

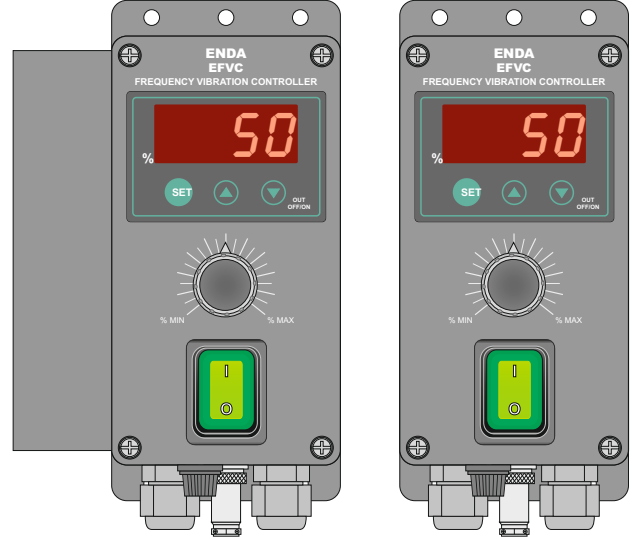


Please read this document carefully before using this product. The guarantee will be invalidated if the device is damaged by not following instructions detailed in the manual. The company shall not be responsible for any damage or losses however caused, which may be experienced as a result of the installation or use of this product.

ENDA EFVC SERIES FREQUENCY CONTROLLED VIBRATION CONTROLLER

Thank you for choosing **ENDA EFVC Series Frequency Controlled Vibration Controller**.

- ▶ Frequency controlled vibration control.
- ▶ 3A AC or 6A AC load current.
- ▶ Operating with 110V AC / 220V AC mains voltage.
- ▶ Adjustable vibration frequency from 30Hz to 140Hz.
- ▶ Adjustable set point with adjustment knob, digital set point or analog input.
- ▶ Stopping the load output with digital input and/or "OUT OFF/ON" key.
- ▶ Selectable digital input (for NO/NC contact).
- ▶ Solenoid valve output controlled by digital input (Optional, 24V DC/250mA).
- ▶ Power cable with plug.
- ▶ Connection cables for vibration coil output and solenoid valve output.
- ▶ Plug-in connection for digital input and analog input.
- ▶ Ability to assign maximum and minimum value for output.
- ▶ Internal fuse.
- ▶ Starting with Soft Start and stopping with Soft Stop.
- ▶ ON/OFF Power Switch.
- ▶ CE marked according to European Norms.



ORDER CODE

EFVC - 03 - 24

Product Basic Code

Wall Mounted
Frequency Controlled
Vibration Controller

Solenoid Valve Output (Optional)

- N/A
24 24V DC/250mA

Load Current

03 3A AC
06 6A AC



RoHS
Compliant

ENVIRONMENTAL CONDITIONS

Ambient/Storage Temperature	0 ... +50°C / -25 ... +60°C (Must be no icing and no condensation in the environment.)
Relative Humidity	Relative humidity 80% for temperatures up to -31°C decreasing linearly to 50% relative humidity at +40°C. (Must be no condensation in the environment).
Pollution Degree	2
Overvoltage Category	II
Height	Max. 2000m
Protection Class	According to EN60529 : Ip20

⚠ KEEP AWAY device from exposed to corrosive, volatile and flammable gases or liquids and DO NOT USE the device in similar hazardous locations.

OUTPUTS

Vibrasyon Coil Output	Current (Arms)	3AAC for EFVC-03-xx; 6AAC for EFVC-06-xx
	Voltage (Vrms)	0-110V AC (for mains voltage 110V AC) or 0-220V AC (for mains voltage 220V AC).
	Frequency (Hz)	It can be adjusted between 30Hz and 140Hz.
Solenoid Valve Output		24V DC, 250mA (If the digital input is active, the output is active).

CONTROL

Control Type	Manual vibration control is done.
Vibration Amplitude Setting	It can be adjusted by adjusting knob or 0-10V DC analog signal input.

INPUTS

Digital Input	Load output can be stopped with NO/NC contact or NO/NC sensor that can be selected from the program and solenoid valve output is activated. It can be used with +12V DC (Maximum 30mA) voltage output on the device or with external 10-30V DC voltage.
Analog Input	0-10V DC

GENEL

Sipariş kodu	EFVC-03-xx	EFVC-06-xx
Besleme	90-250V AC, 50/60Hz, 1000VA	90-250V AC, 50/60Hz, 2000VA
Ebatlar	W80xH175xD90mm.	W115xH175xD160mm.
Ağırlık	Approx. 1500g (After packing).	Approx. 2500g (After packing).
İzolasyon gerilimi	2500 Vrms 1 minute between input and output terminals.	
Bağlantı	With plug cable, cable and plug connector.	
Ürün standardı EMC/LVD	TS EN 61326-1: 2013 / TS EN 61010-1: 2012	
Montaj şekli	Wall mounted.	
Kutu malzemeleri	Self extinguishing plastics. (V-0 According to EN 60695-11-10 Standards).	

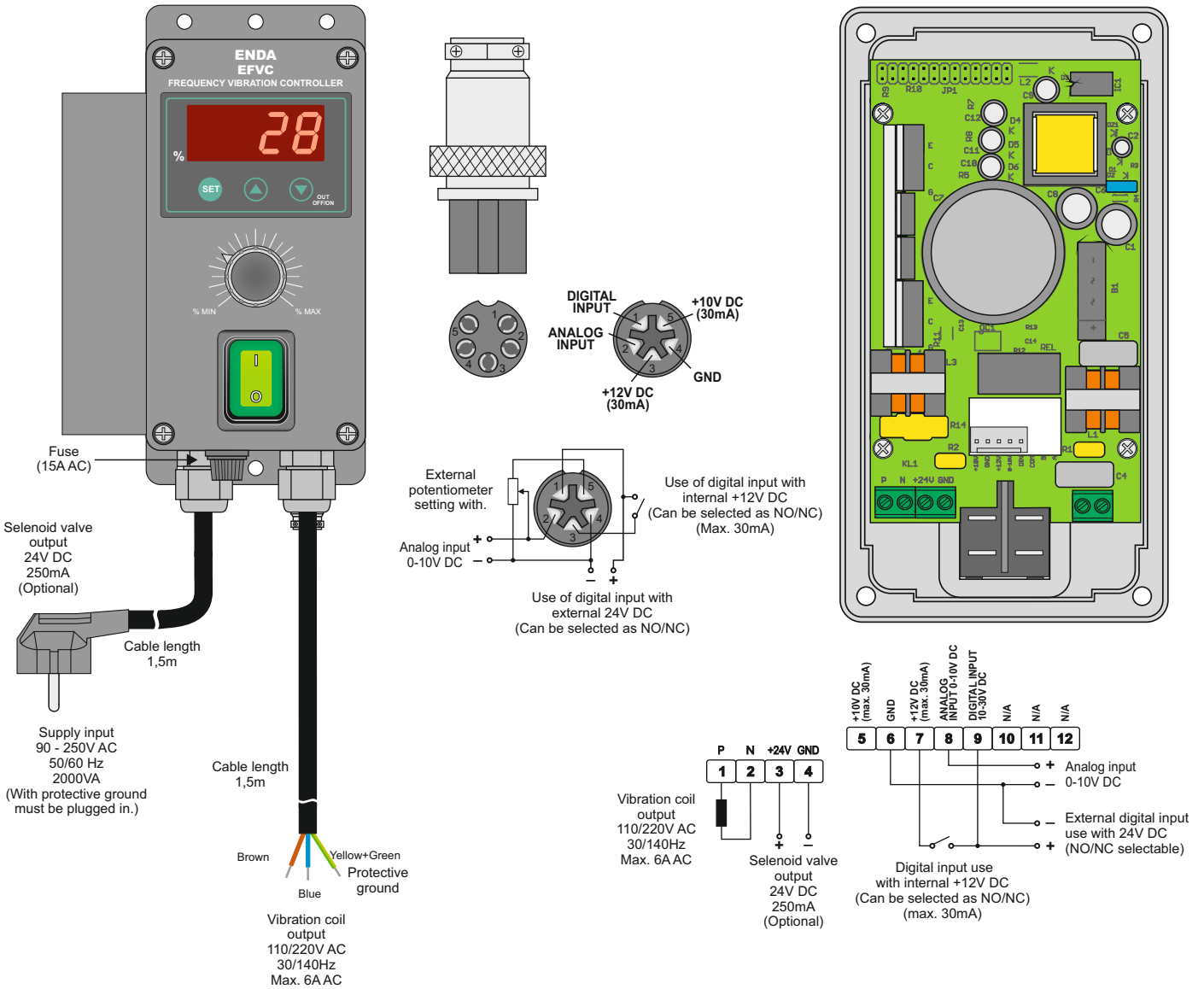
**⚠ Avoid any liquid contact when the device is switched on.
DO NOT clean the device with solvent (thinner, gasoline, acid etc.) and / or abrasive cleaning agents.**



SİSEL MÜHENDİSLİK ELEKTRONİK SAN. VE TİC. A.Ş.
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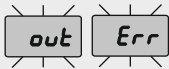


ENDA EFVC Series devices are intended for wall-mounted installations. Make sure that the device is used only for intended purpose. The electrical connections must be carried out by a qualified staff and must be according to the relevant locally applicable regulations. During an installation, all of the cables that are connected to the device must be free of electrical power. The device must be protected against inadmissible humidity, vibrations, severe soiling and make sure that the operation temperature is not exceeded. The cables should not be close to the power cables or components.



Since the device stores high energy, after it is turned off, it will be on high until the screen indicator turns off completely (it turns off in maximum 45 seconds). Do not touch the power line.

Error Message



Choosing the vibration frequency (F_{r5t}) too small may cause the coil to reach saturation. In this case, an error message will be given by drawing excessive current ($out\ Err$).

Determination of Resonance Frequency

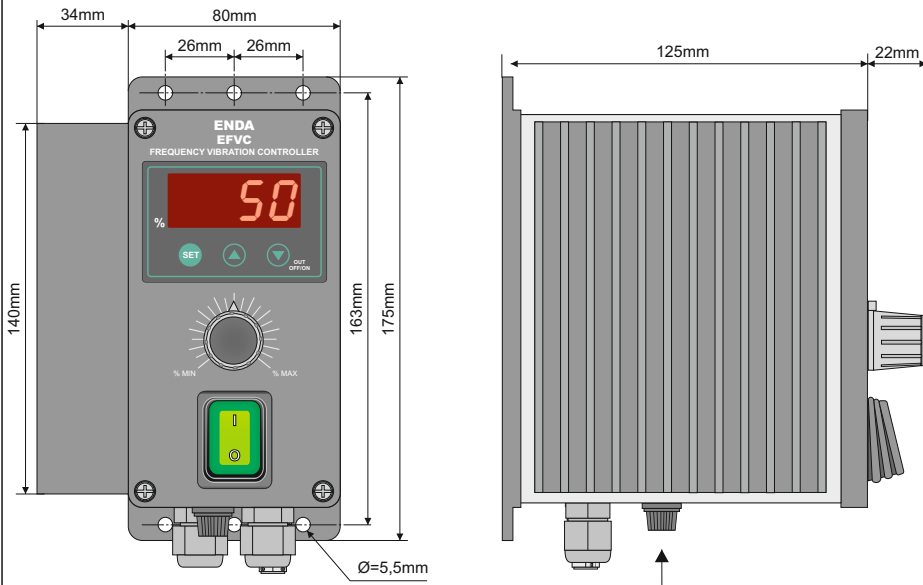
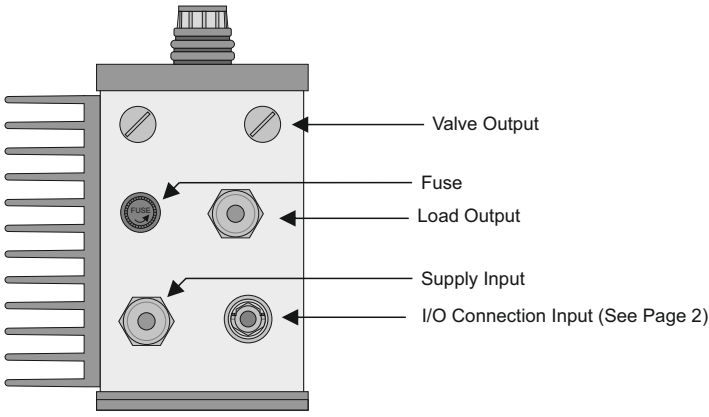
Manual :

Against the risk of hammering the coil at the resonant frequency, the vibration amplitude is set as 50%. The coil current is measured with an ammeter. In operating mode, if the Δ key is pressed for 3 seconds, the F_{r5t} and $d5Et$ parameters are reached. When the SET key is pressed while the F_{r5t} parameter is displayed, the vibration frequency value is displayed. As soon as the vibration frequency is set with ∇/Δ keys, the device output will operate at the set frequency.

The frequency value with the smallest coil current and the highest vibration is the resonance frequency of the system.

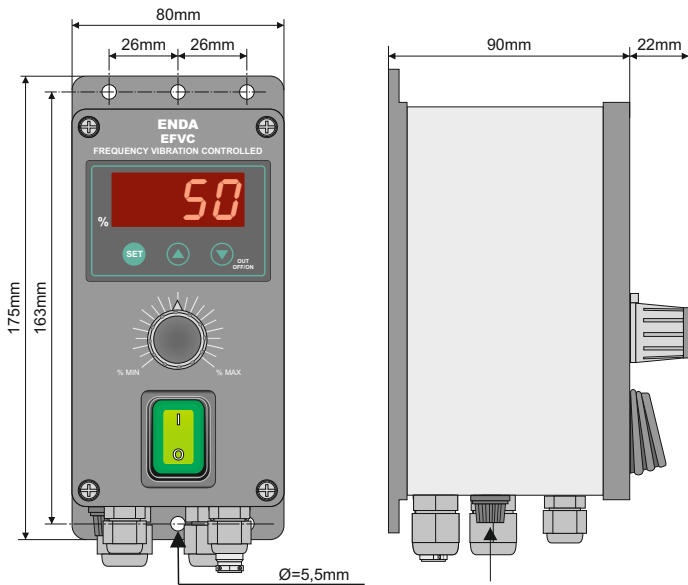
DIMENSIONS

EFVC-06-XX



Montage : Mounting must be done using the holes on the box.

EFVC-03-XX



Montage : Mounting must be done using the holes on the box.

ENDA INDUSTRIAL ELECTRONICS
EFVC-03
 FREQUENCY CONTROLLED
 VIBRATION CONTROLLER

OUTPUT : 110/220V AC, MAX. 3A AC

INPUT : 0-10V DC (ANALOG)
 10-30V DC (DIGITAL)

POWER : 90-250V AC, 50/60Hz, 2000VA

8 680407 730742

Made in Turkey SN: XXXXXXXXXX

ENDA INDUSTRIAL ELECTRONICS
EFVC-03-24
 FREQUENCY CONTROLLED
 VIBRATION CONTROLLER

OUTPUT : 110/220V AC, MAX. 3A AC
 VALVE : 24V DC, 250mA

INPUT : 0-10V DC (ANALOG)
 10-30V DC (DIGITAL)

POWER : 90-250V AC, 50/60Hz, 2000VA

8 680407 730759

Made in Turkey SN: XXXXXXXXXX

ENDA INDUSTRIAL ELECTRONICS
EFVC-06
 FREQUENCY CONTROLLED
 VIBRATION CONTROLLER

OUTPUT : 110/220V AC, MAX. 6A AC

INPUT : 0-10V DC (ANALOG)
 10-30V DC (DIGITAL)

POWER : 90-250V AC, 50/60Hz, 2000VA

8 680407 730766

Made in Turkey SN: XXXXXXXXXX

ENDA INDUSTRIAL ELECTRONICS
EFVC-06-24
 FREQUENCY CONTROLLED
 VIBRATION CONTROLLER

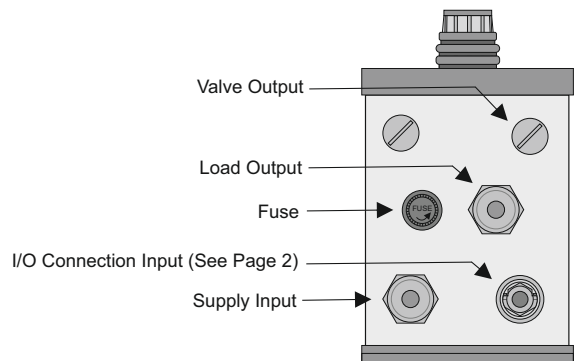
OUTPUT : 110/220V AC, MAX. 6A AC
 VALVE : 24V DC, 250mA

INPUT : 0-10V DC (ANALOG)
 10-30V DC (DIGITAL)

POWER : 90-250V AC, 50/60Hz, 2000VA

8 680407 730773

Made in Turkey SN: XXXXXXXXXX





In operating mode, in percent (%) indicates the vibration amplitude.

It is used to see and change the value of the selected parameter in programming mode. It is used to lock and unlock keys in operating mode.

Value reduction and parameter selection button. If this button is pressed for 3 seconds while in the operating mode, the output of the vibration coil is turned off and the *oFF* message is seen on the display. If this button is pressed for 3 seconds while the *oFF* message is displayed on the display, it will return to the operating mode.

Value increase and parameter selection button. If this key is pressed for 3 seconds while in operation mode, *dSEt* digital set (if active) and *FrSt* vibration frequency parameters are accessed.

The adjustment knob is used to adjust the vibration amplitude (Digital setpoint *dSEt* or analog input can also be used for adjustment).

Power Button.

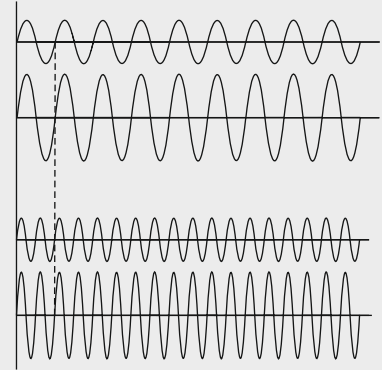
Vibration Control with Vibration Frequency and Vibration Amplitude

Frequency 50Hz
Amplitude %40

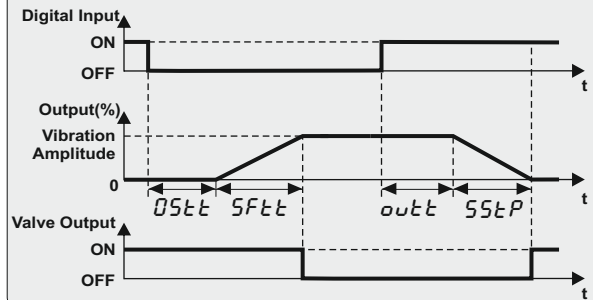
Frequency 50Hz
Amplitude %80

Frequency 100Hz
Amplitude %40

Frequency 100Hz
Amplitude %80



Digital Input, Soft Start and Soft Stop



Keylock

Press and hold the **SET** key for 3 seconds to lock the keys. The display shows the message *LoC* and the keys are locked. The setting button is active while the keys are locked. If the **SET** button is pressed for 3 seconds, the *ULoC* message will appear on the display and the key will be unlocked.

Factory Settings

If the device is energized while the **▽** key is pressed, the *dPRr* message will appear on the display and the device will return to factory settings.

Revision Number Display



If three keys are pressed at the same time in the operating mode, the date of the firmware will be shown on the display as "Year" and "Month.Date" respectively.

Programming Mode

If **△** and **▽** keys are pressed for 3 seconds, programming mode is entered. If no key is pressed for 10 seconds in programming mode or if **△** and **▽** keys are pressed simultaneously, the changes are saved and the operating mode is returned.

Parameter Setting Diagram

When the **SET** key is pressed, the value of the selected parameter is displayed and the desired value is set with the **△**/**▽** keys and returned by pressing the **SET** key.



If the **△**/**▽** keys are pressed continuously, the value to be changed gradually changes rapidly.

PARAMETER TABLE

Parameter Name	Definition	Min. Value	Maks. Value	Default Value	Unit
<i>itYP</i>	It is the selection of the vibration amplitude to be adjusted with the adjustment knob of the device, <i>dSEt</i> or 0-10 volt analog input	<i>PoL</i>	0-10	<i>PoL</i>	-
<i>dSEt</i>	It is used to adjust the vibration amplitude between 0 and 100 when the <i>itYP</i> parameter is selected as <i>dSEt</i> .	0	100	0	%
<i>dinP</i>	The switch type to be connected to the digital input is selected as normally open switch with <i>no</i> message and normally closed switch with <i>nc</i> message.	<i>no</i>	<i>nc</i>	<i>no</i>	-
<i>FrSt</i>	Vibration frequency. If the increase key is pressed for 3 seconds while in the operating mode, the vibration frequency parameter is reached.	30	140	60	Hz
<i>outH</i>	The vibration amplitude upper limit can be adjusted between the <i>outL</i> and the maximum value.	<i>outL</i>	100	100	%
<i>outL</i>	The vibration amplitude lower limit can be adjusted between the <i>outH</i> and the minimum value.	0	<i>outH</i>	0	%
<i>outt</i>	After the digital input is active for <i>outt</i> + <i>SSStP</i> time, the output is stopped and the valve output becomes active.	0	60	5	second
<i>ostt</i>	After the digital input is inactive, the output becomes active after <i>ostt</i> + <i>SSStP</i> time.	0	60	2	second
<i>SFtt</i>	When the device is energized for the first time or after the digital input is passive, the device makes soft start for the time determined by <i>SFtt</i> .	0	10	3	second
<i>SSStP</i>	After the digital input is active, the device makes soft stop for the time determined by <i>SSStP</i> .	0	10	3	second
<i>Err</i>	While the <i>out Err</i> message is seen on the display, if the error condition is corrected and this parameter is set to <i>on</i> , the error condition is removed.	<i>on</i>	<i>oFF</i>	<i>on</i>	-
<i>SLnd</i>	<i>on</i> : As long as the digital input is active(max. 2 seconds), the valve output is active. The load is constantly energized. The <i>outt</i> , <i>ostt</i> and <i>SSStP</i> parameters are disabled. <i>oFF</i> : Load and valve output operate depending on <i>outt</i> and <i>ostt</i> parameters. <i>SSStP</i> parameter is active.	<i>on</i>	<i>oFF</i>	<i>oFF</i>	-