

CHARGE IT!

KEPCO'S ENGINE-START BATTERY CHARGERS



KES 12-40 Model (left) and KES 24-50 Model (right)

The KEPCO KES product line is uniquely suitable for any engine-start application. The KES offers the latest in switch mode power supply technology. While most engine-start chargers do not require an electrically quiet output, the KES boast communications quality output, at a switchgear charger price. The KES is also suitable as a battery eliminator.

FEATURES

- Single-Rate Chargers
- Analog Current Meter
- Form C Charge-Fault Output
- Temperature Compensation (Optional)
- Local/Remote ON-OFF

KEPCO MODEL TABLE

MODEL	OUTPUT VOLTAGE (FLOATING)		OUTPUT CURRENT LIMIT			RIPPLE ⁽³⁾ mV rms	NOISE ⁽³⁾ mV p-p	EFFICIENCY		OUTPUT PROTECTION ⁽⁴⁾		
	FACTORY SETTING V d-c	ADJUSTABLE RANGE V d-c	FACTORY SETTING ⁽¹⁾ A d-c	ADJUSTABLE RANGE A d-c	SHORT CIRCUIT ⁽²⁾ A d-c			AC INPUT 100V	AC INPUT 200V	OVER VOLTAGE V d-c	OVER CURRENT A d-c	BATTERY REVERSED ⁽⁵⁾ A d-c
12 VOLT MODELS												
KES 12-20	13.4	9.4 - 16.2	20	4 - 20	18	120	150	77%	81%	25	29	29
KES 12-40	13.4	9.4 - 16.2	40	8 - 40	36	150	200	81%	85%	25	55	58
24 VOLT MODELS												
KES 24-10	26.8	18.8 - 32.4	10	2 - 10	9	150	200	80%	84%	44	17	14.5
KES 23-20	26.8	18.8 - 32.4	20	4 - 20	18	200	300	82%	86%	44	29	29
KES 24-50	26.8	18.8 - 32.4	50	10 - 50	45	200	300	82%	84%	44	70	72.5
48 VOLT MODELS												
KES 48-5	53.6	37.6 - 55.0	5	1 - 5	4.5	200	300	81%	85%	60	11	7.25
KES 48-10	53.6	37.6 - 55.0	10	2 - 10	9	300	400	84%	87%	60	19	14.5
KES 48-25	53.6	37.6 - 55.0	25	5 - 25	22.5	300	400	84%	88%	60	45	36.3

(1) 4% accuracy for factory set current limit.

(2) 10% of current limit setting value foldback.

(3) Ripple and noise = 1.5 x indicated values for Ta = -10°C to 0°C. Values shown are satisfied for 0 to 100% load, 0 to 65°C. measuring bandwidth ≤ 100MHz.

(4) Shutdown upon fault condition. After disconnecting a-c input, remove the fault, wait about 40 seconds, then reconnect a-c input.

(5) Output disconnected for output current > 1.45 x rated current limit. Output limited to a negative Schottky diode drop.

KES GENERAL SPECIFICATIONS		
SPECIFICATION	RATING/DESCRIPTION	CONDITION
Temperature	-10°C to 65°C	Operating (Output performance derated above 50°C and below 0°C)
	-30°C to +75°C	Storage
Cooling	Forced air flow	One fan (exhaust to the left side) Two fans (KES 24-50 & KES 48-25)
Humidity	10 to 90% RH	Operating and storage, wet bulb temperature $\leq 35^{\circ}\text{C}$
Weight	approx. 9.0 lbs. (4.1 Kg)	KES 12-20, KES 24-10 & KES 48-5
	approx. 12.0 lbs. (5.4 Kg)	KES 12-40, KES 24-20 & KES 48-10
	approx. 22.0 lbs. (10 Kg)	KES 24-50 & KES 48-25
Dimensions H x W x D	7.25 x 11.14 x 9 (inches) 184.2 x 283 x 228.6 (mm)	All except KES 24-50 & KES 48-25
	9.25 x 15.16 x 9 (inches) 235 x 384.6 x 228.6 (mm)	KES 24-50 & KES 48-25

KES OUTPUT CHARACTERISTICS		
SPECIFICATION	RATING/DESCRIPTION	CONDITION
Source Effect	0.2% max.	85-132V a-c, 170-265V a-c
Load Effect	0.6% max. (1)	0-100% load (2)
Temperature Effect	1% max.	-10 to 50°C
Time Effect (Drift)	0.5% max.	1/2 to 8 hr.
Output Voltage Temperature Compensation	3mV/(°F)(cell), 5.4mV/(°C)(cell) 0.5% accuracy @ 2.23V cell voltage (3)	Use optional temperature compensation probe, 0°C to +35°C for Lead-Acid battery

- (1) KES 12-20, KES 24-10, KES 48-5: 0.4%.
(2) Measured at front panel test points; minimum input impedance of 1 Megohm required for voltage measurement instrument.
(3) Compensation calculated using: $\Delta V = - (KT) (T_A - 77) (V_B/2.23)$ where V_B = Battery voltage.
 $KT = 0.003\text{V}/(^{\circ}\text{F})(\text{cell})$, T_A = ambient temperature in °F and 2.23 = cell voltage at 77°F.

KES INPUT CHARACTERISTICS				
SPECIFICATION	KES 12-20, KES 24-10, KES 48-5	KES 12-40, KES 24-20, KES 48-10	KES 24-50, KES 48-25	CONDITION
Voltage Range	Nominal: 100-120V a-c, 220-240V a-c Range: 85-265V a-c			
Frequency	Nominal: 50/60Hz; Range: 47-66Hz (1)			
Input Current	100 to 120V a-c input	4.4A a-c max.	8.4A a-c max.	22A a-c max.
	200 to 240V a-c input	2.2A a-c max.	4.2A a-c max.	11A a-c max.
Input Surge	100 to 120V a-c input	20A p-p max.	30A p-p max.	20A p-p max.
	200 to 240V a-c input	40A p-p max.	60A p-p max.	40A p-p max.
Leakage Current	100V a-c input	0.34mA a-c typ.	0.55mA a-c typ.	0.65mA a-c typ.
	240V a-c input	0.46mA a-c typ.	0.75mA a-c typ.	1.25mA a-c typ.
Power Factor	0.99 typ.			100V a-c input, rated output

(1) KES units can operate with source power frequency up to 400Hz nominal (range to 440Hz). Power factor, efficiency and leakage current will derate as frequency increases. Consult factory for additional information.

KES ENGINE START BATTERY CHARGER



KES 12-40 with Optional Temperature Probe



KES 24-50 with Optional Temperature Probe

KEPCO INC. has long enjoyed an excellent reputation as a leading manufacturer of precision laboratory and OEM type power supplies and now brings its 60+ years of expertise in power conversion to the battery charger market.

For more info, visit our Website: www.kepcochargers.com

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