KA60 SERIES

60VA DC/AC INVERTERS
Sine Wave Output

H30×W60×L140 (mm)

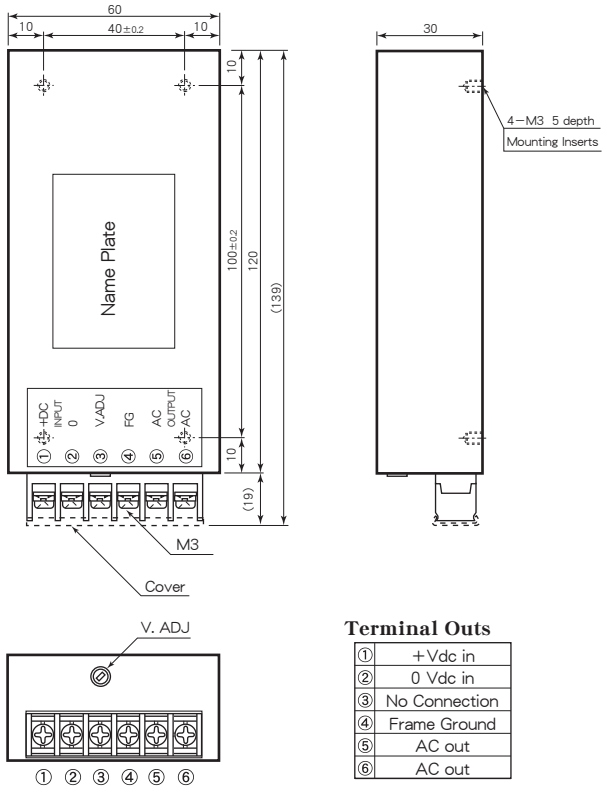
■ Features

- ● High Efficiency 81～85% typical
- ● Input Low Voltage Protection
- ● Input Over Voltage Protection
- ● Thermal Protection
  +90℃～+110℃
- ● Output Frequency Temp. Coefficient
  0.01%/℃ max.
- ● Input-Output Isolation (AC2000V)
- ● Operating Ambient Temperature
  −25℃～+71℃
- ● Adjustable Output Volt. ±5%
- ● Built-in Input and Output Noise Filter
- ● Conformity to RoHS Directive

- ●高効率 81～85% typical
- ●入力低電圧保護回路内蔵
- ●入力過電圧保護回路内蔵
- ●過熱保護回路内蔵
  +90℃～+110℃
- ●出力周波数温度係数
  0.01%/℃ 以下
- ●入出力間絶縁 (AC2000V)
- ●動作周囲温度
  −25℃～+71℃
- ●出力電圧調整可能 ±5%
- ●入出力ノイズフィルタ内蔵
- ●RoHS指令対応

■ Terminal Outs & Dimensions (±0.5mm)

〈Top View〉



Terminal Outs

①	+Vdc in
②	0 Vdc in
③	No Connection
④	Frame Ground
⑤	AC out
⑥	AC out

■ General Characteristics

(at Ta : 25℃, Full Load, Nominal Vin)

- ● Input Voltage — DC12, 24, 48, 96V (See Table 1)
- ● Output Voltage — AC100Vrms, ±5% Adjustable
  AC200Vrms, ±5% Adjustable
  AC220Vrms, ±5% Adjustable
- ● Output Current — See Table 1
- ● Output Frequency — 50Hz, 60Hz, 400Hz, ±0.1%
- ● Output Wave — Sine Wave
- ● Output Wave Distortion — 1.5% max.
  3% max. (Vout : 400Hz only)
- ● Output Voltage Temperature Coefficient — 0.02%/℃ max.
- ● Output Frequency Temperature Coefficient — 0.01%/℃ max.
- ● Efficiency — See Table 1
- ● Line Regulation — ±0.2% max. (at Vin Range)
- ● Load Regulation — ±0.5% max. (0～100% Load)
- ● Short Circuit Protection — Built-in, Auto-restart (See Fig. 2)
- ● Operating Ambient Temp. — −25℃～+71℃ (See Fig. 1)
- ● Storage Temperature — −40℃～+85℃
- ● Isolation Voltage — AC2000V 1 min. (Input−Output)
  AC2000V 1 min. (Input−Case)
  AC1000V 1 min. (Output−Case)
- ● Isolation Impedance — 100MΩ min. (at DC1000V)
  (Input−Output−Case)
- ● Weight — 550g max.
- ● Humidity — 20～90% RH
- ● Shock — 490m/s² (11msec 3directions)
- ● Vibration — 10～55Hz 98m/s²
  (30minutes 3directions)
- ● Surface Structure — Aluminum Case
- ● MTBF — 120,000H
  (Ta : 25℃, 80% Load, Nominal Vin)
- ● Warranty — 5 years

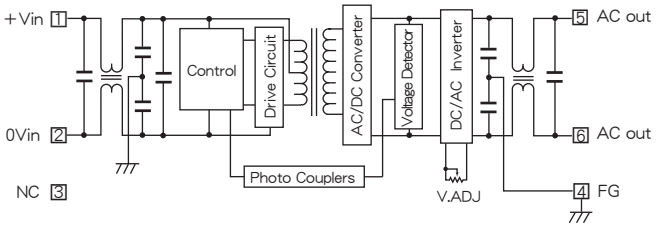
■ Selection Guide

Table 1

Model Number	Input Volt. (Range) (V. DC)	Output Voltage (V. AC)	Output Current (A rms)	Output Frequency (Hz)	Efficiency (typ.)(%) 20% Load	80% Load
KA60-12-100S0.6A50	12 (9～18)	100	0.6	50	72	83
KA60-12-100S0.6A60		100	0.6	60	72	83
KA60-12-100S0.6A400		100	0.6	400	70	82
KA60-12-200S0.3A50		200	0.3	50	66	81
KA60-12-200S0.3A60		200	0.3	60	66	81
KA60-12-220S0.27A50		220	0.27	50	66	81
KA60-12-220S0.27A60		220	0.27	60	66	81
KA60-24-100S0.6A50	24 (18～36)	100	0.6	50	72	85
KA60-24-100S0.6A60		100	0.6	60	72	85
KA60-24-100S0.6A400		100	0.6	400	71	84
KA60-24-200S0.3A50		200	0.3	50	66	83
KA60-24-200S0.3A60		200	0.3	60	66	83
KA60-24-220S0.27A50		220	0.27	50	66	83
KA60-24-220S0.27A60		220	0.27	60	66	83
KA60-48-100S0.6A50	48 (36～76)	100	0.6	50	71	85
KA60-48-100S0.6A60		100	0.6	60	71	85
KA60-48-100S0.6A400		100	0.6	400	69	84
KA60-48-200S0.3A50		200	0.3	50	65	83
KA60-48-200S0.3A60		200	0.3	60	65	83
KA60-48-220S0.27A50		220	0.27	50	65	83
KA60-48-220S0.27A60		220	0.27	60	65	83
KA60-96-100S0.6A50	96 (72～144)	100	0.6	50	71	83
KA60-96-100S0.6A60		100	0.6	60	71	83
KA60-96-100S0.6A400		100	0.6	400	70	82
KA60-96-200S0.3A50		200	0.3	50	65	81
KA60-96-200S0.3A60		200	0.3	60	65	81
KA60-96-220S0.27A50		220	0.27	50	65	81
KA60-96-220S0.27A60		220	0.27	60	65	81

※ 上記仕様以外にも対応可能ですので お問い合わせ下さい。
Please consult with us about other specification.

■ Block Diagram



■ Characteristic Curves

Fig. 1 Derating Curve

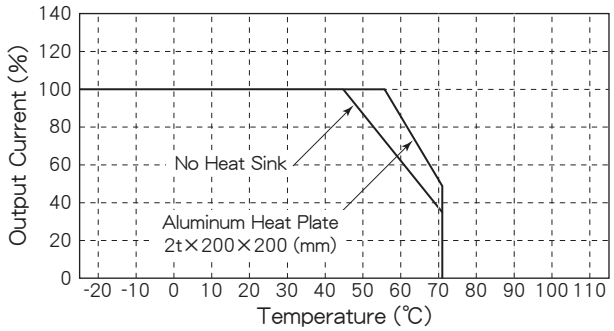


Fig. 2 Short Circuit Operating Area

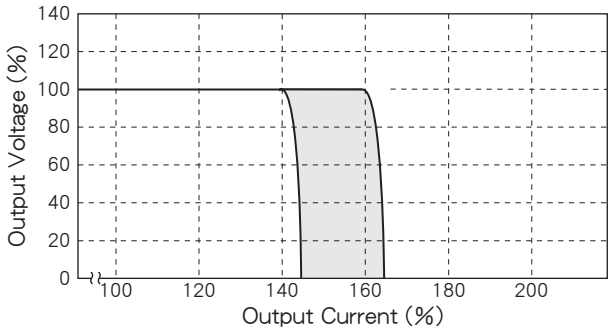


Fig. 3 Temperature Characteristic on Case Surface

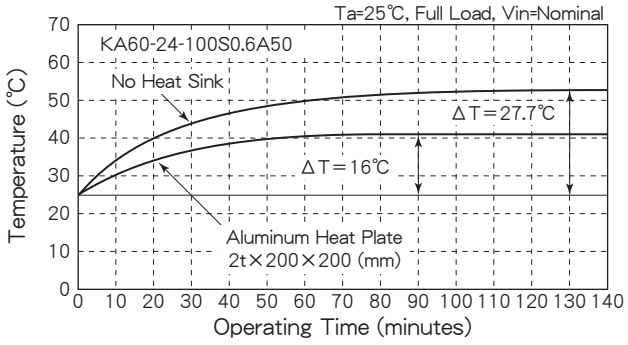
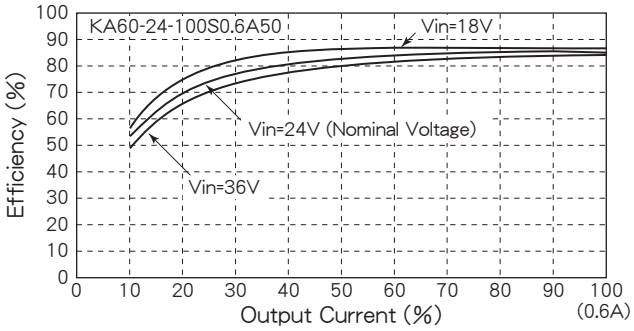


Fig. 4 Efficiency vs. Output Current



■ 主な機能及び注意事項 Function and direction in application

1. 入力低電圧保護、入力過電圧保護 Input low/over voltage protection
下記入力電圧にて出力電圧がOFFとなります。入力電圧を規定値内に戻すと自動復帰します。
Output will be shut down in the input voltages on the following table. Output will automatically be reset when the input voltage comes to within the specified value.

定格入力電圧 Rated input voltage	低電圧保護動作点 Low voltage protection	過電圧保護動作点 Over voltage protection
12V (9～18V)	6～8V	20～22V
24V (18～36V)	12～16V	40～44V
48V (36～76V)	24～32V	80～88V
96V (72～144V)	48～64V	150～165V

2. 出力過電流保護 Output over current protection
負荷が短絡した場合など、過大な負荷電流が流れたときに負荷と本体を保護する機能です。定格出力電流の約140%～160%にて検出し作動します(Fig. 2 参照)。出力は定電流電圧垂下特性、入力電流はフの字特性となっています。また自動復帰特性を有しています。
This function is to protect a power supply and a load when excessive current flows in case of short-circuited load or such possible conditions. It will operate in 140 - 160% of rated output current (see Fig. 2). Output has constant current voltage limiting characteristic and input current has combined current limiting with fold-back protection. It also has automatic reset function.

3. 過熱保護 Thermal protection
本体内部に過熱保護回路が内蔵されています。内部温度が＋90℃～＋110℃にて出力が停止します。＋90℃以下で自動復帰します。
Thermal protection is built-in. Output will be shut down in +90 -110℃ at the plate inside and will automatically be reset below +90℃.

4. 出力側突入電流保護 Output rush current protection
出力側の負荷としてダイオードで整流されたC負荷の突入電流に対して、問題なくインバータは動作します。
Inverter operates unconditionally against rush current of capacitor load rectified by diodes.