

Standard RUN/STOP, soft-start and reverse phase detection.

Phase control system
3-phase Power Controller

FPH-3 series

New MODEL



Forest Co., Ltd.

■ Outline

It is the 3-phase power controller which equipped many functions standardly.
The miniaturization realized low cost.

■ Features

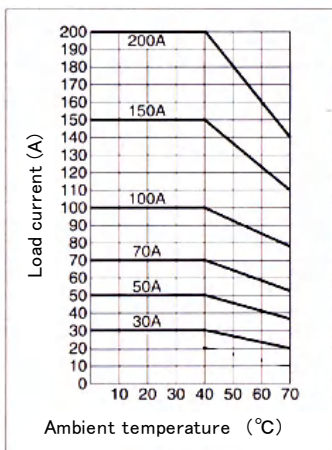
- Miniaturization

20A~50A article:	width 152~156mm
70A~200A article:	width 190mm
- A substantial standard equipment
 - a) RUN-STOP Function (It can be used also as an object for emergency stops.)
 - b) Software start function
 - c) Reverse phase Detection function
- It is with an alarm state monitor (LED lamp).

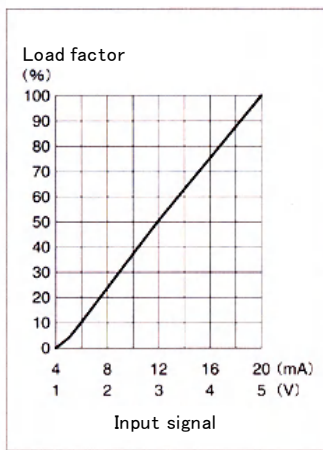
■ Specifications

Max. load current	AC20A,30A,50A,70A,100A,150A,200A(It specifies either.)
Control system	Phase control
Applicable load	Linear (R) load or Inductive (L) load(It specifies either.)
Input signals	4~20mAADC(Input impedance:150Ω) 1~5VDC(Input impedance:10KΩ)(It specifies either.)
Minimum load current	0.3A
Output control range	0~98% of Primary side supply voltage
Cooling system	Self-cooling (20A~70A) The cold of the compulsive style (100A~300A)
Supply voltage	AC200V,220V,380V,400V,440V (It specifies either.) *240VAC can be manufactured.
Power supply frequency	50Hz or 60Hz (Common use)
Permissible voltage fluctuation	Within $\pm 10\%$ of the rated load voltage
Insulation resistance	Over 50 MΩ (500-VDC megger)
Insulation withstand voltage	1500 VAC for one minute
Permissible ambient temperature range	0°C to +40°C (If the ambient temperature exceeds 40°C, see the load current characteristic diagram.)
Permissible ambient humidity range	90%RH or less (without bedewing)
Attachment	Perpendicular attachment
Power consumption	about 2.4VA (20V~70A) about 20.4VA (100A~300A)
Standard function	Software start (about 1~10 sec Variable)、 RUN-STOP、Reverse phase Detection
Option	-1: auto/manual selection/gradient setting -4: alarm of fuse blown (only for type with fuse) -5: High-Low control -F: with quick-blow fuse -G: It is with the SCR warning (the short circuit abnormality detection) output -T: non-standard supply voltage (AC240V,460V,480V)
Weight	20A:3kg, 30A:3.5kg, 50A:6Kg, 70A:10Kg, 100A:11Kg, 150A:11Kg, 200A:11Kg.

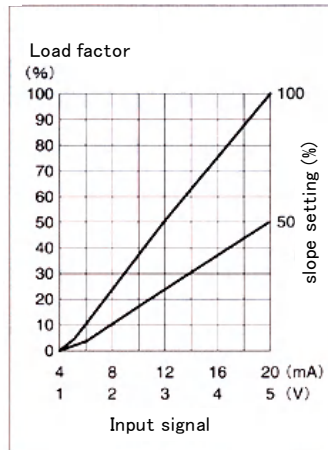
■ Ambient Temperature characteristics



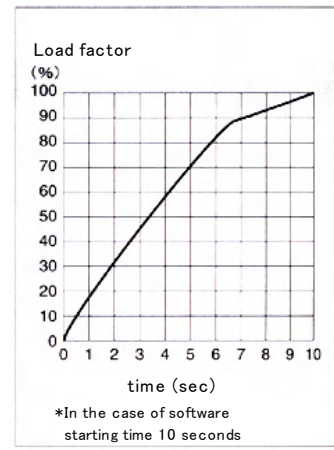
■ Input/Output characteristics



■ An output characteristic with a slope setting machine



■ Software start characteristic



20/30A

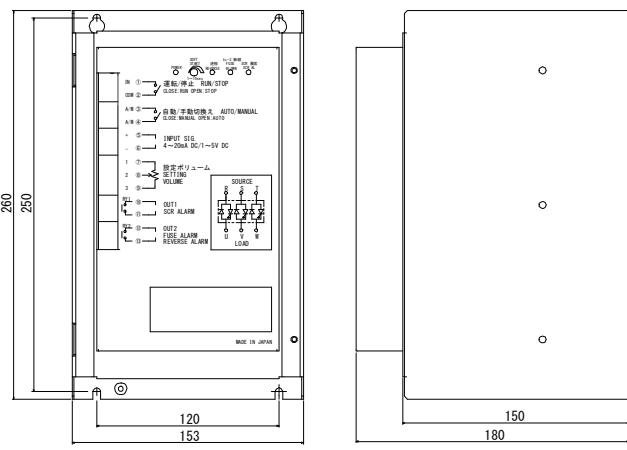
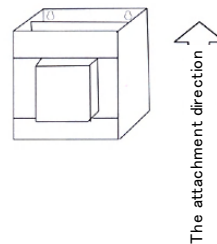
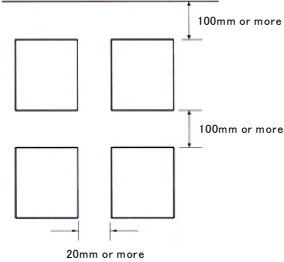


Figure 1: Dimensions and Connections of the Main Unit. The diagram shows a front view of a rectangular unit with dimensions 350mm (height) and 339mm (width). On the left side, there are two rows of terminals labeled A/W 1, 2 and A/W 3, 4. On the right side, there are terminals labeled OUT1, OUT2, and a common terminal labeled COM. The top of the unit features a control panel with buttons for STOP, RUN, and other functions. A detailed inset shows the internal wiring connections for the terminals, including a 200V AC input and a 50/60Hz frequency range.

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1. Standard (Automatic setup)

Terminal block (1-9):

- 1: CLOSE (Drive)
- 2: OPEN (Control stop)
- 3: (Empty)
- 4: (Empty)
- 5: + (Regulation meter)
- 6: - (Regulation meter)
- 7: (Empty)
- 8: (Empty)
- 9: (Empty)

2. Automatic setup (With a slope setup)

Terminal block (1-9):

- 1: CLOSE
- 2: OPEN
- 3: (Empty)
- 4: (Empty)
- 5: + (Regulation meter)
- 6: - (Regulation meter)
- 7: (Empty)
- 8: Slope setting machine
- 9: (Empty)

3. Automatic (With a slope setup) / Manual setup Change type

Terminal block (1-9):

- 1: CLOSE
- 2: OPEN
- 3: CLOSE: Manual
- 4: OPEN: Automatic
- 5: + (Regulation meter)
- 6: - (Regulation meter)
- 7: (Empty)
- 8: Manual: Manual load voltage setting machine
- 9: Automatic: Slope setting machine

4. Only manual setup

Terminal block (1-9):

- 1: CLOSE
- 2: OPEN
- 3: It short-circuits.
- 4: (Empty)
- 5: (Empty)
- 6: (Empty)
- 7: (Empty)
- 8: Slope setting machine
- 9: (Empty)

5. High-Low control

Terminal block (1-9):

- 1: CLOSE
- 2: OPEN
- 3: It short-circuits.
- 4: (Empty)
- 5: HIGH VR
- 6: LOW VR
- 7: N/O
- 8: COM
- 9: N/G

6. Alarm output

Terminal block (10-13):

- 10: RY1 (Alarm)
- 11: SCR Alarm
- 12: Alarm
- 13: RY2 (Fuse disconnection, Reverse phase Detection)

Spec	Spec. Code						
	3-phase Thyristor unit						
control system	phase control system	FPH-					
Rated supply voltage	3-phase AC200V,220V(It specifies either)		32				
	3-phase AC380V		33				
	3-phase AC400V,440V(It specifies either)		34				
Rated current	20A			02			
	30A			03			
	50A			05			
	70A			07			
	100A			10			
	150A			15			
	200A			20			
Applicable load	Linear (R) load			R			
	Inductive (L) load			L			
Input signals	DC4~20mA			A			
	DC1~5V			C			
Option	auto/manual selection/gradient setting					1	
	alarm of fuse blown(only for type with fuse)					4	
	High-Low control					5	
	with quick-blow fuse					F	
	It is with the SCR warning output					G	
	non-standard supply voltage(AC240V,460V,480V)					T	

*Two or more kind specification of an optional feature is possible.
(Example:auto/manual selection/gradient setting+with quick-blow fuse,code:-1-F)

● Quick-blow fuse

If a built-in fuse goes out,please exchange for the thing of the following model name.

• 200V,220V,240V

Max,load current	Model name
20A	250GH-25
30A	250GH-40
50A	250GH-63
70A	250GH-100
100A	250GH-125
150A	250GH-200
200A	250GH-315

• 380V,400V,440V

Max,load current	Model name
20A	660GH-25
30A	660GH-40
50A	660GH-80
70A	660GH-100
100A	660GH-125
150A	660GH-200
200A	660GH-315

Business line

Automatic temperature control meter

Various temperature detection edges

Direct-current ampere-hour meter

Direct-current ampere-hour meter by microcomputer control

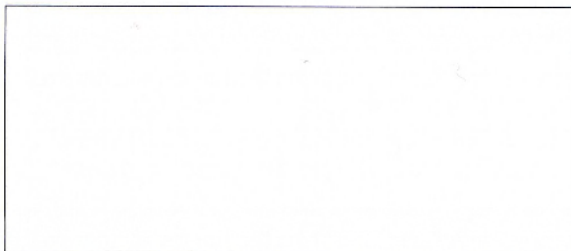
Thyristor power controller

Heater disconnection alarm

In addition, electronic application apparatus



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Caution in using

- Since this product is not manufactured for the applications stipulated in the Export Trade Control Ordinance, it cannot be used for the purpose of weapons of mass destruction.
- The final application and final customer must be checked so that it will not be used for weapons of mass destruction (military application, military equipment). Due attention must also be paid to the re-sale so that it will not be illegally exported.

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