

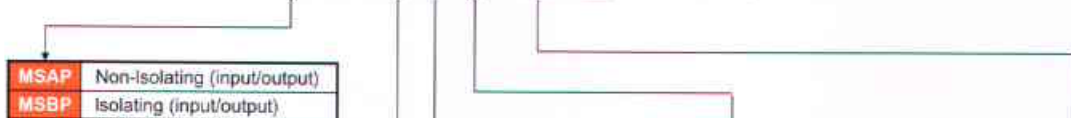
PROGRAMMABLE MATH-SUMMING TRANSMITTER



FEATURES

- Field-rangeable, switchable standard input ranges, switchable wide output ranges
selectable input functions
 $x + y + z / x + y / x - y / x - y + z$
- Accuracy 0.1% F.S.
- Input / output isolation 1.6KVdc
- Either standard or customer calibration

1. **MODEL: PF** - → Non-programmable

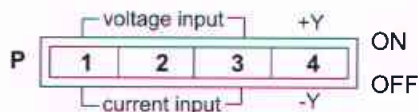


NO	Function	NO	Input Ranges	NO	Output Ranges	NO	Aux. Power
A	X + Y	1	0 ~ 5V	A	0 ~ 0.5 V	1	AC 110V (50/60Hz)
B	X - Y	2	1 ~ 5V	B	0 ~ 1 V	2	AC 220V (50/60Hz)
C	X + Y + Z	3	0 ~ 10V	C	0 ~ 2 V	3	DC 24V
D	X - Y + Z	4	2 ~ 10V	D	0 ~ 4V	4	DC 48V
O	SPECIFIED	5	0 ~ 10mA	E	0 ~ 5 V	5	DC 110V
		6	0 ~ 20mA	F	1 ~ 5 V	6	DC 220V
		7	4 ~ 20mA	G	0 ~ 8 V	7	AC 90~260V
		8	10 ~ 50mA	H	0 ~ 10 V	9	SPECIFIED
		9	SPECIFIED	I	2 ~ 10 V		
				J	0 ~ 1 mA		• ±20% of rate, less 2.5VA for AC input
				K	0 ~ 2 mA		• ±20% of rate, less 2WATT for DC input
				L	0 ~ 5 mA		• Switchable 110V/220V by jump internally
				M	1 ~ 5 mA		• Less 2.5VA for AC switching input
				N	0 ~ 10 mA		
				O	0 ~ 16 mA		
				P	0 ~ 20 mA		
				Q	4 ~ 20 mA		
				R	SPECIFIED		

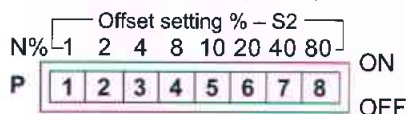
2. Specification

- Accuracy : 0.1% F.S. (23±5°C)
- Output ripple (p-p) : <0.1% F.S.
- Temp. coefficient : 100ppm/°C (0-50°C)
- Maximum input : ≤300 Vrms (> 2V ranges)
 ≤150 Vrms (≤ 2V ranges)
 ≤150 mA (current input)
- 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

- S1 → P1-P2-P3 input mode: voltage/current selection
P4 polarity of input Y

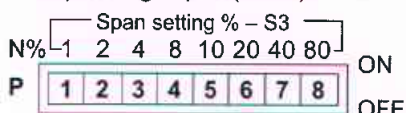


- S2 → Input range offset (ZERO) selection



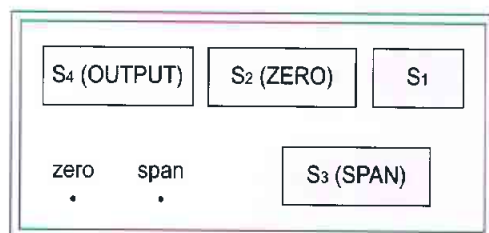
Status	off =enable
All poles off	$\Sigma N=165\%$
All poles on	$\Sigma N=0\%$

- S3 → Input range span (GAIN) selection



Status	off =enable
All poles off	$\Sigma N=165\%$
All poles on	$\Sigma N=0\%$

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



PROGRAMMABLE MATH-SUMMING TRANSMITTER

- 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, AH/AL: input high / input low; G & N: defined constant

Voltage mode		unit: volt	Current mode		unit: mA
• Span → X=[300/G (VH-VL)]%			• Span → X=[1200/G (AH-AL)]%		
• Offset → Y=(20N x VL)%			• Offset → Y=(5N x AL)%		
G	Function		N	Function	
3	X + Y + Z		3	X + Y + Z	
2	X + Y		2	X + Y	
1	X - Y		0	X - Y	
2	X - Y + Z		1	X - Y + Z	

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

(switching status 1 = on; 0 = off)

X + Y Input	S2 (ZERO) 1-2-3-4-5-6-7-8	S3 (SPAN) 1-2-3-4-5-6-7-8	S1 1-2-3-4
0 ~ 5V	1-1-1-1-1-1-1-1	1-1-1-1-0-0-1-1	0-0-0-1
1 ~ 5V	1-1-1-1-1-1-0-1	1-1-1-0-0-0-1-1	0-0-0-1
0 ~ 10V	1-1-1-1-1-1-1-1	0-1-0-1-0-1-1-1	0-0-0-1
2 ~ 10V	1-1-1-1-1-1-1-0	0-1-1-0-0-1-1-1	0-0-0-1
0 ~ 10mA	1-1-1-1-1-1-1-1	1-1-1-1-1-0-0-1	1-1-1-1
0 ~ 20mA	1-1-1-1-1-1-1-1	1-1-1-1-0-0-1-1	1-1-1-1
4 ~ 20mA	1-1-1-1-1-1-0-1	1-1-1-0-0-0-1-1	1-1-1-1
10 ~ 50mA	1-1-1-1-1-0-1-0	0-1-0-1-0-1-1-1	1-1-1-1

X - Y Input	S2 (ZERO) 1-2-3-4-5-6-7-8	S3 (SPAN) 1-2-3-4-5-6-7-8	S1 1-2-3-4
0 ~ 5V	1-1-1-1-1-1-1-1	1-1-1-1-1-0-0-1	0-0-0-0
1 ~ 5V	1-1-1-1-1-1-1-1	0-1-0-1-0-0-0-1	0-0-0-0
0 ~ 10V	1-1-1-1-1-1-1-1	1-1-1-1-0-0-1-1	0-0-0-0
2 ~ 10V	1-1-1-1-1-1-1-1	1-1-1-0-0-0-1-1	0-0-0-0
0 ~ 10mA	1-1-1-1-1-1-1-1	1-1-1-1-1-1-0-0	1-1-1-0
0 ~ 20mA	1-1-1-1-1-1-1-1	1-1-1-1-1-0-0-1	1-1-1-0
4 ~ 20mA	1-1-1-1-1-1-1-1	0-1-0-1-0-0-0-1	1-1-1-0
10 ~ 50mA	1-1-1-1-1-1-1-1	1-1-1-1-0-0-1-1	1-1-1-0

X + Y + Z Input	S2 (ZERO) 1-2-3-4-5-6-7-8	S3 (SPAN) 1-2-3-4-5-6-7-8	S1 1-2-3-4
0 ~ 5V	1-1-1-1-1-1-1-1	1-1-1-1-1-0-1-1	0-0-0-1
1 ~ 5V	1-1-1-1-1-1-0-1	0-1-0-1-1-0-1-1	0-0-0-1
0 ~ 10V	1-1-1-1-1-1-1-1	1-1-1-1-0-1-1-1	0-0-0-1
2 ~ 10V	1-1-1-1-1-1-0-0	1-0-1-1-0-1-1-1	0-0-0-1
0 ~ 10mA	1-1-1-1-1-1-1-1	1-1-1-1-1-1-0-1	1-1-1-1
0 ~ 20mA	1-1-1-1-1-1-1-1	1-1-1-1-1-0-1-1	1-1-1-1
4 ~ 20mA	1-1-1-1-1-1-0-1	0-1-0-1-1-0-1-1	1-1-1-1
10 ~ 50mA	1-1-1-1-0-0-0-0	1-1-1-1-0-1-1-1	1-1-1-1

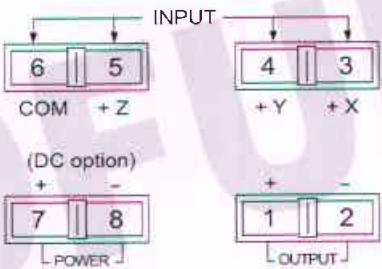
X - Y + Z Input	S2 (ZERO) 1-2-3-4-5-6-7-8	S3 (SPAN) 1-2-3-4-5-6-7-8	S1 1-2-3-4
0 ~ 5V	1-1-1-1-1-1-1-1	1-1-1-1-1-0-0-1	0-0-0-0
1 ~ 5V	1-1-1-1-1-1-0-1	1-1-1-0-0-0-0-1	0-0-0-0
0 ~ 10V	1-1-1-1-1-1-1-1	0-1-0-1-0-1-1-1	0-0-0-0
2 ~ 10V	1-1-1-1-1-1-0-1	0-1-1-0-0-1-1-1	0-0-0-0
0 ~ 10mA	1-1-1-1-1-1-1-1	1-1-1-1-1-0-0-1	1-1-1-0
0 ~ 20mA	1-1-1-1-1-1-1-1	1-1-1-1-0-0-1-1	1-1-1-0
4 ~ 20mA	1-1-1-1-1-0-1-1	1-1-1-0-0-0-1-1	1-1-1-0
10 ~ 50mA	1-1-1-1-0-1-0-1	0-1-0-1-0-1-1-1	1-1-1-0

7. Output switching table (S4)

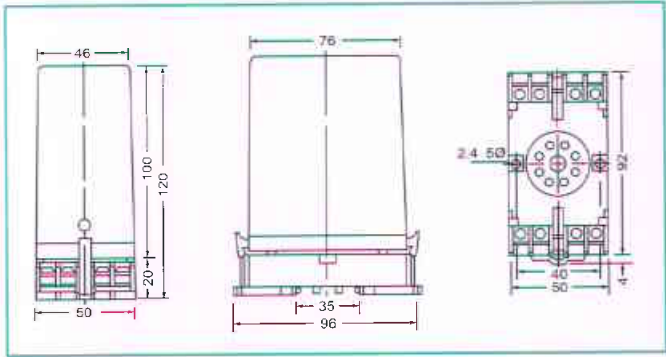
(switching status 1 = on; 0 = off)

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

7. Terminal connection



8. Dimension: (Unit: mm)



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

- Field-rangeable switchable output ranges over 20 standard process signals
- Accuracy 0.1% F.S.
- Input/output isolation 1.6KVdc
- Percent output: percent input A times percent input B

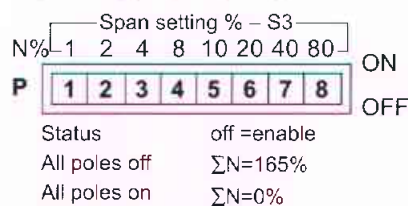
The diagram shows a table with two rows. The first row is labeled 'MMAP' and 'Non-Isolating (input/output)'. The second row is labeled 'MMBP' and 'Isolating (input/output)'. Arrows from the 'Non-Isolating' and 'Isolating' labels point to the 'Non-Isolating' and 'Isolating' labels in the diagram above.

NO	Input X Ranges	NO	Input Y Ranges	NO	Output Ranges Voltage / Current	NO	Aux. Power
1	0 ~ 1 V	1	0 ~ 1 V	A	0 ~ 0.5 V	1	AC 110V (50/60Hz)
2	0 ~ 5 V	2	0 ~ 5 V	B	0 ~ 1 V	2	AC 220V (50/60Hz)
3	1 ~ 5 V	3	1 ~ 5 V	E	0 ~ 5 V	3	DC 24V
4	0 ~ 10 V	4	0 ~ 10 V	F	1 ~ 5 V	4	DC 48V
5	0 ~ 1 mA	5	0 ~ 1 mA	H	0 ~ 10 V	5	DC 110V
6	0 ~ 10 mA	6	0 ~ 10 mA	I	2 ~ 10 V	6	DC 220V
7	0 ~ 20 mA	7	0 ~ 20 mA	J	0 ~ 1 mA	7	AC 90~260V
8	4 ~ 20 mA	8	4 ~ 20 mA	L	0 ~ 5 mA	9	SPECIFIED
9	SPECIFIED	9	SPECIFIED	N	0 ~ 10 mA	<ul style="list-style-type: none">• ±20% of rate, less 2.5VA for AC input• ±20% of rate, less 2WATT for DC input• Switchable 110V/220V by jump internally• Less 2.5VA for AC switching input	
				P	0 ~ 20 mA		
				Q	4 ~ 20 mA		
				R	SPECIFIED		

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

The diagram shows a neural network layer with two input nodes on the left and two output nodes on the right. The input nodes are labeled 'zero' and 'span', each with a small black dot below it. The output nodes are labeled 'S4 (OUTPUT)' and 'S3 (SPAN)', each enclosed in a box. Arrows indicate connections from the input nodes to the output nodes.

- S3 → Input range span (GAIN) selection



- 50

PROGRAMMABLE MATH-MULTIPLIER TRANSMITTER

4. Programming formula

W: percent output (0-100%)

X: percent input (0-100%)

Y: percent input (0-100%)

• Span → $W = [10 / (X \times Y)]\%$

• Note: Max. voltage = 10V = 100%

Max. current = 20mA = 100%

5. Application

Example 1 : PF-MMAP-44H-1

Input range (X = DC0-10V = 100%)

(Y = DC0-10V = 100%)

Output (DC 0-10V)

Power (AC 110V)

• (Span) $W = [10 / (100 \times 100)]\%$
= 10%

• S3 →

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

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

• S4 →

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

 ON
OFF
(P1-P2-P4-P7-P8-on & the rest off)

Example 2 : PF-MMAP-14Q-2

Input range (X = DC0-1V = 10%)

(Y = DC0-10V = 100%)

Output (DC 4-20mA)

Power (AC 220V)

• (Span) $W = [10 / (10 \times 100)]\%$
= 100%

• S3 →

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

 ON
OFF
(P5-P8-off & the rest on → $\Sigma N=100\%$)

• S4 →

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

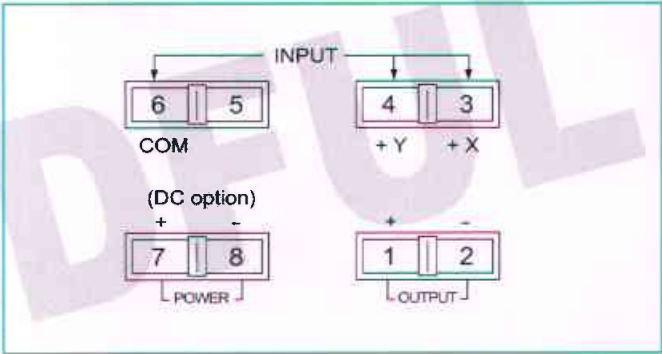
 ON
OFF
(P5-P7-P8-off & the rest on)

6. Output switching table (S4)

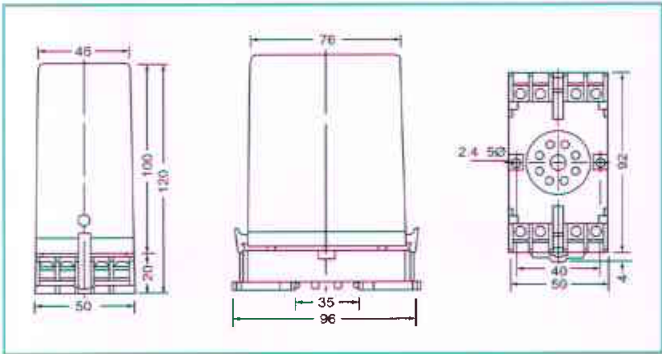
(switching status 1 = on; 0 = off)

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

7. Terminal connection



8. Dimension: (Unit: mm)



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

PROGRAMMABLE MATH-DIVIDER TRANSMITTER



FEATURES

- Field-rangeable switchable output ranges over 20 standard process signals
- Accuracy $\pm 0.1\%$ F.S. (denominator 5-100% input)
- Input/output isolation 1.6KVdc
- Percent output: percent input A divided by percent input B

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

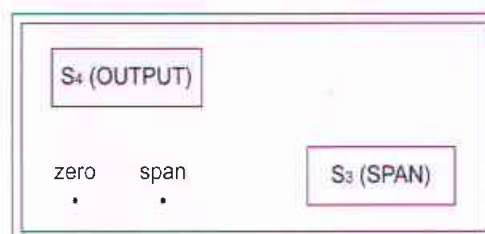


NO	Input X Ranges	NO	Input Y Ranges	NO	Output Ranges Voltage / Current	NO	Aux. Power
1	0 ~ 1 V	1	0 ~ 1 V	A	0 ~ 0.5 V	1	AC 110V (50/60Hz)
2	0 ~ 5 V	2	0 ~ 5 V	B	0 ~ 1 V	2	AC 220V (50/60Hz)
3	1 ~ 5 V	3	1 ~ 5 V	E	0 ~ 5 V	3	DC 24V
4	0 ~ 10 V	4	0 ~ 10 V	F	1 ~ 5 V	4	DC 48V
5	0 ~ 1 mA	5	0 ~ 1 mA	H	0 ~ 10 V	5	DC 110V
6	0 ~ 10 mA	6	0 ~ 10 mA	I	2 ~ 10 V	6	DC 220V
7	0 ~ 20 mA	7	0 ~ 20 mA	J	0 ~ 1 mA	7	AC 90~260V
8	4 ~ 20 mA	8	4 ~ 20 mA	L	0 ~ 5 mA	9	SPECIFIED
9	SPECIFIED	9	SPECIFIED	N	0 ~ 10 mA	<ul style="list-style-type: none">• ±20% of rate, less 2.5VA for AC input• ±20% of rate, less 2WATT for DC input• Switchable 110V/220V by jump internally• Less 2.5VA for AC switching input	
				P	0 ~ 20 mA		
				Q	4 ~ 20 mA		
				R	SPECIFIED		

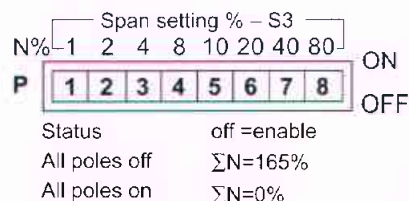
2. Specification

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

3. Function switches (S3, S4)



- 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 MATH-DIVIDER TRANSMITTER

4. Programming formula

W: percent output (0-100%)

X: numerator = percent output (0-100%)

Y: denominator = percent output (0-100%)

- Span $\rightarrow W = [(10Y)/X]\%$

- Note: Max. voltage = 10V = 100%

Max. current = 20mA = 100%

5. Application

Example 1 : PF-MDAP-42Q-2

Input range (X = DC0-10V = 100%)

(Y = DC0-5V = 50%)

Output (DC 4-20mA)

Power..... (AC 220V)

- (Span) W = $[(10 \times 50\%) / 100\%]\%$
= 5%

- S3 →

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

 ON
OFF
(P1-P3 off & the rest on → $\Sigma N=5\%$)

- S4 →

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

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

Example 2 : PF-MDAP-14H-1

Input range (X = DC0-1V = 10%)

(Y = DC0-10V = 100%)

Output (DC 0-10V)

Power..... (AC 110V)

- (Span) $W = [(10 \times 100\%) / 10\%]\%$
 $= 100\%$

- S3 →

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

 ON
OFF
(P6-P8-off & the rest on → $\Sigma N=100\%$)

• S4 →

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

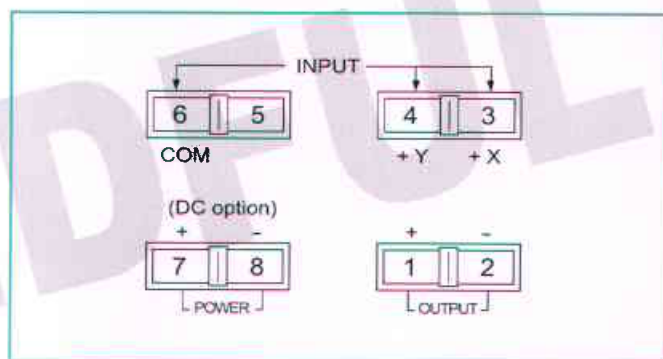
 ON
OFF
(P3-P5-P6-off & the rest on)

6. Output switching table (S4)

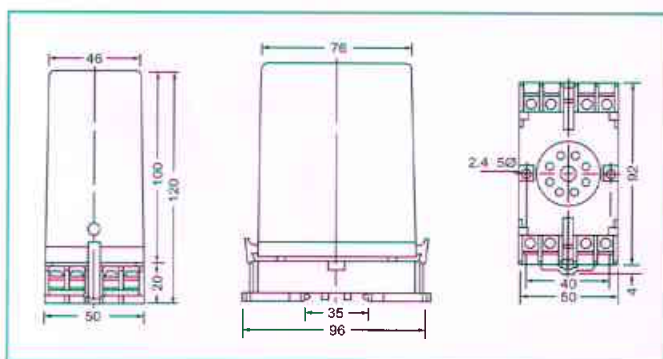
(switching status 1 = on; 0 = off)

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

7. Terminal connection



8. Dimension: (Unit: mm)



Note: 1. Socket drawing type

2. Mounting: **either** rail mounting or general screw mounting

- Field-rangeable switchable output ranges over 20 standard process signals
- Accuracy $\pm 0.1\%$ F.S.
- Input/output isolation 1.6KVdc
- Low-end cutout under 0.5% output

MRAP	Non-Isolating (input/output)
MRBP	isolating (input/output)

NO	Input Ranges	NO	Output Ranges	NO	Aux. Power
10	0 ~ 10 mV	A	0 - 0.5 V	1	AC 110V (50/60Hz)
11	0 ~ 100 mV	B	0 - 1 V	2	AC 220V (50/60Hz)
12	0 ~ 1 V	C	0 - 2 V	3	DC 24V
13	-1 ~ +1 V	D	0 - 4 V	4	DC 48V
14	0 ~ 2 V	E	0 - 5 V	5	DC 110V
15	0 ~ 5 V	F	1 - 5 V	6	DC 220V
16	1 ~ 5 V	G	0 - 8 V	7	AC90~260V
17	-5~ +5 V	H	0 - 10 V	9	SPECIFIED
18	0 ~ 10 V	I	2 - 10 V	<ul style="list-style-type: none">• ±20% of rate, less 2.5VA for AC input• ±20% of rate, less 2WATT for DC input• Switchable 110V/220V by jump internally• Less 2.5VA for AC switching input	
19	2 ~ 10 V	J	0 - 1 mA		
20	-10 ~ 10 V	K	0 - 2 mA		
21	0 ~ 1 mA	L	0 - 5 mA		
22	1 ~ 5 mA	M	1 - 5 mA	<ul style="list-style-type: none">• Switchable 110V/220V by jump internally• Less 2.5VA for AC switching input	
23	2 ~ 10 mA	N	0 - 10 mA		
24	0 ~ 20 mA	O	0 - 16 mA		
25	4 ~ 20 mA	P	0 ~ 20 mA		
26	10 ~ 50 mA	Q	4 - 20 mA	<ul style="list-style-type: none">• Less 2.5VA for AC switching input	
99	SPECIFIED	R	SPECIFIED		

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

S4 (OUTPUT)

zero span
• •

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

Example: I/P: DC4-20mA
O/P: DC4-20mA

Input (mA)	Output (mA)
0	4
4	4
8	8
12	12
16	16
20	20

PROGRAMMABLE MATH-ROOTEXTRACTOR TRANSMITTER

6. Input vs output tables (S1, S2, S3)

Example : I/P = DC4-20mA, O/P = DC4-20mA

Input		Output		Input		Output	
%	Current (mA)	%	Current (mA)	%	Current (mA)	%	Current (mA)
0	4.00	0.00	4.000	51	12.16	71.41	15.426
1	4.16	10.00	5.600	52	12.32	72.11	15.538
2	4.32	14.14	6.263	53	12.48	72.80	15.648
3	4.48	17.32	6.771	54	12.64	73.48	15.758
4	4.64	20.00	7.200	55	12.80	74.16	15.866
5	4.80	22.36	7.578	56	12.96	74.83	15.973
6	4.96	24.49	7.919	57	13.12	75.50	16.080
7	5.12	26.46	8.233	58	13.28	76.16	16.185
8	5.28	28.28	8.525	59	13.44	76.81	16.290
9	5.44	30.00	8.800	60	13.60	77.46	16.394
10	5.60	31.62	9.060	61	13.76	78.10	16.496
11	5.76	33.17	9.306	62	13.92	78.74	16.598
12	5.92	34.64	9.543	63	14.08	79.37	16.700
13	6.08	36.06	9.769	64	14.24	80.00	16.800
14	6.24	37.42	9.987	65	14.40	80.62	16.900
15	6.40	38.73	10.197	66	14.56	81.24	16.999
16	6.56	40.00	10.400	67	14.72	81.85	17.097
17	6.72	41.23	10.597	68	14.88	82.46	17.194
18	6.88	42.43	10.788	69	15.04	83.07	17.291
19	7.04	43.59	10.974	70	15.20	83.67	17.387
20	7.20	44.72	11.155	71	15.36	84.26	17.482
21	7.36	45.83	11.332	72	15.52	84.85	17.576
22	7.52	46.90	11.505	73	15.68	85.44	17.670
23	7.68	47.96	11.673	74	15.84	86.02	17.764
24	7.84	48.99	11.838	75	16.00	86.60	17.856
25	8.00	50.00	12.000	76	16.16	87.18	17.949
26	8.16	50.99	12.158	77	16.32	87.75	18.040
27	8.32	51.96	12.314	78	16.48	88.32	18.131
28	8.48	52.92	12.466	79	16.64	88.88	18.221
29	8.64	53.85	12.616	80	16.80	89.44	18.311
30	8.80	54.77	12.764	81	16.96	90.00	18.400
31	8.96	55.68	12.908	82	17.12	90.55	18.489
32	9.12	56.57	13.051	83	17.28	91.10	18.577
33	9.28	57.45	13.191	84	17.44	91.65	18.664
34	9.44	58.31	13.330	85	17.60	92.20	18.751
35	9.60	59.16	13.466	86	17.76	92.74	18.838
36	9.76	60.00	13.600	87	17.92	93.27	18.924
37	9.92	60.83	13.732	88	18.08	93.81	19.009
38	10.08	61.64	13.863	89	18.24	94.34	19.094
39	10.24	62.45	13.992	90	18.40	94.87	19.179
40	10.40	63.25	14.119	91	18.56	95.39	19.263
41	10.56	64.03	14.245	92	18.72	95.92	19.347
42	10.72	64.81	14.369	93	18.88	96.44	19.430
43	10.88	65.57	14.492	94	19.04	96.95	19.513
44	11.04	66.33	14.613	95	19.20	97.47	19.595
45	11.20	67.08	14.733	96	19.36	97.98	19.677
46	11.36	67.82	14.852	97	19.52	98.49	19.758
47	11.52	68.56	14.969	98	19.68	98.99	19.839
48	11.68	69.28	15.085	99	19.84	99.50	19.920
49	11.84	70.00	15.200	100	20.00	100.00	20.000
50	12.00	70.71	15.314				

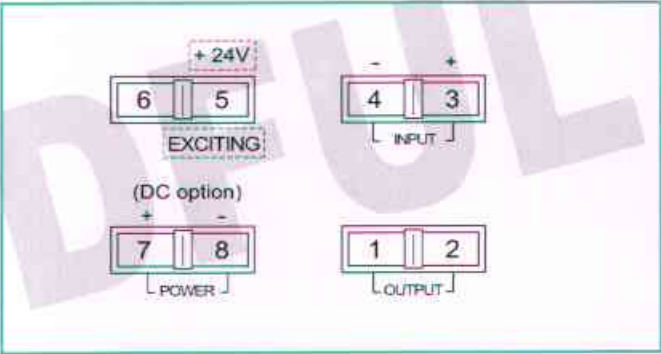
* Output current: Rounded to third decimal place
Output percent: Rounded to second decimal place

6. Output switching table (S4)

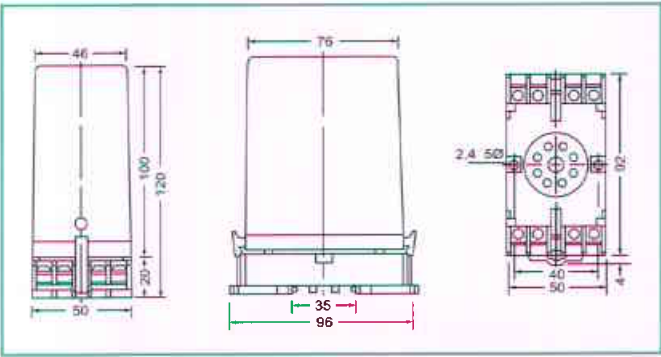
(switching status 1 = on; 0 = off)

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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

7. Terminal connection



8. Dimension: (unit: mm)



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