

PK-Series: MONOVOLT

Primary switched mode power supplies for use in 19" sub racks to DIN41494, 30 to 240 Watt output power.

Features

- Compact, rugged design
- high regulation accuracy
- Safety to approvals UL, cUL and EN60950
- CE marked for compliance to EMC and Low Voltage Directives
- SENSE operation
- Overvoltage protection (OVP)
- Powerfail signal
- Remote On/Off
- Short circuit and no load protected
- Coded H15 connector
- Standardized pinning

Ordering information

Description:

PK Series Power Supplies 30W Output power			Order-Code
Type	Output	without Powerfail	with Powerfail
PK30 3Ux8HP	5V/6A	116-010016D*	-
PK30 3Ux8HP	12-15V/2A	116-010215H	-
PK30 3Ux8HP	24V/1,5A	116-010216E	-

Description: PK Series; 60Watt Output power

PK60 3Ux8HP	3,3V/15A	116-010196L	-
PK60 3Ux8HP	5V/12A	116-010063D*	116-010074H*
PK60 3Ux8HP	12V/5A	116-010064A*	-
PK60 3Ux8HP	15V/4A	116-010065J*	-
PK60 3Ux8HP	24V/2,5A	116-010066F*	116-010077K*
PK60-R 3Ux8HP	5V/12A	116-010128L#	-
PK60-R 3Ux8HP	12V/5A	116-010219G#	-
PK60-R 3Ux8HP	15V/4A	116-010220H#	-
PK60-R 3Ux8HP	24V/2,5A	116-010129H#	-

Description: PK Series; 120Watt Output power

PK120 3Ux14HP	5V/20A	116-010069H	116-010081B
PK120 3Ux14HP	12V/10A	116-010070J	116-010082K
PK120 3Ux14HP	15V/8A	116-010071F	-
PK120 3Ux14HP	24V/5A	116-010072C	116-010084D

Description: PK Series; 240Watt Output power

PK240 3Ux24HP	5V/45A	-	116-010163K
PK240 6Ux14HP	5V/45A	-	116-010125J
PK240 3Ux24HP	12V/20A	-	116-010164G
PK240 6Ux14HP	12V/20A	-	116-010126F
PK240 3Ux24HP	24V/10A	-	116-010165D
PK240 6Ux14HP	24V/10A	-	116-010127C

Accessories:

Reduced height front panel: PK30	148-010012F
Reduced height front panel: PK60	148-010021E
Reduced height front panel: PK120	148-010019G
Mating connector coded H15 to DIN 41612	017-010115K
Coding keys (pkt10)	017-010064F
Mating connector coded DIN 41612, H15+2HA/L Faston	017-010138K

For applications ruled under EN 61000-3-2, we recommend the use of the **VP80** series.



PK-Series MONOVOLT Power Supplies

Technical Data PK Series: Monovolt

Input specification

Input voltage (switchable):	115/230VAC
Input frequency:	47-63Hz
Inrush surge current limitation:	by NTC resistor m20A (cold start)
Input overvoltage protection:	by VDR
Hold up time (Nominal V_{IN} ; 100% I_{OUT}):	>20ms
Efficiency:	typ. >80%

Safety (Compliant with Low Voltage Directive 73/23/EEC)

Certified to, or meets the requirement of:	EN60950, UL1950
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EMC (Compliant with EMC Directive 89/336/EEC)

Emmissions:	EN 55022/B (0,15-30MHz); EN 55022/B (30-1000MHz)
Immunity:	EN 50082-2
Electro Static Discharge:	EN 61000-4-2
Electrical fast transients/Burst:	EN 61000-4-4
RF Conducted disturbance:	EN 50141
RF Field susceptibility:	EN 50140

Environmental

Operating temperature:	0°C to +70°C
Storage temperature:	-25°C to +85°C
Relative humidity:	Non-condensing 5% - 95%

Physical

Case material/finish:	Clear anodised, ventilated aluminium cassette with cooling cutouts and front or rear heat sinks as required. DIN 41494 part 5 compatible
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* EN60950 and UL certified

EN60950 and cUL certified

PK Series: MONOVOLT

Output specification

PK30	V1	V1	V1
Output voltage:	5V	12V	24V
Output adjustment range:	4,8-5,5V	12-15V	22-26V
Output current:	0-6A	0-2,5A	0-1,5A
Ripple:	<40mV _{PP}	<20mV _{PP}	<20mV _{PP}
Line regulation (100% I _{OUT}): Δ iV _{OUT}	<0,2%	<0,02%	<0,02%
Load regulation static (10...90% I _{OUT}): Δ iV _{OUT}	<0,2%	<0,5%	<0,5%
Transient response (10...90% I _{OUT}):		1ms	
Switching frequency, converter type:		20-50kHz fly back converter	
Current limit:	>6,5A	>2,6A	>1,5A
Short circuit protection:		continuous, automatic restart	
Overvoltage protection (OVP):	6-6,7V	-	-
Powerfail-Signal (at full load) >6ms before V _{OUT} :		-	-
Temperature-coefficient/°C:		0,02%	
Voltage compensation with SENSE max. NOTE 1:		0,5V	
Derating:		1W/°C above 55°C	

PK60	V1	V1	V1	V1	V1
Output voltage:	3,3V	5V	12V	15V	24V
Output adjustment range:	1,8-3,5V	4,5-5,5V	11-13V	13,5-16,5V	22-26V
Output current:	0-15A	0-12A	0-5A	0-4A	0-2,5A
Ripple:			<40mV _{PP}		
Line regulation (100% I _{OUT}): Δ iV _{OUT}	<0,3%	<0,3%	<0,2%	<0,2%	<0,2%
Load regulation static (10...90% I _{OUT}): Δ iV _{OUT}			<0,2%		
Transient response (10...90% I _{OUT}):	1ms	0,8ms	0,5ms	0,5ms	0,5ms
Switching frequency, converter type:			100kHz forward converter		
Current limit:	>15,5A	>12,5A	>5,3A	>4,3A	>2,7A
Short circuit protection:			continuous, automatic restart		
Overvoltage protection (OVP):	2,8-5,0V	5,5-6,0V	13,2-15,0V	16,5-18,0V	26,4-30,0V
Powerfail-Signal (at full load) >6ms before V _{OUT} :		-	-		
Temperature-coefficient/°C:			0,02%		
Voltage compensation with SENSE max. NOTE 1:			0,5V		
Derating:			1,6W/°C above 45°C		

PK60-Redundant	V1	V1	V1	V1
Output voltage: (fixed):	5V±1%	12V±1%	15V±1%	24V±1%
Output current:	0-12A	0-5A	0-4A	0-2,5A
Ripple:			<40mV _{PP}	
Line regulation (100% I _{OUT}): Δ iV _{OUT}			<0,2%	
Load regulation static (10...90% I _{OUT}): Δ iV _{OUT}			<0,2%	
Transient response (10...90% I _{OUT}):			1ms	
Switching frequency, converter type:			100kHz forward converter	
Current limit:	>12,5A	>5,3A	>4,3A	>2,7A
Short circuit protection:			continuous, automatic restart	
Overvoltage protection (OVP):	6,0-6,7V	13,2-15,0V	16,5-18,0V	27,0-29,0V
Temperature-coefficient/°C:			0,02%	
Current sharing at redundant use with ASF signal:	>2,4A	>1,0A	>0,8A	>0,5A
Voltage compensation with SENSE max. NOTE 1:			0,5V	
DC-FAIL signal:	Active low when unit fails (NPN-open collector signal; 20mA; I _{O,4A})			
Derating:			2W/°C above 55°C	

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Output specification

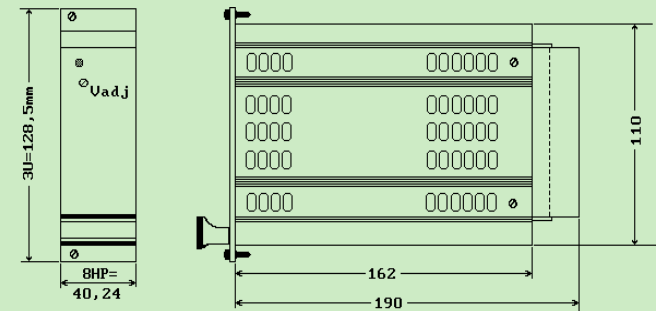
PK120	V1	V1	V1	V1
Output voltage:	5V	12V	15V	24V
Output adjustment range:	4,5-5,5V	10,8-13,2V	13,5-16,5V	21,6-26,4V
Output current:	0-20A	0-10A	0-8A	0-5A
Ripple:	>40mV _{pp}			
Line regulation (100% I _{OUT}): Δ iV _{OUT}	>0,2%			
Load regulation static (10...90% I _{OUT}): Δ iV _{OUT}	>0,2%			
Transient response (10...90% I _{OUT}):	0,5ms			
Switching frequency, converter type:	100kHz forward converter			
Current limit:	>22A	>11A	>8,8A	>5,5A
Short circuit protection:	continuous, automatic restart			
Overvoltage protection (OVP):	5,0-7,0V	12,0-16,5V	15,0-21,0V	27,0-29,0V
Powerfail-Signal (at full load) >6ms before V _{OUT} :	>4,8V	>11,5V	>14,4V	>23,0V
Temperature-coefficient/°C:	0,02%			
Voltage compensation with SENSE max., NOTE 1:	0,5V			
Derating:	2,4W/°C above 55°C			

PK240	V1	V1	V1
Output voltage:	5V	12V	24V
Output adjustment range:	4,5-5,5V	11-13V	22-26V
Output current:	0-45A	0-20A	0-10A
Ripple:	>40mV _{pp}		
Line regulation (100% I _{OUT}): Δ iV _{OUT}	>0,2%	>0,35%	>0,5%
Load regulation static (10...90% I _{OUT}): Δ iV _{OUT}	>0,2%		
Transient response (10...90% I _{OUT}):	0,5ms		
Switching frequency, converter type:	45kHz push-pull converter		
Current limit:	>46A	>22A	>12A
Short circuit protection:	continuous, automatic restart		
Overvoltage protection (OVP):	5,5-6,5V	14,0-18,0V	26,4-30,0V
Powerfail-Signal (at full load) >6ms before V _{OUT} :	>4,8V	>11,5V	>23V
Temperature-coefficient/°C:	0,02%		
Voltage compensation with SENSE max., NOTE 1:	0,5V		
Derating:	3HE: 8W/°C above 55°C, 6HE: 4W/°C above 55°C		

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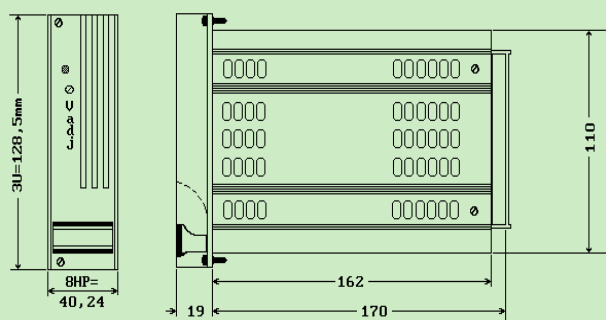
Mechanical details

PK30, PK60

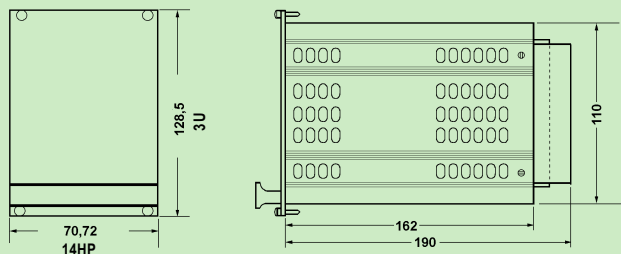


Weight: PK30, PK60, PK60R 850g

PK 60-R

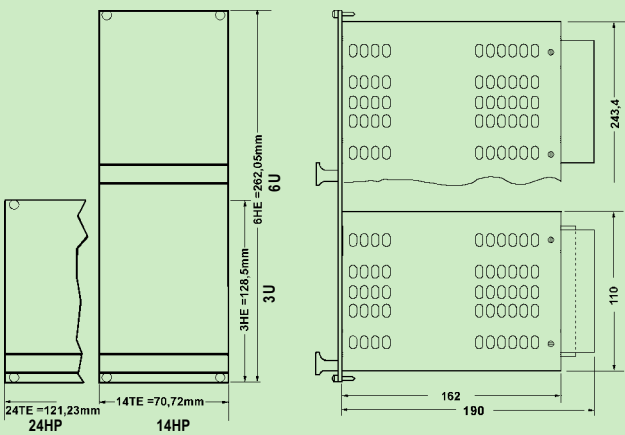


PK120



Weight: PK120 1350g

PK240



Weight: PK240 2200g

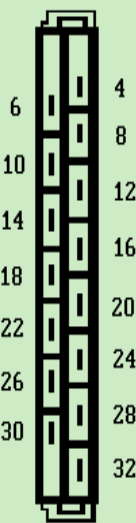
Connector pin allocation H15-Connector

PIN	Function PK30	Function PK60	Function PK60-R	Function PK120
4	+Vout	+Vout	+Vout	+Vout
6	+Vout	+Vout	+Vout	+Vout
8	-Vout	-Vout	-Vout	-Vout
10	-Vout	-Vout	-Vout	-Vout
12 Anm. 1	+SENSE	+SENSE	+SENSE	+SENSE
14 Anm. 1	-SENSE	-SENSE	-SENSE	-SENSE
16	—	Ext I/O+	—	Ext I/O+
18	—	PF Q	DC FAIL	PF Q
20	—	—	ASF	—
22	—	PF Q	—	PF Q
24	—	Ext I/O-	—	Ext I/O-
26	—	—	—	—
28	N	N	N	N
30	L	L	L	L
32	E	E	E	E

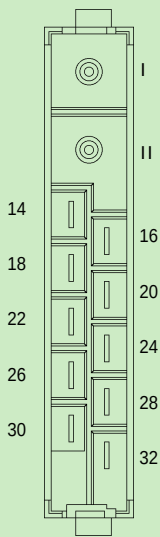
Connector pin allocation H15+2HA-Connector

PIN	Function PK240
I	+Vout
II	-Vout
14 Note. 1	+SENSE
16 Note. 1	-SENSE
22	Ext on/off
24	PF Q
28	N
30	L
32	E

H15-connector



H15+2HA-Connector



Note1: Sense lines must be connected. For maximum compensation for supply lead voltage drop they should be connected as close to the load as possible