

Single-phase, primary switched mode power supply, Economy
PVSE 230



General Data

Input rated voltage 100 - 240 Vac
Output rated voltage 12 - 48 Vdc
Output rated current 3 - 20 A
Ambient temperature -25 °C to +70 °C
Efficiency up to 92 %

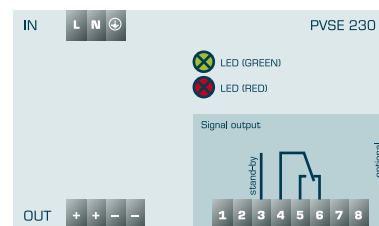
Advantages

Stabilised and adjustable output voltage
Up to 200 % Real Power Boost for 4 seconds
Top Boost to trip conventional circuit breakers
DC OK signalling
Stand-by-input
Parallel connection option
Service-friendly spring-loaded connector system
Optional with active inrush current limiter

Applications

Primary switched mode power supply with massive power reserves focussing on the key task of power supply.

Sample application



Standards

Primary switched mode power supply to UL 60950, UL 508

Safety:
EN 61558-2-16, EN 60950-1

EMC:
EN 61204-3

Approvals



UL/CSA 60950 recognised (E213214), UL508 listed (E219022)

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Single-phase, primary switched mode power supply, Economy

PVSE 230

Typ	PVSE 230/12-6	PVSE 230/12-10	PVSE 230/12-15	PVSE 230/24-3
Electrical data				
Input				
Input rated voltage	100 - 240 Vac	100 - 240 Vac	100 - 240 Vac	100 - 240 Vac
Input rated current (rated load)	0.86 / 0.51 Aac (110 / 230 Vac)	1.7 / 0.97 Aac (110 / 230 Vac)	1.9 / 0.9 Aac (110 / 230 Vac)	0.86 / 0.51 Aac (110 / 230 Vac)
Input voltage range	85 - 264 Vac (120 - 373 Vdc)	85 - 264 Vac (120 - 373 Vdc)	85 - 264 Vac (120 - 373 Vdc)	85 - 264 Vac (120 - 373 Vdc)
Rated frequency range	44 Hz - 66 Hz / 0 Hz	44 Hz - 66 Hz / 0 Hz	44 Hz - 66 Hz / 0 Hz	44 Hz - 66 Hz / 0 Hz
Starting current limiter	<30 A, NTC	<30 A, NTC	<8 A, active	<30 A, NTC
Input fuse internal	2 A (slow-blow)	4 A (slow-blow)	6.3 A (slow-blow)	2 A (slow-blow)
Recommended back-up fuse (circuit breaker)	6 A, 10 A, 16 A, characteristics B, C	6 A, 10 A, 16 A, characteristics B, C	10 A, 16 A, characteristics B, C	6 A, 10 A, 16 A, characteristics B, C
Harmonic correction	-	-	active	-
Mains buffering (rated load)	10 / 70 ms (110 / 230 Vac)	12 / 35 ms (110 / 230 Vac)	30 / 30 ms (110 / 230 Vac)	10 / 70 ms (110 / 230 Vac)
Transient surge voltage protection	Varistor	Varistor	Varistor	Varistor
Output				
Output rated voltage	12 Vdc	12 Vdc	12 Vdc	24 Vdc
Output voltage range	11 - 18 Vdc	11 - 18 Vdc	11 - 18 Vdc	22 - 29.5 Vdc
Resistance to reverse feed max.	25 Vdc	25 Vdc	25 Vdc	35 Vdc
Output rated current	6.00 A	10.00 A	15.00 A	3.00 A
Parallel connection	Yes	Yes	Yes	Yes
Power Boost	12 A / 4 s (9 A / 8 s)	20 A / 4 s (15 A / 8 s)	30 A / 4 s (22.5 A / 8 s)	6.5 A / 4 s (5.8 A / 8 s)
Overload behaviour	Constant current	Constant current	Constant current	Constant current
max. Power loss idling/nominal load	3.0 / 8.8 W	5.0 / 14.6 W	4.6 / 23.4 W	3.0 / 8.8 W
Serial operation	Yes	Yes	Yes	Yes
Efficiency	typ. 83 %	typ. 87.8 %	typ. 87 %	typ. 87.7 %
Ripple factor	typ. 70 mVss	typ. 70 mVss	typ. 70 mVss	typ. 70 mVss
Top Boost	21 A / 25 ms	60 A / 25 ms	55 A / 25 ms	14 A / 25 ms
Signaling				
Stand-by-input	Yes	Yes	Yes	Yes
Power Good (DC OK)	LED green, LED red	LED green, LED red	LED green, LED red	LED green, LED red
Potential free signal contact	Yes	Yes	Yes	Yes
Approvals				
Approvals	cURus, cULus	cURus, cULus	cURus, cULus	cURus, cULus
Environment				
Storage temperature	-25 °C to +85 °C	-25 °C to +85 °C	-25 °C to +85 °C	-25 °C to +85 °C
Derating	-3 %/K > +50 °C, -5 %/Vac < 95 Vac	-3 %/K > +50 °C, -5 %/Vac < 95 Vac	-3 %/K > +50 °C, -1.5 %/Vac < 110 Vac	-3 %/K > +50 °C, -5 %/Vac < 95 Vac
Ambient temperature	-10 °C to +70 °C	-10 °C to +70 °C	-10 °C to +70 °C	-10 °C to +70 °C
Safety and protection				
Safety class	I, with PE connection	I, with PE connection	I, with PE connection	I, with PE connection
Protection index	IP 20	IP 20	IP 20	IP 20
Accessory				
Connector for signalling	PV-CON (optional)	PV-CON (optional)	PV-CON (optional)	PV-CON (optional)
Side DIN rail mounting	PV-TS35M (optional)	PV-TS35M (optional)	PV-TS35M (optional)	PV-TS35M (optional)
Direct screw fastening plate for lateral mounting	PV-WB2 (optional)	PV-WB2 (optional)	PV-WB2 (optional)	PV-WB2 (optional)
Order numbers				
Order Number	PVSE 230/12-6	PVSE 230/12-10	PVSE 230/12-15	PVSE 230/24-3



Single-phase, primary switched mode power supply, Economy **PVSE 230**

Typ	PVSE 230/24-3B	PVSE 230/24-5	PVSE 230/24-5B	PVSE 230/24-10
Electrical data				
Input				
Input rated voltage	100 - 240 Vac	100 - 240 Vac	100 - 240 Vac	110 - 240 Vac
Input rated current (rated load)	0.86 / 0.51 A (110 / 230 Vac)	1.7 / 0.97 Aac (110 / 230 Vac)	1.7 / 0.97 Aac (110 / 230 Vac)	2.5 / 1.2 Aac (110 / 230 Vac)
Input voltage range	85 - 264 Vac (120 - 373 Vdc)	85 - 264 Vac (120 - 373 Vdc)	85 - 264 Vac (120 - 373 Vdc)	85 - 264 Vac (120 - 373 Vdc)
Rated frequency range	44 Hz - 66 Hz / 0 Hz	44 Hz - 66 Hz / 0 Hz	44 Hz - 66 Hz / 0 Hz	44 Hz - 66 Hz / 0 Hz
Starting current limiter	<5 A, active	<30 A, NTC	<8 A, active	<8 A, active
Input fuse internal	2 A (slow-blow)	4 A (slow-blow)	4 A (slow-blow)	6,3 A (slow-blow)
Recommended back-up fuse (circuit breaker)	6 A, 10 A, 16 A, characteristics B, C	6 A, 10 A, 16 A, characteristics B, C	6 A, 10 A, 16 A, characteristics B, C	10 A, 16 A, characteristics B, C
Harmonic correction	-	-	-	active
Mains buffering (rated load)	10 / 70 ms (110 / 230 Vac)	12 / 35 ms (110 / 230 Vac)	12 / 35 ms (110 / 230 Vac)	24 / 24 ms (110 / 230 Vac)
Transient surge voltage protection	Varistor	Varistor	Varistor	Varistor
Output				
Output rated voltage	24 Vdc	24 Vdc	24 Vdc	24 Vdc
Output voltage range	22 - 29.5 Vdc	22 - 29.5 Vdc	22 - 29.5 Vdc	22 - 29.5 Vdc
Resistance to reverse feed max.	35 Vdc	35 Vdc	35 Vdc	35 Vdc
Output rated current	3.00 A	5.00 A	5.00 A	10.00 A
Parallel connection	Yes	Yes	Yes	Yes
Power Boost	6.5 A / 4 s (5.8 A / 8 s)	10 A / 4 s (7.5 A / 8 s)	10 A / 4 s (7.5 A / 8 s)	20 A / 4 s (15 A / 8 s)
Overload behaviour	Constant current	Constant current	Constant current	Constant current
max. Power loss idling/nominal load	3.0 / 8.8 W	5.0 / 14.6 W	5.0 / 14.6 W	3.5 / 19.7 W
Serial operation	Yes	Yes	Yes	Yes
Efficiency	typ. 87.7 %	typ. 87.8 %	typ. 87.8 %	typ. 91.8 %
Ripple factor	typ. 70 mVss	typ. 70 mVss	typ. 70 mVss	typ. 70 mVss
Top Boost	14 A / 25 ms	21 A / 25 ms	21 A / 25 ms	60 A / 25 ms
Signaling				
Stand-by-input	Yes	Yes	Yes	Yes
Power Good (DC OK)	LED green, LED red	LED green, LED red	LED green, LED red	LED green, LED red
Potential free signal contact	Yes	Yes	Yes	Yes
Approvals				
Approvals	cURus, cULus	cURus, cULus	cURus, cULus	cURus, cULus
Environment				
Storage temperature	-25 °C to +85 °C	-25 °C to +85 °C	-25 °C to +85 °C	-25 °C to +85 °C
Derating	-3 %/K > +50 °C, -5 %/Vac < 95 Vac	-3 %/K > +50 °C, -5 %/Vac < 95 Vac	-3 %/K > +50 °C, -5 %/Vac < 95 Vac	-3 %/K > +50 °C, -1.5 %/Vac < 110 Vac
Ambient temperature	-10 °C to +70 °C	-10 °C to +70 °C	-10 °C to +70 °C	-10 °C to +70 °C
Safety and protection				
Safety class	I, with PE connection	I, with PE connection	I, with PE connection	I, with PE connection
Protection index	IP 20	IP 20	IP 20	IP 20
Accessory				
Connector for signalling	PV-CON (optional)	PV-CON (optional)	PV-CON (optional)	PV-CON (optional)
Side DIN rail mounting	PV-TS35M (optional)	PV-TS35M (optional)	PV-TS35M (optional)	PV-TS35M (optional)
Direct screw fastening plate for lateral mounting	PV-WB2 (optional)	PV-WB2 (optional)	PV-WB2 (optional)	PV-WB2 (optional)
Order numbers				
Order Number	PVSE 230/24-3B	PVSE 230/24-5	PVSE 230/24-5B	PVSE 230/24-10

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Single-phase, primary switched mode power supply, Economy

PVSE 230

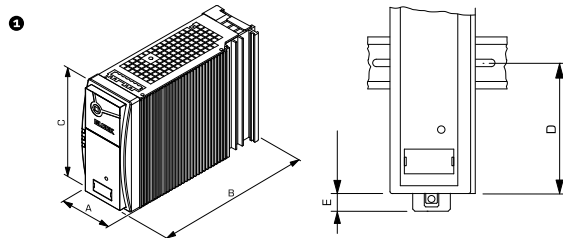
Typ	PVSE 230/24-20	PVSE 230/30-15	PVSE 230/48-5	PVSE 230/48-10
Electrical data				
Input				
Input rated voltage	110 - 240 Vac	110 - 240 Vac	110 - 240 Vac	110 - 240 Vac
Input rated current (rated load)	5.7 / 2.3 Aac (110 / 230 Vac)	5.7 / 2.3 Aac (110 / 230 Vac)	2.5 / 1.2 Aac (110 / 230 Vac)	5.7 / 2.3 Aac (110 / 230 Vac)
Input voltage range	85 - 264 Vac (120 - 373 Vdc)	85 - 264 Vac (120 - 373 Vdc)	85 - 264 Vac (120 - 373 Vdc)	85 - 264 Vac (120 - 373 Vdc)
Rated frequency range	44 Hz - 66 Hz / 0 Hz	44 Hz - 66 Hz / 0 Hz	44 Hz - 66 Hz / 0 Hz	44 Hz - 66 Hz / 0 Hz
Starting current limiter	<8 A, active	<8 A, active	<8 A, active	<8 A, active
Input fuse internal	10 A (slow-blow)	10 A (slow-blow)	6.3 A (slow-blow)	10 A (slow-blow)
Recommended back-up fuse (circuit breaker)	10 A, 16 A, characteristics B, C	10 A, 16 A, characteristics B, C	10 A, 16 A, characteristics B, C	10 A, 16 A, characteristics B, C
Harmonic correction	active	active	active	active
Mains buffering (rated load)	20 / 25 ms (110 / 230 Vac)	20 / 25 ms (110 / 230 Vac)	24 / 24 ms (110 / 230 Vac)	20 / 25 ms (110 / 230 Vac)
Transient surge voltage protection	Varistor	Varistor	Varistor	Varistor
Output				
Output rated voltage	24 Vdc	30 Vdc	48 Vdc	48 Vdc
Output voltage range	22 - 29.5 Vdc	27 - 43 Vdc	33 - 52 Vdc	33 - 52 Vdc
Resistance to reverse feed max.	35 Vdc	63 Vdc	63 Vdc	63 Vdc
Output rated current	20.00 A	15.00 A	5.00 A	10.00 A
Parallel connection	Yes	Yes	Yes	Yes
Power Boost	30 A / 4 s (25 A / 8 s)	15 A / 4 s (12.5 A / 8 s)	10 A / 4 s (7.5 A / 8 s)	15 A / 4 s (12.5 A / 8 s)
Overload behaviour	Constant current	Constant current	Constant current	Constant current
max. Power loss idling/nominal load	4.8 / 50.2 W	4.8 / 50.2 W	7.4 / 21.6 W	4.8 / 50.2 W
Serial operation	Yes	Yes	Yes	Yes
Efficiency	typ. 91 %	typ. 91 %	typ. 91 %	typ. 91 %
Ripple factor	typ. 70 mVss	typ. 70 mVss	typ. 70 mVss	typ. 70 mVss
Top Boost	80 A / 25 ms	70 A / 25 ms	30 A / 25 ms	40 A / 25 ms
Signaling				
Stand-by-input	Yes	Yes	Yes	Yes
Power Good (DC OK)	LED green, LED red	LED green, LED red	LED green, LED red	LED green, LED red
Potential free signal contact	Yes	Yes	Yes	Yes
Approvals				
Approvals	cURus, cULus	cURus, cULus	cURus, cULus	cURus, cULus
Environment				
Storage temperature	-25 °C to +85 °C	-25 °C to +85 °C	-25 °C to +85 °C	-25 °C to +85 °C
Derating	-3 %/K > +50 °C, -1.5 %/Vac < 110 Vac	-3 %/K > +50 °C, -1.5 %/Vac < 110 Vac	-3 %/K > +50 °C, -1.5 %/Vac < 110 Vac	-3 %/K > +50 °C, -1.5 %/Vac < 110 Vac
Ambient temperature	-10 °C to +70 °C	-10 °C to +70 °C	-10 °C to +70 °C	-10 °C to +70 °C
Safety and protection				
Safety class	I, with PE connection	I, with PE connection	I, with PE connection	I, with PE connection
Protection index	IP 20	IP 20	IP 20	IP 20
Accessory				
Connector for signalling	PV-CON (optional)	PV-CON (optional)	PV-CON (optional)	PV-CON (optional)
Side DIN rail mounting	PV-TS35M (optional)	PV-TS35M (optional)	PV-TS35M (optional)	PV-TS35M (optional)
Direct screw fastening plate for lateral mounting	PV-WB2 (optional)	PV-WB2 (optional)	PV-WB2 (optional)	PV-WB2 (optional)
Order numbers				
Order Number	PVSE 230/24-20	PVSE 230/30-15	PVSE 230/48-5	PVSE 230/48-10



Single-phase, primary switched mode power supply, Economy
PVSE 230

Typ	Terminals input, (spring clamp terminal, pluggable)	Terminals output, (spring clamp terminal, pluggable)	Terminals signalling, (spring clamp terminal, pluggable)	Mounting position	Fixing method	Weight	Dimension picture (in mm)				
							A	B	C	D	E
PVSE 230/12-6	max. 2.5 mm ²	max. 2.5 mm ²	max. 0.5 mm ²	vertical	DIN Rail system TS35	0.8 kg	40	163.5	127	76	12.5
PVSE 230/12-10	max. 2.5 mm ²	max. 2.5 mm ²	max. 0.5 mm ²	vertical	DIN Rail system TS35	1.1 kg	57	163.5	127	76	12.5
PVSE 230/12-15	max. 2.5 mm ²	max. 2.5 mm ²	max. 0.5 mm ²	vertical	DIN Rail system TS35	1.3 kg	57	179.5	127	76	12.5
PVSE 230/24-3	max. 2.5 mm ²	max. 2.5 mm ²	max. 0.5 mm ²	vertical	DIN Rail system TS35	0.8 kg	40	163.5	127	76	12.5
PVSE 230/24-3B	max. 2.5 mm ²	max. 2.5 mm ²	max. 0.5 mm ²	vertical	DIN Rail system TS35	0.8 kg	40	163.5	127	76	12.5
PVSE 230/24-5	max. 2.5 mm ²	max. 2.5 mm ²	max. 0.5 mm ²	vertical	DIN Rail system TS35	1.1 kg	57	163.5	127	76	12.5
PVSE 230/24-5B	max. 2.5 mm ²	max. 2.5 mm ²	max. 0.5 mm ²	vertical	DIN Rail system TS35	1.1 kg	57	163.5	127	76	12.5
PVSE 230/24-10	max. 2.5 mm ²	max. 2.5 mm ²	max. 0.5 mm ²	vertical	DIN Rail system TS35	1.3 kg	57	179.5	127	76	12.5
PVSE 230/24-20	max. 2.5 mm ²	max. 10 mm ²	max. 0.5 mm ²	vertical	DIN Rail system TS35	2.3 kg	97	187.5	127	76	12.5
PVSE 230/30-15	max. 2.5 mm ²	max. 10 mm ²	max. 0.5 mm ²	vertical	DIN Rail system TS35	2.3 kg	97	187.5	127	76	12.5
PVSE 230/48-5	max. 2.5 mm ²	max. 2.5 mm ²	max. 0.5 mm ²	vertical	DIN Rail system TS35	1.3 kg	57	179.5	127	76	12.5
PVSE 230/48-10	max. 2.5 mm ²	max. 10 mm ²	max. 0.5 mm ²	vertical	DIN Rail system TS35	2.3 kg	97	187.5	127	76	12.5

Dimension pictures



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