.241D**	**PIC240.241D**	**PIC480.241D** [3]	**PIC480.481D** [3]

General Data for All Versions:

Power Reduction	2.5 % / °C from +55° C
Humidity	5 % to 95 % r.h.
Altitude (with derating)	0 to 2,000 m (up to 5,000 m)
Shock Test	30 g 6 ms, 20 g 11 ms in accordance with IEC60068-2-27
Warranty	3 years

Standards & Approvals

CE, cULus LISTED [4], IECEE CB Scheme [4], DNV·GL dnvgl.com/af [5], ABS [5], EAC [6]

Annotations

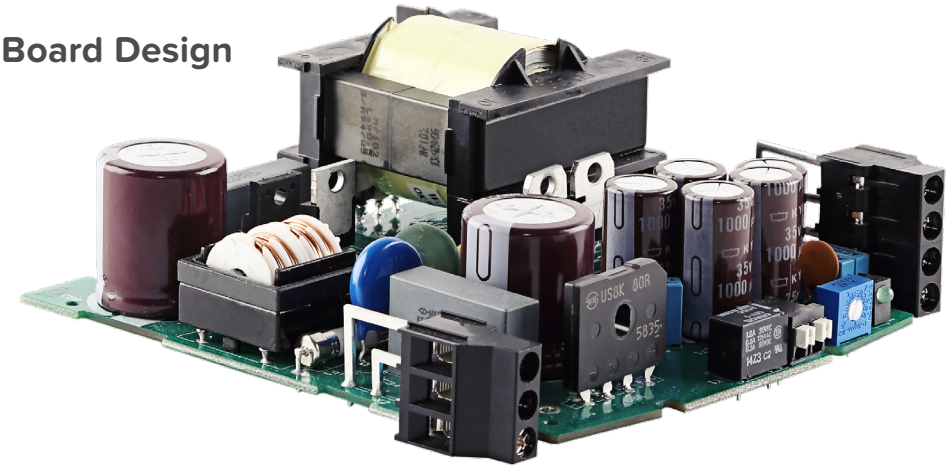
1) Auto-select 2) NEC Class 2 version 3) With aluminum housing

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

All technical data is subject to change without notice

Internal Views

Board Design



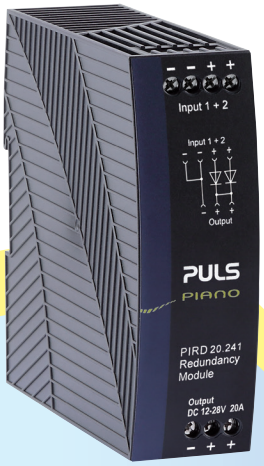
Monitoring Function
DC-OK Relay Contact (PIC Models)

Longer Lifetime
Heat-sensitive components are placed in the coolest spots with free airflow for maximum cooling

Model Gallery

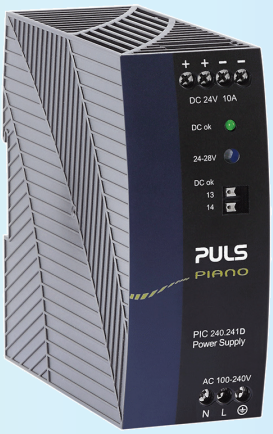
PIM90.245-L1
NEC Class 2 Compliant

PIM Models:
36 W, 60 W, 90 W



PIRD20.241
Diode Redundancy Module

PIC Models:
120 W, 240 W, 480 W



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