

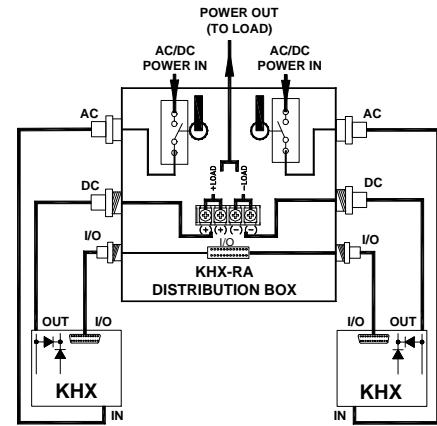
KEPCO KHX 300W SERIES POWER SUPPLIES WATER AND WEATHER PROOF FOR EXTREME ENVIRONMENTS



CE
IP67
Σx
NEMA 4X



SERIES KHX



Kepeco's sealed KHX power supply modules are ideal for extreme environments applications. The rugged die-cast aluminum housing is water, ice, oil and dust resistant in compliance with IP67 and NEMA 4X standards. The metal case works as an efficient heatsink, allowing full power operation of up to +60°C ambient temperature (no fan required). The unit is shock- and vibration-proof, permitting direct mounting on a machine.

Designed to meet multiple safety standards, as well as ATEX certification applications in hazardous locations, e.g. chemical or food processing industries. The KHX 300W series offers a cost-efficient solution for decentralized power systems in industrial automation applications with critical environment conditions.

Standard configuration uses hermetic sealed connectors per MIL C-5015; MIL-DTL-12520; MIL-DTL-22992; MIL-DTL-38999. Various connector interfaces, military or commercial/industrial: Pin-sleeve/IEC 60309 style for AC, multi-pin/circular style for DC and I/O. Flywire/cables with any terminations are also available as standard features.

KHX FEATURES

- Rugged isolated power supplies for harsh outdoor environments.
- Die-cast and extruded aluminum housing.
- Dust, water (including salt water), ice and oil resistant enclosure.
- IP67 temporary submersion and NEMA 4X rated, IP69K.
- Connection via waterproof I/O connectors.
- Shock and vibration-proof construction.
- Operating temperature range -40°C to +85°C.
- Universal input 85 to 264VAC plus DC input.
- Output voltage adjustable.
- DC OK indicator or METER LED.
- Low Ripple and noise.
- Class I, zone 2 approved, including ATEX certification (tested in accordance to IECEx).

KHX MODEL TABLE

MODEL	OUTPUT VOLTAGE (Volts)		OUTPUT CURRENT (Amps)	RIPPLE & NOISE (Percent)	EFFICIENCY (Percent)
	Nominal (Factory Set)	Adjustment Range			
300 WATT MODELS					
KHX 12-25R	12	11.4 - 13	25	1.5%	<90%
KHX 24-13R	24	22.8 - 26	13	1.5%	<90%
KHX 28-11R	28	27 - 31.5	11	1.5%	<90%
KHX 48-6R	48	47 - 50	6	1.5%	<90%

(1) Storage temperature -40°C to +85°C. Operating temperature -20°C to +75°C.

KHX OUTPUT SPECIFICATIONS

Output Regulation	<4% ⁽¹⁾	
Ripple and Noise		20MHz bandwidth
Electronic short circuit protection	Yes	Auto recovery after removing short
Output Overvoltage protection	Latching	Need to cycle AC to restart
Hold-up Time	16 mS	@90 VAC, 75% load

(1) Includes line (90 - 264 VAC), load (0 - 100%) and temperature (0 - 50°C)

KHX INPUT SPECIFICATIONS

SPECIFICATION	RATING/DESCRIPTION	CONDITION
a-c voltage 1000W models	Nominal	90-264 VAC
	AC Range	85-264 VAC
	DC Range	85-375 VDC
Input Frequency	47 - 63Hz	440Hz with reduced PFC
Harmonic Limits	EN 61000-3-2	
Input Current @ Full load	230 VAC	1.0A
	115 VAC	2.0A
Input Fuse	Dual Fuses (L + N)	Fast acting (not user accessible)

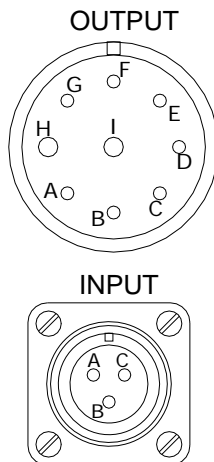
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KHX GENERAL SPECIFICATIONS

SPECIFICATION		RATING/DESCRIPTION	CONDITION
Temperature Range	Operating:	-40°C to +70°C	max.
	Storage:	-40°C to +85°C	
Power Derating		4%/K	Above 50°C
Safety Standards (Designed to meet)	Information technology equipment	IEC/EN 60950-1	
	Industrial control equipment	UL 508, File e210002	
	Electrical Equipment for measurement, control, laboratory	IEC/EN 61010-1, C22.2 61010-1-12, UL 61010-1 3rd	
Electromagnetic compatibility (EMC), emissions (Designed to meet)	Emissions	EN 61000-6-3	
	Conducted RI suppression on input	EN 55011, EN 55032	
	Radiated RI suppression	EN 55011, EN 55032	
	Harmonic Limits	EN 61000-3-2, Class A	
Electromagnetic compatibility (EMC), immunity (Designed to meet)	Immunity	EN 61000-6-2	
	Electrostatic Discharge (ESD)	EN 61000-4-2	8kV/15kV perf. criteria A
	Radiated RF field immunity	EN 61000-4-3	12V/m perf. criteria A
	Electrical fast transient/burst immunity input	EN 61000-4-4	4.4kV, perf. criteria A
	Electrical fast transient/burst immunity output	EN 61000-4-4	2.2kV, perf. criteria A
	Surge immunity line - neutral	EN 61000-4-5	2.2kV, perf. criteria A
	Surge immunity line - ground	EN 61000-4-5	1.1kV, perf. criteria A
	Surge immunity neutral - ground	EN 61000-4-5	1.1kV, perf. criteria A
Safety Class		degree of protection class I	
Case Protection		IP67 (IEC 60529), NEMA 4X rated, UL 50	
		Degree of protection (IP67)	
		Water Intrusion test	
		Dust test	
		Icing test	
		Oil exclusion test	
		Salt spray test	
		Gasket aging test	
		Hosedown test	
Humidity		Up to 100% rel. hum.	with condensation
Reliability		>900,000 h	Calculated MTBF @+40°C per IEC 61709
	Shock	±3 x 30g shocks in each plane, total 18 shocks ⁽¹⁾	30g shocks = 11ms (±0.5ms), 1/2 sine
	Vibration	Single axis, 10-500Hz, at 2g (sweep and endurance at resonance) ⁽²⁾	In all 3 planes.
Altitude	Operational	3000m (10,000 ft.)	max.
	Storage	5000m (16,400 ft.)	max.
Material		Die cast extruded aluminum	
Weight		3500g (7.7 lbs/)	
Dimensions		6.45" x 3.54" x 10" (164mm x 90mm x 255mm)	D x W x H

(1) Conforms to EN 60068-2-27, EN 60068-2-47, IEC 69-2-27, IEC 68-2-47, JIS C0041-1987; MIL-STD-810E/F, Method 516.5, Pro I, IV, VI.
 (2) Conforms to EN 60068-2-6, IEC 68-6.; MIL-STD-810E, Method 514.4, Pro I, Cat.1.9.



PIN	FUNCTION
A	+S
B	-S
C	+RC
D	-RC
E	N.O. Alarm
F	Alarm COM
G	N. C. Alarm
H	OUT "+"
	OUT "-"

PIN	FUNCTION
A	Hot
B	GND PE
C	Neutral

