FREQUENCY-TO-DC CONVERTER (VARIABLE MAXIMUM MEASUREMENT FREQUENCY TYPE) WVP-FVR

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

This plug-in converter outputs a DC signal that is proportional to the frequency of the input pulse signal, and is characterized by the ability to vary the maximum measurement frequency arbitrarily. It detects the period of the input pulse, computes the frequency (using a reciprocal calculation) with a built-in microprocessor unit, and converts the result into a DC signal. Therefore, the converter is quick to respond to very low frequencies and delivers ripple-free signals. Moreover, its input section, MPU unit, and output section are isolated from one another by photocouplers, thereby ensuring immunity to external noise and high reliability.

Features

- Maximum measurement frequency can be changed using only a screwdriver.
- One single unit is capable of supporting a very wide range of input frequency ratings.
- High response, linearity, and ripple-free signal output with high repeatability.
- Capable of suppressing output variation against transient input frequency fluctuations.
- Reduces the output smoothly by means of predictive calculation in cases where the input signal is interrupted.
- Its input, output and power supply are isolated, with a dielectric strength of 2,000 VAC.

Major Applications

- Conversion of revolution and speed detection pulse train signals into analog signals.
- Conversion of flow meter pulse output signals into analog signals.

Model WVP-□□□-□□ □-□

FVR	Frequecy-to-DC converter (variable maximum measurement frequency)

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

	Input Signal	
11	Compatible with open collectors	5 V at OFF, 1 mA at ON Both ON/OFF for 4 µsec or more
13	Voltage pulse (input impedance more than 20 KΩ)	[1] +3.5 V–+30 V [0] -30 V–+1.5 V Both [1] and [0] for 4 µmsec or more
99	Other than the above (Please consult with us.)	

	Output Signal	
		Allowable Load Resistance
A	DC 4–20 mA	750 Ω or less
B	DC 1–5 mA	2 KΩ or less
C	DC 2–10 mA	1 KΩ or less
D	DC 0–1 mA	10 KΩ or less
E	DC 0–10 mA	1 KΩ or less
F	DC 0–16 mA	625 Ω or less
G	DC 0–20 mA	500 Ω or less
H	DC 1–5 V	2.5 KΩ or more
J	DC 0–10 mV	10 KΩ or more
K	DC 0–100 mV	100 KΩ or more
L	DC 0–1 V	500 Ω or more
N	DC 0–5 V	2.5 KΩ or more
P	DC 0–10 V	5 KΩ or more
S	Other than the above (Please consult with us.): Voltage output 10 V or less Current output 20 mA or less	

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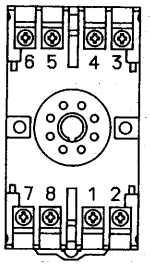
Specification

Output signal:	DC voltage, DC current
Measurement frequency:	10.00 Hz·fs to 99.99 KHz·fs Switchable by 4 ranges
Effective input range:	0.1–100%·fs
Input impedance:	20 KΩ or more (in case of voltage pulse input)
Accuracy:	±0.2%·fs (at 23°C)
Damper function:	Primary delay processing to analog output. Variable up to max. 5 seconds. (0–63%·fs response)
Predictive calculation function:	Gradual output reduction by predictive calculation, in case where the input signal is interrupted
Response time:	Input pulse spacing + 0.2 sec or 0.5 sec (whichever is longer) Input pulse spacing x 2 + 1 sec or less, for an instant after resetting (Response time is the time needed for the output to reach 90%·fs when the input varies from 0% to 100%.)
Allowable load resistance:	For voltage output, a resistance value that provides a load current of 2 mA or less (1 μA or less for an output below 1 V·fs) For current output, a resistance value that provides a voltage drop of 15 V or less between output terminals
Operating temperature and humidity:	-5 to +55°C, 90% RH or less (without condensation or icing)
Influence of ambient temperature:	±0.15%·fs/10°C
Insulation resistance:	100 MΩ or more with a 500 VDC megger between the input and output terminals, and between the input/output terminal and power supply terminal
Dielectric strength:	2,000 VAC for 1 minute between the input and output terminals, and between the input/output terminal and power supply terminal
Power consumption:	Approx. 5 VA (AC), approx. 160 mA (24 VDC)
Sensor power supply:	12 VDC ± 5%, max. 40 mA
Zero & span adjustment:	±5%·fs each (one-turn trimmer)
Influence of supply voltage:	±0.1%·fs/±10% of rated supply voltage

Explanation of Functions

Damper function:	This function adds a primary delay function to the analog output, so that fluctuations in the input will not directly translate into fluctuations in the output, thereby suppressing flickering in the indicators. Variable up to maximum 5 sec. (0–63%·fs response)
Predictive calculation function:	In case the input signal is interrupted, the converter performs predictive calculation and reduces the output gradually to avoid an abrupt drop off.

Explanation of Terminals



No.	Symbol		Description
1	OUTPUT	+	Output signal
2		-	
3	INPUT	+	Input signal
4		-	
5	SENSOR	-	Sensor power supply
6		+	
7	POWER	U (+)	Power supply
8		V (-)	

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