

Single-phase, primary switched mode power supply

PC 1AC



General Data

Nominal input voltage: AC 100 - 240 V
Nominal output voltage: DC 12 - 48 V
Nominal output current: 5 - 20 A
Ambient temperature -25 °C to +70 °C
Efficiency up to 93 %
Protection index IP 20

Advantages

Stabilised and adjustable output voltage
Fast tripping of conventional circuit breakers
DC OK signalling
Parallel operation
Push-in terminals
Robust DIN rail mounting
Resistant to transient overvoltages up to 4 kV

Applications

Power Compact combines the basic functionality of an economic switched mode power supply with key additional features to ensure high system availability. A powerful and flexible option that's still light and compact. Our real all-rounders, these power supply units are suitable for a highly diverse range of applications in solar, measurement and control technology and they really come into their own in industrial and building automation. The devices cover the average power requirement from 120 W to 480 W. Versions with 12 V, 24 V, and 48 V are available, which allow a range of applications. A version with 5 A rated current is available for a single or two-phase supply from 180 V to 550 V. The output voltage can be set easily using the rotary potentiometer on the front of the housing. The robust DIN rail fastening method and push-in connection terminals enable fast and secure mounting.

For applications in the medical field, power supplies are available with approval according to UL 60601-1.

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, UL508 listed, Germanischer Lloyd; Medical
Netzteil: UL 60601-1 (3rd ed. 2MOPP)



Single-phase, primary switched mode power supply **PC 1AC**

Electrical data	Typ	PC-0112-150-0	PC-0124-050-0	PC-0124-050-4	PC-0124-100-0
	Special features				
	Characteristics	-	-	Suitable for the medical field	-
	Input				
	Input rated voltage	100 - 240 Vac	100 - 240 Vac	100 - 240 Vac	100 - 240 Vac
	Input voltage range	85 - 264 Vac (120 - 372 Vdc)	85 - 264 Vac (120 - 372 Vdc)	85 - 264 Vac (120 - 372 Vdc)	85 - 264 Vac (120 - 372 Vdc)
	Input voltage derating	-2.5 %/Vac < 100 Vac	-2.5 %/Vac < 97 Vac	-2.5 %/Vac < 97 Vac	-2.5 %/Vac < 100 Vac
	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
	Input rated current (rated load)	2.07 A (100 Vac) / 0.95 A (230 Vac)	2.25 A (100 Vac) / 1.2 A (230 Vac)	2.3 A (100 Vac) / 1.24 A (230 Vac)	2.74 A (100 Vac) / 1.25 A (230 Vac)
	Starting current limiter	< 30 A, NTC (active)	< 30 A, NTC	< 30 A, NTC (active)	< 30 A, NTC (active)
	Switch-on time	0.71 s (100 Vac) / 0.43 s (230 Vac)	0.25 s (100 Vac) / 0.2 s (230 Vac)	0.25 s (100 Vac) / 0.2 s (230 Vac)	1.3 s (100 Vac) / 0.25 s (230 Vac)
	Mains buffering (rated load)	28 ms (100 Vac) / 28 ms (230 Vac)	10 ms (100 Vac) / 80 ms (230 Vac)	10 ms (100 Vac) / 80 ms (230 Vac)	15 ms (100 Vac) / 17 ms (230 Vac)
	Power factor	0.91 (active PFC)	0.5	0.47	0.92 (active PFC)
	Input fuse internal	6.3 A	4 A	4AT	6.3 A
	Recommended back-up fuse (circuit breaker)	10 A, 16 A, characteristic B, C	6 A, 10 A, 16 A, characteristic B, C	6A, 10 A, 16 A, characteristic B, C	10 A, 16 A, characteristic B, C
	Transient surge voltage protection	Varistor	Varistor	Varistor	Varistor
	Output				
	Output rated voltage	12 Vdc	24 Vdc	24 Vdc	24 Vdc
	Output voltage range	11.5 - 15 Vdc	23 - 28.5 Vdc	11.8 - 27.5 Vdc	23 - 28.5 Vdc
	Output rated current	15 A	5 A	5 A	10 A
	Output limited current	typ. 16.5 A (constant current)	typ. 5.5 A (constant current)	typ. 16.5 A (constant current)	typ. 11 A (constant current)
	Tripping of LS circuit breakers	max. B4	max. B4	Yes	max. B6, C2
	Parallel connection	Yes	Yes	Yes	Yes
	Serial operation	Yes	Yes	Yes	Yes
	Power dissipation, no load/rated load	4.4 W / 21.8 W (230 Vac)	1.2 / 14.6 W (230 Vac)	1.2 W / 14.6 W (230 Vac)	6.6 / 24.4 W (230 Vac)
	Max. power losses	24.7 W (100 Vac / 12 V / 15 A)	19.4 W (100 Vac / 24 V / 5 A)	19.4 W (100 Vac / 24 V / 5 A)	31.3 W (100 Vac / 24 V / 10 A)
	Ripple factor	typ. 35 mVss	typ. 30 mVss	typ. 30 mVss	typ. 50 mVss
	Efficiency	typ. 90 %	typ. 89 %	typ. 89 %	typ. 91 %
	Resistance to reverse feed max.	35 Vdc	35 Vdc	0 Vdc	35 Vdc
	Over-voltage-protection	max. 20 Vdc	max. 41 Vdc	max. 41 Vdc	max. 40 Vdc
Signaling	Typ. switching threshold for LED and signal output (DC OK)	-	-	LED: Uout > 11.2 V, signal output: Uout > 16 V (typ.)	-
	Status indicator	LED green	LED green	LED green	LED green
	Signal output	Relay contact	Relay contact	Relay contact, max. 30 V / 1 A	Relay contact
Approvals					
Approvals		cURus, cULus, GL	cURus, cULus, GL	cURus, cULus (UL 60601), GL	cURus, cULus, GL
Environment					
Type of cooling		natural convection	natural convection	natural convection	natural convection
Ambient temperature		-25 °C to +70 °C	-25 °C to +70 °C	-25 °C to +70 °C	-25 °C to +70 °C
Storage temperature		-25 °C to +85 °C	-25 °C to +85 °C	-25 °C to +85 °C	-25 °C to +85 °C
Derating		-5 %/K > +60 °C @ 196 - 264 Vac -2.5 %/K > +50° C @ 85 - 195 Vac	-5 %/K > +60 °C @ 196 - 264 Vac -2.5 %/K > +50° C @ 85 - 195 Vac	-5 %/K > +60 °C @ 196 - 264 Vac -2.5 %/K > +50° C @ 85 - 195 Vac	-5 %/K > +60 °C @ 196 - 264 Vac -2.5 %/K > +50° C @ 85 - 195 Vac
Required minimum spacing (left/right)		0 mm	0 mm	0 mm	0 mm
Required minimum spacing (over/under)		50 mm	50 mm	50 mm	50 mm
Safety and protection					
Protection index		IP 20	IP 20	IP 20	IP 20
Safety class		I, with PE connection	I, with PE connection	I	I, with PE connection
Order numbers					
Order Number		PC-0112-150-0	PC-0124-050-0	PC-0124-050-4	PC-0124-100-0



Single-phase, primary switched mode power supply

PC 1AC

Electrical data	Typ	PC-0124-100-4	PC-0124-200-0	PC-0124-200-4	PC-0148-050-0
	Special features				
	Characteristics	Suitable for the medical field	-	Suitable for the medical field	-
	Input				
	Input rated voltage	100 - 240 Vac	100 - 240 Vac	100 - 240 Vac	100 - 240 Vac
	Input voltage range	85 - 264 Vac (120 - 372 Vdc)	85 - 264 Vac (120 - 372 Vdc)	85 - 264 Vac (120 - 372 Vdc)	85 - 264 Vac (120 - 372 Vdc)
	Input voltage derating	-2,5 %/Vac < 100 Vac	-2,5 %/Vac < 100 Vac	-2,5 %/Vac < 100 Vac	-2,5 %/Vac < 100 Vac
	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
	Input rated current (rated load)	2,74 A (100 Vac) / 1,25 A (230 Vac)	5,56 A (100 Vac) / 2,23 A (230 Vac)	5,56 A (100 Vac) / 2,23 A (230 Vac)	2,68 A (100 Vac) / 1,19 A (230 Vac)
	Starting current limiter	< 30 A, NTC	< 30 A, NTC (active)	< 30 A, NTC (active)	< 30 A, NTC (active)
	Switch-on time	1,3 s (100 Vac) / 0,25 s (230 Vac)	0,45 s (100 Vac) / 0,2 s (230 Vac)	0,45 s (100 Vac) / 0,2 s (230 Vac)	0,68 s (100 Vac) / 0,31 s (230 Vac)
	Mains buffering (rated load)	15 ms (100 Vac) / 17 ms (230 Vac)	20 ms (100 Vac) / 20 ms (230 Vac)	8 ms (100 Vac) / 20 ms (230 Vac)	21 ms (100 Vac) / 21 ms (230 Vac)
	Power factor	0,92	0,98 (active PFC)	0,98	0,92 (active PFC)
	Input fuse internal	6,3 AT	10 A	10 AT	6,3 A
	Recommended back-up fuse (circuit breaker)	10 A, 16 A, characteristic B, C	10 A, 16 A, characteristic B, C	10 A, 16 A, characteristic B, C	10 A, 16 A, characteristic B, C
	Transient surge voltage protection	Varistor	Varistor	Varistor	Varistor
	Output				
	Output rated voltage	24 Vdc	24 Vdc	24 Vdc	48 Vdc
	Output voltage range	23 - 28,5 Vdc	23 - 28,5 Vdc	23 - 28,5 Vdc	40 - 56 Vdc
	Output rated current	10 A	20 A	20 A	5 A
	Output limited current	typ. 11 - 13 A (constant current)	typ. 22 A (constant current)	typ. 22 A (constant current)	typ. 5,5 A (constant current)
	Tripping of LS circuit breakers	Yes	max. B6, C6, K4	Yes	max. B6, C4, K2
	Parallel connection	Yes	Yes	Yes	Yes
	Serial operation	Yes	Yes	Yes	Yes
	Power dissipation, no load/rated load	6,6 W / 24,4 W (230 Vac)	7,2 / 42,4 W (230 Vac)	7,2 W / 42,4 W (230 Vac)	7 W / 40,8 W (230 Vac)
	Max. power losses	31,3 W (100 Vac / 24 V / 10 A)	68,3 W (100 Vac / 24 V / 20 A)	68,3 W (100 Vac / 24 V / 10 A)	26,5 W (100 Vac / 48 V / 5 A)
	Ripple factor	typ. 50 mVss	typ. 70 mVss	typ. 70 mVss	typ. 35 mVss
	Efficiency	typ. 91 %	typ. 92 %	typ. 92 %	typ. 92 %
	Resistance to reverse feed max.	0 Vdc	35 Vdc	0 Vdc	63 Vdc
	Over-voltage-protection	max. 40 Vdc	max. 40 Vdc	max. 40 Vdc	max. 60 Vdc
Signaling	Typ. switching threshold for LED and signal output (DC OK)	Uout > 21,5 V	-	Uout > 21,5 V	-
	Status indicator	LED green	LED green	LED green	LED green
	Signal output	Relay contact, max. 30 V / 1 A	Relay contact	Relay contact, max. 30 V / 1 A	Relay contact
Approvals					
Approvals	cURus, cULus (UL 60601), GL	cURus, cULus, GL	cURus, cULus (UL 60601), GL	cURus, cULus, GL	
Environment					
Type of cooling	natural convection	natural convection	natural convection	natural convection	
Ambient temperature	-25 °C to +70 °C	-25 °C to +70 °C	-25 °C to +70 °C	-25 °C to +70 °C	
Storage temperature	-25 °C to +85 °C	-25 °C to +85 °C	-25 °C to +85 °C	-25 °C to +85 °C	
Derating	-5 %/K > +60 °C @ 196 - 264 Vac -2,5 %/K > +50° C @ 85 - 195 Vac	-5 %/K > +60 °C @ 196 - 264 Vac -2,5 %/K > +50° C @ 85 - 195 Vac	-5 %/K > +60 °C @ 196 - 264 Vac -2,5 %/K > +50° C @ 85 - 195 Vac	-5 %/K > +60 °C @ 196 - 264 Vac -2,5 %/K > +50° C @ 85 - 195 Vac	-5 %/K > +60 °C @ 196 - 264 Vac -2,5 %/K > +50° C @ 85 - 195 Vac
Required minimum spacing (left/right)	0 mm	0 mm	0 mm	0 mm	
Required minimum spacing (over/under)	50 mm	50 mm	50 mm	50 mm	
Safety and protection					
Protection index	IP 20	IP 20	IP 20	IP 20	
Safety class	I	I, with PE connection	I	I, with PE connection	
Order numbers					
Order Number	PC-0124-100-4	PC-0124-200-0	PC-0124-200-4	PC-0148-050-0	



Single-phase, primary switched mode power supply

PC 1AC

Electrical data	Typ	PC-0148-100-0
	Special features	
	Characteristics	-
	Input	
	Input rated voltage	100 - 240 Vac
	Input voltage range	85 - 264 Vac (120 - 372 Vdc)
	Input voltage derating	-2.5 %/Vac < 100 Vac
	Rated frequency range	44 Hz - 66 Hz / 0 Hz
	Input rated current (rated load)	5.15 A (100 Vac) / 2.22 A (230 Vac)
	Starting current limiter	< 30 A, NTC (active)
	Switch-on time	0.45 s (100 Vac) / 0.2 s (230 Vac)
	Mains buffering (rated load)	20 ms (100 Vac) / 20 ms (230 Vac)
	Power factor	0.92 (active PFC)
	Input fuse internal	10 A
	Recommended back-up fuse (circuit breaker)	10 A, 16 A, characteristic B, C
	Transient surge voltage protection	Varistor
	Output	
	Output rated voltage	48 Vdc
	Output voltage range	40 - 56 Vdc
	Output rated current	10 A
	Output limited current	typ. 11 A (constant current)
	Tripping of LS circuit breakers	max. B6, C4, K2
	Parallel connection	Yes
	Serial operation	Yes
	Power dissipation, no load/rated load	11.7 / 36.3 W (230 Vac)
	Max. power losses	64.9 W (100 Vac / 48 V / 10 A)
	Ripple factor	typ. 80 mVss
	Efficiency	typ. 93 %
	Resistance to reverse feed max.	63 Vdc
	Over-voltage-protection	max. 60 Vdc
	Signaling	
	Typ. switching threshold for LED and signal output (DC OK)	-
	Status indicator	LED green
	Signal output	Relay contact
	Approvals	cURus, cULus, GL
	Environment	
	Type of cooling	natural convection
	Ambient temperature	-25 °C to +70 °C
	Storage temperature	-25 °C to +85 °C
	Derating	-5 %/K > +60 °C @ 196 - 264 Vac -2.5 %/K > +50° C @ 85 - 195 Vac
	Required minimum spacing (left/right)	0 mm
	Required minimum spacing (over/under)	50 mm
	Safety and protection	
	Protection index	IP 20
	Safety class	I, with PE connection
	Order numbers	
	Order Number	PC-0148-100-0



Single-phase, primary switched mode
power supply

PC 1AC

Mechanical data	Typ	Mounting position	Terminals signalling (direct plug-in technology Push-in)	Terminals output (direct plug-in technology Push-in)	Terminals input (direct plug-in technology Push-in)	Weight	Dimension (W x H x D)	Dimension picture (in mm)	A	B	C	D	E	F
	PC-0112-150-0	horizontal for standard rail DIN TS35	max 2,5 mm ²	max 2,5 mm ²	max 2,5 mm ²	0.93 kg	55 x 127 x 161 mm		127	63.5	3	55	153.5	161
	PC-0124-050-0	horizontal for standard rail DIN TS35	max 2,5 mm ²	max 2,5 mm ²	max 2,5 mm ²	0.59 kg	42 x 127 x 126 mm		127	63.5	3	42	118.5	126
	PC-0124-050-4	horizontal for standard rail DIN TS35	-	max 2,5 mm ²	-	0.65 kg	42 x 127 x 140.5 mm		127	63.5	3	42	133	140.5
	PC-0124-100-0	horizontal for standard rail DIN TS35	max 2,5 mm ²	max 2,5 mm ²	max 2,5 mm ²	0.93 kg	55 x 127 x 161 mm		127	53.5	3	55	153.5	161
	PC-0124-100-4	horizontal for standard rail DIN TS35	-	max 2,5 mm ²	-	0.65 kg	55 x 127 x 170 mm		127	63.5	3	55	162.5	170
	PC-0124-200-0	horizontal for standard rail DIN TS35	max 2,5 mm ²	max 2,5 mm ²	max 2,5 mm ²	1.60 kg	95 x 127 x 159 mm		127	63.5	3	95	151.5	159
	PC-0124-200-4	horizontal for standard rail DIN TS35	-	max 2,5 mm ²	-	1.70 kg	95 x 127 x 168 mm		127	63.5	3	95	160.5	168
	PC-0148-050-0	horizontal for standard rail DIN TS35	max 2,5 mm ²	max 2,5 mm ²	max 2,5 mm ²	0.93 kg	55 x 127 x 161 mm		127	63.5	3	55	153.5	161
	PC-0148-100-0	horizontal for standard rail DIN TS35	max 2,5 mm ²	max 2,5 mm ²	max 2,5 mm ²	1.60 kg	95 x 127 x 159 mm		127	63.5	3	95	151.5	159

Dimension pictures

1

