

MICROPROCESS FREQUENCY TRANSMITTER



FEATURES

- Accuracy 0.02% F.S.
- Input ranges from 0.01 Hz to 80 KHz
- 15 bit DAC analog voltage or current mode can be modified
- Decimal point can be modified
- Input pulse cut off sampling time (0.1~99.9) second can be modified
- Display value depend on the mean input pulse several times can be modified (1 to 9 times)

1. MODEL: PF-MF- [] - [Min.] - [Max.] [Hz] - [N] → (Non-programmable)

NO	Input Type	NO	Output Ranges	NO	Aux. Power
1	Pulse (TTL) (5V)	B	0-1 V	1	AC 110V (50/60Hz)
2	Pulse (NPN) (12V)	E	0-5 V	2	AC 220V (50/60Hz)
3	Pulse (PNP) (12V)	F	1-5 V	3	DC 24V
4	AC 0.1-6V	H	0-10 V	4	DC 48V
5	AC 1-60V	I	2-10 V	5	DC 110V
9	SPECIFIED	J	0-1 mA	6	DC 220V
		N	0-10mA	7	AC 90~260V
		P	0-20 mA	9	SPECIFIED
		Q	4-20 mA		
		R	SPECIFIED		

• ±20% of rate, less 3.5VA for AC input

• ±20% of rate, less 3WATT for DC input

• Switchable 110V/220V by jump internally

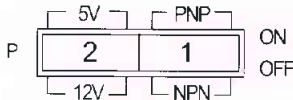
• Less 3.5VA for AC switching input

2. Specification

- Accuracy : 0.02% F.S. (23±5°C)
- Count input type : Switch selectable current sourcing or current sinking
- Count input trigger levels : Switch selectable
Hi bias ($V_{IH}=7.5V$, $V_{IL}=5.5V$) or
Lo bias ($V_{IH}=3.7V$, $V_{IL}=2.0V$)
- Sampling time : 10 cycle/sec. (≥10Hz)
f cycle/sec. (<10Hz)
- Over input indication : "ovEr"
- Readout (output) range : "0" to "99999" adjustable
- Sensor power supply : 12VDC ±10% (≤50mA)
- Output drive capability : ≤10mA for voltage mode
≤10V for current mode
- Output ripple (p-p) : <0.1% F.S.
- Response time : ≤200ms (0~90%) (≥10Hz)
- Temp. coefficient : 50 ppm/°C (0-50°C)
- Dielectric strength : 1.5KVac/1 min. (power/input/output)
2000 Vdc (input/output)
- Operating condition : 0~55°C (20~95% RH non-condensed)
- Storage condition : 0~70°C (20~95% RH non-condensed)
- Construction : Socket/plug-in type with barrier terminals

3. Function switches (S1, S2)

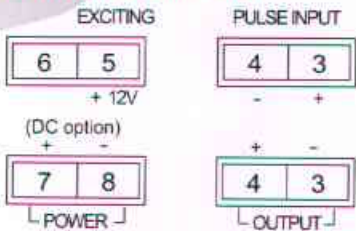
- S1 → P1 input trigger level selection
P2 input level selection



- S2 → P1-P2-P3-P4-P5-P6 output range selection
P7-P8 output mode: voltage/current selection

X	Output Range	O/P Range 1-2-3-4-5-6	O/P Mode 7-8
0	SPECIFIED	switching status	on=1 off=0
1	0 ~ 1V	1-0-1-1-1-0	1-1
2	0 ~ 5V	1-0-1-0-1-0	1-1
3	1 ~ 5V	1-1-1-0-1-1	1-1
4	0 ~ 10V	1-1-0-1-0-0	1-1
5	2 ~ 10V	1-1-1-1-0-1	1-1
6	0 ~ 1mA	0-1-1-1-1-0	0-0
7	0 ~ 10mA	1-0-1-0-1-0	0-0
8	0 ~ 20mA	1-1-0-1-0-0	0-0
9	4 ~ 20mA	1-1-1-1-0-1	0-0

4. Terminal connection



5. Dimension: See other transmitter dimension

6. Application

Example 1 : PF-MF-2Q2-0-1000.0Hz

Input range (0-1000.0Hz)
Input level (pulse (NPN))
Output range (DC 4-20mA)
Power (AC 220V)

Example 2 : PF-MF-1H1-1000.0-100.0Hz

Input range (1000.0-100.0Hz)
Input level (pulse (TTL))
Output range (DC 0-10V)
Power (AC 110V)

MICROPROCESS THERMOCOUPLE TRANSMITTER



FEATURES

- Accuracy 0.2% F.S. $\pm 0.5^{\circ}\text{C}$ (CJC)
- Programmable rate - 1999 to 9999 digit (analog output)
- CJC traceability $\leq \pm 0.5^{\circ}\text{C}$ (0-70 $^{\circ}\text{C}$)
- 15 bit DAC analog voltage or current mode can be modified
- Sensor error compensation (offset) and break detection function
- $^{\circ}\text{C}$ or $^{\circ}\text{F}$ scale, 1 or 0.1 degree resolution
- Display value depend on the mean input pulse several times can be modified (1-9 times)
- Input/output isolation 2KVdc

1. MODEL: PF- [] - [] - [] - [] - [Min. - Max.] - [] - [N] \rightarrow (Non-programmable)

MTA Non-isolating (input/output)
MTB Isolating (input/output)

NO	Input Type	NO	Output Ranges	NO	Aux. Power
B	B (200~1800 $^{\circ}\text{C}$)	E	DC 0-5 V	1	AC 110V (50/60Hz)
E	E (-185~990 $^{\circ}\text{C}$)	F	DC 1-5 V	2	AC 220V (50/60Hz)
J	J (-200~760 $^{\circ}\text{C}$)	H	DC 0-10 V	3	DC 24V
K	K (-200~1360 $^{\circ}\text{C}$)	J	DC 0-1 mA	4	DC 48V
R	R (0~1760 $^{\circ}\text{C}$)	P	DC 0-20 mA	5	DC 110V
S	S (0~1750 $^{\circ}\text{C}$)	Q	DC 4-20 mA	6	DC 220V
T	T (-200~395 $^{\circ}\text{C}$)	R	SPECIFIED	7	AC 90~260V
				9	SPECIFIED

• $\pm 20\%$ of rate, less 3.5VA for AC input
• $\pm 20\%$ of rate, less 3WATT for DC input
• Switchable 110V/220V by jump internally
• Less 3.5VA for AC switching input

3. Output switches table (S4)

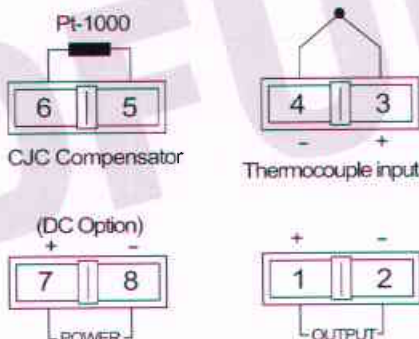
(switching status 1 = on; 0 = off)

Output Range	O/P Range	O/P Mode
	1-2-3-4-5-6	7-8
0 ~ 5V	1-0-1-0-1-0	1-1
1 ~ 5V	1-1-1-0-1-1	1-1
0 ~ 10V	1-1-0-1-0-0	1-1
0 ~ 1mA	0-1-1-1-1-0	0-0
0 ~ 20mA	1-1-0-1-0-0	0-0
4 ~ 20mA	1-1-1-1-0-1	0-0

2. Specification

- Accuracy (23 $\pm 5^{\circ}\text{C}$) : 0.2% F.S. $\pm 0.5^{\circ}\text{C}$ (CJC)
- Sampling time : 0.04 second
- Readout range : -1999 ~ 9999 digit adjustable
- Display : Red high efficiency LEDs 9.2mm (0.36")
- Polarity display : When input is negative, "-" displayed
- Over input indication : "ovEr"
- (input break indication)
- Analog output resolution : 15 bit DAC
- Output drive capability : $\leq 10\text{mA}$ for voltage mode
 $\leq 10\text{V}$ for current mode
- Output ripple (p-p) : $< 0.1\%$ F.S.
- Response time : $\leq 100\text{ms}$ (0~90%)
- Temp. coefficient : 50 ppm/ $^{\circ}\text{C}$ (0-50 $^{\circ}\text{C}$)
- Dielectric strength : 1.5KVac/1 min. (power/input/output)
2000 Vdc (input/output)
- Operating condition : 0~55 $^{\circ}\text{C}$ (20~95% RH non-condensed)
- Storage condition : 0~70 $^{\circ}\text{C}$ (20~95% RH non-condensed)
- Construction : Socket/plug-in type with barrier terminals

4. Terminal connection



5. Dimension: See other transmitter dimension

6. Application

Example 1 : PF-MTB-KQ1-0-1200 $^{\circ}\text{C}$

Input type (K-type)
Input range (0-1200 $^{\circ}\text{C}$)
Output range (DC 4-20mA)
Power (AC 110V)

Example 2 : PF-MTB-RH2-0-3182 $^{\circ}\text{F}$

Input type (R-type)
Input range (0-3182 $^{\circ}\text{F}$)
Output range (DC 0-10V)
Power (AC 220V)

MICROPROCESS ANALOG TRANSMITTER WITH LED DISPLAY



FEATURES

- Input type DCA, DCV, ACA, ACV, Potentiometer, Pt-100, etc...
- Accuracy 0.05% F.S. ± 1 digit (DC)
- Programmable rate -1999 to 9999 digit (readout & analog output)
- 15 bit DAC analog voltage or current mode can be modified
- Display value depend on the mean input several times can be modified (1 to 9 times)
- Input/output isolation 2KVdc
- Man-machine interface, easy to operate

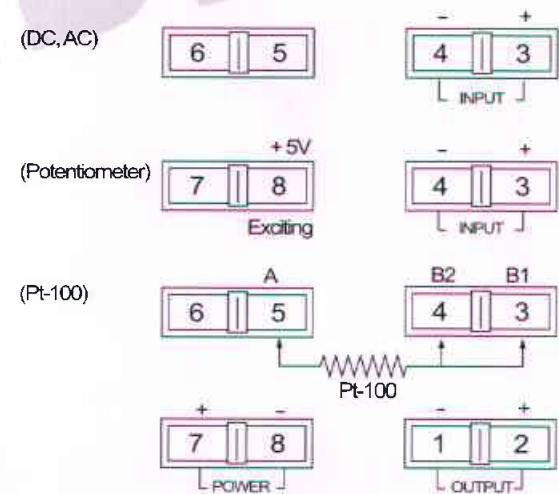
1. MODEL: PF-MAT -

NO	Input Type	NO	DCV (ACV)	NO	DCA (ACA)	NO	Potentiometer	NO	Pt-100	NO	Output Range	NO	Aux. Power
A	DC	11	0-50.00mV	21	0-9.999 μ A	31	0-10%	41	-50.0~50.0°C	E	0 - 5 V	1	AC 110V (50/60Hz)
B	AC (RMS)	12	0-99.99mV	22	0-99.99 μ A	32	0-50%	42	-100.0~100.0°C	F	1 - 5 V	2	AC 220V (50/60Hz)
C	AC (TRMS)	13	0-999.9mV	23	0-2.000mA	33	0-100%	43	-199.9~199.9°C	H	0 - 10 V	3	DC 24V
D	Potentiometer	14	0-5V	24	0-20.00mA	34	5-95%	44	-199.9~400°C	I	2 - 10 V	4	DC 48V
F	Pt-100 (RTD)	15	0-10V	25	0-200.0mA	35	10-90%	45	-199.9~850°C	J	0 - 1 mA	5	DC 110V
O	SPECIFIED	16	0-35V	26	0-2.000A	39	SPECIFIED	49	SPECIFIED	N	0 - 10 mA	6	DC 220V
		17	0-600V	27	0-5.000A		• Three wire connection		• Three wire connection	P	0 - 20 mA	7	AC 90~260V
		18	0-999.9V	28	0-9.999A		• Exciting voltage DC 5V (≤ 5 mA)			Q	4 - 20 mA	9	SPECIFIED
		19	SPECIFIED	29	SPECIFIED					R	SPECIFIED		• $\pm 20\%$ of rate, less 3.5VA for AC input
													• $\pm 20\%$ of rate, less 3WATT for DC input
													• Switchable 110V/220V by jump internally
													• Less 3.5VA for AC switching input

2. Specification

- Accuracy (23 $\pm 5^\circ\text{C}$) : 0.05% F.S. ± 1 digit (DC)
0.1% F.S. ± 1 digit (AC(TRMS), Potentiometer, Pt-100)
0.15% F.S. ± 1 digit (AC(TRMS))
- Sampling time : 0.04 second
- Readout range : -1999~9999 digit adjustable
- Display : Red high efficiency LEDs high 9.2mm (0.36")
- Polarity display : When input is negative, "-" displayed
- Over input indication : "ovEr"
- Analog output resolution : "15 bit DAC"
- Output drive capability : ≤ 10 mA for voltage mode
 ≤ 10 V for current mode
- Output ripple (p-p) : $< 0.1\%$ F.S.
- Response time : ≤ 100 ms (0-90%)
- Temp. coefficient : 50ppm/ $^\circ\text{C}$ (0-50 $^\circ\text{C}$)
- Dielectric strength : 1.5KVac/1min. (power/input/output)
2000 Vdc (input/output)
- Operating condition : 0~55 $^\circ\text{C}$ (humidity 20 to 95% RH non-condensed)
- Storage condition : 0~70 $^\circ\text{C}$ (humidity 20 to 90% RH non-condensed)
- Construction : Socket/plug-in type with barrier terminals

3. Terminal connection



4. Dimension → See transmitter dimension