

HDKGS Power Supply User Manual

Safety Notification

Please read this manual carefully before installation, operation, maintenance and inspection. Install and use the product in strict accordance with the manual instructions.



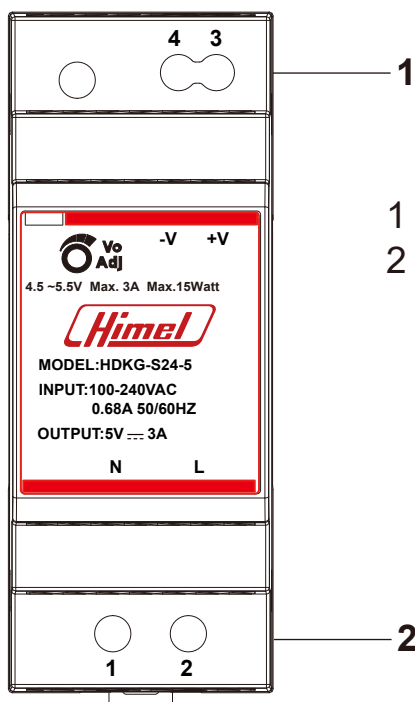
Attention:

- Risk of electrical shock and energy hazard. All failures should be examined by a qualified technician. Please do not remove the case of the power supply by yourself!
- Risk of electric arcs and electric shock (danger to life). Connecting both the primary and the secondary sides together is not allowed.
- Risk of burn hazard. Do not touch the unit in operation and shortly after disconnection!
- Risk of fire and short circuit. The openings should be protected from foreign objects or dripping liquids.
- Only install the unit in a pollution degree 2 environment (Note.1).
- Please do not install the unit in places with high moisture or near the water.
- Output current and output wattage must not exceed the rated value on its specification.

Disconnect system from supply voltage:

Before commencing any installation, maintenance or modification work: Disconnect your system from supply voltage. Make sure that inadvertent connection in circuit will be impossible!

Note.1: Pollution Degree 2 applies where there is only non-conductive pollution that might temporarily become conductive due to occasional condensation. Generally refer to dry, well-ventilated locations, such as control cabinets.

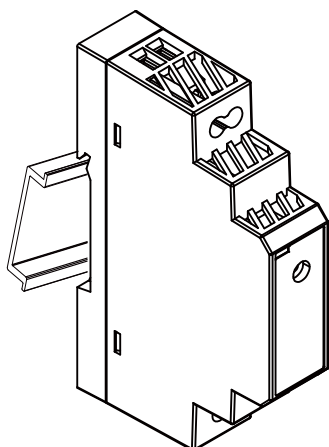


1 - DC Output Voltage Connection Terminals (Screw Type)

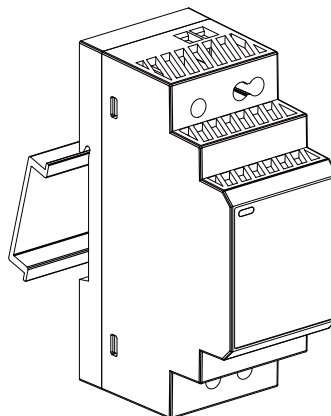
2 - AC Input Voltage Connection Terminals (Screw Type)

Model			HDKG-S15-5	HDKG-S15-12	HDKG-S15-15	HDKG-S15-24	HDKG-S15-48
15W	Output	DC Voltage	5V	12V	15V	24V	48V
		Rated Current	2.4A	1.25A	1A	0.63A	0.32A
		Current Range	0~2.4A	0~1.25A	0~1A	0~0.63A	0~0.32A
		Rated Power	12W	15W	15W	15.2W	15.4W
		Ripple & Noise (Max.)	80mVp-p	120mVp-p	120mVp-p	150mVp-p	240mVp-p
		Voltage Adjustment Range	4.5~5.5V	10.8~13.8V	13.5~18V	21.6~29V	43.2~55.2V
		Voltage Accuracy	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%
		Line Regulation	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
		Load Regulation	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
		Startup, Rise Time	2000ms,80ms/230VAC 2000ms, 80ms/115VAC(at full load)				
		Hold-up Time (Typ.)	30ms/230VAC 12ms/115VAC(at full load)				
	Input	Voltage Range	85~264VAC(277VAC Available) 120 ~ 370VDC(390VDC Available)				
		Frequency Range	50~60Hz				
		Efficiency(Typ.)	80%	85%	85.5%	86%	87%
		AC Range(Typ.)	0.5A/115VAC 0.25A/230VAC				
		Inrush Current (Typ.)	Available25A/115VAC 45A/230VAC				

Model			HDKG-S24-5	HDKG-S24-12	HDKG-S24-15	HDKG-S24-24	HDKG-S24-48
24W	Output	DC Voltage	5V	12V	15V	24V	48V
		Rated Current	3A	2A	1.6A	1A	0.5A
		Current Range	0~3A	0~2A	0~1.6A	0~1A	0 ~ 0.5A
		Rated Power	15W	24W	24W	24W	24W
		Ripple & Noise (Max.)	80mVp-p	120mVp-p	120mVp-p	150mVp-p	240mVp-p
		Voltage Adjustment Range	4.5~5.5V	10.8~13.8V	13.5~18V	21.6~29V	43.2~55.2V
		Voltage Accuracy	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%
		Line Regulation	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
		Load Regulation	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
		Startup, Rise Time	500ms,50ms/230VAC 500ms, 50ms/115VAC(at full load)				
		Hold-up Time (Typ.)	30ms/230VAC 12ms/115VAC(at full load)				
	Input	Voltage Range	85~264VAC(277VAC Available) 120~370VDC(390VDC Available)				
		Frequency Range	50~60Hz				
		Efficiency(Typ.)	82%	88%	89%	89%	90%
		AC Range(Typ.)	0.68A/115VAC 0.38A/230VAC				
		Inrush Current (Typ.)	Available25A/115VAC 45A/230VAC				



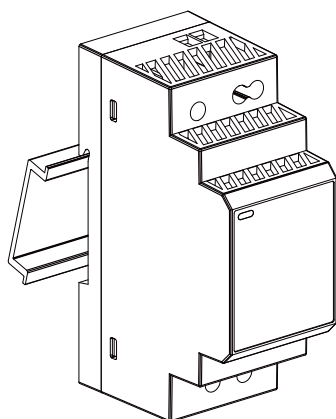
HDKG-S15



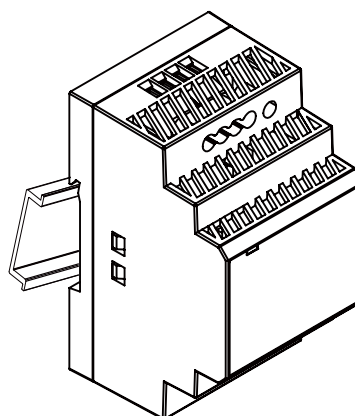
HDKG-S24

Model			HDKG-S30-5	HDKG-S30-12	HDKG-S30-15	HDKG-S30-24	HDKG-S30-48
30W	Output	DC Voltage	5V	12V	15V	24V	48V
		Rated Current	3A	2.2A	2A	1.5A	0.75A
		Current Range	0~3A	0~2.2A	0~2A	0~1.5A	0~0.75A
		Rated Power	15W	26.4W	30W	36W	36W
		Ripple & Noise (Max.)	80mVp-p	120mVp-p	120mVp-p	150mVp-p	240mVp-p
		Voltage Adjustment Range	4.5~5.5V	10.8~13.8V	13.5~18V	21.6~29V	43.2~55.2V
		Voltage Accuracy	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%
		Line Regulation	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
		Load Regulation	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
		Startup,Rise Time	500ms,50ms/230VAC 500ms,50ms/115VAC(at full load)				
		Hold-up Time (Typ.)	30ms/230VAC 12ms/115VAC(at full load)				
	Input	Voltage Range	85~264VAC(277VAC Available) 120~370VDC(390VDC Available)				
		Frequency Range	50~60Hz				
		Efficiency(Typ.)	82%	88%	89%	89%	90%
		AC Range(Typ.)	0.88A/115VAC 0.48A/230VAC				
		Inrush Current (Typ.)	Available25A/115VAC 45A/230VAC				

Model			HDKG-S60-5	HDKG-S60-12	HDKG-S60-15	HDKG-S60-24	HDKG-S60-48
60W	Output	DC Voltage	5V	12V	15V	24V	48V
		Rated Current	6.5A	4.5A	4A	2.5A	1.25A
		Current Range	0~6.5A	0~4.5A	0~4A	0~2.5A	0~1.25A
		Rated Power	32.5W	54W	60W	60W	60W
		Ripple & Noise (Max.)	80mVp-p	120mVp-p	120mVp-p	150mVp-p	240mVp-p
		Voltage Adjustment Range	5.0~5.5V	10.8~13.8V	13.5~18V	21.6~29V	43.2~55.2V
		Voltage Accuracy	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%
		Line Regulation	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
		Load Regulation	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
		Startup,Rise Time	500ms,50ms/230VAC 500ms,50ms/115VAC(at full load)				
		Hold-up Time (Typ.)	30ms/230VAC 12ms/115VAC(at full load)				
	Input	Voltage Range	85~264VAC(277VAC Available) 120~370VDC(390VDC Available)				
		Frequency Range	50~60Hz				
		Efficiency(Typ.)	85%	88%	89%	90%	91%
		AC Range(Typ.)	1.8A/115VAC 0.8A/230VAC				
		Inrush Current (Typ.)	Available30A/115VAC 60A/260VAC				



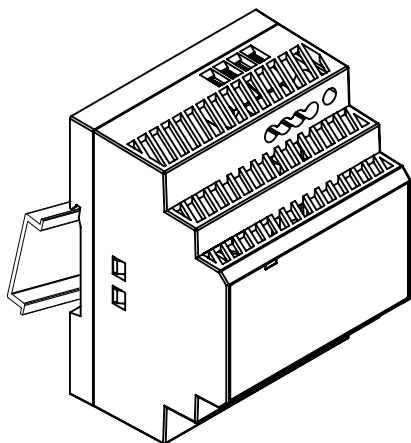
HDKG-S30



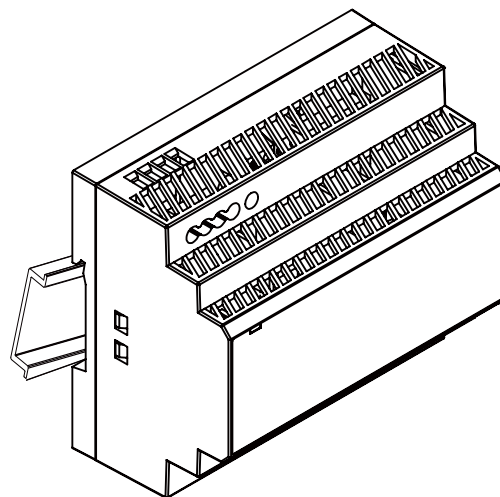
HDKG-S60

Model			HDKG-S100-12	HDKG-S100-15	HDKG-S100-24	HDKG-S100-48
100W	Output	DC Voltage	12V	15V	24V	48V
		Rated Current	7.5A	6.5A	4.2A	2.1A
		Current Range	0~7.5A	0~6.5A	0~4.2A	0~2.1A
		Rated Power	90W	97.5W	100.8W	100.8W
		Ripple & Noise (Max.)	120mVp-p	120mVp-p	150mVp-p	240mVp-p
		Voltage Adjustment Range	12~13V	15~17V	24~25.5V	48~48.7V
		Voltage Accuracy	± 2.0%	± 1.0%	± 1.0%	± 1.0%
		Line Regulation	± 1.0%	± 1.0%	± 1.0%	± 1.0%
		Load Regulation	± 1.0%	± 1.0%	± 1.0%	± 1.0%
		Startup,Rise Time	500ms,60ms/230VAC 500ms,60ms/115VAC(at full load)			
		Hold-up Time (Typ.)	30ms/230VAC 12ms/115VAC(at full load)			
	Input	Voltage Range	85~264VAC(277VAC Available) 120~370VDC(390VDC Available)			
		Frequency Range	50~60Hz			
		Efficiency(Typ.)	88%	89%	90%	90%
		AC Range(Typ.)	3A/115VAC 1.6A/230VAC			
		Inrush Current (Typ.)	Available35A/115VAC 70A/230VAC			

Model			HDKG-S150-12	HDKG-S150-15	HDKG-S150-24	HDKG-S150-48
150W	Output	DC Voltage	12V	15V	24V	48V
		Rated Current	115VAC	10.2A	8.55A	5.31A
			230VAC	11.3A	9.5A	6.25A
		Current Range	115VAC	122.4W	128.3W	127.4W
			230VAC	135.6W	142.5W	150W
		Ripple & Noise (Max.)	100mVp-p	120mVp-p	150mVp-p	200mVp-p
		Voltage Adjustment Range	10.8~13.8V	13.5~18V	21.6~29V	43.2~52.2V
		Voltage Accuracy	±2.0%	±1.0%	±1.0%	±1.0%
		Line Regulation	±1.0%	±1.0%	±1.0%	±1.0%
		Load Regulation	±1.0%	±1.0%	±1.0%	±1.0%
		Startup,Rise Time	500ms, 60ms/230VAC 500ms, 60ms/115VAC (at full load)			
		Hold-up Time (Typ.)	30ms/230VAC 12ms/115VAC (at full load)			
	Input	Voltage Range	85 ~ 264VAC (277VAC Available) 120 ~ 370VDC (390VDC Available)			
		Frequency Range	50~60Hz			
		Efficiency(Typ.)	89%	89.5%	90.50%	90.50%
		AC Range(Typ.)	3A/115VAC 1.8A/200~240VAC			
		Inrush Current (Typ.)	Available35A/115VAC 70A/230VAC			



HDKG-S100



HDKG-S150

Technical Data

Operating Temperature (see derating curves page 5)	-30 ~ +70 °C (see derating curves on page 5)
Working humidity	20 ~ 90%RH,Non-condensing
Storage temperature and humidity	-40~+85°C, 10~95%RH, Non-condensing
Temperature coefficient	±0.03%/°C (0~50°C)
Operating altitude	III; In accordance with EN61558, EN50178, EN60664-1, EN62477-1; the maximum altitude is 2000 meters
Overvoltage Category	10 ~ 500Hz, 2G, 10 minutes per cycle; 60 minutes each for X, Y, Z axes; Mounting: Complies with IEC60068-2-6

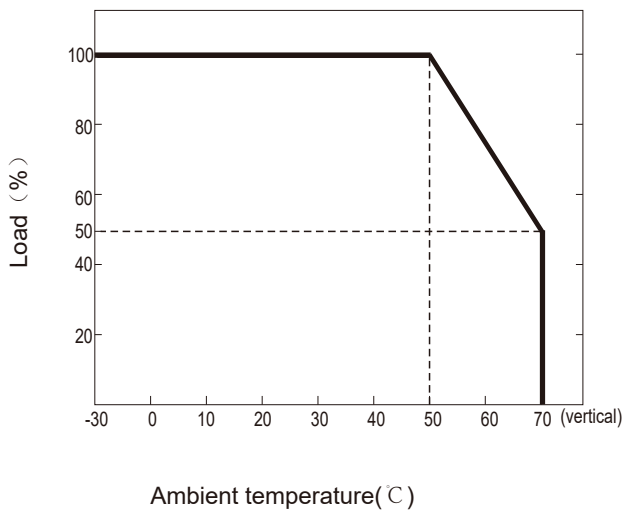
If the equipment is used in an unspecified or unauthorized manner, the protection provided by the equipment may be impaired.

In case of DC supply, the supply must be a secondary circuit that is isolated from mains by an isolating transformer.

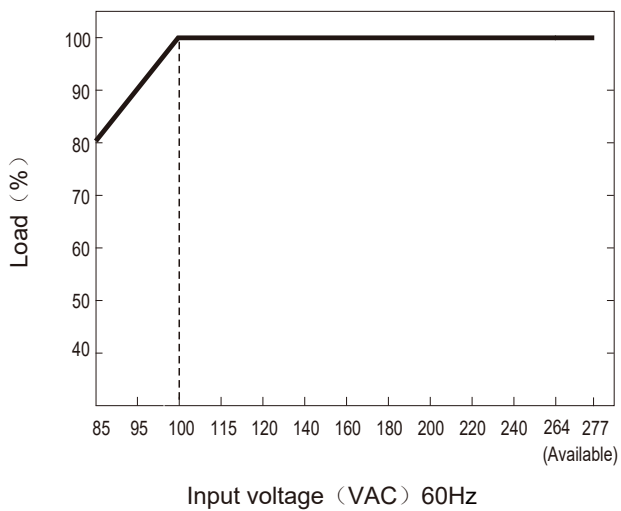
For means of disconnection a switch or circuit breaker, located near the product, must be included in the installation. A marking as disconnecting device for the product is required.

The device has an internal fuse. The unit is tested and approved with branch circuit protective device up to 20 A. This circuit breaker can be used as disconnecting device. The power supply is only suitable for audio, video, information, communication, industrial and control equipment.

Derating Curve



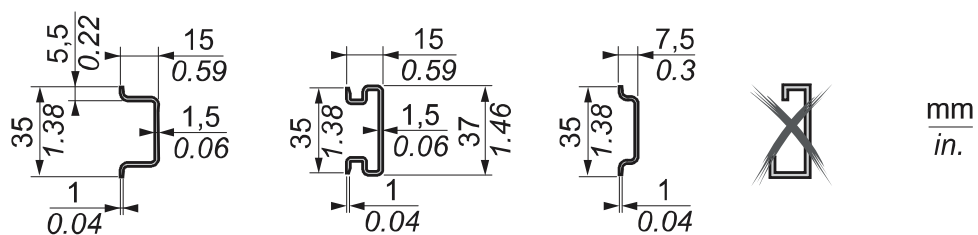
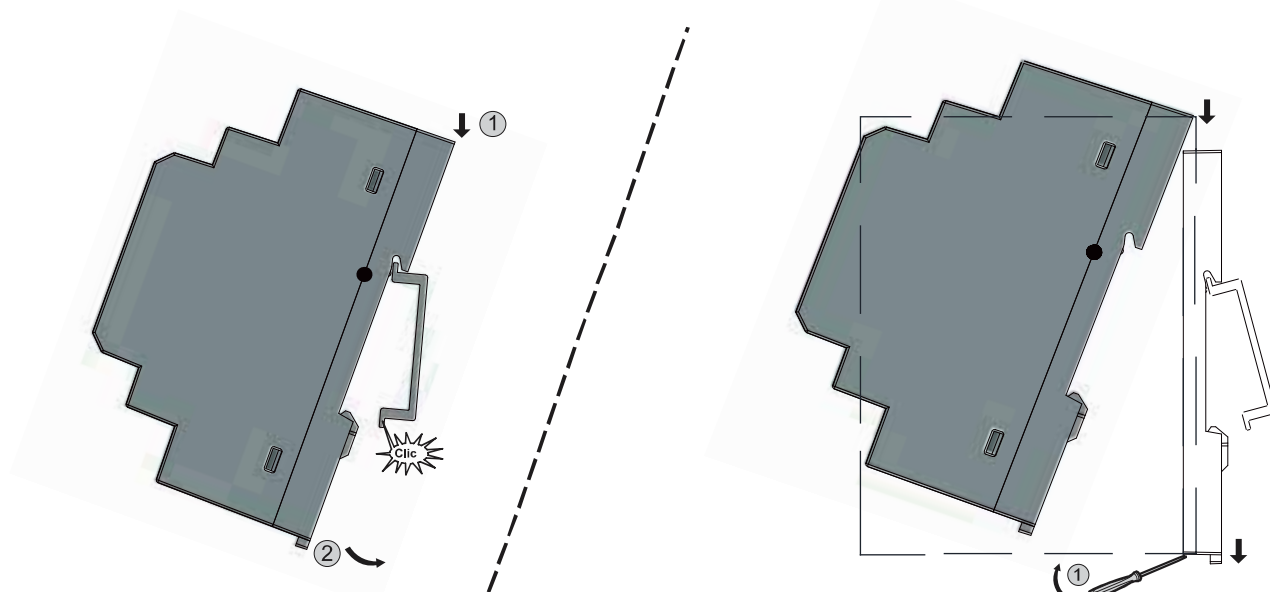
Reduced Voltage Output VS Input Voltage Curve



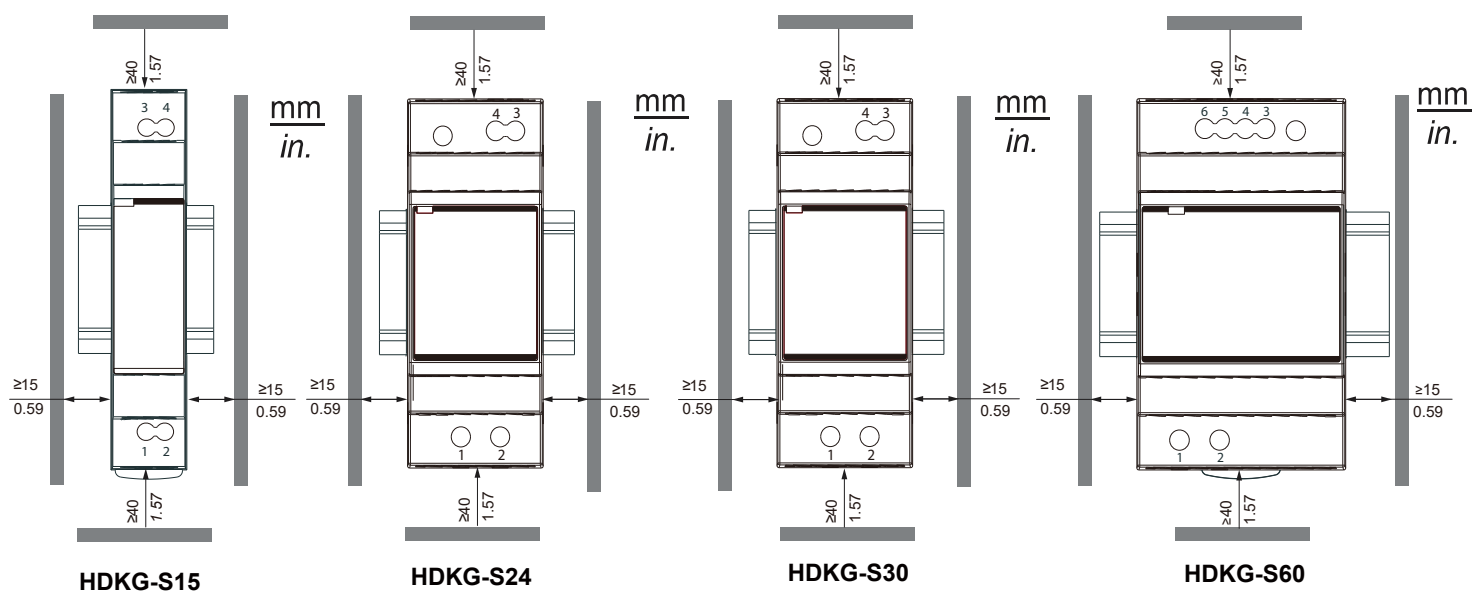
θ° : Ambient Temperature

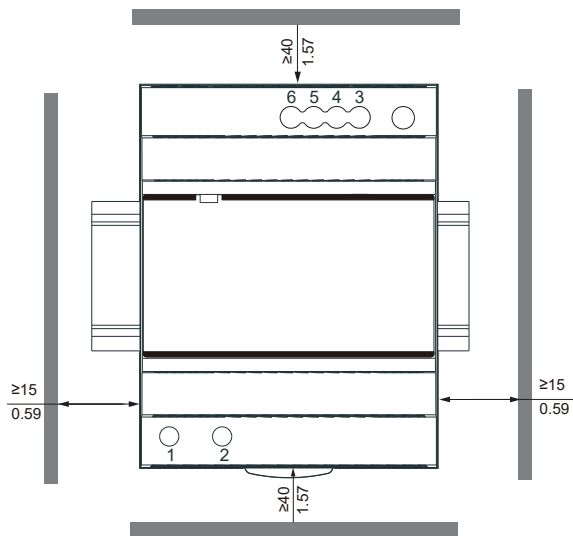
% : Percentage of the maximum load

Installation and disassembly

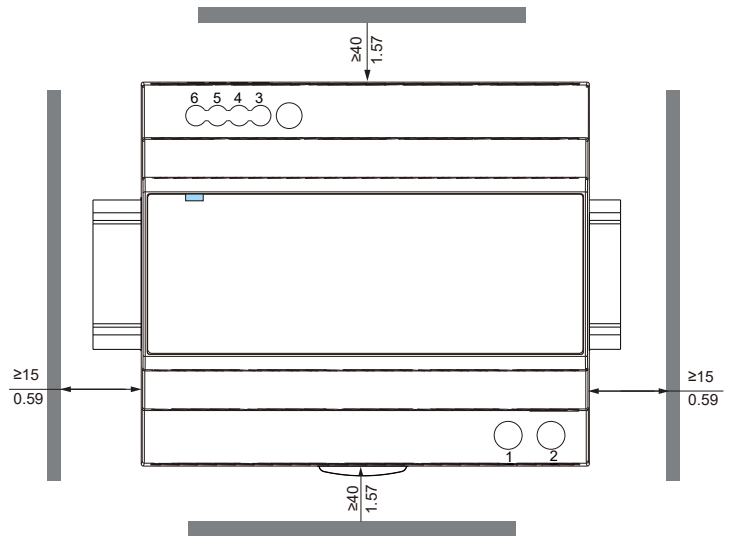


Recommended installation dimensions





HDKG-S100

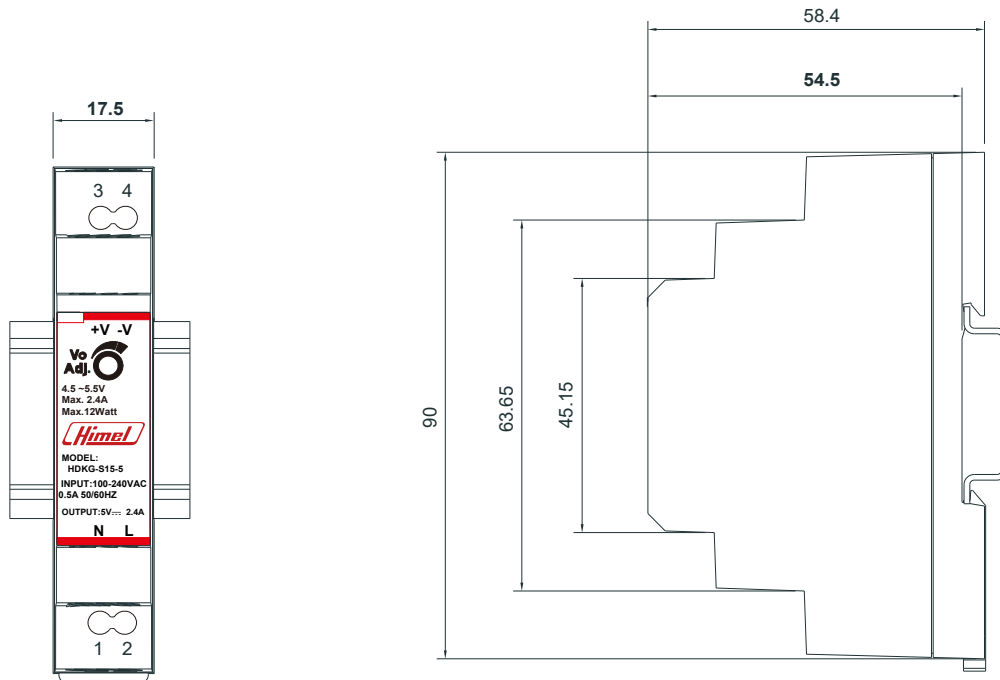


HDKG-S150

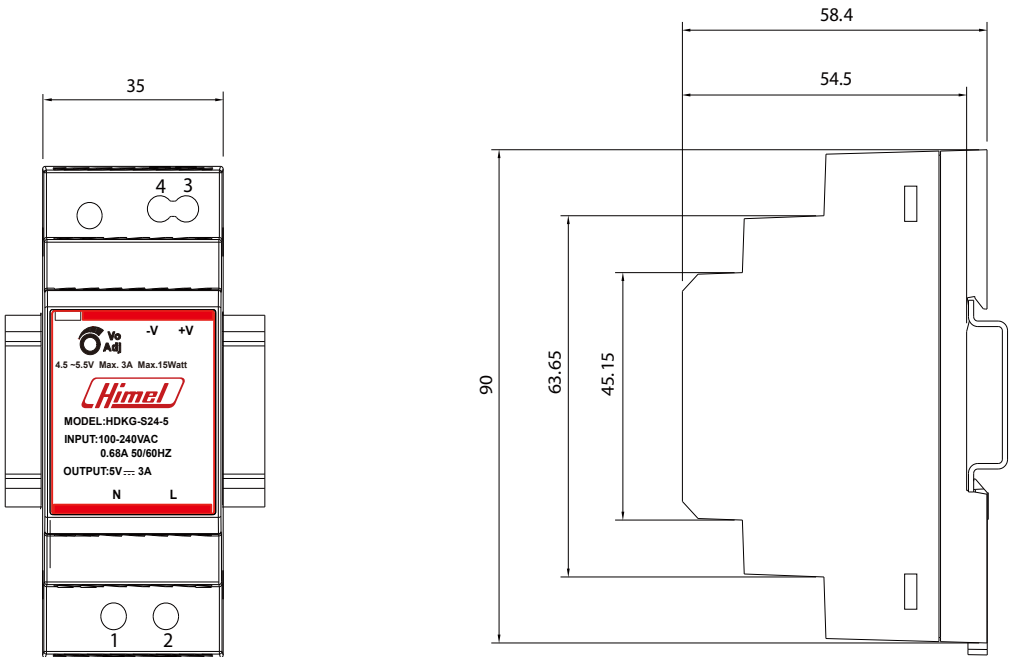
Product Dimension

(Unit: mm, Tolerance: $\pm 0.5\text{mm}$)

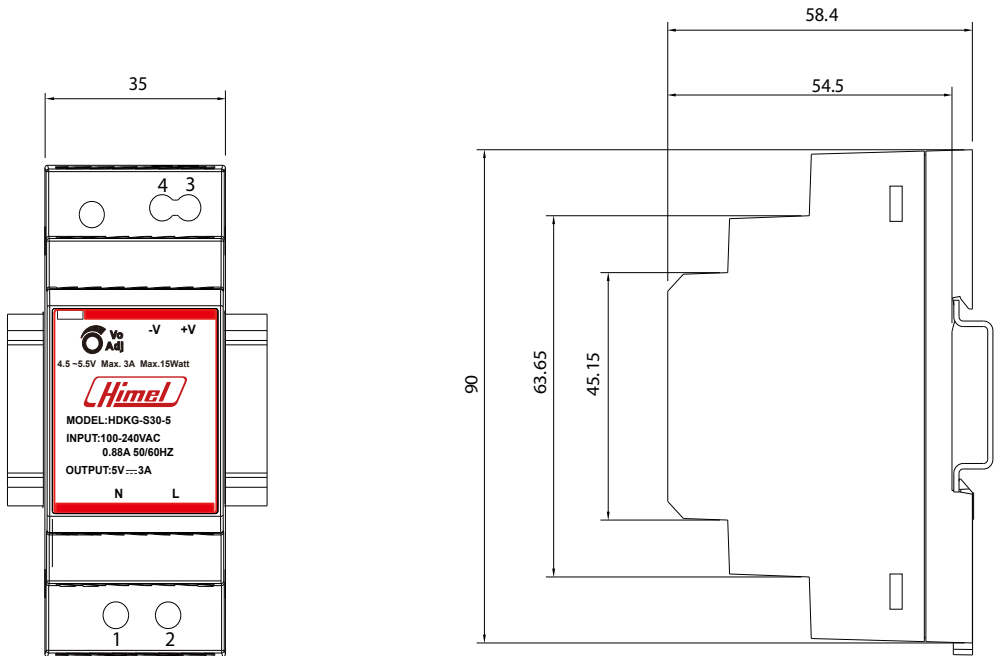
HDKG-S15



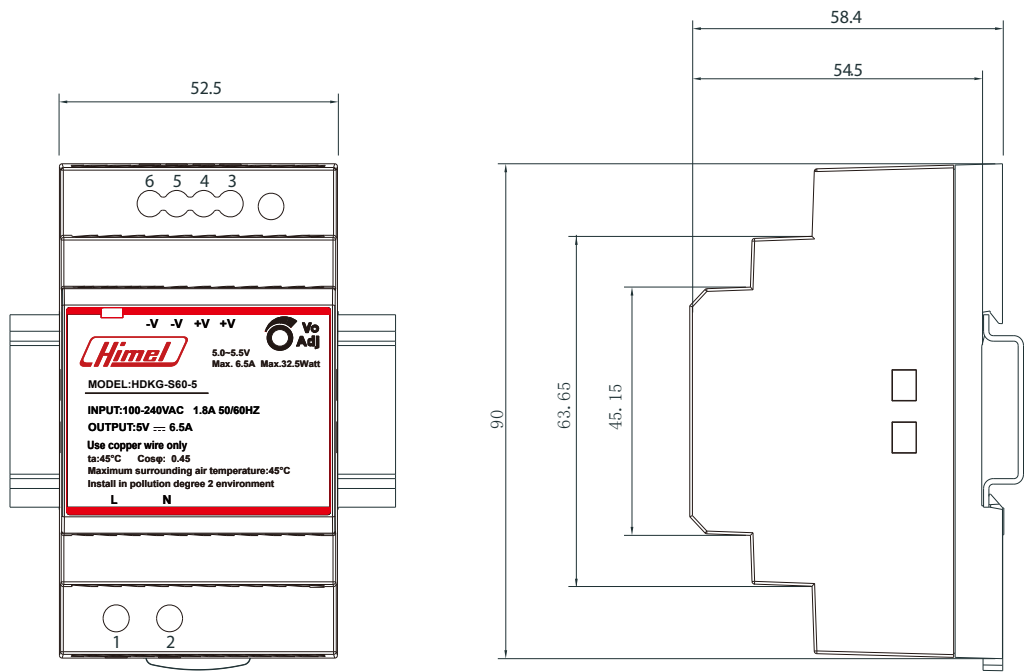
HDKG-S24



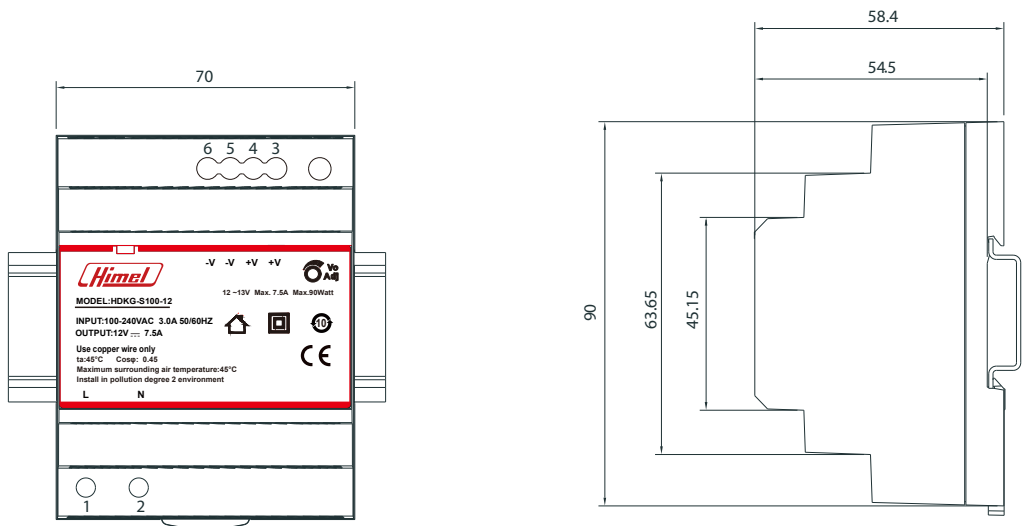
HDKG-S30



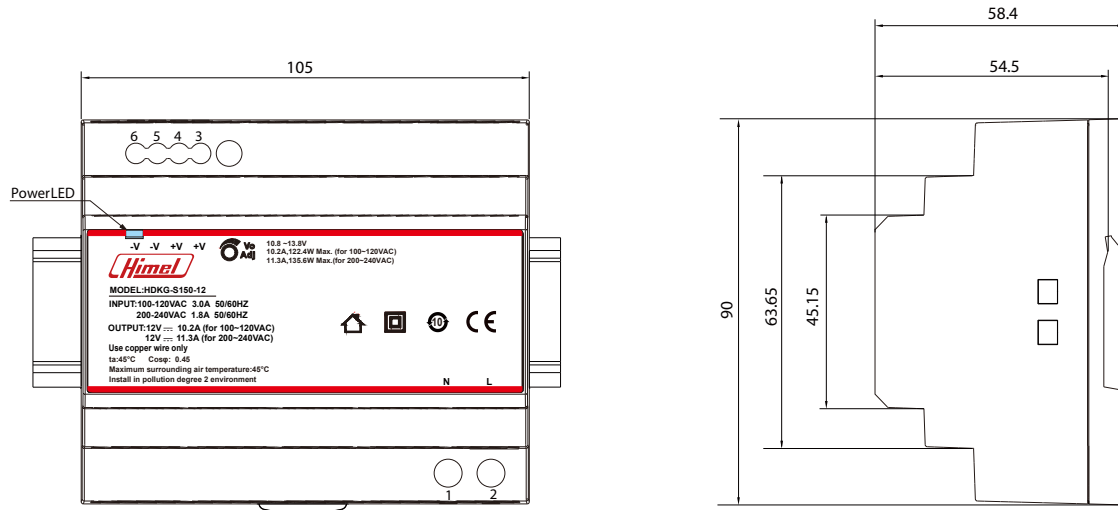
HDKG-S60



HDKG-S100



HDKG-S150



Wiring notification

Use copper conductors only

The recommended torque setting for terminals is shown as below

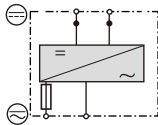
Model	I/P	O/P
HDKG-S15	5kgf-cm(4.4Lb-in)	5kgf-cm(4.4Lb-in)
HDKG-S24	5.1kg~6.9kgf-cm(4.5~6Lb-in)	5kgf-cm(4.4Lb-in)
HDKG-S30	5.1kg~6.9kgf-cm(4.5~6Lb-in)	5kgf-cm(4.4Lb-in)
HDKG-S60	5.1kg~6.9kgf-cm(4.5~6Lb-in)	5kgf-cm(4.4Lb-in)
HDKG-S100	5.1kg~6.9kgf-cm(4.5~6Lb-in)	5.8kgf-cm(5~7Lb-in)
HDKG-S150	5.8kgf-cm(5.0Lb-in)	5.8kgf-cm(5.0Lb-in)

Use copper wire only, and recommended wires are shown as below:

AWG	18	16	14
Rated Current of Equipment(Amp)	7	10	15
Cross-section of Lead (mm ²)	0.8	1.3	2.1

Note : Current each wire carries should be de-rated to 80% of the current suggested above when using 4-6 wires connected to the unit

HDKG-S15-5 / HDKG-S15-12 / HDKG-S15-15 / HDKG-S15-24 / HDKG-S15-48

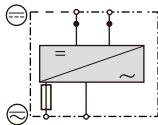


Terminal Pin Definitions

Pin Code	Pin Function	Pin Code	Pin Function
1	AC/N	3	+V
2	AC/L	4	-V

	N·m	0.49
	lb-in	4.4
	Ø 4.5 mm	(0.18 in.)

HDKG-S24-5 / HDKG-S24-12 / HDKG-S24-15 / HDKG-S24-24 / HDKG-S24-48

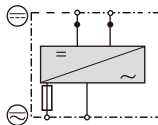


Terminal Pin Definitions

Pin Code	Pin Function	Pin Code	Pin Function
1	AC/N	3	+V
2	AC/L	4	-V

	N·m	0.49
	lb-in	4.4
	Ø 4.5 mm	(0.18 in.)

HDKG-S30-5 / HDKG-S30-12 / HDKG-S30-15 / HDKG-S30-24 / HDKG-S30-48

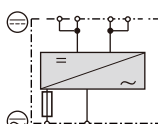


Terminal Pin Definitions

Pin Code	Pin Function	Pin Code	Pin Function
1	AC/N	3	+V
2	AC/L	4	-V

	N·m	0.49
	lb-in	4.4
	Ø 4.5 mm	(0.18 in.)

HDKG-S60-5 / HDKG-S60-12 / HDKG-S60-15 / HDKG-S60-24 / HDKG-S60-48

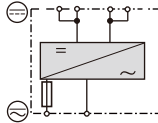


Terminal Pin Definitions

Pin Code	Pin Function	Pin Code	Pin Function
1	AC/L	3,4	+V
2	AC/N	5,6	-V

	N·m	0.49
	lb-in	4.4
	Ø 4.5 mm	(0.18 in.)

HDKG-S100-12 / HDKG-S100-15 / HDKG-S100-24 / HDKG-S100-48

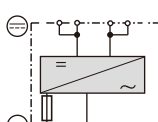


Terminal Pin Definitions

Pin Code	Pin Function	Pin Code	Pin Function
1	AC/L	3,4	+V
2	AC/N	5,6	-V

	N·m	0.49
	lb-in	4.4
	Ø 4.5 mm	(0.18 in.)

HDKG-S150-12 / HDKG-S150-15 / HDKG-S150-24 / HDKG-S150-48



Terminal Pin Definitions

Pin Code	Pin Function	Pin Code	Pin Function
1	AC/N	3,4	+V
2	AC/L	5,6	-V

	N·m	0.49
	lb-in	4.4
	Ø 4.5 mm	(0.18 in.)