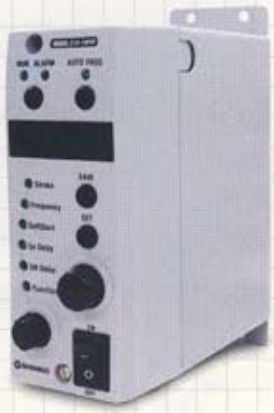
C10 series—*Variable Frequency Digital Controllers*

Digital control operated in 'Analog' way

A completely new type of digital controller that can be used with the full line-up of feeders, from high frequency mini parts feeders to small electromagnetic feeders and large size models. With 'analog-style' operation it can be adjusted very swiftly. With an auto-tuning function that eliminates the need for frequency adjust-ment, and convenient digital settings and display, drive units can be operated to their full potential.



Features

•Auto-tuning function eliminates leaf-spring adjustment (C10-1VFEF, 3VFEF, 5VFEF)

This digital equipment has a special advanced vibration frequency auto-tuning function. It automatically tracks resonance point changes not only from changes to input volume of workpieces, but also from mechanical changes over time, to deliver optimal vibration at all times. No leaf-spring adjustment or even frequency adjustment is necessary, thereby boosting operation efficiency and saving energy.

•Digital setting and display makes settings easy to manage.

Amplitude, drive frequency, output voltage notches are all set and displayed digitally, for easy management.

•Constant amplitude control matched to workpieces or materials (C10-1VFEF, 3VFEF, 5VFEF)

Amplitude can be set digitally, and an amplitude sensor allows drive at constant amplitude suited to the workpieces under conveyance.

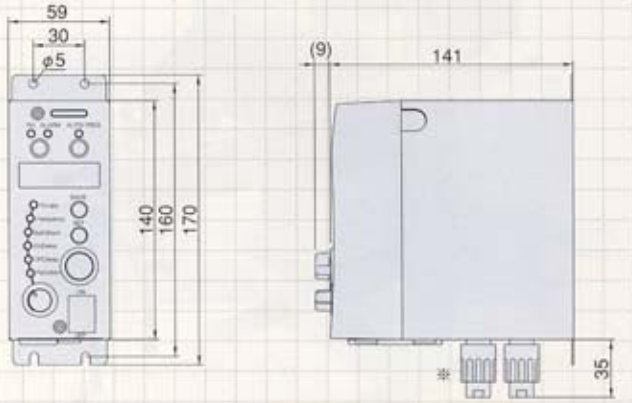
•Easy-to-use panel design

The frequency, voltage, soft start, on delay and off delay settings needed for parts feeder adjustment are located on a control panel. A rotary encoder allows 'analog-style' setting input to be changed to digital values.

•Many external control functions

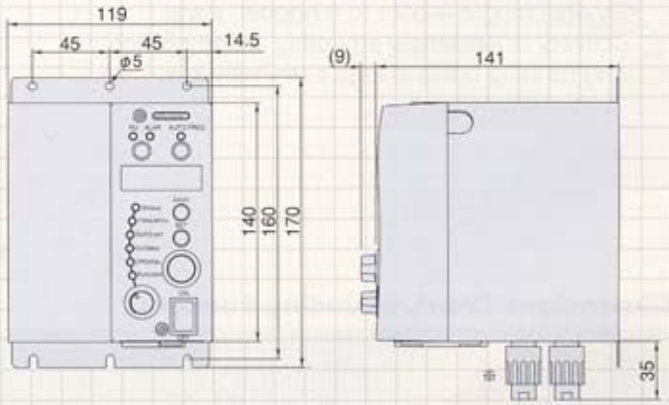
Choice of four speeds can be made by external signal. Two-step control through external regulating resistance. External volume adjustment via a DC4-20mA signal is also possible.

C10-1VF/1VFEF/3VF/3VFEF Dimensions



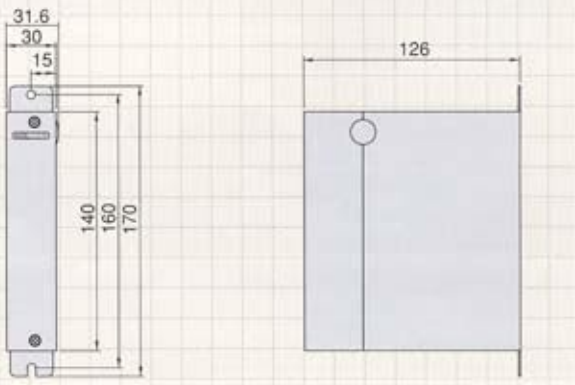
※No plug for sensor on C10-1VF/3VF (Unit: mm)

C10-5VF/5VFEF Dimensions



※No plug for sensor on C10-5VF (Unit: mm)

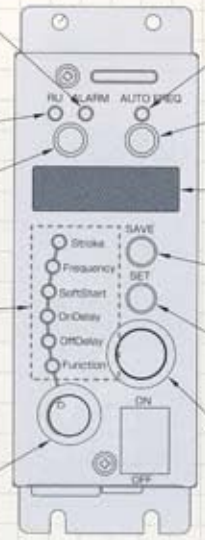
C10-TR Dimensions



(Unit: mm)

By using a C10-TR power transformer unit with a standard controller, output voltage can be boosted to run an AC 200 V parts feeder from an AC 100 V power source.

C10 Series Parts & Functions



ALARM light
Lights when
-In constant amplitude or auto-tuning mode, output voltage reaches saturation and cannot track set amplitude, or
-Error occurs

RUN light
Lights while operating

RUN/STOP button
Operation can be stopped or started manually

Data display lights
Identify what is showing on data display screen. LED light indicates display mode; flashing light indicates data modification mode
Stroke: voltage (amplitude) percentage displayed
Frequency: frequency displayed
Soft start: Soft start time displayed
On delay: On delay time displayed*
Off delay: Off delay time displayed*

Data display dial
Switches data shown on data display screen

AUTO FREQ light*
Lights during auto-tuning mode
Flashes during initial auto-adjusting

AUTO FREQ button*
Activates/de-activates auto-tuning

Data display screen
Displays voltage/amplitude (%), frequency, settings, and error codes

SAVE button
In settings mode, records data modifications

SET button
Switches between display mode and data modification mode
In data modification mode for stroke and frequency, press again to switch the position of a figure

Settings encoder
Modifies settings in data display screen

* These functions are not available on C10-1VF, 3VF, 5VF models (exclusive to VFEF models)

Specifications

Model		C10-5VF	C10-3VF	C10-1VF	C10-5VFEF	C10-3VFEF	C10-1VFEF
Input power source		AC100/110±10%, 50/60Hz AC200/220±10%, 50/60Hz					
Output	Control system	PWM system					
	Voltage	0~190 V (for AC 200 V input) 0~95 V (for AC 100 V input) Optional unit C10-TR allows output voltage in 0~190 V range					
		Half wave: 45~90 Hz Full wave: 90~180 Hz Intermediate wave: 65~120 Hz High afrequency: 180~360 Hz					
	Max. current	5A	3A	1A	5A	3A	1A
Operating Modes	Constant voltage mode	Frequency, output voltage set manually					
	Constant amplitude mode	—			Constant amplitude control at set frequency		
	Auto-tuning mode	—			With frequency auto-tuning, constant amplitude control requires no amplitude setting		
Additional features	Speed selector	Selection of up to 4 amplitude settings by means of external signal					
	Start/stop control	Start/Stop control by external signal					
	Output signal	Output signal synchronized to parts feeder operation					
	Soft start	Start-up time 0.2~4.0 secs					
	On/Off delay	—			Delay 0.2~4.0 secs		
	Sensor power source	—			For DC 12 V, max. 80 A 3P power plug		
Synchronized power output	Function	—			Power output synchronized to parts feeder operation (RUN)		
	Control system	—			ON/OFF control		
	Output voltage	—			As power source input to controller		
	Max. current	—			2A		
Others	Noise tolerant voltage	Above 1000 V					
	Ambient temperature	0~40°C					
	Ambient humidity	10~90% (no condensation)					
	Weight	1.5kg	0.9kg	0.8kg	1.6kg	1.0kg	0.9kg
	Case color	U75-70D (Japan Paint Industry Association)					
Compatible SHINKO equipment		ER-55B,65B,75B	ER-30B,38B,45B EA-25,30,38,45	ER-25B EA-15,20 LFB-300,400,550 LFG-400,550,700 (H) ME-08,14 (H) LFB-02,04	ER-55B,65B,75B	ER-30B,38B,45B EA-25,30,38,45	ER-25B EA-15,20 LFB-300,400,550 LFG-400,550,700 (H) ME-08,14 (H) LFB-02,04