

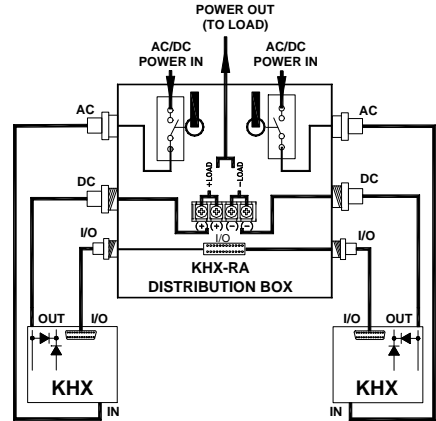
KEPCO KHX 300W SERIES POWER SUPPLIES WATER AND WEATHER PROOF FOR EXTREME ENVIRONMENTS



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 +50°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 +75°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).
- Auxiliary power 5V @ 1A.

KHX MODEL TABLE

MODEL	OUTPUT VOLTAGE (Volts)		OVP SETTING (Volts)	OUTPUT CURRENT (Amps)	RIPPLE & NOISE (Percent)	EFFICIENCY (Percent)
	Nominal (Factory Set)	Adjustment Range ⁽¹⁾	Factory Setpoint	50° C	(p-p) 20MHz	120V/230V 100% Load
300 WATT MODELS						
KHX 12-25R	12	10.8 - 13.2	13.8 - 16.8	25	1.5%	89/91
KHX 24-13R	24	21.6 - 26.4	27.6 - 33.6	13	1.5%	90/92
KHX 48-6R	48	43.2 - 52.8	55.3 - 67.2	6	1.5%	90/92

(1) Factory preset adjustment range.
(2) Storage temperature -40°C to +85°C. Operating temperature -20°C to +75°C. Starting at -40°C specifications may not be in normal range.

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)

KHX OUTPUT SPECIFICATIONS

SPECIFICATION	RATING/DESCRIPTION	CONDITION
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)

www.kepcopower.com/khx.htm



KHx GENERAL SPECIFICATIONS

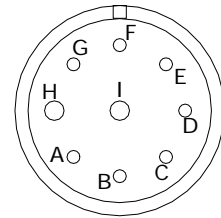
SPECIFICATION	RATING/DESCRIPTION	CONDITION				
Temperature Range	Operating:	-40°C to +75°C		max.		
	Storage:	-40°C to +85°C				
Power Derating		4%/K		Above 50°C		
Safety Standards (Designed to meet)	Information technology equipment	IEC/EN 60950-1				
	Industrial control equipment	UL 508, File e210002				
	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	Degree Of Protection	NEMA	UL	IP	ISO/DIN	
	Standard	NEMA 250	UL 503	IEC 60539	ISO 26503	
	Dust Proof	3	Type 3	IP55	IP55	
	Rain Proof	3R	Type 3R	IP24	IP24	
	Icing Proof	3S	Type 3S	IP54	IP54	
	Weather Proof	3X	Type 3X	IP54	IP54	
	Corrosion Protection Salt Spray Test	4X	Type 4X	IP54	IP54	
	DripProof Oil	12	Type 12	IP54	IP54	
	Oil Ingression (gasket aging test rust proof)	13	Type 13	IP54	IP54	
	Waterproof Hosedown test	4	4	IP66	IP66	
	Waterproof Submersion	6	Type 6	IP67	IP67	
	Hot Water and steam hosedown proof	N/A	N/A	IP69	IP69K	
	Note : A higher rating of ingress protection assume compliance with all lower grades. As example, IP67 means compliance with IP65, IP55 and IP20..For NEMA/UL, a rating of 4X means compliance with 4, 3R and 2.also..					
	Humidity	Up to 100% rel. hum.	with condensation Calculated MTBF @+40°C per IEC 61709			
Reliability	>90,000 h					
Shock	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.





OUTPUT

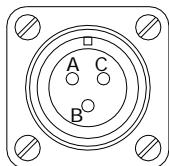


OUTPUT

PIN	FUNCTION
A	+AUX or +S ⁽¹⁾
B	-AUX or -S ⁽¹⁾
C	+RC
D	-RC
E	N.O. Alarm
F	Alarm COM
G	N. C. Alarm
H	OUT "+"
I	OUT "-"

(1)AUX $\pm 5V$ @ 1A may not be offered in all models. Consult Factory.

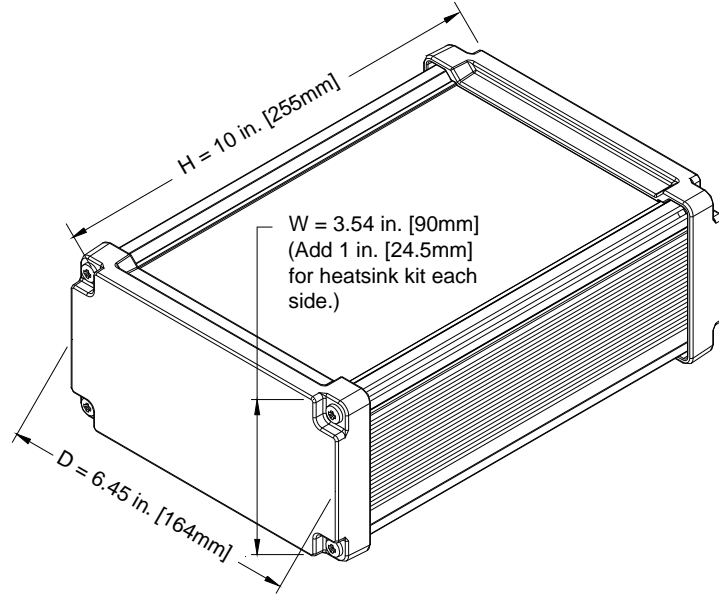
INPUT



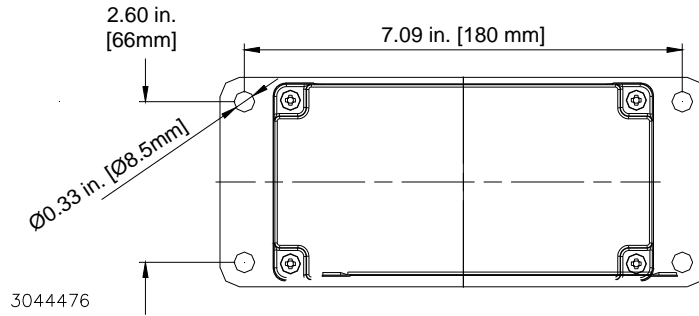
INPUT

PIN	FUNCTION
A	Hot
B	GND PE
C	Neutral

MOUNTING OPTIONS

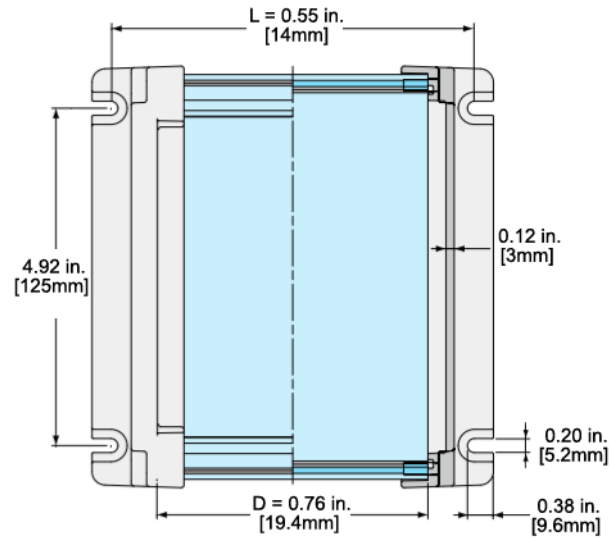


A. Vertical installation: mounting feet with four bolts (5/16 in. [8mm] clearance hole as shown at right



KHX 300W OUTLINE DRAWING

B. Longitudinal Wall Mounting: Mounting flanges available as shown at right



KHX 300W MOUNTING FLANGE OUTLINE DRAWING

C. DIN Rail Mounting: Horizontal, vertical and perpendicular DIN mounting orientations available as shown at right.

DIN RAIL ORIENTATION				
HORIZONTAL (Long Dimension)	HORIZONTAL (Short Dimension)	PERPENDICULAR	VERTICAL (Short Dimension)	VERTICAL (Long Dimension)
L	S	P	VS	VL