General Specifications

MP4
Pulse Rate Converter

JUXTA

This plug-in type pulse rate converter receives contact pulse, voltage pulse or current pulse from the field and converts it into isolated transistor contact pulse or dry contact AC switch·pulse after calculation by setup pulse rate.

- 4 ports isolation (input, output, power supply, ground)
- Can specify pulse generator power supply to supply 12V DC or 24V DC.
- Vesatile power supply (100V/200V AC, 24V/100V DC)
- If it receives chattering signals, internal input filter (10ms) requirement can be selected through switch
- Selection of load resistance and setting of pulse rate and input filter can be made through front face.
- 2000V AC high voltage proof.

MP4-□□-□

Model

Generator Supply Power
1 : Pulse generator power supply (12V DC ±10%)
2 : Pulse generator power supply (24V DC ±10%)

Output Signal
1 : Open collector
3 : Dry contact AC switch

Power Supply
3 : 24V DC ±10%
4 : 85~132V AC/85~150V DC
5 : 170~264V AC

ORDERING INFORMATION
- Model Code : (Example) MP4-21-4
- Input Frequency : (Example) 0~2kHz
- Output Frequency : (Example) 0~5Hz

Input & Output

Input Signal Type :

	Signal Type
	Dry Voltage Contact
ON Input	Contact R 200Ω or less
OFF Input	Contact R 100kΩ or more

	Signal Type	
	Voltage Pulse	Current Pulse
Hi level	2V~50V DC	$2/R_L$mA~$(50V/R_L)$mA
Lo level	-1V~+8V DC	$(-1/R_L)$mA~$(+8V/R_L)$mA

Voltage pulse amplitude : 2V or more
Max. permissible input voltage : 50V DC or less
R_L : Internal load Resistance (KΩ)

Input Frequency : 0~10kHz

Input Resistance :
Contact or voltage pulse : 15kΩ or more
Current pulse : Load resistance value

Input Pulse Width :
Minimum 40μs or both On time and OFF time

Input Contact Rating : 15V DC/15mA or more

Input Filter : Time constant about 10ms
Setting ON/OFF can be done from front face
(Set it at OFF when shipmwent from factory)
Input frequency range at time of filter setting is 100Hz (pulse width more than 3ms or more)

Generator Power Supply: 12V DC/30mA or 24V DC/30mA (with current control circuit at 40~60mA)

Internal Load Resistance(R_L): Non, 200Ω, 500Ω, 1kΩ
(In case of current pulse, it can be selected by whichever resistance or combination)
(In case of voltage pulse or dry voltage contact input, select it Non)
(Set it at none when shipment)

Pulse Rate Setting : 0.0001~0.9999

Output Frequency : 0~Fo_{100}[Hz] 0~Fo_{100}≦16.6Hz

Output Type : Open collector or dry contact AC switch

Maximum Permissioble Load :
Open collector 30V DC/200mA
Dry contact AC switch 100V AC /200mA

Note :
This converter can take out 0~9999 of optional pulses against input of 10000 pulses.
However, pulses for input pulses multiplied by pulse rate are not always output equally. Be careful for this point when operating converter.

Standard Performance

Pulse Rate Calculation Formular :
Pulse Rate = Fo_{100}/Fi_{100}
(round to four decimals)

Setting limit of pulse rate for input frequency

Max. input freq. Fi_{100}	Pulse rate
0~16.6Hz	No limit
16.6~33.3Hz	0.4000 or less
33.4~83.3Hz	0.2000 or less
83.4~166Hz	0.1000 or less
167~333Hz	0.0400 or less
334~833Hz	0.0200 or less
0.834~1.66kHz	0.0100 or less
1.66~3.33kHz	0.0040 or less
3.34~8.33kHz	0.0020 or less
8.34~10.0kHz	0.0010 or less

Output ON pulse width : 30ms±3ms

Insulation Resistance :
Over 100MΩ (500V DC) between input~output~power supply~ground

Withstand Voltage :
2000V AC/minute between input~output~power supply~ground

Temperature Range : 0~50℃

Humidity Range : 5~90% RH (no condensation)

Power Voltage : 24V DC±10%
85~132V AC (47~63Hz)/85~150V DC
or 170~264V AC (47~63Hz)

Effect of Power Voltage Fluctuation :
No errorneous action for power voltage range

Effect of Ambient Temperature Change :
No errorneous action for temperature range

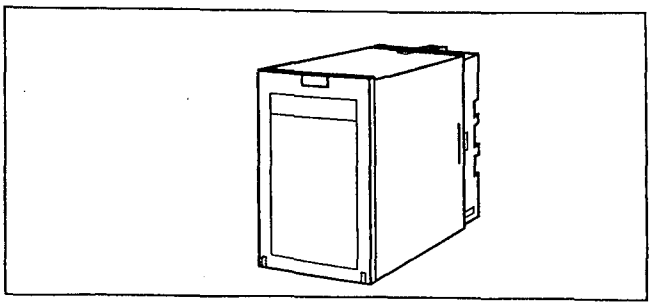
Current Dissipation : 24V DC 90mA, 110V DC 20mA

Power Dissipation : 100V AC 6VA, 200V AC 9VA
* When no use of pulse genrator power supply

Mounting, Shape & Accessories

Materials	Case ABS plastic
Mounting Method	Wall and DIN rail mountings More than 5mm interval is required for close mounting
Connecting Method	M3.5 screw terminal

External Dimension	85x50x123mm(HxWxD) (including socket)
Weight	Body : Abt. 250g Socket : Abt. 60g
Accessories : Spacer ..... 1 (use for DIN rail mounting) Tag number label 2	



CUSTOM ORDER SPECS.

Manufacturable Range

Output Frequency	10kHZ or less
Output ON Pulse	40μs or more

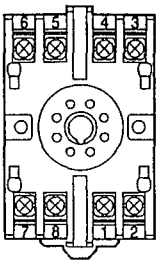
However, output pulse width should satisfy the conditions below :

$$40\mu s \leqq \text{output ON pulse width} \leqq \frac{1}{Fi_{,oo}} \times 0.5 \times n$$

n changes according to pulse rate

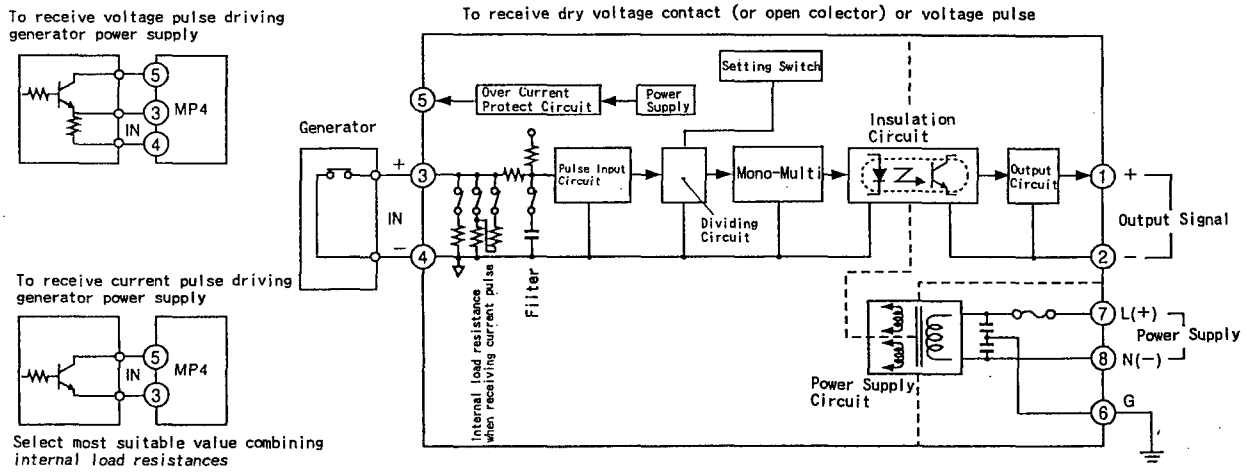
Pulse Rate $\frac{Fo_{,oo}}{Fi_{,oo}}$	n
0.9999~0.4001	1
0.4000~0.2001	2
0.2000~0.1001	5
0.1000~0.0401	10
0.0400~0.0201	20
0.0200~0.0101	50
0.0100~0.0041	100
0.0040~0.0021	200
0.0020~0.0011	500
0.0010~0.0005	1000
0.0004~0.0003	2000
0.0002	5000
0.0001	10000

TERMINAL ARRANGEMENT

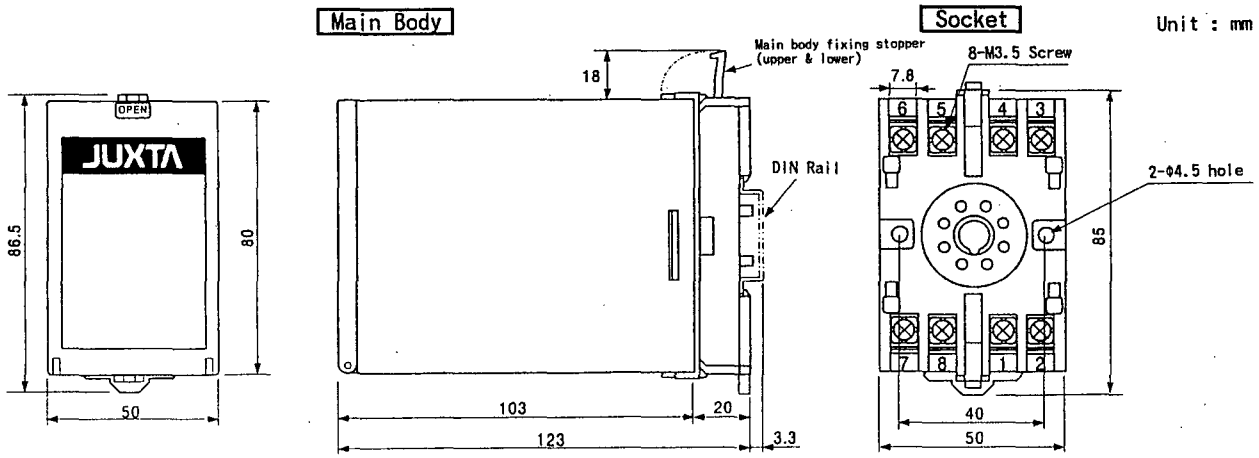


1	OUTPUT	(+)
2	OUTPUT	(−)
3	INPUT	(+)
4	INPUT	(−)
5	INPUT	(PS+)
6	GND	(G)
7	SUPPLY	(L+)
8	SUPPLY	(N−)

BLOCK DIAGRAM



EXTERNAL DIMENSION



Subject to change without notice for grade up quality and performance