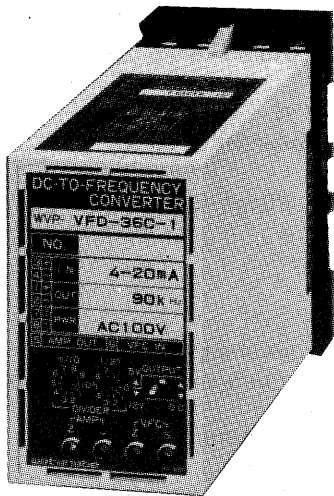


# DC-TO-FREQUENCY CONVERTER (VARIABLE OUTPUT TYPE)

**WVP-VFD/VFC/VFS**



50 (W) x 96 (H) x 125.5 (D) mm Approx. 400 g

This converter takes in an analog current or voltage, and outputs a pulse train signal having a frequency that is proportional to its input value. Its output frequency can be set to any value by operating a rotary switch and trimmer located on the front panel. This function is made possible by the converter's built-in frequency demultiplier. Moreover, this general-purpose converter allows an open-collector signal or a voltage pulse signal of 5 V or 12 V to be selected from the front panel in accordance with different loads.

## Features

- The output frequency can be set to any value over a wide frequency range.
- The output pulse signal levels support a broad spectrum of loads.
- Equipped with a shutdown function (Type VFS).
- Plug-in design enables mounting on or demounting from DIN rails using a one-touch process.

**Model WVP -**            

VFD	Without output shutdown	Insulated	Dielectric voltage 2,000 VAC (1 min.)
VFC	With output shutdown		Dielectric voltage 1,500 VAC (1 min.)
VFS			Dielectric voltage 2,000 VAC (1 min.)

Power Supply	
1	AC 100 V $\pm$ 10%, 50/60 Hz
2	AC 200 V $\pm$ 10%, 50/60 Hz
3	DC 24 V $\pm$ 10%
4	AC 110 V $\pm$ 10%, 50/60 Hz
5	AC 220 V $\pm$ 10%, 50/60 Hz

Input Signal		
		Input Resistance
10	DC 0–10 mV	1 M $\Omega$
11	DC 0–100 mV	1 M $\Omega$
12	DC 0–1 V	1 M $\Omega$
13	DC 0–5 V	1 M $\Omega$
14	DC 1–5 V	1 M $\Omega$
15	DC 0–10 V	1 M $\Omega$
16	DC 0–50 mV	1 M $\Omega$
17	DC 0–60 mV	1 M $\Omega$
31	DC 0–100 $\mu$ A	100 $\Omega$
32	DC 0–1 mA	100 $\Omega$
33	DC 0–10 mA	50 $\Omega$
34	DC 0–16 mA	50 $\Omega$
35	DC 0–20 mA	50 $\Omega$
36	DC 4–20 mA	50 $\Omega$
99	Other than the above (Please consult with us.): Over 10 mV $\cdot$ fs up to 300 V $\cdot$ fs Over 10 $\mu$ A $\cdot$ fs up to 20 mA $\cdot$ fs	

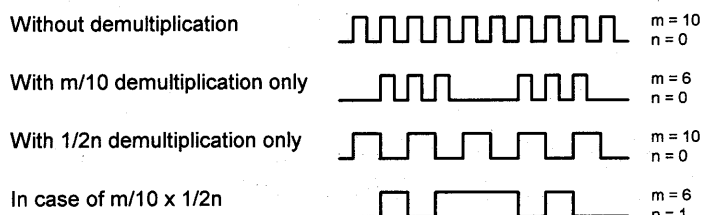
Maximum Frequency		
A	1 KHz	Specify the required output frequency.
B	10 KHz	The converter will be delivered with the
C	100 KHz	specified frequency preset at the factory.

Output Signal Variable Range	– Rough adjustment:	The frequency is demultiplied in the range given by the following equation when adjusted via rotary switches "m" and "n". $f_{out} = f_{max} \times m/10 \times 1/2^n$ A type: 1 KHz–3.90625 Hz $\cdot$ fs B type: 10 KHz–49.0625 Hz $\cdot$ fs C type: 100 KHz–390.625 Hz $\cdot$ fs
	– Fine adjustment:	Zero & span can individually be adjusted over a total of $\pm 10\%$ $\cdot$ fs in the input amplifier and VF conversion section by means of a three-turn trimmer.

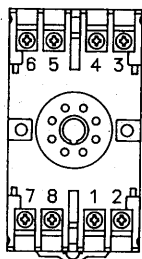
## Specification

Input signal:	DC voltage, DC current
Output signal:	Pulse frequency
Accuracy:	$\pm 0.1\% \cdot f_s$ (at 23°C)
Response time:	Input from 1 to 10 V: $20 \mu\text{sec} + 1/f_{out}$ For other than the above: $1 \text{ msec} + 1/f_{out}$ $f_{out}$ : Output frequency
Output circuit:	Selectable between voltage output and open-collector output via DIP switches. For voltage output, either +12 V or +5 V is selected via DIP switches. The open collector output should be used at less than 30 V, 50 mA.
Operating temperature and humidity:	-5 to +55°C, 90% RH or less (without condensation)
Influence of ambient temperature:	$\pm 0.2\% \cdot f_s / 10^\circ\text{C}$
Insulation resistance:	100 MΩ or more with a 500 VDC megger between the input/output terminal and power supply terminal, and between the input and output terminals.
Dielectric strength:	VFC model: 1,500 VAC for 1 minute between input, output and power supply terminals. VFD & VFS models: 2,000 VAC for 1 minute between input, output and power supply terminals.
Power consumption:	Approx. 4 VA (AC), approx. 120 mA (DC)
Output shutdown (equipped in VFS model):	This function forcibly cuts off the output in cases where the input signal falls to 10% or less of the rating. Please specify if a preset value other than 10% is required.

## Output Waveform



## Explanation of Terminals



No.	Symbol	Description
1	OUTPUT	+
2		-
3	INPUT	+
4		-
5	AMPOUT	-
6	VF IN	+
7	POWER	U (+)
8		V (-)