

MICROPROCESS 6 DIGITAL HI/LO DISPLACEMENT CONTROLLER METER



FEATURES

- Readout range from -99999 to 999999
- Accepts input rates 50 or 500 CPS can be modified
- Accepts input counting for quadrature sensing (up to 4 times resolution)
- Input scaling multiplier (0.00001 to 9.99999)
- Dual alarm, alarm action can be modified (PF-C726-CA-C)
- Alarm, compare hysteresis can be modified (PF-C726-CA-CC)
- Decimal point can be modified
- Up and down key setting, easy to operate
- Count inhibit function (GATE control)

1. MODEL: PF - C726 - CA - ☒ ☐ → X= R (Relay Output) X=O (Open Collector Output)

Y = C1 (One alarm setting), C2 (Two alarm setting)

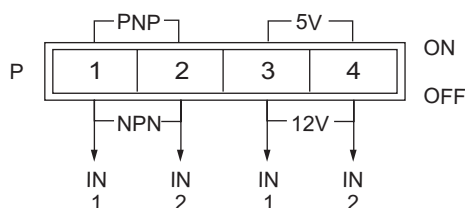
Y = CC (Alarm ± hysteresis setting)

2. Specification

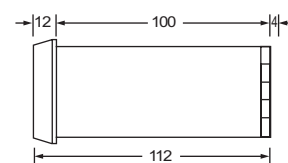
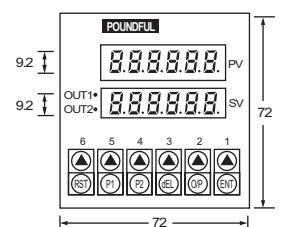
- Aux. power supply : AC 110&220V ±20% (50 or 60Hz)
(Optional DC 24, 48, 110, 220V ±20%)
AC 90~260V ±10%
DC 24~70V ±20%)
- Count input trigger levels : Switch selectable
Hi bias($V_{IH}=7.5V$, $V_{IL}=5.5V$) or
Lo bias($V_{IH}=3.7V$, $V_{IL}=2.0V$)
- Max. count rates : ≤ 500Hz
- Over input indication : "ovEr"
- Readout (compare) range : "-99999" to "999999"
- Setting methods : Touch switches
- Display count value : Red high efficiency LEDs 9.2mm (0.36")
- Display preset value : Red high efficiency LEDs 9.2mm (0.36")
- Alarm action : "Hi" or "Lo" adjustable
- Relay contact output : AC 250V-3A, DC 30V-5A
- Contactless output : Open collector, DC 30V/60mA Max.
- Sensor power supply : 12VDC ±10% (≤60mA)
- Memory type : Non-volatile EEPROM memory
- Dielectric strength : 2KVac/1 min. (power/input/output)
- Operating condition : 0~50°C (20~90% RH non-condensed)
- Storage condition : 0~70°C (20~90% RH non-condensed)

3. Function switches

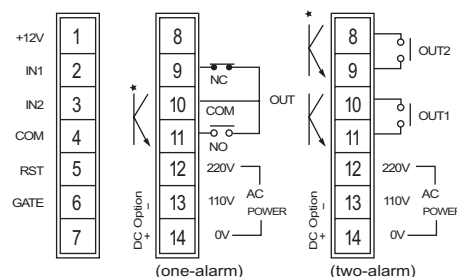
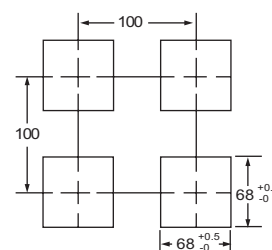
- P₁, P₂ → input type selection
- P₃, P₄ → input trigger level selection



4. Outside dimension and connection diagram



• PANEL CUT-OUT



★ (open collector output)

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)
(Input Range)

| 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 | | |

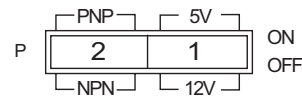
• ±20% of rate, less 3.5VA for AC input
 • ±20% of rate, less 3WATT for DC input
 • Switchable 110V/220V by jump internally
 • ±10% of rate, less 3.5VA for AC switching input

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. ($\geq 10Hz$)
f cycle/sec. ($< 10Hz$)
- Over input indication : "ovEr"
- Readout (output) range : "0" to "99999" adjustable
- Sensor power supply : 12VDC ±10% ($\leq 50mA$)
- Output drive capability : $\leq 10mA$ for voltage mode
 $\leq 10V$ for current mode
- Output ripple (p-p) : $< 0.1\%$ F.S.
- Response time : $\leq 200ms$ (0~90%) ($\geq 10Hz$)
- 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)

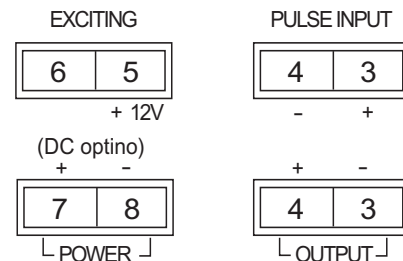
- S1 → P₁ input trigger level selection
P₂ input level selection



- 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)

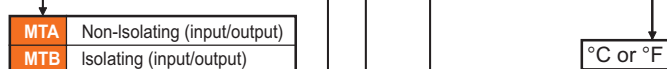
MICROPROCESS THERMOCOUPLE TRANSMITTER



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.] []



| 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
 • $\pm 10\%$ of rate, less 3.5VA for AC switching input

2. Specification

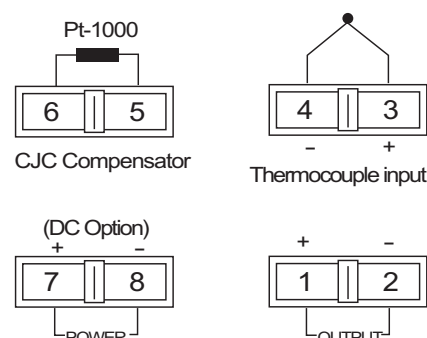
- Accuracy (23 $\pm 5^{\circ}\text{C}$) : 0.2% F.S. $\pm 0.5^{\circ}\text{C}$ (CJC)
- Sampling time : 0.04 second
- Readout range : -1999 ~ 9999 digit adjustable
- Display : Red high efficiency LEDs 9.2mm (0.36")
- Polarity display : When input is negative, "-" displayed
- Over input indication : "ovEr"
- 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 : 1.5KVdc/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

3. Output switches table (S4)

(switching status 1 = on; 0 = off)

| Output Range | O/P Range 1-2-3-4-5-6 | O/P Mode 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 |

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

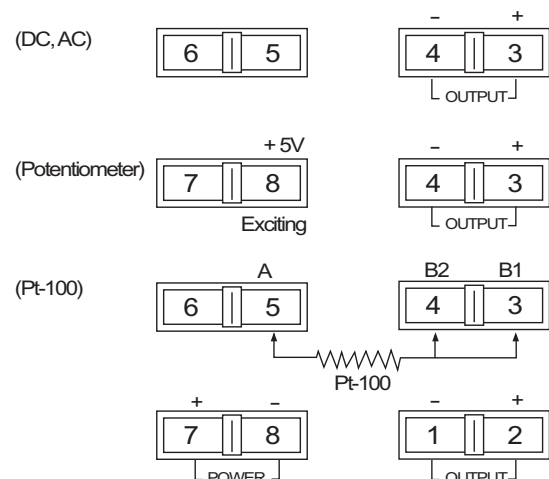
1. MODEL: PF-MAT - ■ ■ ■ - ■

| NO | Input Type | NO | DCV (ACV) | NO | DCA (ACA) | NO | Potentiometer | NO | Pt-100 | NO | Output Range | NO | Aux. Power |
|----|---------------|----|-----------|----|-----------------|----|--|----|-------------------------|----|--------------|----|--|
| A | DC | 11 | 0-50.0mV | 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 • Exciting voltage DC 5V (≤ 5 mA) | | • Three wire connection | P | 0 - 20 mA | 7 | AC 90~260V |
| | | 18 | 0-999.9V | 28 | 0-9.999A | | | | | 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 • $\pm 10\%$ of rate, less 3.5VA for AC switching input |

2. Specification

- Accuracy (23 $\pm 5^\circ$ 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/ $^\circ$ C (0-50 $^\circ$ C)
- Dielectric strength : 1.5KVac/1min. (power/input/output)
2000 Vdc (input/output)
- Operating condition : 0~55 $^\circ$ C (humidity 20 to 95% RH non-condensed)
- Storage condition : 0~70 $^\circ$ C (humidity 20 to 90% RH non-condensed)
- Construction : Socket/plug-in type with barrier terminals

3. Terminal connection



4. Dimension → See transmitter dimension

PROGRAMMABLE DC TRANSMITTER



FEATURES

- Field-rangeable. Wide switchable input ranges 10mV to 200V/200 μ A to 50mA, wide switchable output ranges over 20 standard process signals
- Accuracy 0.1% F.S.
- Input/output isolation 1.6KVdc

1. MODEL: PF - [] - [] - [] - [] → Non-programmable

DAP

DBP

Non-Isolating (input/output)

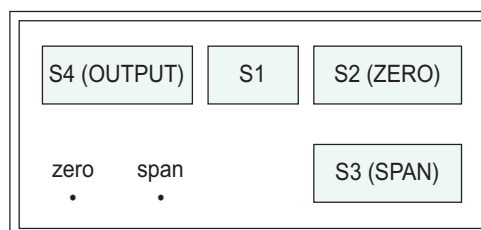
Isolating (input/output)

| NO | Input Ranges Voltage | NO | Input Ranges Current | NO | Output Ranges Voltage / Current | NO | Aux. Power |
|----|-------------------------|--|-------------------------|----|------------------------------------|--|-------------------|
| 10 | 0 ~ 10 mV | 30 | 0 ~ 200 μA | A | 0 ~ 0.5V | 1 | AC 110V (50/60Hz) |
| 11 | 0 ~ 20 mV | 31 | 0 ~ 500 μA | B | 0 ~ 1V | 2 | AC 220V (50/60Hz) |
| 12 | 0 ~ 50 mV | 32 | 0 ~ 1 mA | C | 0 ~ 2V | 3 | DC 24V |
| 13 | 0 ~ 100 mV | 33 | 0 ~ 2 mA | D | 0 ~ 4V | 4 | DC 48V |
| 14 | 0 ~ 200 mV | 34 | 0 ~ 5 mA | E | 0 ~ 5V | 5 | DC 110V |
| 15 | 0 ~ 500 mV | 35 | 1 ~ 5 mA | F | 1 ~ 5V | 6 | DC 220V |
| 16 | 0 ~ 1 V | 36 | 0 ~ 10 mA | G | 0 ~ 8V | 7 | AC 90~260V |
| 17 | -1 ~ +1 V | 37 | 2 ~ 10 mA | H | 0 ~ 10V | 9 | SPECIFIED |
| 18 | 0 ~ 2 V | 38 | 0 ~ 20 mA | I | 2 ~ 10V | <div> <div>±20% of rate, less 2.5VA for AC input</div> <div>±20% of rate, less 2WATT for DC input</div> <div>Switchable 110V/220V by jump internally</div> <div>±10% of rate, less 2.5VA for AC switching input</div> </div> | |
| 19 | 0 ~ 5 V | 39 | 4 ~ 20 mA | J | 0 ~ 1mA | | |
| 20 | 1 ~ 5 V | 40 | 0 ~ 50 mA | K | 0 ~ 2mA | | |
| 21 | -5 ~ +5 V | 41 | 10 ~ 50 mA | L | 0 ~ 5mA | | |
| 22 | 0 ~ 10 V | 42 | 20 ~ 4 mA | M | 1 ~ 5mA | | |
| 23 | 2 ~ 10 V | 43 | 50 ~ 10 mA | N | 0 ~ 10mA | | |
| 24 | -10 ~ +10 V | 44 | *4 ~ 20 mA | O | 0 ~ 16mA | | |
| 25 | 0 ~ 20 V | 99 | SPECIFIED | P | 0 ~ 20mA | | |
| 26 | 0 ~ 100 V | * exciting DC 24V (two wire) | | Q | 4 ~ 20mA | | |
| 27 | 0 ~ 200 V | * 20~4mA & 50~10mA be reversed of input connection | | R | SPECIFIED | | |

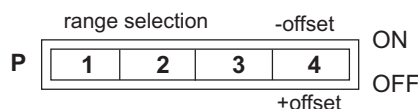
2. Specification

- Accuracy : 0.1% F.S (23 \pm 5 $^{\circ}$ C)
- Output ripple (p-p) : <0.1% F.S.
- Temp. coefficient : 100ppm/ $^{\circ}$ C (0-50 $^{\circ}$ C)
- Input resistance : $\geq 100M\Omega$ ($\leq 2V$ ranges)
 $\geq 1M\Omega$ ($> 2V$ ranges)
 $\leq 20\Omega$ (current input)
- Maximum input : $\geq 300V_{rms}$ ($> 2V$ ranges)
 $\leq 150V_{rms}$ ($\leq 2V$ ranges)
 $\leq 150mA$ (current input)
- Dielectric strength : 1.5KVac / 1min. (power/input / output)
1600Vdc (input/output)
- Output drive capability : $\leq 10mA$ for voltage mode
 $\leq 10V$ for current mode
- Response time : $\leq 250ms$ (0-90%)
- Operating condition : 0~55 $^{\circ}$ C (20 to 95% RH non-condensed)
- Storage condition : 0~70 $^{\circ}$ C (20 to 95% RH non-condensed)
- Construction : Socket/plug-in type with barrier terminals

3. Function switches (S1, S2, S3, S4)



- S1 → P₁-P₂-P₃ input range selection
P₄ input offset polarity selection

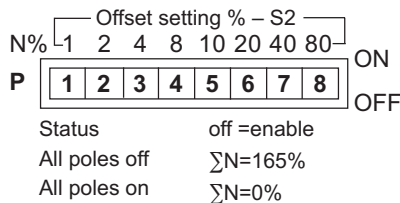


PROGRAMMABLE DC TRANSMITTER

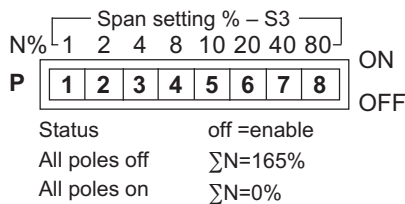
| Effective input range D | S1 pole 1-2-3 | Pregain G |
|-----------------------------------|------------------|--------------|
| 200 V \geq D > 20 V | 0-1-1 | 0.01 |
| 20 V \geq D > 2 V | 0-0-1 | 0.1 |
| 2 V \geq D > 200 mV | 0-0-0 | 1 |
| 200 mV \geq D > 20 mV | 1-0-1 | 10 |
| 20 mV \geq D > 2 mV | 1-0-0 | 100 |
| 50 mA \geq D > 5 mA | 1-1-1 | 1 |
| 5 mA \geq D > 500 μ A | 1-0-1 | 10 |
| 500 μ A \geq D > 50 μ A | 1-0-0 | 100 |

(Status ——— P1-P2-P3 – on = 1; off=0)

- S2 → Input range offset (ZERO) selection



- S3 → Input range offset (GAIN) selection



- S4 → P1-P2-P3-P5-P6- output range selection
- P7-P8 output mode: voltage/current selection
- ★ (ref. output switching table)

4. Programming formula

VH/VL, AH/AL: input high / input low; G: pregain

| Voltage mode | unit: volt | Current mode | unit: mA |
|---|------------|---------------------------------|----------|
| • Span → $X=[10/G (VH-VL)]\%$ | | • Span → $X=[500/G (AH-AL)]\%$ | |
| • Offset → $Y=[100 \times G \times VL]\%$ | | • Offset → $Y=[2G \times AL]\%$ | |

- ★ Note: 1. Range selection: IVH-VLI should be ≥ 0.1 IVHI limited of pregain & range selection
2. Solution of non-linear problem: at input span IVH-VLI ≤ 0.2 IVHI, at normal setting switching calibration, if non-linear happened, shifting offset switches up or down 1-2%, recalibrating to obtain correct output.

5. Output switching table: See other transmitter

Output switching table

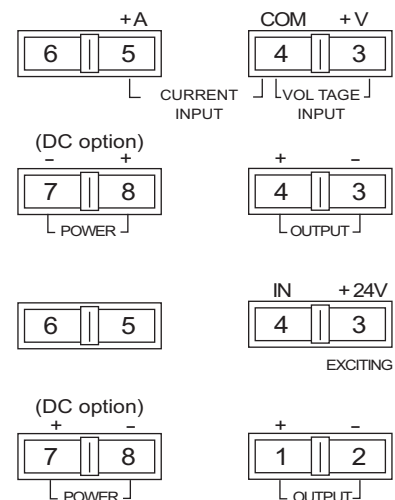
6. Input switching table (S1, S2, S3)

(switching status 1 = on; 0 = off; X = don't care)

| Input Range | S2 (ZERO) 1-2-3-4-6-7-8 | S3 (SPAN) 1-2-3-4-5-6-7-8 | S1 1-2-3-4 |
|-------------|----------------------------|------------------------------|---------------|
| 0~10 mV | 1-1-1-1-1-1-1-1 | 1-1-1-1-0-1-1-1 | 1-0-0-X |
| 0~20 mV | 1-1-1-1-1-1-1-1 | 0-1-0-1-1-1-1-1 | 1-0-0-X |
| 0~50 mV | 1-1-1-1-1-1-1-1 | 1-1-1-1-1-0-1-1 | 1-0-1-X |
| 0~100 mV | 1-1-1-1-1-1-1-1 | 1-1-1-1-0-1-1-1 | 1-0-1-X |
| 0~200 mV | 1-1-1-1-1-1-1-1 | 0-1-0-1-1-1-1-1 | 1-0-1-X |
| 0~500 mV | 1-1-1-1-1-1-1-1 | 1-1-1-1-1-0-1-1 | 0-0-0-X |
| 0~1 V | 1-1-1-1-1-1-1-1 | 1-1-1-1-0-1-1-1 | 0-0-0-X |
| -1~1 V | 1-1-1-1-1-0-1-0 | 0-1-0-1-1-1-1-1 | 0-0-0-0 |
| 0~2 V | 1-1-1-1-1-1-1-1 | 0-1-0-1-1-1-1-1 | 0-0-0-X |
| 0~5 V | 1-1-1-1-1-1-1-1 | 1-1-1-1-1-0-1-1 | 0-0-1-X |
| 1~5 V | 1-1-1-1-0-1-1-1 | 0-1-0-1-1-0-1-1 | 0-0-1-1 |
| -5~5 V | 1-1-1-1-0-1-0-1 | 1-1-1-1-0-1-1-1 | 0-0-1-0 |
| 0~10 V | 1-1-1-1-1-1-1-1 | 1-1-1-1-0-1-1-1 | 0-0-1-X |
| 2~10 V | 1-1-1-1-1-0-1-1 | 0-0-1-1-0-1-1-1 | 0-0-1-1 |
| -10~10 V | 1-1-1-1-1-0-1-0 | 0-1-0-1-1-1-1-1 | 0-0-1-0 |
| 0~20 V | 1-1-1-1-1-1-1-1 | 0-1-0-1-1-1-1-1 | 0-0-1-X |
| 0~50 V | 1-1-1-1-1-1-1-1 | 1-1-1-1-1-0-1-1 | 0-1-1-X |
| 0~100 V | 1-1-1-1-1-1-1-1 | 1-1-1-1-0-1-1-1 | 0-1-1-X |
| 0~200 V | 1-1-1-1-1-1-1-1 | 0-1-0-1-1-1-1-1 | 0-1-1-X |
| 0~0.2 mA | 1-1-1-1-1-1-1-1 | 0-1-0-1-1-0-1-1 | 1-0-0-X |
| 0~0.5 mA | 1-1-1-1-1-1-1-1 | 1-1-1-1-0-1-1-1 | 1-0-0-X |
| 0~1 mA | 1-1-1-1-1-1-1-1 | 1-1-1-1-0-1-0-1 | 1-0-1-X |
| 0~2 mA | 1-1-1-1-1-1-1-1 | 0-1-0-1-1-0-1-1 | 1-0-1-X |
| 0~5 mA | 1-1-1-1-1-1-1-1 | 1-1-1-1-0-1-1-1 | 1-0-1-X |
| 1~5 mA | 1-1-1-1-1-0-1-1 | 0-0-1-1-0-1-1-1 | 1-0-1-1 |
| 0~10 mA | 1-1-1-1-1-1-1-1 | 1-1-1-1-0-1-0-1 | 1-1-1-1 |
| 2~10 mA | 1-1-0-1-1-1-1-1 | 0-0-1-1-1-0-0-1 | 1-1-1-1 |
| 0~20 mA | 1-1-1-1-1-1-1-1 | 0-1-0-1-1-0-1-1 | 1-1-1-X |
| 4~20 mA | 1-1-1-0-1-1-1-1 | 0-1-1-1-0-0-1-1 | 1-1-1-1 |
| 10~50 mA | 1-1-1-1-1-0-1-1 | 0-0-1-1-0-1-1-1 | 1-1-1-1 |
| *20~4 mA | 1-1-1-1-1-1-0-1 | 0-1-1-1-0-0-1-1 | 1-1-1-0 |
| *50~10 mA | 1-1-1-1-1-0-1-0 | 0-0-1-1-0-1-1-1 | 1-1-1-0 |

- 20~4 & 50~10 mA be reversed of input connection

7. Terminal connection



(PF-DAP (DBP)-44 only)

8. Dimension: See other transmitter dimension

PROGRAMMABLE AC TRANSMITTER



FEATURES

- Field-rangeable switchable input & output range
- Accuracy 0.1% F.S.
- Input/output isolation 1.6KVdc

1. MODEL: PF- - - - - N → (Non-programmable)

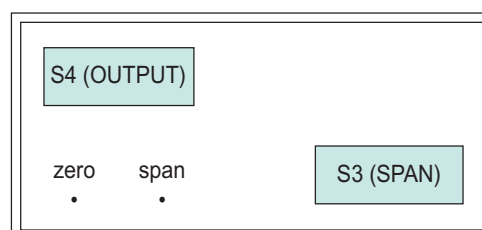
• CTB (diode block) is supplied to protect the current transformer from burning when the loop is open

| NO | Input Type | NO | Output Ranges | NO | Aux. Power |
|----|------------|----|---------------|----|---|
| 1 | AC 0-10V | E | DC 0-5 V | 1 | AC 110V (50/60Hz) |
| 2 | AC 0-50V | F | DC 1-5 V | 2 | AC 220V (50/60Hz) |
| 3 | AC 0-150V | H | DC 0-10 V | 3 | DC 24V |
| 4 | AC 0-300V | I | DC 2-10 V | 4 | DC 48V |
| 5 | AC 0-600V | J | DC 0-1 mA | 5 | DC 110V |
| 6 | AC 0-1A | N | DC 0-10 mA | 6 | DC 220V |
| 7 | AC 0-5A | P | DC 0-20 mA | 7 | AC 90~260V |
| 8 | AC 0-10A | Q | DC 4-20 mA | 9 | SPECIFIED |
| 9 | SPECIFIED | R | SPECIFIED | | <ul style="list-style-type: none"> • $\pm 20\%$ of rate, less 2.5VA for AC input • $\pm 20\%$ of rate, less 2WATT for DC input • Switchable 110V/220V by jump internally • $\pm 10\%$ of rate, less 2.5VA for AC switching input |

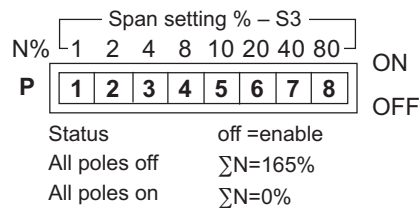
2. Specification

- Accuracy : 0.1% F.S. (TRMS) (23±5°C)
0.25% F.S. (RMS) (23±5°C)
- Temp. coefficient : 100ppm/°C (0-50°)
- Input burden : ≤0.2VA (ACV); ≤0.2VA (ACA)
- Max. input over : ≤2 x rated continuous (Voltage)
≤3 x rated continuous (Current)
- Response time : ≤300ms (0~90%)
- Output ripple (p-p) : <0.1% F.S.
- Dielectric strength : 1.5KVac/1 min. (power/input/output)
- Output drive capability : ≤10mA for voltage mode
≤10V for current mode
- Operating condition : 0~55°C humidity 20~95% RH
non-condensed
- Storage condition : 0~70°C humidity 20~95% RH
non-condensed
- Construction : Socket/plug-in type with barrier terminals

3. Function switches (S3, S4)



- S3 → Input range offset (GAIN) selection



- S4 → P1-P2-P3-P4-P5-P6 output range selection
P7-P8 output mode: voltage/current selection
★ (ref. output switching table)

4. Programming formula

| Effective input range D | Pregain G | Effective input range D | Pregain G |
|----------------------------|--------------|----------------------------|--------------|
| $600V \geq D > 150V$ | 600 | $10A \geq D > 5A$ | 10 |
| $150V \geq D > 50V$ | 150 | $5A \geq D > 1A$ | 5 |
| $50V \geq D > 10V$ | 50 | $10A \geq D > 5A$ | 1 |
| $10V \geq D > 2V$ | 10 | | |

IH/IL: input high/input low; G: pregain

- SPAN $\rightarrow X = [10G / (I_H - I_L)]\%$

PROGRAMMABLE AC TRANSMITTER

5. Application

Example : PF-AA-7Q-2

Gain (G = 5)
 Input range (IH = 5A, IL = 0A)
 Output (DC 4-20mA)
 Power (AC 220V)
 • (Span) X = $[10 \times 5 / (5-0)]\%$
 = 10%

• S3 →

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|

 ON
 OFF
 (P5-off & the rest on → $\sum N=10\%$)

• S4 →

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|

 ON
 OFF
 (P5-P7-P8-off & the rest on)

Example : PF-AA-9H-1

Gain (G = 50)
 Input range (IH = 35V, IL = 0V)
 Output (DC 0-10V)
 Power (AC 110V)
 • (Span) X = $[10 \times 50 / (35-0)]\%$
 = 14%

• S3 →

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|

 ON
 OFF
 (P3-P5-off & the rest on → $\sum N=14\%$)

• S4 →

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|

 ON
 OFF
 (P3-P5-P6-off & the rest on)

6. Input switching table (S3)

(switching status 1 = on; 0 = off)

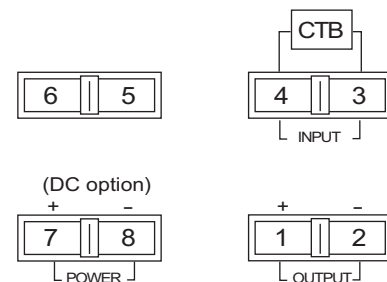
| Input Range | S3 (SPAN) 1-2-3-4-5-6-7-8 |
|-------------|------------------------------|
| AC 0 ~ 10V | 1-1-1-1-0-1-1-1 |
| AC 0 ~ 50V | 1-1-1-1-0-1-1-1 |
| AC 0 ~ 150V | 1-1-1-1-0-1-1-1 |
| AC 0 ~ 300V | 1-1-1-1-1-0-1-1 |
| AC 0 ~ 600V | 1-1-1-1-0-1-1-1 |
| AC 0 ~ 1A | 1-1-1-1-0-1-1-1 |
| AC 0 ~ 5A | 1-1-1-1-0-1-1-1 |
| AC 0 ~ 10A | 1-1-1-1-0-1-1-1 |

7. Output switching table (S4)

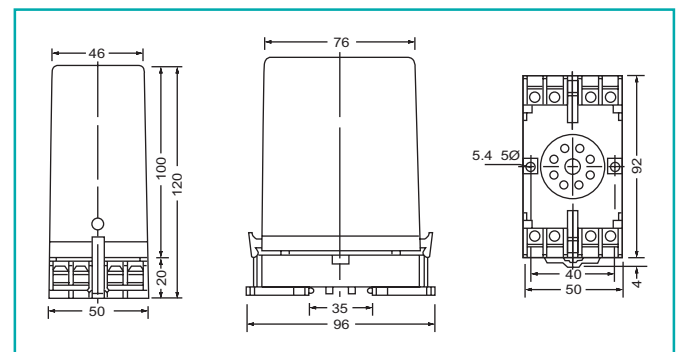
(switching status 1 = on; 0 = off)

| Output Range | O/P Range 1-2-3-4-5-6 | O/P Mode 7-8 |
|--------------|--------------------------|-----------------|
| 0 ~ 0.5V | 0-1-1-1-1-0 | 1-1 |
| 0 ~ 1V | 1-0-1-1-1-0 | 1-1 |
| 0 ~ 2V | 1-1-0-1-1-0 | 1-1 |
| 0 ~ 4V | 1-1-1-0-1-0 | 1-1 |
| 0 ~ 5V | 1-0-1-0-1-0 | 1-1 |
| 1 ~ 5V | 1-1-1-0-1-1 | 1-1 |
| 0 ~ 6V | 1-1-0-0-1-0 | 1-1 |
| 0 ~ 8V | 1-1-1-1-0-0 | 1-1 |
| 0 ~ 10V | 1-1-0-1-0-0 | 1-1 |
| 2 ~ 10V | 1-1-1-1-0-1 | 1-1 |
| 0 ~ 1mA | 0-1-1-1-1-0 | 0-0 |
| 0 ~ 2mA | 1-0-1-1-1-0 | 0-0 |
| 0 ~ 5mA | 0-1-0-1-1-0 | 0-0 |
| 1 ~ 5mA | 1-1-0-1-1-1 | 0-0 |
| 0 ~ 10mA | 1-0-1-0-1-0 | 0-0 |
| 2 ~ 10mA | 1-1-1-0-1-1 | 0-0 |
| 0 ~ 16mA | 1-1-1-1-0-0 | 0-0 |
| 0 ~ 20mA | 1-1-0-1-0-0 | 0-0 |
| 4 ~ 20mA | 1-1-1-1-0-1 | 0-0 |

8. Terminal connection



9. Dimension:



Note: 1. Socket drawing type

2. Mounting: either rail mounting or general screw mounting

PROGRAMMABLE RTD TRANSMITTER



FEATURES

- Field-rangeable switchable input & output ranges
- Accuracy 0.1% F.S.
- Non-linear input with linear DC output
- 3 wires configuration automatically compensating line resistance effects
- Input/output isolation 1.6KVdc

1. MODEL: PF- [] [] [] [] [] → Non-programmable

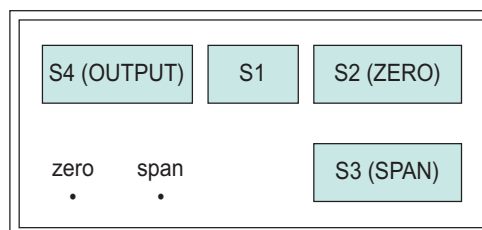
PAP Non-Isolating (input/output)
PBP Isolating (input/output)

| NO | Input Ranges Temperature | NO | Output Ranges | NO | Aux. Power |
|----|--------------------------|----|---------------|---|-------------------|
| 10 | 0 ~ 50°C | A | 0 - 0.5 V | 1 | AC 110V (50/60Hz) |
| 11 | 0 ~ 100°C | B | 0 - 1 V | 2 | AC 220V (50/60Hz) |
| 12 | 0 ~ 200°C | C | 0 - 2 V | 3 | DC 24V |
| 13 | 0 ~ 300°C | D | 0 - 4 V | 4 | DC 48V |
| 14 | 0 ~ 400°C | E | 0 - 5 V | 5 | DC 110V |
| 15 | 0 ~ 600°C | F | 1 - 5 V | 6 | DC 220V |
| 16 | 0 ~ 800°C | G | 0 - 8 V | 7 | AC 90~260V |
| 17 | -20 ~ +80°C | H | 0 - 10 V | 9 | SPECIFIED |
| 18 | -50 ~ +50°C | I | 2 - 10 V | • ±20% of rate, less 2.5VA for AC input | |
| 19 | -100 ~ +100°C | J | 0 - 1 mA | | |
| 20 | -100 ~ +200°C | K | 0 - 2 mA | | |
| 21 | -100 ~ +400°C | L | 0 - 5 mA | • ±20% of rate, less 2WATT for DC input | |
| 22 | -100 ~ +800°C | M | 1 - 5 mA | | |
| 23 | -200 ~ +200°C | N | 0 - 10 mA | • Switchable 110V/220V by jump internally | |
| 24 | -200 ~ +400°C | O | 0 - 16 mA | | |
| 25 | -200 ~ +800°C | P | 0 - 20 mA | • ±10% of rate, less 2.5VA for AC switching input | |
| 99 | SPECIFIED | Q | 4 - 20 mA | | |

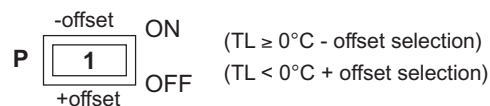
2. Specification

- Accuracy : 0.1% F.S. (23±5°C)
- Output ripple (p-p) : <0.1% F.S.
- Temp. coefficient : 100ppm/°C (0-50°)
- Dielectric strength : 1.5KVac/1 min. (power/input/output)
1600 Vdc (input/output)
- Output drive capability : ≤10mA for voltage mode
≤10V for current mode
- Response time : ≤250ms (0~90%)
- Operating condition : 0~55°C humidity 20~95% RH
non-condensed
- Storage condition : 0~70°C humidity 20~95% RH
non-condensed
- Construction : Socket/plug-in type with barrier terminals

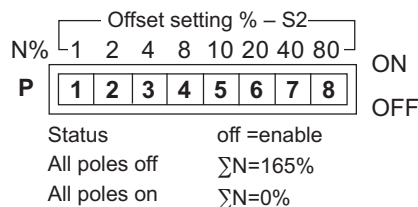
3. Function switches (S1, S2, S3, S4)



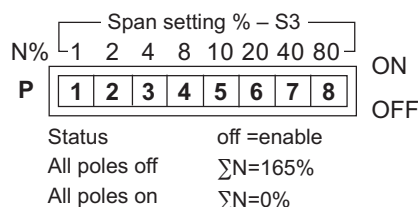
- S1 → Input offset polarity selection



- S2 → Input range offset (ZERO) selection



- S3 → Input range span (GAIN) selection



- S4 → P₁-P₂-P₃-P₄-P₅-P₆ output range selection
P₇-P₈ output mode: voltage/current selection
★ (ref. output switching table)

PROGRAMMABLE RTD TRANSMITTER

4. Programming formula

TH/TL: input high / input low

- Span $\rightarrow X = [8000/(TH-TL)]$
- Offset $\rightarrow Y = (TL/2)\%$

- ★ Note: 1. Input span ITH-TLI should be ≥ 0.1 ITHI
 2. If input ITH-TLI ≤ 0.2 IVHI, at normal setting with calibration, if non-linear happened, shifting offset switches up or down 1-2%, recalibrating to obtain correct output.

5. Application

Example : PAP-11 E-1

Input range (TH = 100°C, TL = 0°C)

Output (DC 0-5V)

Power (AC 110V)

- (Span) $X = 8000/(100-0) = 80\%$
- (Offset) $Y = 0/2 = 0\%$

- S1 $\rightarrow P_1 = \text{on/-offset } (TL \geq 0^\circ\text{C})$

• S2 \rightarrow

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|

 ON
OFF
(All poles on $\rightarrow \Sigma N=0\%$)

• S3 \rightarrow

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|

 ON
OFF
(P8-off & the rest on $\rightarrow \Sigma N=80\%$)

6. Input switching table (S1, S2, S3)

(switching status 1 = on; 0 = off)

| | S1 | S2 (ZERO) | S3 (SPAN) |
|--------------|----|-----------------|------------------|
| Input Range | 1 | 1-2-3-4-5-6-7-8 | 1-2-3-4-5-6-7-8 |
| 0 ~ 50°C | X | 1-1-1-1-1-1-1-1 | 1-0-1-0-0-0-0-0 |
| 0 ~ 100°C | X | 1-1-1-1-1-1-1-1 | 1-1-1-1-1-1-1-0 |
| 0 ~ 200°C | X | 1-1-1-1-1-1-1-1 | 1-1-1-1-1-1-0-1 |
| 0 ~ 400°C | X | 1-1-1-1-1-1-1-1 | 1-1-1-1-1-0-1-1 |
| 0 ~ 600°C | X | 1-1-1-1-1-1-1-1 | *0-0-1-1-0-1-1-1 |
| 0 ~ 800°C | X | 1-1-1-1-1-1-1-1 | 1-1-1-1-0-1-1-1 |
| -20 ~ 80°C | 1 | 1-1-1-1-0-1-1-1 | 1-1-1-1-1-1-1-0 |
| -50 ~ 50°C | 1 | 0-1-0-1-1-0-1-1 | 1-1-1-1-1-1-1-0 |
| -100 ~ 100°C | 1 | 1-1-1-1-0-1-0-1 | 0-1-1-1-1-1-0-1 |
| -100 ~ 200°C | 1 | 1-1-1-1-0-1-0-1 | *0-0-0-1-1-0-1-1 |
| -100 ~ 400°C | 1 | 1-1-1-1-0-1-0-1 | 0-0-0-1-0-1-1-1 |
| -100 ~ 800°C | 1 | 1-1-1-1-0-1-0-1 | *0-1-1-0-1-1-1-1 |
| -200 ~ 200°C | 1 | 1-1-1-1-0-0-1-0 | 1-1-1-1-1-0-1-1 |
| -200 ~ 400°C | 1 | 1-1-1-1-0-0-1-0 | *0-0-1-1-0-1-1-1 |
| -200 ~ 800°C | 1 | 1-1-1-1-0-0-1-0 | 1-1-1-0-1-1-1-1 |

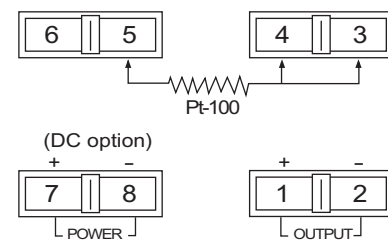
* recalibration to obtain linear output

7. Output switching table (S4)

(switching status 1 = on; 0 = off)

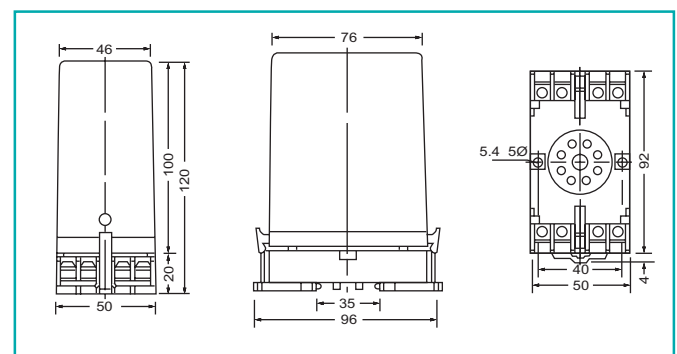
| Output Range | O/P Range 1-2-3-4-5-6 | O/P Mode 7-8 |
|--------------|--------------------------|-----------------|
| 0 ~ 0.5V | 0-1-1-1-1-0 | 1-1 |
| 0 ~ 1V | 1-0-1-1-1-0 | 1-1 |
| 0 ~ 2V | 1-1-0-1-1-0 | 1-1 |
| 0 ~ 4V | 1-1-1-0-1-0 | 1-1 |
| 0 ~ 5V | 1-0-1-0-1-0 | 1-1 |
| 1 ~ 5V | 1-1-1-0-1-1 | 1-1 |
| 0 ~ 6V | 1-1-0-0-1-0 | 1-1 |
| 0 ~ 8V | 1-1-1-1-0-0 | 1-1 |
| 0 ~ 10V | 1-1-0-1-0-0 | 1-1 |
| 2 ~ 10V | 1-1-1-1-0-1 | 1-1 |
| 0 ~ 1mA | 0-1-1-1-1-0 | 0-0 |
| 0 ~ 2mA | 1-0-1-1-1-0 | 0-0 |
| 0 ~ 5mA | 0-1-0-1-1-0 | 0-0 |
| 1 ~ 5mA | 1-1-0-1-1-1 | 0-0 |
| 0 ~ 10mA | 1-0-1-0-1-0 | 0-0 |
| 2 ~ 10mA | 1-1-1-0-1-1 | 0-0 |
| 0 ~ 16mA | 1-1-1-1-0-0 | 0-0 |
| 0 ~ 20mA | 1-1-0-1-0-0 | 0-0 |
| 4 ~ 20mA | 1-1-1-1-0-1 | 0-0 |

8. Terminal connection



- Note: Two wires application shorting terminals 3 & 4

9. Dimension: (Unit: mm)



Note: 1. Socket drawing type

2. Mounting: either rail mounting or general screw mounting

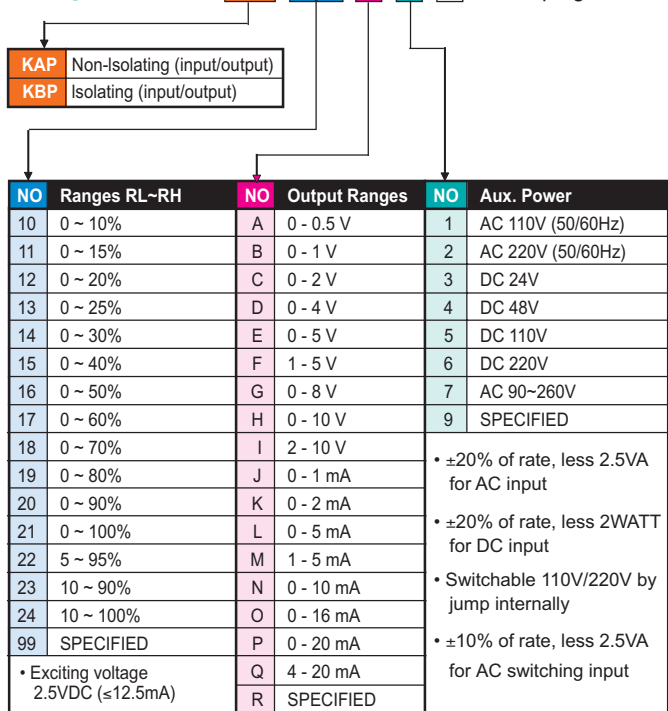
PROGRAMMABLE POTENTIOMETER TRANSMITTER



FEATURES

- Field-rangeable. Wide switchable input ranges 200 to 50K Ω , wide switchable output ranges over 20 standard process ranges
- Accuracy 0.1% F.S.
- Input/output isolation 1.6KVdc

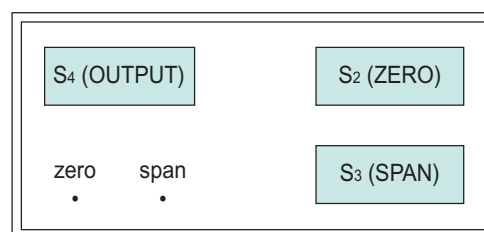
1. MODEL: PF- **→ Non-programmable**



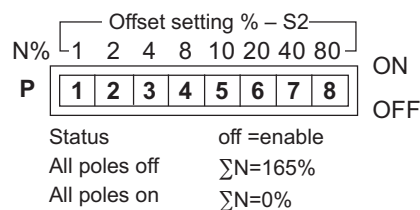
2. Specification

- Accuracy : 0.1% F.S. (23±5°C)
- Output ripple (p-p) : <0.1% F.S.
- Temp. coefficient : 100ppm/°C (0-50°)
- Dielectric strength : 1.5KVac/1 min. (power/input/output)
1600 Vdc (input/output)
- Output drive capability : ≤10mA for voltage mode
≤10V for current mode
- Response time : ≤250ms (0~90%)
- Operating condition : 0~55°C humidity 20~95% RH
non-condensed
- Storage condition : 0~70°C humidity 20~95% RH
non-condensed
- Construction : Socket/plug-in type with barrier terminals

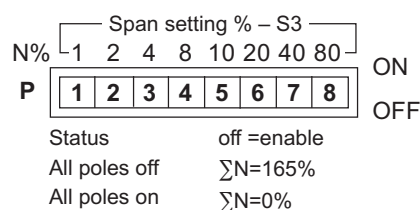
3. Function switches (S2, S3, S4)



- S2 → Input range offset (ZERO) selection



- S3 → Input range span (GAIN) selection



- S4 → P1-P2-P3-P4-P5-P6 output range selection
P7-P8 output mode: voltage/current selection
★ (ref. output switching table)

PROGRAMMABLE POTENTIOMETER TRANSMITTER

4. Programming formula

RH/RL: Percent input high / percent input low

- Span $\rightarrow X = [10/(RH-RL)]\%$
- Offset $\rightarrow Y = (100 \times RL)\%$

5. Application

Example : PF-KAP-21Q-1

Input range (RH = 100%, RL = 0%)

Output (DC 4-20mA)

Power (AC 110V)

- (Span) $X = [10/(100\%-0\%)]\%$
= 10%
- (Offset) $Y = (100 \times 0\%)\%$
= 0%

• S2 \rightarrow

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|

 ON
OFF
(All poles on $\rightarrow \Sigma N=0\%$)

• S3 \rightarrow

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|

 ON
OFF
(P5-off & the rest on $\rightarrow \Sigma N=10\%$)

• S4 \rightarrow

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|

 ON
OFF
(P5-P7-P8-off & the rest on)

6. Input switching table (S2, S3)

(switching status 1 = on; 0 = off)

| Input Range | S2 (ZERO) 1-2-3-4-5-6-7-8 | S3 (SPAN) 1-2-3-4-5-6-7-8 |
|-------------|------------------------------|------------------------------|
| 0 ~ 10% | 1-1-1-1-1-1-1-1 | 1-1-1-1-1-0-1-0 |
| 0 ~ 15% | 1-1-1-1-1-1-1-1 | * 0-0-0-1-1-0-0-1 |
| 0 ~ 20% | 1-1-1-1-1-1-1-1 | 1-1-1-1-0-1-0-1 |
| 0 ~ 25% | 1-1-1-1-1-1-1-1 | 1-1-1-1-1-1-0-1 |
| 0 ~ 30% | 1-1-1-1-1-1-1-1 | * 0-0-1-1-0-0-1-1 |
| 0 ~ 40% | 1-1-1-1-1-1-1-1 | 0-1-0-1-1-0-1-1 |
| 0 ~ 50% | 1-1-1-1-1-1-1-1 | 1-1-1-1-1-0-1-1 |
| 0 ~ 60% | 1-1-1-1-1-1-1-1 | * 0-0-0-1-0-1-1-1 |
| 0 ~ 70% | 1-1-1-1-1-1-1-1 | * 1-1-0-1-0-1-1-1 |
| 0 ~ 80% | 1-1-1-1-1-1-1-1 | * 0-0-1-1-0-1-1-1 |
| 0 ~ 90% | 1-1-1-1-1-1-1-1 | * 0-1-1-1-0-1-1-1 |
| 0 ~ 100% | 1-1-1-1-1-1-1-1 | 1-1-1-1-0-1-1-1 |
| 5 ~ 95% | 0-1-0-1-1-1-1-1 | * 0-1-1-1-0-1-1-1 |
| 10 ~ 90% | 1-1-1-1-0-1-1-1 | * 0-0-1-1-0-1-1-1 |
| 10 ~ 100% | 1-1-1-1-0-1-1-1 | 0-1-1-1-0-1-1-1 |

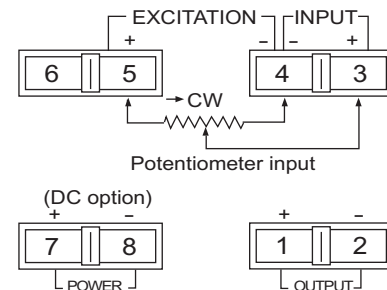
* recalibration to obtain linear output

7. Output switching table (S4)

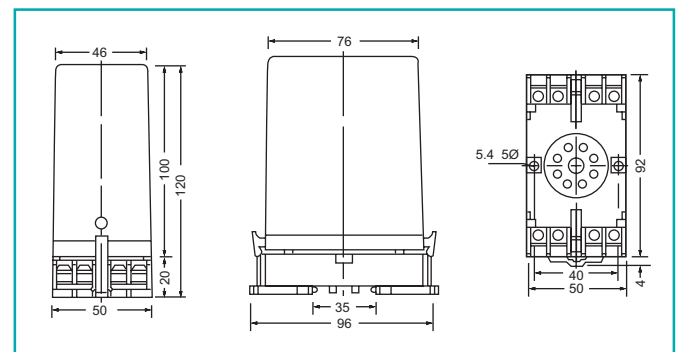
(switching status 1 = on; 0 = off)

| Output Range | O/P Range 1-2-3-4-5-6 | O/P Mode 7-8 |
|--------------|--------------------------|-----------------|
| 0 ~ 0.5V | 0-1-1-1-1-0 | 1-1 |
| 0 ~ 1V | 1-0-1-1-1-0 | 1-1 |
| 0 ~ 2V | 1-1-0-1-1-0 | 1-1 |
| 0 ~ 4V | 1-1-1-0-1-0 | 1-1 |
| 0 ~ 5V | 1-0-1-0-1-0 | 1-1 |
| 1 ~ 5V | 1-1-1-0-1-1 | 1-1 |
| 0 ~ 6V | 1-1-0-0-1-0 | 1-1 |
| 0 ~ 8V | 1-1-1-1-0-0 | 1-1 |
| 0 ~ 10V | 1-1-0-1-0-0 | 1-1 |
| 2 ~ 10V | 1-1-1-1-0-1 | 1-1 |
| 0 ~ 1mA | 0-1-1-1-1-0 | 0-0 |
| 0 ~ 2mA | 1-0-1-1-1-0 | 0-0 |
| 0 ~ 5mA | 0-1-0-1-1-0 | 0-0 |
| 1 ~ 5mA | 1-1-0-1-1-1 | 0-0 |
| 0 ~ 10mA | 1-0-1-0-1-0 | 0-0 |
| 2 ~ 10mA | 1-1-1-0-1-1 | 0-0 |
| 0 ~ 16mA | 1-1-1-1-0-0 | 0-0 |
| 0 ~ 20mA | 1-1-0-1-0-0 | 0-0 |
| 4 ~ 20mA | 1-1-1-1-0-1 | 0-0 |

8. Terminal connection



9. Dimension:



Note: 1. Socket drawing type

2. Mounting: either rail mounting or general screw mounting

PROGRAMMABLE LOAD CELL TRANSMITTER



FEATURES

- Field-rangeable. Wide switchable exciting voltages 5~12V, Wide switchable input ranges 3mV to 90mV
Wide switchable output ranges over 20 standard process ranges
- Input offset 85%, input gain 165%
- Accuracy 0.1% F.S.
- Input/output isolation 1.6KVdc

1. MODEL: PF - [] - [] - [] - [] - [] - [] → Non-programmable

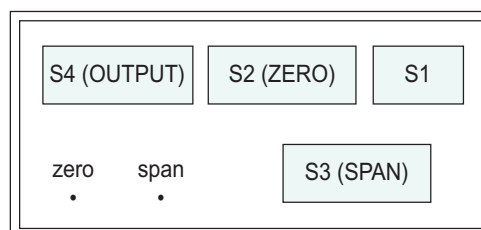
| | |
|-----|------------------------------|
| LAP | Non-Isolating (input/output) |
| LBP | Isolating (input/output) |

| NO | Input Ranges | NO | Exciting | NO | Output Ranges | NO | Aux. Power |
|----|--------------|----------------------------|------------------|----|---------------|--|-------------------|
| A | 0 ~ 3 mV | 1 | 5.0V | A | 0 ~ 0.5 V | 1 | AC 110V (50/60Hz) |
| B | 0 ~ 4 mV | 2 | 10.0V | B | 0 ~ 1 V | 2 | AC 220V (50/60Hz) |
| C | 0 ~ 5 mV | 3 | 12.0V | C | 0 ~ 2 V | 3 | DC 24V |
| D | 0 ~ 6 mV | 4 | 15.0V (optional) | D | 0 ~ 4V | 4 | DC 48V |
| E | 0 ~ 8 mV | 9 | SPECIFIED | E | 0 ~ 5 V | 5 | DC 110V |
| F | 0 ~ 10 mV | * Max. output current 50mA | | F | 1 ~ 5 V | 6 | DC 220V |
| G | 0 ~ 12 mV | | | G | 0 ~ 8 V | 7 | AC 90~260V |
| H | 0 ~ 15 mV | | | H | 0 ~ 10 V | 9 | SPECIFIED |
| I | 0 ~ 18 mV | | | I | 2 ~ 10 V | • ±20% of rate, less 3.5VA for AC input • ±20% of rate, less 3WATT for DC input • Switchable 110V/220V by jump internally • ±10% of rate, less 3.5VA for AC switching input | |
| J | 0 ~ 20 mV | | | J | 0 ~ 1 mA | | |
| K | 0 ~ 24 mV | | | K | 0 ~ 2 mA | | |
| L | 0 ~ 25 mV | | | L | 0 ~ 5 mA | | |
| M | 0 ~ 27 mV | | | M | 1 ~ 5 mA | | |
| N | 0 ~ 30 mV | | | N | 0 ~ 10 mA | | |
| O | 0 ~ 50 mV | | | O | 0 ~ 16 mA | | |
| P | 0 ~ 60 mV | | | P | 0 ~ 20 mA | | |
| Q | 0 ~ 90 mV | | | Q | 4 ~ 20 mA | | |
| R | SPECIFIED | | | R | SPECIFIED | | |

2. Specification

- Accuracy : 0.1% F.S (23±5°C)
- Output ripple (p-p) : <0.1% F.S.
- Temp. coefficient : 100ppm/°C (0-50°C)
- Dielectric strength : 1.5KVac / 1min. (power/input / output)
1600Vdc (input/output)
- Output drive capability : ≤10mA for voltage mode
≤10V for current mode
- Response time : ≤250 ms (0-90%)
- Operating condition : 0~55°C (20 to 95% RH non-condensed)
- Storage condition : 0~70°C (20 to 95% RH non-condensed)
- Construction : Socket/plug-in type with barrier terminals

3. Function switches (S1, S2, S3, S4)



- S1 → input exciting voltage

| | | | | | |
|---|------|-------|-------|---|-----|
| P | 1 | 2 | 3 | 4 | ON |
| | DC5V | DC10V | DC12V | | OFF |

(Status on enable 1 = on; 0 = off)

PROGRAMMABLE LOAD CELL TRANSMITTER

- S2 → P₁ input offset polarity selection
P₂-P₃-P₄-P₅-P₆-P₇-P₈ input range offset (ZERO)selection

Offset setting %

-offset 1 2 4 8 10 20 40 N%

P ON OFF

+offset

Status off =enable

All poles off $\Sigma N=85\%$

All poles on $\Sigma N=0\%$

- S3 → Input range Span (GAIN) selection

Span setting % - S3

N% ON OFF

P ON OFF

Status off =enable

All poles off $\Sigma N=165\%$

All poles on $\Sigma N=0\%$

- S4 → P₁-P₂-P₃-P₄-P₅-P₆ output range selection
P₇-P₈ output mode: voltage/current selection
★ (ref. output switching table)

4. Programming formula

VH/VL: input high / input low (unit: mV)

- Span → $X = [500 / (VH - VL)]\%$
- Offset → $Y = (VL)\%$

Note: on field application, the required offset at no load status just switching S₂ of 1% = 1mV offset

5. Application

Example : PF-LBP-J2H-1

Exciting (DC10V)
Input range (VH - 20mV, VL - 0mV)
Output (DC 0-10V)
Power (AC 110V)

- (Span) $X = [500 / (20 - 0)]\% = 25\%$
- (Offset) $Y = (0)\% = 0\%$

- S1 → ON OFF
(P₂-on & the rest off)

- S2 → ON OFF
(All poles on → $\Sigma N=0\%$)

- S3 → ON OFF
(P₁-P₃-P₆-off & the rest on → $\Sigma N=25\%$)

6. Input switching table (% of gain) (S3)

(switching status off = enable; 1 = on; 0 = off)

| Input Range (VH-VL) | S3 1-2-3-4-5-6-7-8 |
|---------------------|--------------------|
| 3 mV | * 0-0-0-0-0-0-0-0 |
| 4 mV | 0-1-0-1-1-1-0-0 |
| 5 mV | 1-1-1-1-1-0-1-0 |
| 6 mV | * 0-0-1-1-1-1-1-0 |
| 8 mV | * 0-0-1-1-1-0-0-1 |
| 10 mV | 1-1-1-1-0-1-0-1 |
| 12 mV | * 1-0-1-1-1-1-0-1 |
| 15 mV | * 0-0-1-1-0-0-1-1 |
| 18 mV | * 1-1-1-0-1-0-1-1 |
| 20 mV | 0-1-0-1-1-0-1-1 |
| 24 mV | * 0-1-1-1-1-0-1-1 |
| 25 mV | 1-1-1-1-1-0-1-1 |
| 27 mV | * 0-1-1-0-0-1-1-1 |
| 30 mV | * 0-0-0-1-0-1-1-1 |
| 36 mV | * 1-1-0-1-0-1-1-1 |
| 40 mV | * 0-0-1-1-0-1-1-1 |
| 50 mV | 1-1-1-1-0-1-1-1 |
| 60 mV | * 1-1-1-0-1-1-1-1 |
| 90 mV | * 1-0-0-1-1-1-1-1 |

- recalibration to obtain linear output

7. Output switching table (S4)

(switching status 1 = on; 0 = off)

| Output Range | O/P Range 1-2-3-4-5-6 | O/P Mode 7-8 |
|--------------|-----------------------|--------------|
| 0 ~ 0.5V | 0-1-1-1-1-0 | 1-1 |
| 0 ~ 1V | 1-0-1-1-1-0 | 1-1 |
| 0 ~ 2V | 1-1-0-1-1-0 | 1-1 |
| 0 ~ 4V | 1-1-1-0-1-0 | 1-1 |
| 0 ~ 5V | 1-0-1-0-1-0 | 1-1 |
| 1 ~ 5V | 1-1-1-0-1-1 | 1-1 |
| 0 ~ 6V | 1-1-0-0-1-0 | 1-1 |
| 0 ~ 8V | 1-1-1-1-0-0 | 1-1 |
| 0 ~ 10V | 1-1-0-1-0-0 | 1-1 |
| 2 ~ 10V | 1-1-1-1-0-1 | 1-1 |
| 0 ~ 1mA | 0-1-1-1-1-0 | 0-0 |
| 0 ~ 2mA | 1-0-1-1-1-0 | 0-0 |
| 0 ~ 5mA | 0-1-0-1-1-0 | 0-0 |
| 1 ~ 5mA | 1-1-0-1-1-1 | 0-0 |
| 0 ~ 10mA | 1-0-1-0-1-0 | 0-0 |
| 2 ~ 10mA | 1-1-1-0-1-1 | 0-0 |
| 0 ~ 16mA | 1-1-1-1-0-0 | 0-0 |
| 0 ~ 20mA | 1-1-0-1-0-0 | 0-0 |
| 4 ~ 20mA | 1-1-1-1-0-1 | 0-0 |

8. Dimension: See other transmitter dimension

9. Terminal connection

