

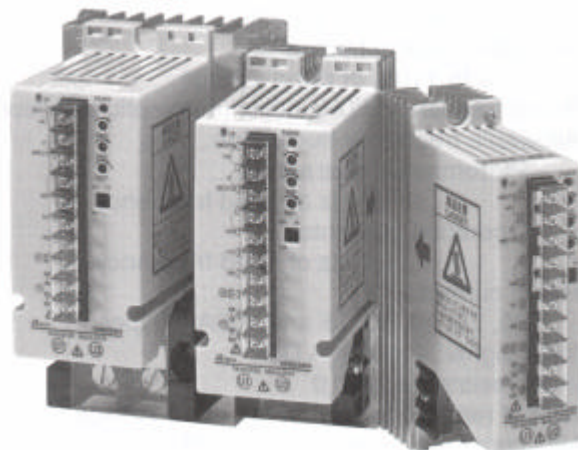
# THYRISTOR REGULATOR JB SERIES



JB series small and lightweight thyristor regulators for single-phase loads are characterized with high panel installation density. 6 models for the rated current of 20A, 30A, 40A, 50A, 75A and 100A are available for regulation of alternative current power by the combination with a controller or by manual control.

Two control systems, a phase-angle firing system for continuous power control and a zero-cross firing system, are built-in and selectable for various applications and power environment.

The applications include small electric furnaces, calibration bath, casting dies heating and heating units for laboratory use.



## ■ Feature

### ● Compact structure

Compact, lightweight and high panel installation density

### ● Phase-angle firing/zero-cross firing

The phase-angle firing system and the zero-cross firing system can be selected by internal dipswitches. You can select an appropriate system depending on applications or power environment.

### ● Automatic frequency detecting function

### ● Linearization of input/output characteristics

### ● Programmable soft-start time

With a built-in trimmer, the soft-start time and soft up/down time are programmable. This function is convenience to countermeasure a rapid change of load voltage and input signal, and to prevent overloading to loads by over-current.

### ● Built-in slope setting function

The slope of output to input signal can be adjusted by a built-in trimmer. A slope-setting unit is separately available, too.

### ● Built-in low-limit setting function

By the built-in low-limit setting function, the variation band of output to on-off contact input signal can be adjusted for sensitive control. A low-limit setting unit is separately provided, too.

### ● Abundant Accessories

Separate setting units for slope and high/low limit(s), and easy-to-mount external rapid fuse unit are provided.

## ■ Model

JB-2

Rated current

020: 20A

030: 30A

040: 40A

050: 50A

075: 75A

100: 100A

## ■ Specification

No. of phases: Single phase

Rated voltage:

100 to 120VAC and 200 to 240VAC

Common to 100V line and 200V line  
(selectable by terminals)

Allowable voltage fluctuation:

90% to 110% of rated voltage

Rated frequency: 50Hz/60Hz (automatic selection)

Allowable frequency fluctuation:

Performance guarantee...

±1 Hz of rated frequency

Operation guarantee...

±2 Hz of rated frequency

Rated current:

20, 30, 40, 50, 75 and 100A, 6 types

Input signal:

4 to 20mA DC, 1 to 5VDC or On-off contact  
signal (selectable by terminals)

Input resistance:

100  $\Omega$  (4 to 20mA DC), 25 k $\Omega$  (1 to 5VDC)

Output range: 0 to 98% of the rated voltage

Minimum load current: 0.5A (at 98% output)

Applicable load:

Resistive load,

Inductive load (transformer primary control and  
phase control system only)

Control system:

Phase-angle firing and zero-cross firing  
(selectable by built-in dipswitches)

Output setting range:

Slope setting (0 to 100%)

Low-limit setting (0 to 100%)

Other functions:

Soft start, soft up/down (approx. 1 to 20 sec.)

Soft start at reset of power interruption

Working temperature range:

Performance guarantee ...0 to 40°C

Operation guarantee .....-15 to +55 °C

Working humidity range: 30 to 90%RH

Insulation resistance:

500VDC, higher than 20M $\Omega$  between power  
terminals and case

Dielectric strength: 2000VAC, 1 minute

Weight:

Model JB-2020                      Approx. 0.9 kg

Model JB-2030                      Approx. 1.0 kg

Model JB-2040                      Approx. 1.2 kg

Model JB-2050                      Approx. 1.3 kg

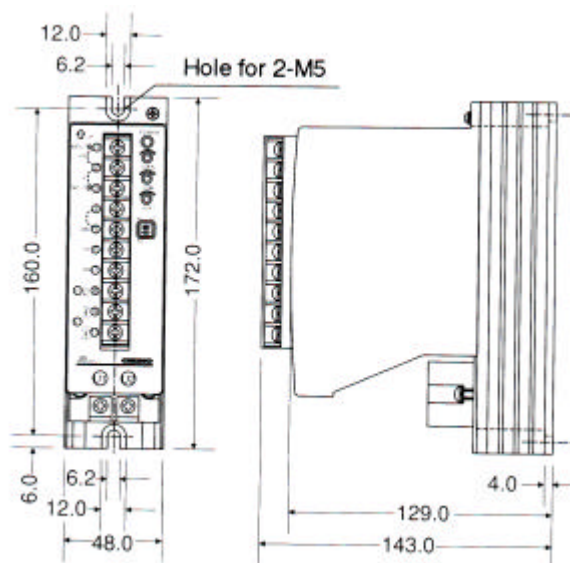
Model JB-2075                      Approx. 1.9 kg

Model JB-2100                      Approx. 1.9 kg

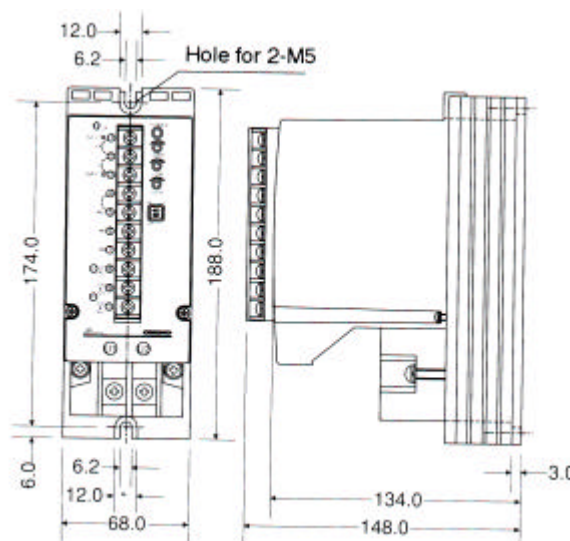
## ■ Dimension

■ 20A, 30A

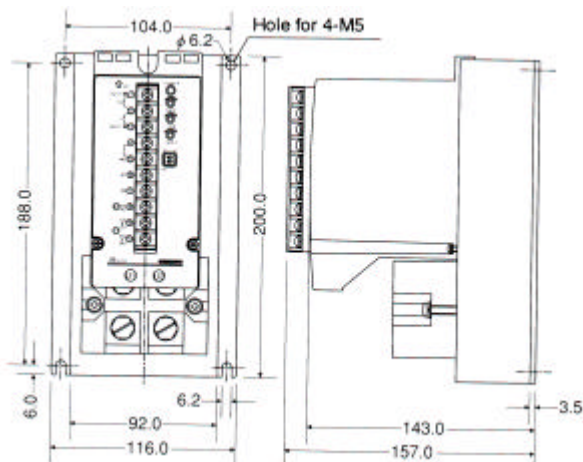
Unit: mm



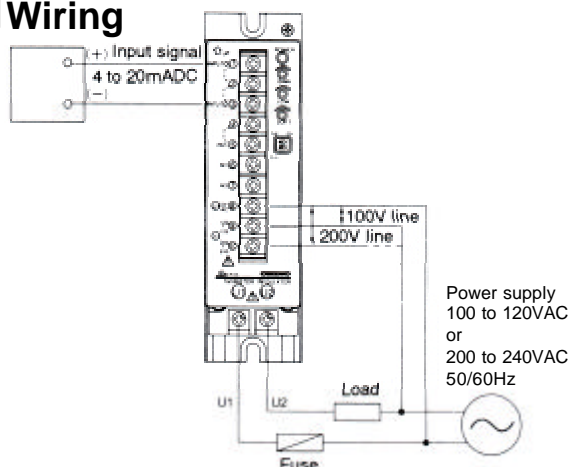
■ 40A, 50A



■ 75A, 100A

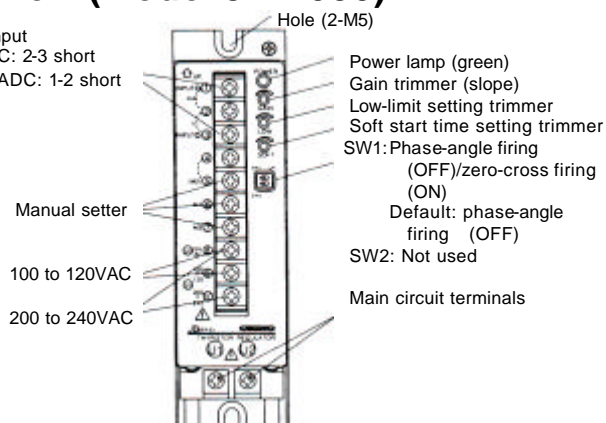


## ■ Wiring

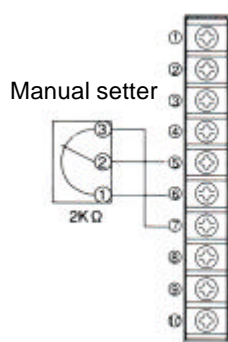


## ■ View (Model JB-2030)

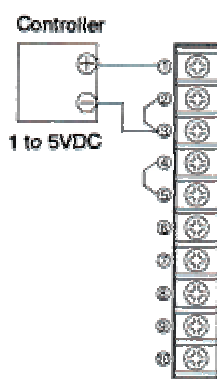
Control input  
1 to 5VDC: 2-3 short  
4 to 20mADC: 1-2 short



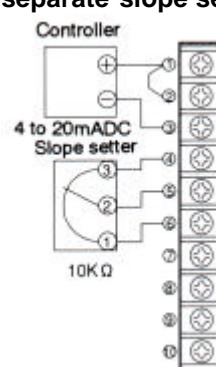
### ● Manual setter



### ● Voltage signal 1 to 5VDC

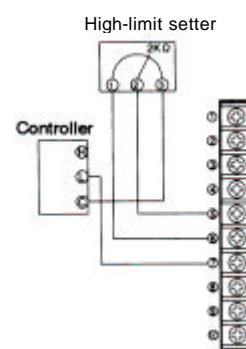


### ● Current signal 4 to 20mADC with a separate slope setter

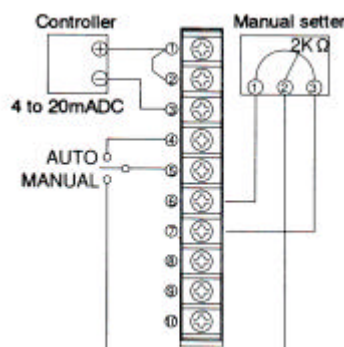


### ● Contact signal

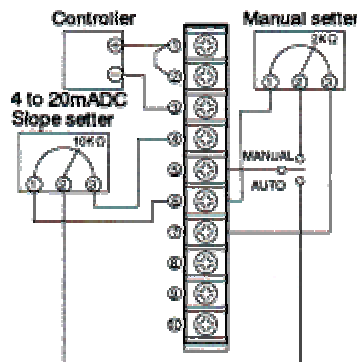
#### ● High-limit setter only



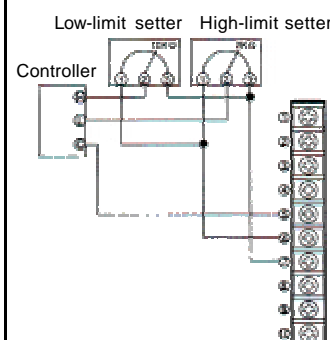
### ● Current signal 4 to 20mADC with a separate manual setter



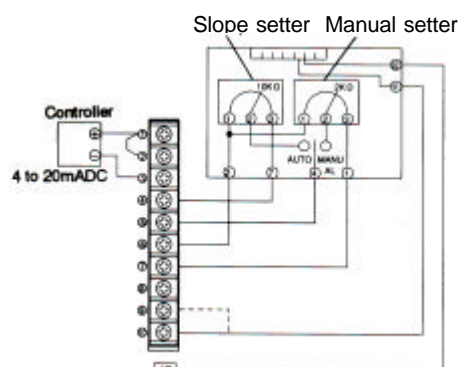
### ● Current signal 4 to 20mADC with a separate slope setter and a separate manual setter



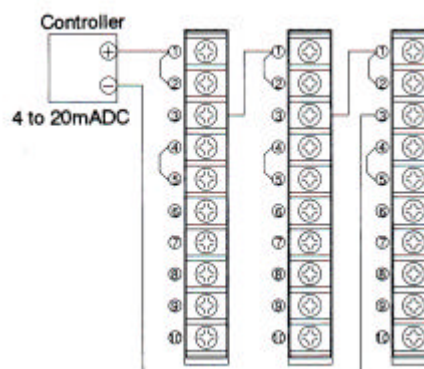
### ● With separate high-limit and low-limit setters



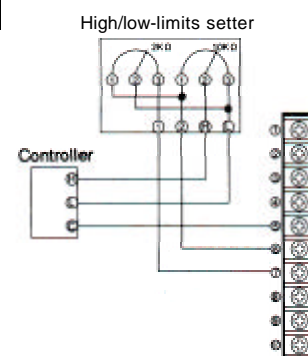
### ● Current signal 4 to 20mADC with a setter (with output indicator)



### ● Parallel running of 3 units by current signal 4 to 20mADC



### ● With a separate high-limit/low-limit setter





## ■ Accessories

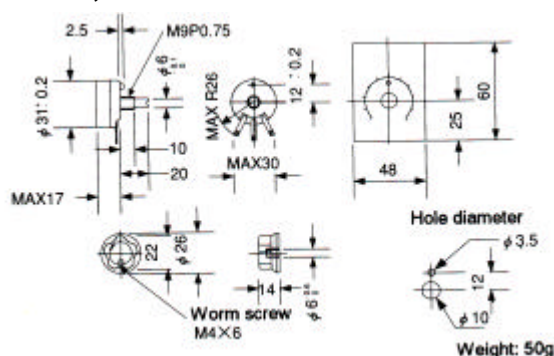
Separate purchase is required.

## Setters

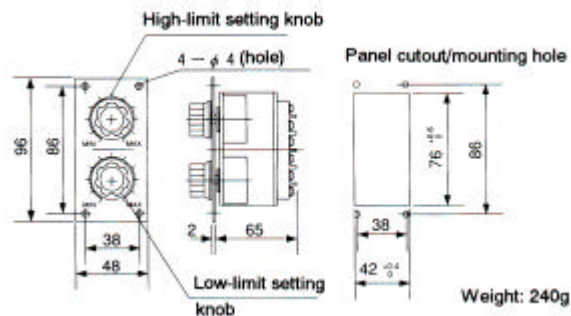
VL-JAL	Slope setting Low -limit setting	Variable resistor 10k
VL-JMH	Manual setting High-limit setting	Variable resistor 2k
VL-JHL	High-limit/low -limit setting	Variable resistor 10k , 2k
VL-JAM <input type="checkbox"/>	Output indicator/ slope setting/ manual setting/ auto-manual switch	1. Voltage indicator: 0 to 150V 2. Voltage indicator: 0 to 250V  Variable resistor 10k , 2k

VL-JAL and VL-JMH are consisted of a variable resistor, a scale plate and a knob

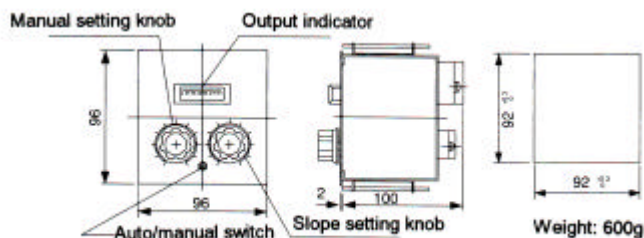
●VL-JAL, VL-JMH



## VL-JHL



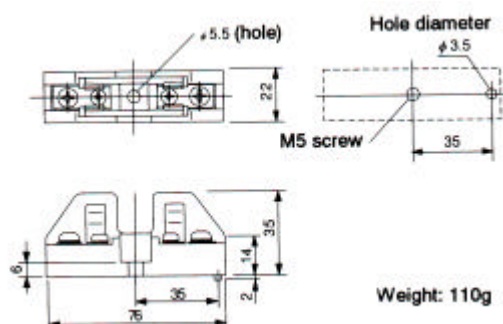
● VL-JAM



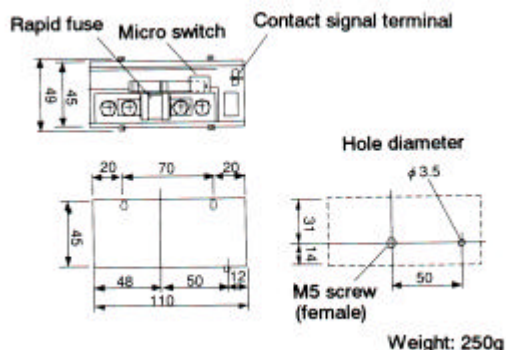
### ● Separate fuse units

Model	Specification
FU-J020	Applicable current 20A, rapid fuse and holder
FU-JA030	Applicable current 30A, rapid fuse and holder with cover
FU-JA040	Applicable current 40A rapid fuse and holder with cover
FU-JA050	Applicable current 50A, rapid fuse and holder with cover
FU-JA075	Applicable current 75A rapid fuse and holder with cover
FU-JA100	Applicable current 100A, rapid fuse and holder with cover

## ●FU-J020



●FU-JA □□□



Unit: mm

Specifications subject to change without notice. Original 2000.11

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