

DUAL OUTPUT ISOLATORS TRANSMITTER



FEATURES

- Directly accept process signal input (DCA, DCV, ACA, ACV, Transmitter, Pt-100, Potentiometer, Thermocouple) and provide two independent and isolated DC outputs
- Accuracy 0.1% F.S.
- Input/output1/output2 isolation 1.6KVdc
- High stability & Dimension small

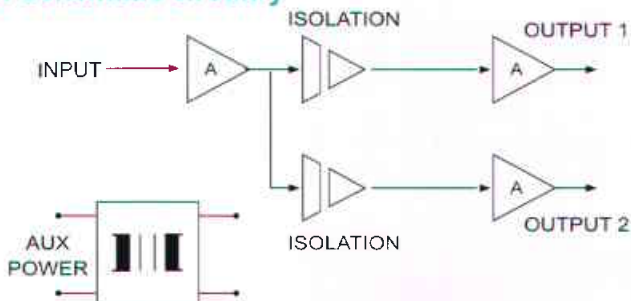
1. MODEL: PF-DDI - [Color] - [Color] - [Color] - [Color]

NO	Input Type	NO	DCV (ACV)	NO	DCA (ACA)	NO	Transmitter	NO	Pt-100	NO	Thermocouple	NO	Output Range Voltage/Current	NO	Aux. Power
A	DC	11	0-10mV	21	0-200μA	31	4-20mA	41	-50~50°C	51	0-600°C(J)	B	0 ~ 1 V	1	AC 110V (50/60Hz)
B	AC (RMS)	12	0-50mV	22	0-1mA	32	1-5V	42	-100~100°C	52	0-1200°C(K)	E	0 ~ 5 V	2	AC 220V (50/60Hz)
C	AC (TRMS)	13	0-100mV	23	0-5mA	33	4-20mA	43	-200~200°C	53	0-1600°C(R)	F	1 ~ 5 V	3	DC 24V
D	Transmitter	14	0-1V	24	0-10mA	34	1-5V	44	0~850°C	59	SPECIFIED	H	0 ~ 10 V	4	DC 48V
E	Pt-100 (RTD)	15	0-10V	25	0-20mA	39	SPECIFIED	45	-200~850°C	• Accuracy 0.25% F.S. ±0.5°C • Internal CJC trace ability ≤ ±0.5°C ≤ 10min. warm up		I	2 ~ 10 V	5	DC 110V
F	Thermocouple	16	0-35V	26	0-2A	• Two wire connection • 31-32 non- exciting DC 24V • 33-34 exciting DC 24V (≤25mA)		49	SPECIFIED			J	0 ~ 1 mA	6	DC 220V
O	SPECIFIED	17	0-200V	27	0-5A			N	0 ~ 10 mA			7	AC 90~260V		
		18	0-1000V	28	10-50mA							P	0 ~ 20 mA	9	SPECIFIED
		19	SPECIFIED	29	SPECIFIED							Q	4 ~ 20 mA	• ±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	
												R	SPECIFIED		

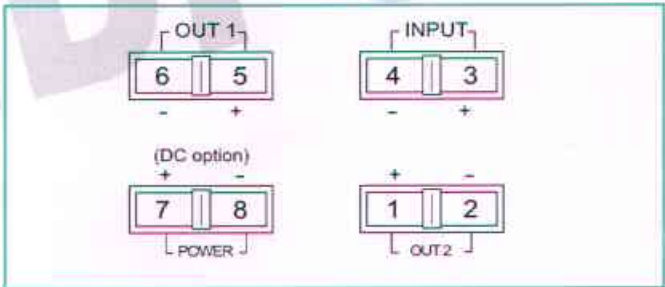
2. Specification

- Accuracy (23±5°C) : 0.1% F.S. (DC, AC(TRMS)), Transmitter, Pt-100
0.15% F.S. ±(AC(TRMS))
0.25% F.S. ±0.5°C (Thermocouple)
- Output ripple (p-p) : 0.1% F.S.
- Temp. coefficient : 100ppm/°C (0-50°C)
- Dielectric strength : 1.5KVac/1min. (power/input/output1/output2)
1600 Vdc (input/output1/output2)
- Output drive capability : ≤10mA for voltage mode
≤10V for current mode
- Response time : ≤250ms (0-90%)
- Operating condition : 0~55°C (humidity 20 to 95% RH non- condensed)
- Storage condition : 0~70°C (humidity 20 to 90% RH non-condensed)
- Construction : Socket/plug-in type with barrier terminals

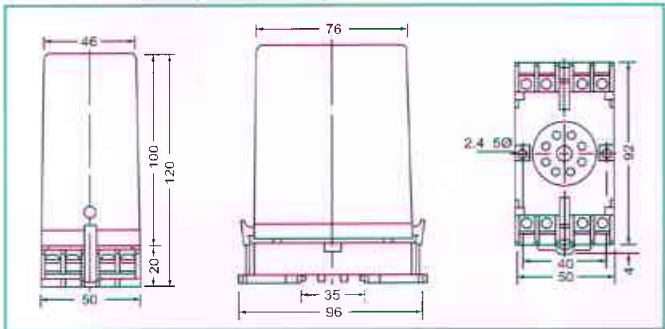
3. Schematic circuitry



4. Terminal connection



5. Dimension (unit: mm)



- Note: 1. Socket drawing type
2. Mounting: either rail mounting or general screw mounting

THREE OUTPUT ISOLATORS TRANSMITTER



FEATURES

- Directly accept process signal input (DCA, DCV, ACA, ACV, Transmitter, Pt-100, Thermocouple) and provide three independent and isolated DC outputs
- Accuracy 0.1% F.S
- Input/output1/output2/output3 isolation 1.6KVdc
- High stability & Dimension small

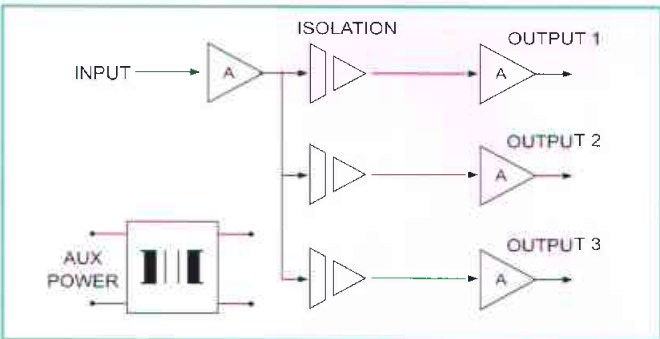
1. MODEL: PF-TDI - [Color Code]

NO	Input Type	NO	DCV (ACV)	NO	DCA (ACA)	NO	Transmitter	NO	Pt-100	NO	Thermocouple	NO	Output Range Voltage/Current	NO	Aux. Power		
A	DC	11	0-10mV	21	0-200μA	31	4-20mA	41	-50~50°C	51	0-600°C(J)	B	0 ~ 1 V	1	AC 110V/220V (50/60Hz)		
B	AC (RMS)	12	0-50mV	22	0-1mA	32	1-5V	42	-100~100°C	52	0-1200°C(K)	E	0 ~ 5 V	2	DC 24V		
C	AC (TRMS)	13	0-100mV	23	0-5mA	33	4-20mA	43	-200~200°C	53	0-1600°C(R)	F	1 ~ 5 V	3	DC 48V		
D	Transmitter	14	0-1V	24	0-10mA	34	1-5V	44	-0~850°C	59	SPECIFIED	H	0 ~ 10 V	4	DC 110V		
E	Pt-100 (RTD)	15	0-10V	25	0-20mA	39	SPECIFIED	45	-200~850°C	<div>• Accuracy 0.25% F.S. ±0.5°C</div> <div>• Internal CJC trace ability ≤ ±0.5°C ≤ 10min. warm up</div>		I	2 ~ 10 V	5	DC 220V		
F	Thermocouple	16	0-35V	26	0-2A	<div>• Two wire connection</div> <div>• 31-32 non-exciting DC 24V</div> <div>• 33-34 exciting DC 24V (≤25mA)</div>		49	SPECIFIED			<div>• Three wire connection</div>		J	0 ~ 1 mA	6	AC 90-260V
O	SPECIFIED	17	0-200V	27	0-5A			N	0 ~ 10 mA					7	SPECIFIED		
		18	0-1000V	28	10-50mA			P	0 ~ 20 mA					<div>• ±20% of rate, less 6.5VA for AC input</div> <div>• ±20% of rate, less 5WATT for DC input</div> <div>• Less 6.5VA for AC switching input</div>			
		19	SPECIFIED	29	SPECIFIED			Q	4 ~ 20 mA								
												R	SPECIFIED				

2. Specification

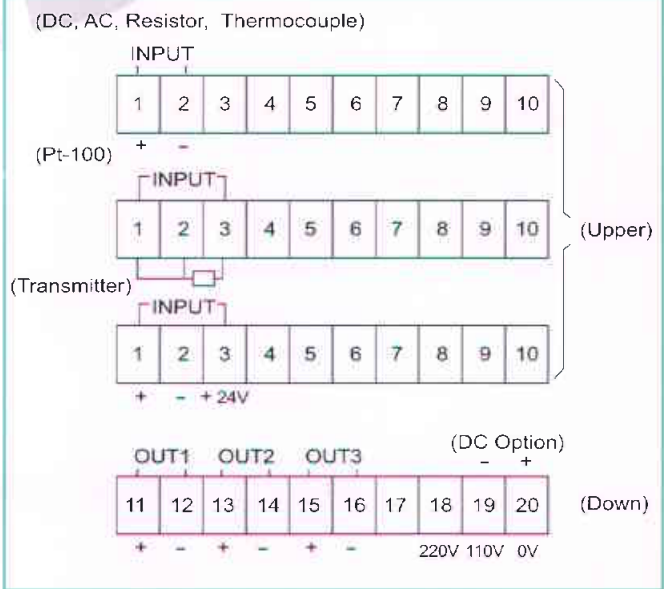
- Accuracy (23±5°C) : 0.1% F.S. (DC, AC(TRMS), Transmitter, Pt-100)
0.15% F.S. ±(AC(TRMS))
0.25% F.S. ± 0.5°C (Thermocouple)
- Output ripple (p-p) : < 0.1% F.S.
- Temp. coefficient : 100ppm/°C (0-50°C)
- Dielectric strength : 1.5KVdc/1min. (power/input/output1/output2/output3)
1600 Vdc (input/output)
- Output drive capability : ≤10mA for voltage mode
≤10V for current mode
- Response time : ≤250ms (0-90%)
- Operating condition : 0~55°C (humidity 20 to 95% RH non-condensed)
- Storage condition : 0~70°C (humidity 20 to 95% RH non-condensed)
- Construction : Socket type with barrier terminals

3. Schematic circuitry



4. Dimension: See Page-99 Transducer Dimension

5. Terminal connection



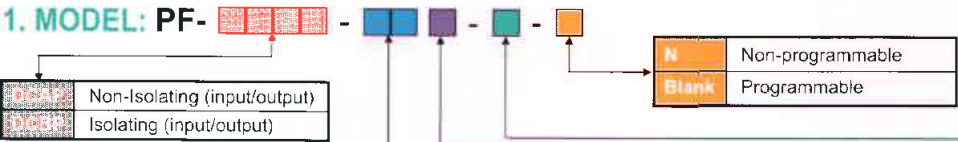
COMPACT PROGRAMMABLE DC TRANSMITTER



FEATURES

- Input and output range programmable with internal DIP switches
- Accuracy 0.1% F.S.
- 3-way isolation, input/output/power (optional)
- Optical isolation with 2KVac/1 min for Input/output (optional)

1. MODEL: PF-



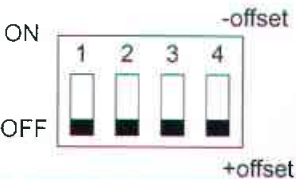
NO	Input Ranges	Voltage	NO	Input Ranges	Current	NO	Output Range Voltage/Current	NO	Aux.Power
10	0 ~ 10	mV	30	0 ~ 200	μA	A	0 ~ 0.5 V	1	AC 100V~240V±10 %
11	0 ~ 20	mV	31	0 ~ 500	μA	B	0 ~ 1 V	2	DC 24V~70V±10 %
12	0 ~ 50	mV	32	0 ~ 1	mA	C	0 ~ 2 V	3	DC 110V±10 %
13	0 ~ 100	mV	33	0 ~ 2	mA	D	0 ~ 4 V	4	DC 220V±10 %
14	0 ~ 200	mV	34	0 ~ 5	mA	E	0 ~ 5 V	5	DC/AC 24V±10 %
15	0 ~ 500	mV	35	1 ~ 5	mA	F	1 ~ 5 V	9	SPECIFIED
16	0 ~ 1	V	36	0 ~ 10	mA	G	0 ~ 8 V	±10 % of rate, less 4.7VA for AC switching input ±10 % of rate, less 4W for DC input	
17	-1 ~ +1	V	37	2 ~ 10	mA	H	0 ~ 10 V		
18	0 ~ 2	V	38	0 ~ 20	mA	I	2 ~ 10 V		
19	0 ~ 5	V	39	4 ~ 20	mA	J	0 ~ 1 mA		
20	1 ~ 5	V	40	0 ~ 50	mA	K	0 ~ 2 mA		
21	-5 ~ +5	V	41	10 ~ 50	mA	L	0 ~ 5 mA		
22	0 ~ 10	V	42	20 ~ 4	mA	M	1 ~ 5 mA		
23	2 ~ 10	V	43	50 ~ 10	mA	N	0 ~ 10 mA		
24	-10 ~ +10	V	44	* 4 ~ 20	mA	O	0 ~ 16 mA		
25	0 ~ 20	V	99	SPECIFIED		P	0 ~ 20 mA		
26	0 ~ 100	V	* 20~4mA & 50~10mA be reversed of input connection			Q	4 ~ 20 mA		
27	0 ~ 200	V	* Exciting DC 24V(Two wires)			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)
- Input resistance : ≥10KΩ (≤2V ranges) ≥1MΩ (>2V ranges) ≤15Ω (current input)
- Maximum input : ≤300Vrms (>2V ranges) ≤150Vrms (≤2V ranges) ≤120mA (current input)
- Exciting voltage : DC 24±1.5V (≤60mA)
- Power consumption : ≤4.7VA (AC power) , ≤4W(DC power)
- Dielectric strength : 1.5KVac/1 min. (power/input/output)
- Output drive capability : ≤20mA for voltage mode ≤14V for current mode
- Response time : ≤200ms (0~90%)
- Operating condition : 0~55°C (humidity 20~95% RH non-condensed)
- Storage condition : 0~70°C (humidity 20~95% RH non-condensed)

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

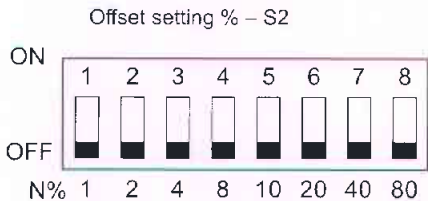
- S1 → Input range & offset polarity selection



Effective input range D	S1 pole 1-2-3	Pregain G
200 V ≥ D > 20 V	0 - 1 - 1	0.01
20 V ≥ D > 2 V	0 - 0 - 1	0.1
2 V ≥ D > 200 mV	0 - 0 - 0	1
200 mV ≥ D > 20 mV	1 - 0 - 1	10
20 mV ≥ D > 2 mV	1 - 0 - 0	100
50 mA ≥ D > 5 mA	1 - 1 - 1	1
5 mA ≥ D > 500 µA	1 - 0 - 1	10
500 µA ≥ D > 50 µA	1 - 0 - 0	100

(Status—— P1-P2-P3— on = 1; off=0)

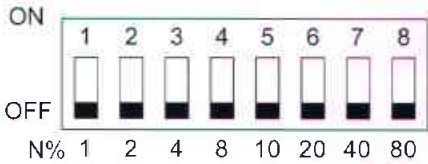
- S2 → Input range offset (ZERO) selection



Status off =enable
All poles off ΣN=165%
All poles on ΣN=0%

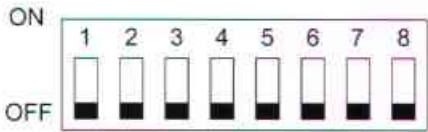
COMPACT PROGRAMMABLE DC TRANSMITTER

• S3 → Input range offset (GAIN) selection



Status off =enable
All poles off ΣN=165%
All poles on ΣN=0%
Output mode Selection

• S4 → Output mode Selection



Status ON =1, OFF=0

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

4. Programming formula

VH/VL: Voltage input high/low

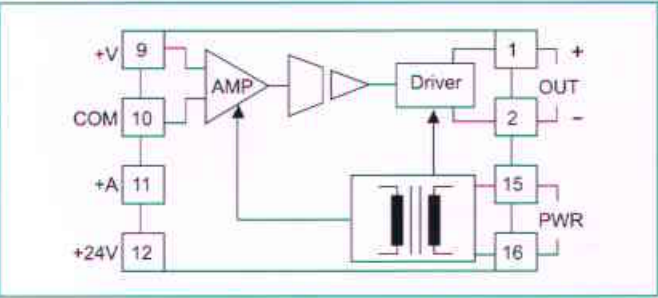
AH/AL: Current input high/low

G: Pregain

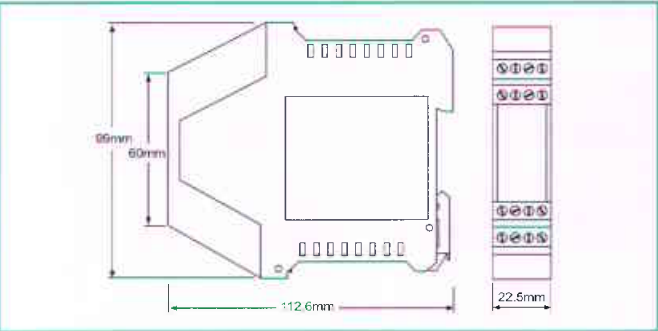
Voltage mode (V)	Current mode (mA)
• Span=[10 / G (VH-VL)] %	• Span= [500 / G (AH-AL)] %
• Offset= (100 x G x VL) %	• Offset= (2G x AL) %

- ★ 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. Terminal connection



6. Dimension:



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

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

Input range	S2 (ZERO)	S3 (SPAN)	S1
	1-2-3-4-5-6-7-8	1-2-3-4-5-6-7-8	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-X
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

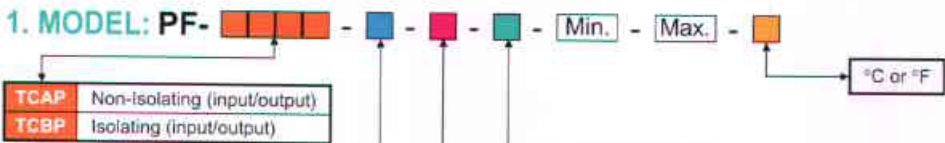
COMPACT MICROPROCESS TEMPERATURE TRANSMITTER



FEATURES

- Accuracy $\pm 0.2\%$ F.S. $\pm 0.5^\circ\text{C}$ (CJC) for Thermocouple. Accuracy $\pm 0.1\%$ F.S. for RTD.
- 3-way isolation, input/output/power.
- Input/output isolation 1.6KVdc.
- 3-wire RTD configuration automatically compensating wire resistance effects.
- Input type and range selectable with DIP switches for PF-TCAP or Man-machine interface for PF-TCBP.
- Sensor break detection function.

1. MODEL: PF-



NO	Ranges RL~RH	NO	Output Voltages/Current	NO	Aux. Power
1	Pt100 $\alpha=0.00385$ (-200 ~ +1200°C)	A	0 ~ 0.5 V	1	AC 100 ~ 240 V $\pm 10\%$
2	Pt100 $\alpha=0.00392$ (-200 ~ +600°C)	B	0 ~ 1 V	2	DC 20 ~ 70 V $\pm 10\%$
B	B-type T/C (0 ~ +1800°C)	C	0 ~ 2 V	3	DC 110 V $\pm 10\%$
E	E-type T/C (-200 ~ +1000°C)	D	0 ~ 4 V	4	DC 220 V $\pm 10\%$
J	J-type T/C (-200 ~ +1200°C)	E	0 ~ 5 V	5	DC/AC 24V $\pm 10\%$
K	K-type T/C (-200 ~ +1370°C)	F	1 ~ 5 V	9	SPECIFIED
N	N-type T/C (-100 ~ +1300°C)	G	0 ~ 8 V		$\pm 10\%$ of rate, less 4.7VA for AC switching input
P	Platinel II-type T/C (0 ~ +1395°C)	H	0 ~ 10 V		$\pm 10\%$ of rate, less 4W for DC input
R	R-type T/C (0 ~ +1760°C)	I	2 ~ 10 V		
S	S-type T/C (0 ~ +1760°C)	J	0 ~ 1 mA		
T	T-type T/C (-200 ~ +400°C)	K	0 ~ 2 mA		
		L	0 ~ 5 mA		
		M	1 ~ 5 mA		
		N	0 ~ 10 mA		
		O	0 ~ 16 mA		
		P	0 ~ 20 mA		
		Q	4 ~ 20 mA		
		R	SPECIFIED		

2. Specification

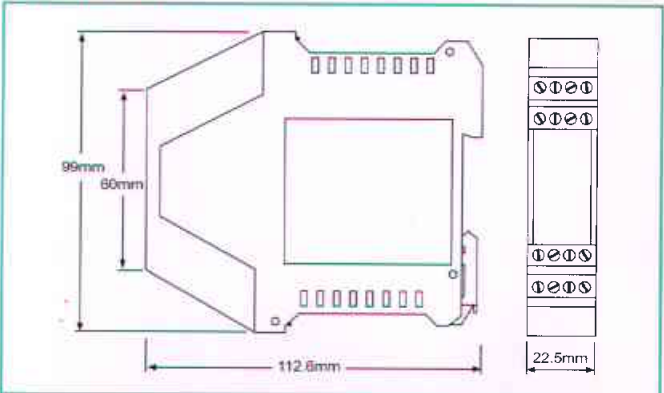
- Accuracy ($23\pm 5^\circ\text{C}$) : For Thermocouple $\pm 0.2\%$ F.S. $\pm 0.5^\circ\text{C}$ (CJC)
For RTD $\pm 0.1\%$ F.S.
- Update time : 0.2 second without Filter
1.0 second with Filter
- Readout range (TCBP) : -19999 ~ 99999 digit adjustable
- Display (TCBP) : Red LEDs 0.3" (7.62mm)
- Over input indication (Input break function) : PWR LED flash
- Analog output resolution : 16-bit DAC
- Output ripple (p-p) : $< 0.1\%$ F.S.
- Temp. coefficient : 100ppm/ $^\circ\text{C}$ (0 ~ 50°C)
- Dielectric strength : 1.5KVdc/1min.(power/input/output)
1600Vdc(input/output)
- Output drive capability : $\leq 20\text{mA}$ for voltage mode
 $\leq 14\text{V}$ for current mode
- Response time : $\leq 100\text{ms}$ (0~90%)
- Operation condition : 0~55°C (humidity 20~95% RH non-condensed)
- Storage condition : 0~70°C (humidity 20~95% RH non-condensed)
- Power Consumption : $\leq 4.7\text{VA}$ (AC power)

5. Application

Example: PF-TCAP-J-Q-1- -100 - 300°F

INPUT TYPE.....Thermocouple J type
OUTPUT.....DC 4 ~ 20 mA
POWER.....AC 100 ~ 240V
LOWER RANGE.....-100°F
FULL RANGE.....(300°F ~ -100°F) = 400°F
CJC.....Enable
UNIT.....°F
FILTER.....Disable
S1.....P2-P6-ON & the rest OFF
S2.....P3-P4-P6-ON & the rest OFF
S3.....P5-P7-P8-OFF & the rest ON

6. Dimension:



COMPACT MICROPROCESS TEMPERATURE TRANSMITTER

3. Function switches (S1, S2, S3) for PF-TCAP

• Input type switches (ON=1, OFF=0)

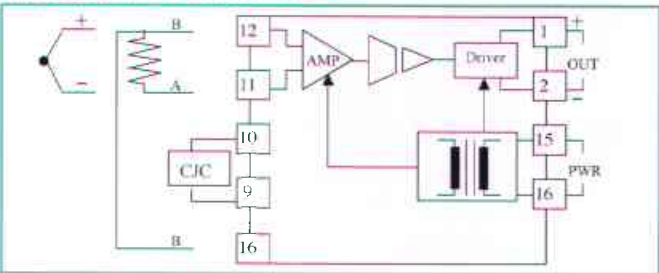
S1	
Type	1-2-3-4
1	0-0-0-0
2	0-0-0-1
B	0-0-1-0
E	0-0-1-1
J	0-1-0-0
K	0-1-0-1
N	0-1-1-0
P	0-1-1-1
R	1-0-0-0
S	1-0-0-1
T	1-0-1-0

• Full range switches (ON=1, OFF=0)

S2	
Full range	1-2-3-4-5
100°C / 100°F	0-0-0-0-0
150°C / 150°F	0-0-0-0-1
200°C / 200°F	0-0-0-1-0
250°C / 250°F	0-0-0-1-1
300°C / 300°F	0-0-1-0-0
350°C / 350°F	0-0-1-0-1
400°C / 400°F	0-0-1-1-0
450°C / 450°F	0-0-1-1-1
500°C / 500°F	0-1-0-0-0
550°C / 550°F	0-1-0-0-1
600°C / 600°F	0-1-0-1-0
650°C / 650°F	0-1-0-1-1
700°C / 700°F	0-1-1-0-0
750°C / 750°F	0-1-1-0-1
800°C / 800°F	0-1-1-1-0
850°C / 850°F	0-1-1-1-1
900°C / 900°F	1-0-0-0-0
950°C / 950°F	1-0-0-0-1
1000°C / 1000°F	1-0-0-1-0
1050°C / 1100°F	1-0-0-1-1
1100°C / 1200°F	1-0-1-0-0
1150°C / 1300°F	1-0-1-0-1
1200°C / 1400°F	1-0-1-1-0
1250°C / 1500°F	1-0-1-1-1
1300°C / 1600°F	1-1-0-0-0
1350°C / 1700°F	1-1-0-0-1
1400°C / 1800°F	1-1-0-1-0
1450°C / 1900°F	1-1-0-1-1
1500°C / 2000°F	1-1-1-0-0
1600°C / 2500°F	1-1-1-0-1
1700°C / 3000°F	1-1-1-1-0
1800°C / 3500°F	1-1-1-1-1

Full Range = Max. of input range – Min. of input range

4. Terminal connection



Note1: Black plastic part of CJC element must be very close to negative terminal of the thermocouple.

Note2: Two-wire RTD application shorting terminals 16 & 12.

• Lower range switches (ON=1, OFF=0)

S1	
Lower range	5-6-7-8
-200°C / -350°F	0-0-0-0
-150°C / -250°F	0-0-0-1
-100°C / -200°F	0-0-1-0
-50°C / -150°F	0-0-1-1
-40°C / -100°F	0-1-0-0
-30°C / -50°F	0-1-0-1
-20°C / 0°F	0-1-1-0
-10°C / +50°F	0-1-1-1
0°C / +100°F	1-0-0-0
+50°C / +150°F	1-0-0-1
+100°C / +200°F	1-0-1-0
+150°C / +250°F	1-0-1-1
+200°C / +500°F	1-1-0-0
+250°C / +1000°F	1-1-0-1
+500°C / +2000°F	1-1-1-0
+1000°C / +2500°F	1-1-1-1

• Misc. switches (ON=1, OFF=0)

S2			
CJC	6	Unit	7
Enable	1	°C	1
Disable	0	°F	0
Filter	8	Enable	1
		Disable	0

• Output mode selection



Status on =1, off=0

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

Note: S1 and S2 switch functions are instead of Man-Machine interface in PF-TCBP. See the instruction manual of PF-TCBP.

COMPACT PROGRAMMABLE LOAD CELL TRANSMITTER



FEATURES

- Field-rangeable. Wide switchable input ranges 200 to 50KΩ, Wide switchable output ranges over 20 standard process ranges.
- Accuracy 0.1% F.S.
- 3-way isolation, input/output/power (optional)
- Optical isolation with 2KVac/1 min for Input/Output (optional)

1. MODEL: PF- [] - [] - [] - []



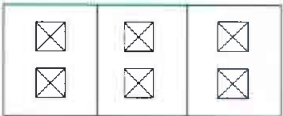
NO	Input Ranges	NO	Exciting Voltages	NO	Output Voltage/Current	NO	Aux. Power
A	0 ~ 3 mV	1	2.5 v	A	0 ~ 0.5 V	1	AC 100V~240V ± 10 %
B	0 ~ 4 mV	2	5.0 v	B	0 ~ 1 V	2	DC 20V~70V ± 10 %
C	0 ~ 5 mV	3	10.0 v	C	0 ~ 2 V	3	DC 110V ± 10 %
D	0 ~ 6 mV	4	12.0 v	D	0 ~ 4 V	4	DC 220V ± 10 %
E	0 ~ 8 mV	9	SPECIFIED	E	0 ~ 5 V	5	DC/AC 24V ± 10 %
F	0 ~ 10 mV	• Max. output current 100mA		F	1 ~ 5 V	9	SPECIFIED
G	0 ~ 12 mV			G	0 ~ 8 V	±10 % of rate, less 4.7VA for AC switching input ±10 % of rate, less 4W for DC input	
H	0 ~ 15 mV			H	0 ~ 10 V		
I	0 ~ 18 mV			I	2 ~ 10 V		
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)
- Exciting voltage : 2.5/5.0/10.0/12.0V (≤100mA)
- Power consumption : ≤4.7VA (AC power)
- Dielectric strength : 1.5KVac/1 min. (power/input/output)
1600Vdc (input/output)
- Output drive capability : ≤20mA for voltage mode
≤14V for current mode
- Response time : ≤200ms (0~90%)
- Operating condition : 0~55°C (humidity 20~95% RH non-condensed)
- Storage condition : 0~70°C (humidity 20~95% RH non-condensed)

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

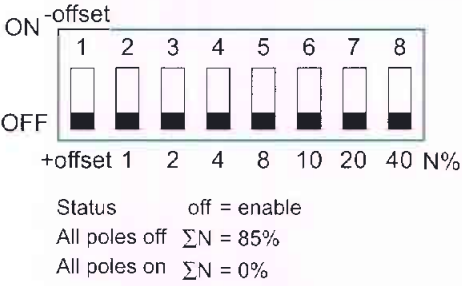
- S1 → Input exciting voltage



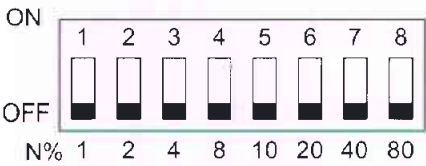
DC5V DC10V DC12V

SHORT for enable and OPEN for disable (Only one is short)
None is short for DC 2.5V

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



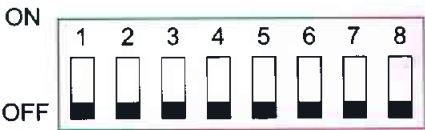
- S3 → Input range span (GAIN) selection



Status off = enable
All poles off ΣN = 85%
All poles on ΣN = 0%

COMPACT PROGRAMMABLE LOAD CELL TRANSMITTER

• S4 → Ouput mode Selection



Status on = 1, off = 0

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

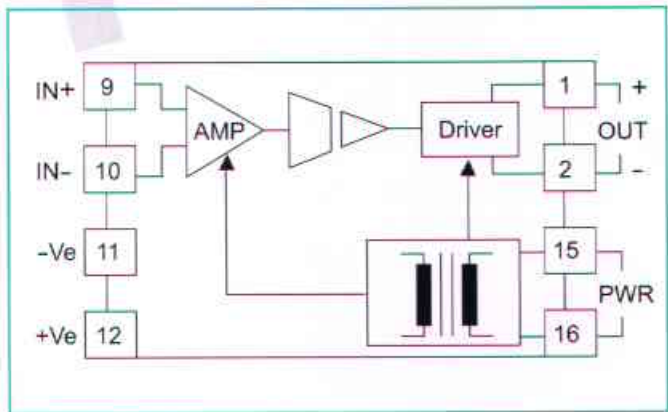
4. Programming formula

VH/VL: input high/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. Terminal connection



6. Input switching table (S2, S3)

(Status-on = 1, off = 0, don't care = X)

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. Application

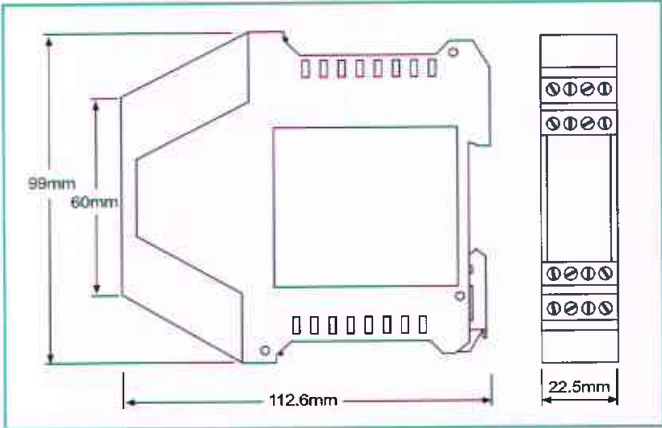
Example: PF-LCBP-J2H-1

Exciting.....DC 10V
Input range.....VH=20mV, VL=0mV
Output.....DC 0~10V
Power.....AC 100 ~ 240V

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

S1 → P2-on & the rest off
S2 → All poles on, $\Sigma N = 0\%$
S3 → P1-P3-P6-Off & the rest on, $\Sigma N = 25\%$
S4 → P3-P5-P6-Off & the rest on

8. Dimension:



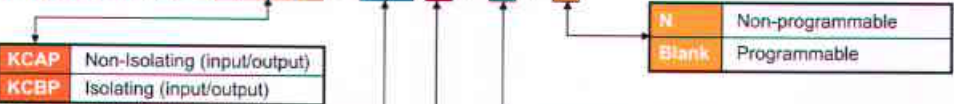
COMPACT PROGRAMMABLE POTENTIOMETER TRANSMITTER



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.
- 3-way isolation, input/output/power (optional)
- Optical isolation with 2KVac/1 min for Input/Output (optional)

1. MODEL: PF- [] - [] - [] - []



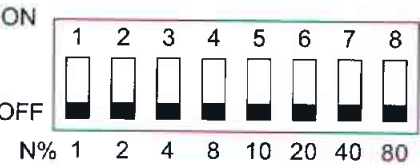
NO	Ranges RL-RH	%	NO	Output Voltages/Current	NO	Aux. Power
10	0 ~ 10	%	A	0 ~ 0.5 V	1	AC 100V~240V \pm 10 %
11	0 ~ 15	%	B	0 ~ 1 V	2	DC 20V~70V \pm 10 %
12	0 ~ 20	%	C	0 ~ 2 V	3	DC 110V \pm 10 %
13	0 ~ 25	%	D	0 ~ 4 V	4	DC 220V \pm 10 %
14	0 ~ 30	%	E	0 ~ 5 V	5	DC/AC 24V \pm 10 %
15	0 ~ 40	%	F	1 ~ 5 V	9	SPECIFIED
16	0 ~ 50	%	G	0 ~ 8 V	\pm 10 % of rate, less 4.7VA for AC switching input \pm 10 % of rate, less 4W for DC input	
17	0 ~ 60	%	H	0 ~ 10 V		
18	0 ~ 70	%	I	2 ~ 10 V		
19	0 ~ 80	%	J	0 ~ 1 mA		
20	0 ~ 90	%	K	0 ~ 2 mA		
21	0 ~ 100	%	L	0 ~ 5 mA		
22	5 ~ 95	%	M	1 ~ 5 mA		
23	10 ~ 90	%	N	0 ~ 10 mA		
24	10 ~ 100	%	O	0 ~ 16 mA		
99	SPECIFIED		P	0 ~ 20 mA		
• Exciting Voltage 2.5V DC \leq 60mA			Q	4 ~ 20 mA		
			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)
- Exciting voltage : DC 2.5V (\leq 60mA)
- Power consumption : \leq 4.7VA (AC power)
- Dielectric strength : 1.5KVac/1 min. (power/input/output)
1600Vdc (input/output)
- Output drive capability : \leq 20mA for voltage mode
 \leq 14V for current mode
- Response time : \leq 200ms (0~90%)
- Operating condition : 0~55 $^{\circ}$ C (humidity 20~95% RH non-condensed)
- Storage condition : 0~70 $^{\circ}$ C (humidity 20~95% RH non-condensed)

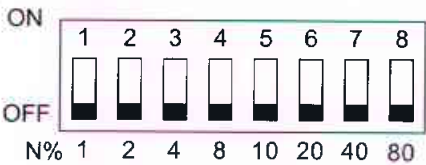
3. Function switches (S2, S3, S4)

- S2 \rightarrow Input range offset (ZERO) selection



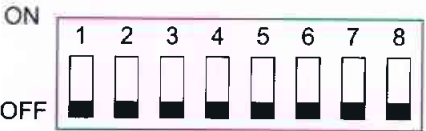
Status off off = enable
All poles off Σ N = 165%
All poles on Σ N = 0%

- S3 \rightarrow Input range span (GAIN) selection



Status off = enable
All poles off Σ N = 165%
All poles on Σ N = 0%

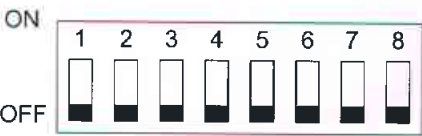
- S4 \rightarrow Output mode Selection



Status on = 1, off = 0

COMPACT PROGRAMMABLE POTENTIOMETER TRANSMITTER

• S4 → Output mode Selection



Status ON = 1, OFF = 0

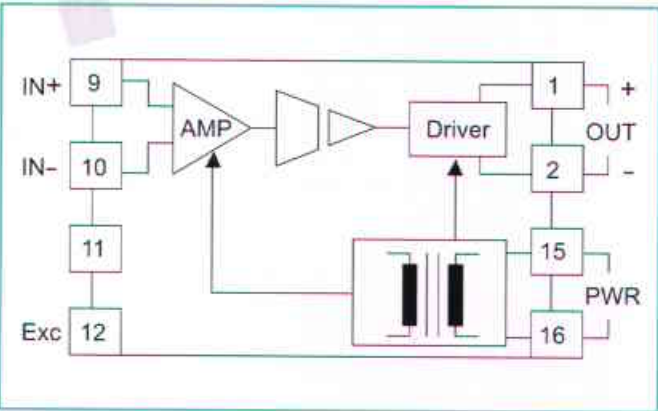
Output Range	O/P Range 1-2-3-4-5-6	O/P Mode 7-8
0 ~ 0.5V	0-1-1-1-1-0	1-1
0 ~ 1V	1-0-1-1-1-0	1-1
0 ~ 2V	1-1-0-1-1-0	1-1
0 ~ 4V	1-1-1-0-1-0	1-1
0 ~ 5V	1-0-1-0-1-0	1-1
1 ~ 5V	1-1-1-0-1-1	1-1
0 ~ 6V	1-1-0-0-1-0	1-1
0 ~ 8V	1-1-1-1-0-0	1-1
0 ~ 10V	1-1-0-1-0-0	1-1
2 ~ 10V	1-1-1-1-0-1	1-1
0 ~ 1mA	0-1-1-1-1-0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

4. Programming formula

RH/RL: percent input high/percent input low

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

5. Terminal connection



6. Input switching table (S2, S3)

(Status-on = 1, off = 0, don't care = X)

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. Application

Example: PF-KCBP-21Q-1

INPUT RANGE.....RH=100%, RL=0%

OUTPUT.....DC 4 ~ 20 mA

POWER.....AC 100 ~ 240V

S2.....All poles ON → ΣN=0%

S3.....P5-OFF & the rest ON → ΣN=10%

S4.....P5-P7-P8-OFF & the rest ON

8. Dimension:

