GK Series: Monovolt

VDE and UL* approved primary switched mode power supplies with front or rear heat sinks for use in 19" subracks to DIN41494, single input and 30 to 120 Watt output.

Features

- Compact, rugged design
- CE marked for compliance to EMC and Low Voltage Directives
- SENSE operation
- Overvoltage (OVP) and short circuit protected
- Saftey to EN60950
- No minimum load required
- External on/off
- **18 MONTH WARRANTY**

GK Series Monovolt 3U plug-in power supplies

Ordering information

Description: Monovolt GK Series; 30 - 120 Watts output

Model	Output	Order code
GK30-2 12VDC 3U x 8HP	5V/6A	**116-10166A**
GK30-2 24VDC 3U x 8HP	5V/6A	**116-10167J**
GK30-2 48VDC 3U x 8HP	5V/6A	**116-10168F**
GK60-2 24VDC 3U x 8HP	5V/12A	**116-10034B**
GK60-2 24VDC 3U x 8HP	12V/5A	**116-10035K**
GK60-2 24VDC 3U x 8HP	15V/4A	**116-10036G**
GK60-2 24VDC 3U x 8HP	24V/2,5A	**116-10037D**
GK60-2 48VDC 3U x 8HP	5V/12A	**116-10038A**
GK60-2 48VDC 3U x 8HP	12V/5A	**116-10039J**
GK60-2 48VDC 3U x 8HP	15V/4A	**116-10040K**
GK60-2 48VDC 3U x 8HP	24V/2,5A	**116-10041G**
GK 120 24VDC 3U x 14HP	5V/20A	**116-10132C**
GK 120 24VDC 3U x 14HP	12V/10A	**116-10133L**
GK 120 24VDC 3U x 14HP	24V/5A	**116-10135E**
GK 120 48VDC 3U x 14HP	5V/20A	**116-10136B**
GK 120 48VDC 3U x 14HP	12V/10A	**116-10137K**
GK 120 48VDC 3U x 14HP	15V/8A	**116-10138G**
GK 120 48VDC 3U x 14HP	24V/5A	**116-10139D**
Reduced height front panel: GK30		**148-10012F**
Reduced height front panel: GK60		**148-10021E**
Reduced height front panel: GK120		**148-10019G**
Mating connector coded H15 to DIN 41612		**17-10115K**
Coding keys (pkt 10)		**17-10064F**

Technical Data GK Series: Monovolt

Input specification	
Input voltage DC-DC: version dependent	12VDC, 24VDC, 48VDC
Inrush surge current limitation:	line impedance dependent
Input overvoltage protection:	by thyristor crowbar
Hold up time (Nominal V_{IN}; 100% I_{OUT}):	≥3ms
Efficiency:	typ. ≥70%
Safety (Compliant with Low Voltage Directive 73/23/EEC)	
Isolation: input-output	0,5kVDC
Isolation: input-chassis	0,5kVDC
Isolation: output-chassis	0,5kVDC
EMC (Compliant with EMC Directive 89/336/EEC)	
Emmisions:	EN 55022
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 applicable. DIN 41494 part 5 compatible	

GK Series: Monovolt

Output specification

GK30	V1
Output voltage:	**5V**
Output adjustment range:	4,8-5,5V
Output current:	**0-6A**
Ripple:	≤40mV$_{PP}$
Line regulation (100% I_{OUT}): ΔV_{OUT}	≤0,2%
Load regulation static (10...90% I_{OUT}): ΔV_{OUT}	≤0,2%
Transient response (10...90% I_{OUT}):	1ms
Switching frequency, converter type:	85kHz forward converter
Current limit:	≥6,5A
Short circuit protection:	continuous, automatic restart
Overvoltage protection (OVP):	6-6,7V
Temperature coefficient/°C:	0,02%
Voltage compensation with SENSE max.NOTE1:	0,5V
Derating:	1W/°C from 55°C

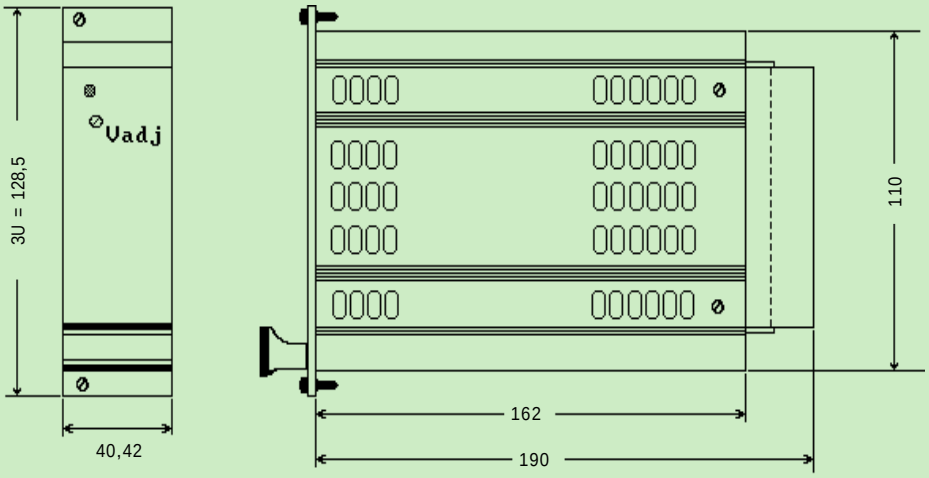
GK60	V1	V1	V1	V1
Output voltage:	**5V**	**12V**	**15V**	**24V**
Output adjustment range:	4,5-5,5V	11-13V	13,5-16,5V	22-26V
Output current:	**0-12A**	**0-5A**	**0-4A**	**0-2,5A**
Ripple:	≤40mV$_{PP}$			
Line regulation (100% I_{OUT}): ΔV_{OUT}	≤0,3%	≤0,2%	≤0,2%	≤0,2%
Load regulation static (10...90% I_{OUT}): ΔV_{OUT}	≤0,2%			
Transient response (10...90% I_{OUT}):	0,8ms	0,5ms	0,5ms	0,5ms
Switching frequency, converter type:	75kHz push-pull converter			
Current limit:	≥12,5A	≥5,3A	≥4,3A	≥2,7A
Short circuit protection:	continuous, automatic restart			
Overvoltage protection (OVP):	5,5-6,0V	13,2-15,0V	16,5-18,0V	26,4-30,0V
Temperature coefficient/°C:	0,02%			
Voltage compensation with SENSE max.NOTE1:	0,5V			
Derating:	2W/°C from 55°C			

GK120	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}): ΔV_{OUT}	≤0,2%			
Load regulation static (10...90% I_{OUT}): ΔV_{OUT}	≤0,2%			
Transient response (10...90% I_{OUT}):	0,5ms			
Switching frequency, converter type:	85kHz push-pull 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
Temperature coefficient/°C:	0,02%			
Voltage compensation with SENSE max.NOTE1:	0,5V			
Derating:	4W/°C from 55°C			

GK Series: Monovolt

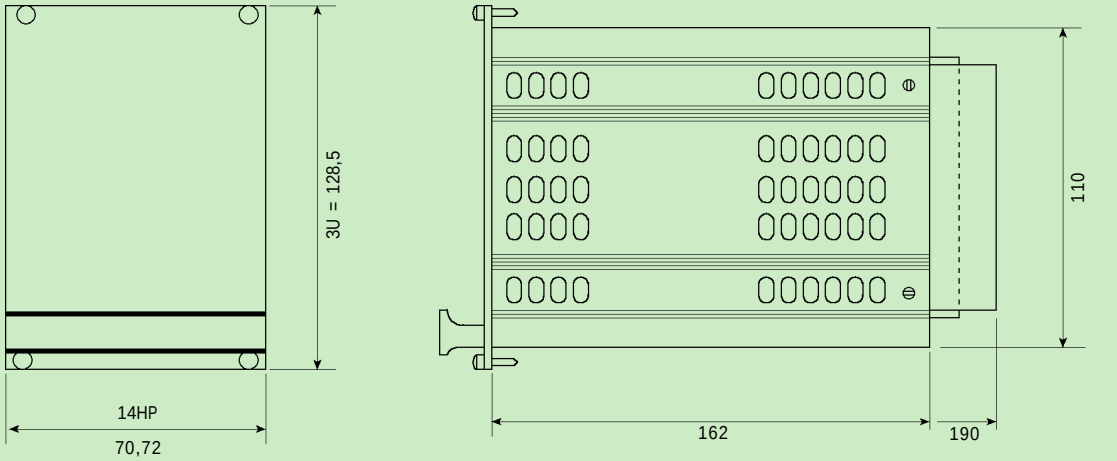
Mechanical details

GK30, GK60



Weight: GK30, GK60 850g

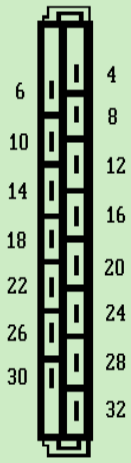
GK120



Weight: GK120 1350g

Pin allocation - H15 connector

PIN	Function *GK30*	*GK60*	*GK120*
4	+Vout	+Vout	+Vout
6	+Vout	+Vout	+Vout
8	-Vout	-Vout	-Vout
10	-Vout	-Vout	-Vout
12	+SENSE	+SENSE	+SENSE
14	-SENSE	-SENSE	-SENSE
16	——	——	——
18	——	——	——
20	——	——	——
22	——	Ext on/off	Ext on/off
24	-Vin	-Vin	-Vin
26	-Vin	-Vin	-Vin
28	+Vin	+Vin	+Vin
30	+Vin	+Vin	+Vin
32	E	E	E



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

GK Series: Bivolt

VDE and UL* approved primary switched mode power supplies with front or rear heat sinks for use in 19" subracks to DIN41494, dual input and 30 or 60 Watt output.

Features

- CE marked for compliance to EMC and Low Voltage Directives
- Overvoltage (OVP) and short circuit protected
- Powerfail signal
- Remote On/Off
- No minimum load required
- Coded H15 connector
- Standardized pinning
- Thermally optimised mechanical design
- **18 MONTH WARRANTY**

GK Series Bivolt 3U plug-in power supplies

Ordering information

Description: Bivolt GK30, GK60; 3U x 8HP, 30 and 60 Watt outputs

Model	Output voltage	Order code
GK30-2 12VDC	±12-15V/1A	**116-010170D**
GK30-2 24VDC	±12-15V/1A	**116-010171A**
GK30-2 48VDC	±12-15V/1A	**116-010172J**
GK60-2A 12VDC	±12-15V/2A	**116-010152F**
GK60-2A 24VDC	±12-15V/2A	**116-010153C**
GK60-2A 48VDC	±12-15V/2A	**116-010154L**
Reduced height front panel: GK30		**148-10013C**
Reduced height front panel: GK60		**148-10011J**
Mating connector coded H15 to DIN 41612		**017-010115K**
Coding keys (pkt 10)		**017-010064F**

Technical Data GK Series: Bivolt

Input specification	
Input voltage DC: version dependent	12VDC, 24VDC, 48VDC
Inrush surge current limitation:	line input impedance dependent
Input overvoltage protection:	by thyristor crowbar
Hold up time (Nominal V_{IN}; 100% I_{OUT}):	≥3ms
Efficiency:	typ. ≥60-80%

Safety (Compliant with Low Voltage Directive 73/23/EEC)	
Isolation: input-output	0,5kVDC
Isolation: input-chassis	0,5kVDC
Isolation: output-chassis	0,5kVDC

EMC (Compliant with EMC Directive 89/336/EEC)	
Emmisions:	EN 55022
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 applicable. DIN 41494 part 5 compatible

GK Series: Bivolt

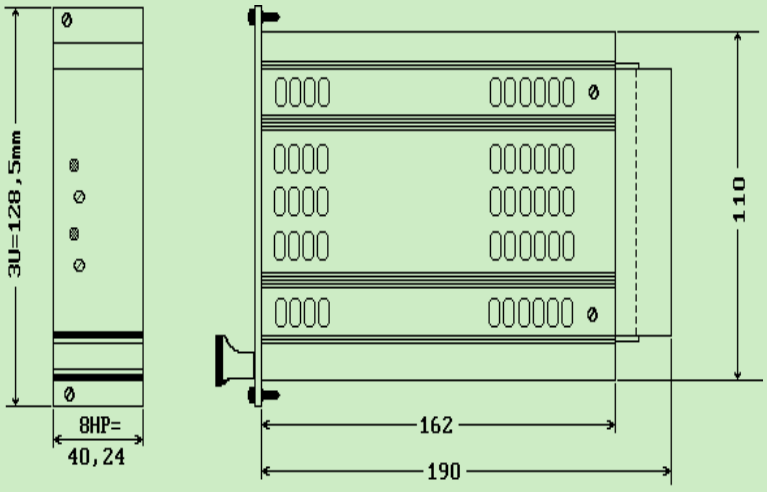
Output specification

GK30	V1, V2
Output voltage: adjustable	**±12V - 15V**
Output current:	**±0-1A**
Ripple:	≤3mV$_{PP}$
Line regulation (100% I_{OUT}): ΔV_{OUT}	≤0,02%
Load regulation static (10...90% I_{OUT}): ΔV_{OUT}	≤0,2%
Transient response (10...90% I_{OUT}):	10μs
Switching frequency, converter type:	95kHz forward converter
Current limit:	≥1,1A
Short circuit protection:	continuous, automatic restart
Overvoltage protection (OVP):	-
Temperature coefficient/°C:	0,05%
Voltage compensation with SENSE max.NOTE1:	-
Derating:	1W/°C from 55°C

GK60	A:V1,V2
Output voltage: adjustable	**±12-15V**
Output current:	**±0-2A**
Ripple:	≤20mV$_{PP}$
Line regulation (100% I_{OUT}): ΔV_{OUT}	≤0,2%
Load regulation static (10...90% I_{OUT}): ΔV_{OUT}	≤0,5%
Transient response (10...90% I_{OUT}):	1ms
Switching frequency, converter type:	85-95kHz forward converter
Current limit:	≥2,2A
Short circuit protection:	continuous, automatic restart
Overvoltage protection (OVP):	fixed on 5V output, optional to special order on others
Temperature coefficient/°C:	0,05%
Voltage compensation with SENSE max.NOTE1:	0,5V maximum on 5V outputs
Derating:	2W/°C from 55°C

Mechanical details

GK30, GK60

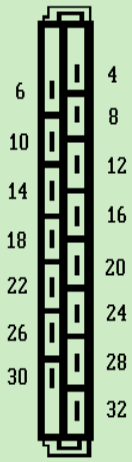


Weight GK30: 690 g
GK60: 800 g

Pin allocation - H15 Connector

PIN	Function *GK30*	Function *GK60*
4	——	——
6	——	——
8	——	——
10	——	——
12	——	——
14	——	——
16	——	——
18	+12-15V	+12-15V
20	0V	0V
22	-12-15V	-12-15V
24	-Vin Note	-Vin
26	-Vin	-Vin
28	+Vin	+Vin
30	+Vin	+Vin
32	E	E

Note: Only on 12VDC input version

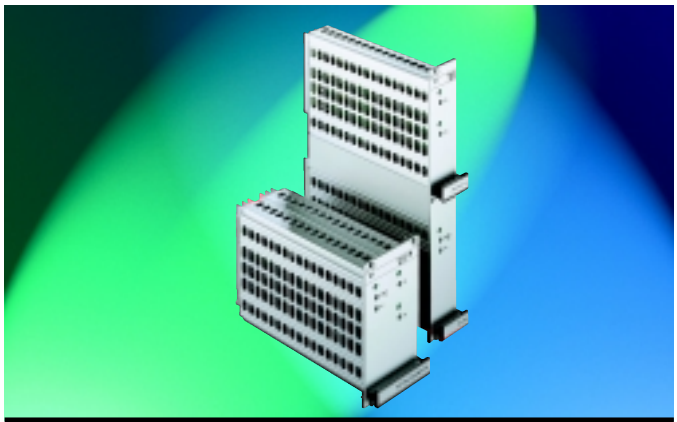


GK Series: Trivolt

VDE and UL* approved primary switched mode power supplies with front or rear heat sinks for use in 19" subracks to DIN41494, single input and 60 to 120 Watt output.

Features

- Compact, rugged design
- CE marked for compliance to EMC and Low Voltage Directives
- SENSE operation (5V output)
- Overvoltage (OVP) protection (5V output)
- Short circuit protected
- No minimum load required
- Coded H15 connector
- Standardized pinning
- Thermally optimised mechanical design
- **18 MONTH WARRANTY**



GK Series DC-DC Trivolt Plug-in power supplies

Ordering information

Description: Trivolt GK60: 3U x 8HP
60 Watt output

Model	Output	Order code
GK60-2A 12V	V1:5V/6A, V2/3: ±12-15V/1A	**116-010097B**
GK60-2A 24V	V1:5V/6A, V2/3: ±12-15V/1A	**116-010098K**
GK60-2A 48V	V1:5V/6A, V2/3: ±12-15V/1A	**116-010099G**
Reduced height front panel: GK60		**148-010010A**
Mating connector coded H15 to DIN 41612		**017-010115K**
Coding keys (pkt 10)		**017-010064F**

Description: Trivolt GK120; 3U x 14HP, 6U x 8HP
120 Watt output

Model	Output	Order code
GK120-2 3U 24V	5V/12A,+12-15V/2A	**116-010175L**
GK120-2 6U 48V	5V/12A,+12-15V/2A	**116-010176H**
GK120-2 3U 24V	5V/12A,+12-15V/2A	**116-010179K**
GK120-2 6U 48V	5V/12A,+12-15V/2A	**116-010180L**
Reduced height front panel: GK120 (3U)		**148-010020H**
Mating connector coded H15 to DIN 41612		**017-010115K**
Coding keys (pkt 10)		**017-010064F**

Technical Data GK Series: Trivolt

Input specification	
Input voltage DC: version dependent	12VDC, 24VDC, 48VDC
Inrush surge current limitation:	line input impedance dependent
Input overvoltage protection:	by thyristor crowbar
Hold up time (Nominal V_{IN}; 100% I_{OUT}):	≥3ms
Efficiency:	typ. ≥70-75%
Safety (Compliant with Low Voltage Directive 73/23/EEC)	
Isolation: input-output	0,5kVDC
Isolation: input-chassis	0,5kVDC
Isolation: output-chassis	0,5kVDC
EMC (Compliant with EMC Directive 89/336/EEC)	
Emmisions:	EN 55022
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 applicable. DIN 41494 part 5 compatible

GK Series: Trivolt

Output specification

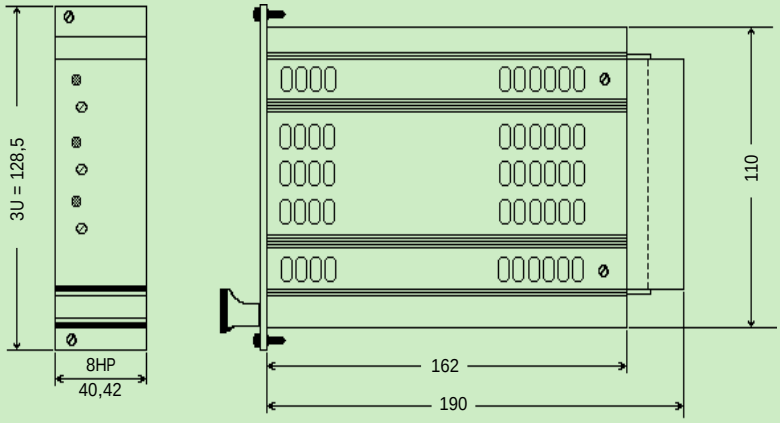
GK60	V1	V2/3
Output voltage:	**5V**	**±12-15V**
Output adjustment range:	4,5-5,5V	-
Output current:	**0-6A**	**±0-1A**
Ripple:	≤40mV$_{PP}$	≤3mV$_{PP}$
Line regulation (100% I_{OUT}): ΔV_{OUT}	≤0,2%	≤0,02%
Load regulation static (10...90% I_{OUT}): ΔV_{OUT}	≤0,2%	≤0,2%
Transient response (10...90% I_{OUT}):	1ms	10µs
Switching frequency, converter type:	85-95kHz forward converter	
Current limit:	≥6,5A	≥1,1A
Short circuit protection:	continuous, automatic restart	
Overvoltage protection (OVP):	6-6,7V	-
Powerfail Signal (at full load) >6ms before V_{OUT}:	<4,8V	-
Temperature coefficient/°C:	0,02%	
Voltage compensation with SENSE max.NOTE1:	0,5V	-
Derating:	2W/°C from 55°C	

GK120	V1	V2,V3
Output voltage:	**5V**	**±12-15V**
Output adjustment range:	4,5-5,5V	-
Output current:	**0-12A**	**0-2A**
Ripple:	≤40mV$_{PP}$	≤20mV$_{PP}$
Line regulation (100% I_{OUT}): ΔV_{OUT}	<0,2%	
Load regulation static (10...90% I_{OUT}): ΔV_{OUT}	≤0,2%	
Transient response (10...90% I_{OUT}):	≤0,2ms	≤0,5ms
Switching frequency, converter type:	75-95kHz push-pull forward converter	
Current limit:	≥12,5A	≥2,2A
Short circuit protection:	continuous, automatic restart	
Overvoltage protection (OVP):	5,5-6,0V	-
Powerfail Signal (at full load) >6ms before V_{OUT}:	<4,8V	-
Temperature coefficient/°C:	0,05%	
Voltage compensation with SENSE max.NOTE1:	0,5V	-
Derating:	4W/°C from 55°C	

GK Series: Trivolt

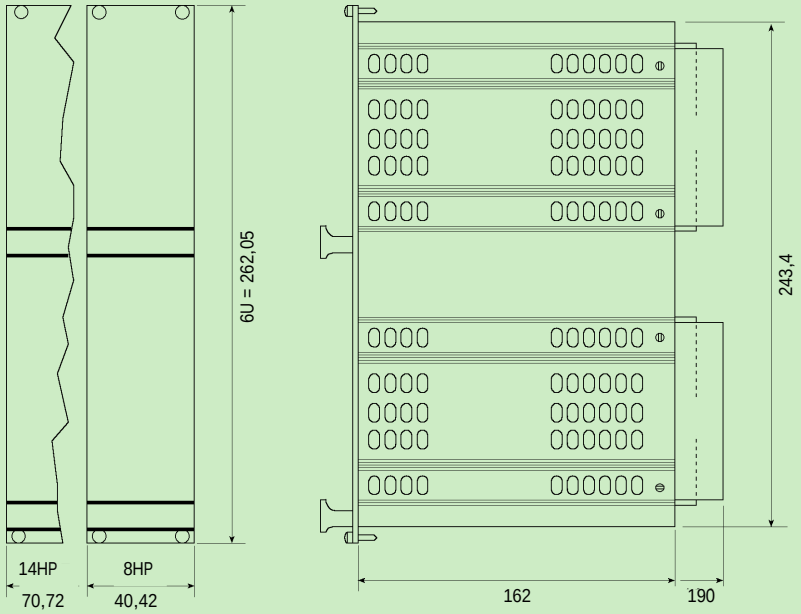
Mechanical details

GK60



Weight: GK60: 700g

GK120



Weight: GK120: 1350g

Pin allocation - H15 connector

PIN	Function	Function
	GK60	***GK120***
4	+5V	+5V
6	+5V	+5V
8	-Vout	-Vout
10	-Vout	-Vout
12	+SENSE	+SENSE
14	-SENSE	-SENSE
16	———	———
18	+12-15V	+12-15V
20	0V	0V
22	-12-15V	-12-15V
24	-Vin Note	———
26	-Vin	-Vin
28	+Vin	+Vin
30	+Vin	+Vin
32	E	E

Note: Only on 12VDC input version