

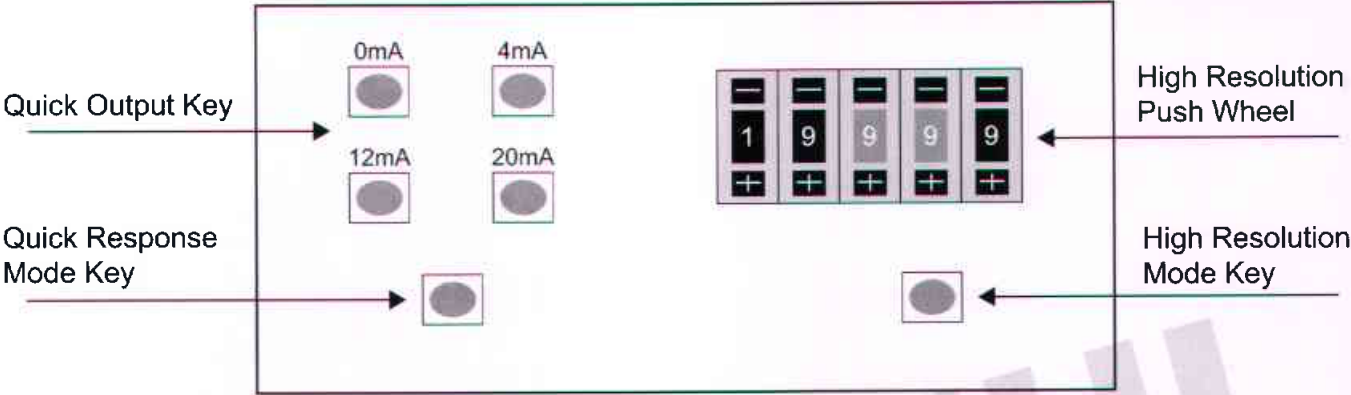
# PRECISION DC CURRENT SIMULATOR / CALIBRATOR



## FEATURES

- Auxiliary: AC110/220V
- High accuracy 0.03% F.S. (  $23\pm5^{\circ}\text{C}$  )
- Quick response mode with one touch key for simulation, high resolution mode with push wheel for calibration
- Ripple (  $V_{p-p}$  )  $\leq 0.02\%$  F.S.
- Output drive capability  $\leq 600\ \Omega$
- Memory type EEPROM
- Dielectric strength : 1.6KVac/1min (power/output)
- Temperature coefficient 100ppm $^{\circ}\text{C}$
- Operating condition: 0~50 $^{\circ}\text{C}$  (20-90% RH non-condensed)
- Storage condition : 0~70 $^{\circ}\text{C}$  (20-90% RH non-condensed)

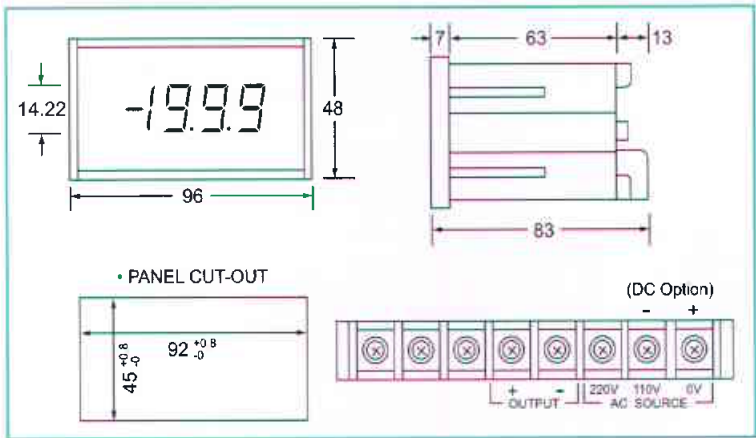
## 1. MODEL: PF-MDCG



## 2. Operation

- Quick response mode : Push quick response mode key which will be lit, and select the output needed by quick output key (0mA , 4mA, 8mA, 12mA, 20mA)
- High resolution mode : push high resolution mode key which will be lit, and push the push wheel to obtain the output needed (0-19.999mA)
- EEPROM memory : Remember the last output setting

## 3. Outside dimension and connection diagram



PROXIMITY SENSOR

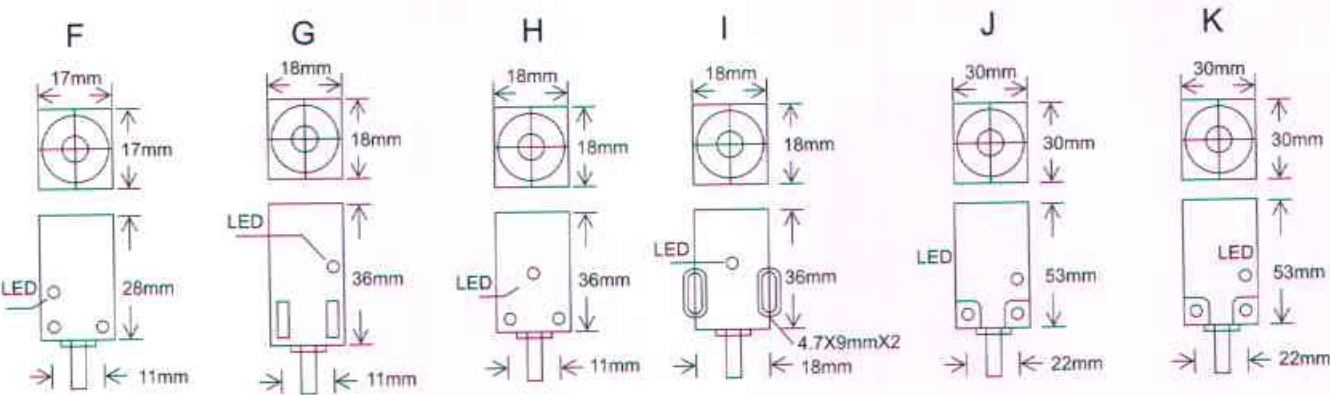
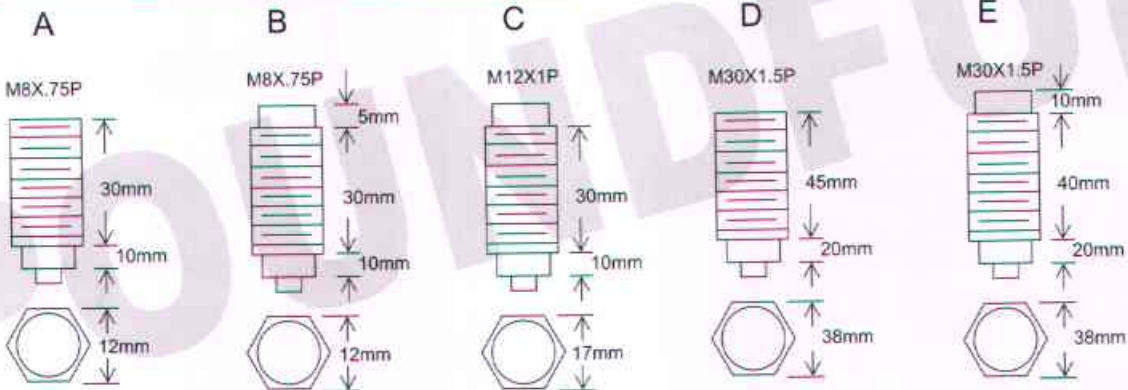


Specification:

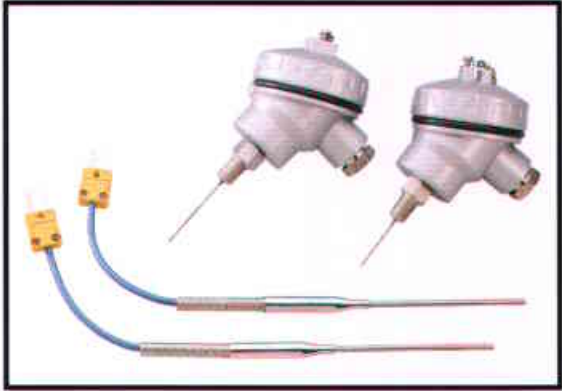
- Power : DC 10-30VDC
- Protection : Reverse Protection
- Output indicator : Red LED
- Housing Material : Brass Nickel Plated
- Current Consumption : 10mA
- Operating temperature : -25~+65°C
- Enclosure protection : IP67

1. MODEL: PFS - PX - [Color Code]

NO	Shape	NO	Output	NO	Action	NO	Sensing Distance	Response Hz	Target Steel	Load	Screw	Weight	Dimension
R	Round	N	NPN 3W	E1	NO. ON	01	1mm	1K Hz	8x8x1T	100mA	M8	90g	A
		P	PNP 3W	E2	NO. OFF	02	2mm	1K Hz	8x8x1T	100mA	M8	90g	B
		D	DC 2W			04	4mm	1K Hz	12x12x1T	200mA	M12	100g	C
		R	Specified			10	10mm	400Hz	30x30x1T	200mA	M30	130g	D
						15	15mm	200Hz	30x30x1T	200mA	M30	130g	E
S	Square					04	4mm	300Hz	17x17x1T	200mA		90g	F
								350Hz	17x17x1T	200mA		90g	G
						05	5mm	300Hz	17x17x1T	200mA		90g	H
								400Hz	17x17x1T	200mA		90g	I
						10	10mm	200Hz	17x17x1T	200mA		90g	J
						15	15mm	200Hz	17x17x1T	200mA		90g	K



# TEMPERATURE SENSOR



1.MODEL: PFS - T - [ ] - [ ] - [ ] - [ ] - [ ] - [ ] Example: PFS-TK1-E6.4-E888-DI

2. Input Type  
K J T E N R S B W RTD

3. NPT Fitting  
0 None  
1 1/8"  
2 1/4"  
4 1/2"  
6 3/4"  
24 1/4" x 1/2"  
64 3/4" x 1/2"  
9 Specified

4. Cold End Termination  
A None required  
B Std cast iron head  
C Std cast aluminum head  
D Miniature cast aluminum head  
E Explosion proof head  
F Assembly with flexible armor leads  
G Assembly with over braid leads  
H Connector

5. Tube Diameter  
3.2mm  
4.8mm  
6.4mm  
8mm  
9.5mm  
12.7mm  
specified

9. Junction Styles  
G welded ground  
I Insulated  
E Exposed junction

8. Element Styles  
S Single  
D Dual  
T Triple

7. Immersion Length  
168mm  
888m  
Length specified as customer required

6. Protection Tube  
A DIN 610  
B DIN710  
C SIC  
D SS304  
E SS316  
F INCONEL  
G HASTELLOY  
H TITANIUM



ROTARY ENCODER



FEATURES

- Incremental or absolute
- Response 100KHz
- Phase A, AB, ABZ optional
- Open collector, voltage, Line driver, Push-Pull
- High stability

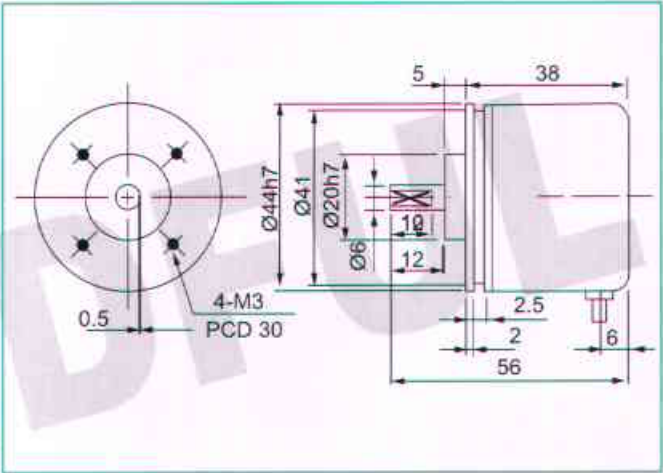
1. MODEL: PFS - RE - [Color] - [Color] - [Color]

Pulse per revolution	NO	Output Phase	NO	Output type	NO	Excitation Power
40, 50, 60, 100, 150	1	A	LL	Line driver 5VDC	1	5VDC
200, 250, 300, 360, 400	2	AB	HL	Line drive 8-26VDC	2	8-26VDC
500, 600, 800, 1000	3	ABZ	OC	Open-collector	60mA	
1024, 1200, 2000	4	AB+Z (high phase)	PP	Push-Pull		
2048			VT	Voltage		

2. Specification

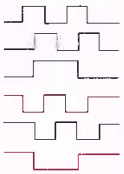
- Pulse /Revolution : 40, 50, 60, 100, 150, 200, 250, 300, 360, 400, 500, 600, 800, 1000, 1024, 1200, 2000, 2048
- Output phase : A, AB, ABZ
- Excitation : 8~26VDC, 5V optional
- Current consumption : 60mA
- Frequency response : 50~100KHz
- Output wave form : Square wave
- Wave Form rise/fall : 2μS,
- Output mode : Voltage, Open collector, Push-Pull, Line Driver
- Operating condition : 0~55°C (20~90%RH non-condensed)
- Storage condition : 0~70°C (20~90%RH non-condensed)
- Enclosure : IP 50 Dust proof
- Shaft diameter : 8mm
- Shaft Loading : Axial 3Kg, Radial : 5 Kg ≤400RPM  
Axial 1Kg, Radial : 2 Kg >400RPM
- Starting torque at 25° : 40gf-cm or less
- Max. speed : 6000RPM
- Shock : 20g per 11ms
- Polarity protection : Reverse protection (not with 5V)
- Cable : 4.5Ø, 50cm long
- Weight : Abt 200g

3. Dimension



4. Wiring Diagram

NORMAL			LINE DRIVER		
Color of wire	( pin )	Function	Color of wire	( pin )	Function
Red	1A	+ V	Red	1A	+ V
Black	2B	0V Common	Black	2B	0V Common
White	3C	CH A	Blue	3C	CH A
Green	4D	CH B	Green	4D	CH B
Yellow	5EZ	CH Z	Yellow	5E	CH Z
Shield	-	NC	Violet	6F	Ā CH A ( reverse )
			Orange	7G	Ḃ CH B ( reverse )
			Brown	8H	Z̄ CH Z ( reverse )
			Shield	-	NC



WHEEL SENSOR



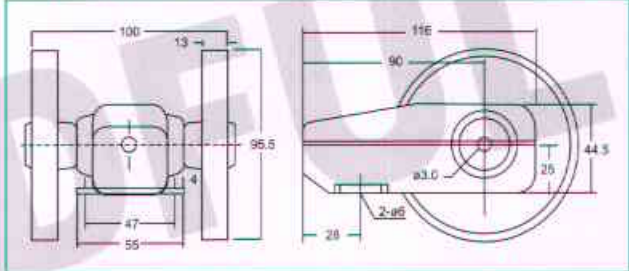
1. MODEL: PFS - W - [Color] - [Color] - [Color] Example: PFS-W-A1-M

		Resolution			
A	Single-direction	1	1	Y	Yard
B	Bi-direction	2	0.1	M	Meter
		3	0.01		
		4	0.001		

2. Specification

Power Source : 12V, 24V DC  
Current Consumption : ≤40mA  
Response Frequency : 20KHz  
Output Impedance : 4.7KΩ  
Maximum Speed : 120 M/Min.  
Weight : 630g

3. Dimension



Wheel Circle Length:  
Meter : 300mm ±0.1%  
Yard : 0.3 Yard ±0.1%

4. Connection

Red	Black	White	Green	Shield
+	-	A	B	⏏

CURRENT TRANSFORMER



1. MODEL: PFS - CT - [Color] - [Color] / [Color] A

HOLE DIA		S.C	P.C							
35	1	10	50	125	250	500	1000	2500	6000	
60	2	x	x	x	x	xx	xxx	xxxxx	xxxxxx	
90	5	20	60	150	275	600	1200	3000	7000	
110		x	x	x	x	xx	xxx	xxxxx	xxxxxx	
128		30	75	200	300	750	1500	4000	8000	
		x	x	x	x	xx	xxx	xxxxx	xxxxxx	
		40	100	225	400	800	2000	5000	9500	
		x	x	x	x	xxx	xxxx	xxxxx	xxxxxx	

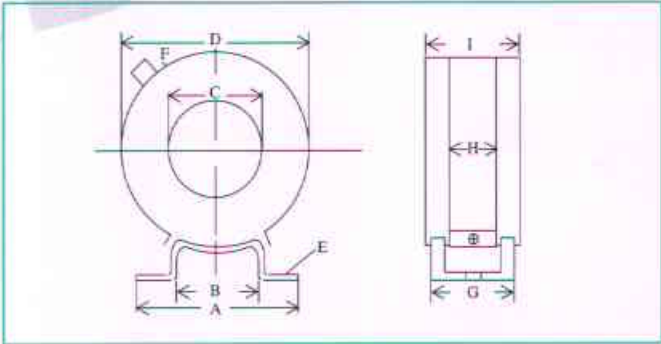
x Hole 35 xx Hole 60 xxx Hole 90 xxxx Hole 110 xxxxx Hole 128  
S.C: Secondary current  
P.C: Primary current

4. Specification

Case : P.P  
Burden : 15VA  
Accuracy : 1.0  
Power strength : 40

Model	A	B	C	D	E	F	G	H	I
CT-35	90	44	35	78	2	13	45	25	53.5
CT-60	103	44	60	102	2	13	45	25	54.5
CT-90	103	60	90	135	2	13	45	25	55.5
CT-110	103	60	110	151	2	13	45	25	55.5
CT-128	103	60	128	183	2	13	45	25	60

Unit: mm





SHUNT SENSOR



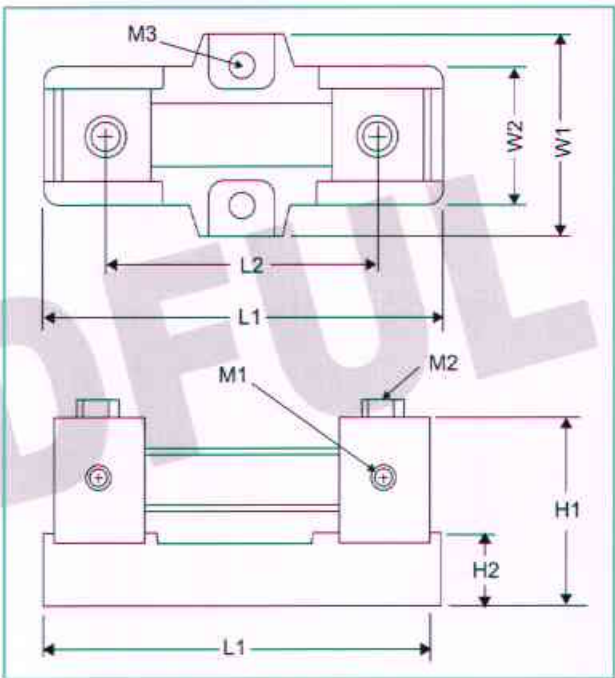
Example: PFS-SHT-150mV/225A

1. MODEL: PFS - SHT - ■ mv / ■ A

S.V mv
50
60
100
200
SPECIFIED

P.C					A
10	60	150	400	800	
20	70	200	450	900	
30	80	250	500	1000	
40	90	300	600	1200	
50	100	350	700	1500	
SPECIFIED					

S.V : Secondary voltage  
P.C : Primary current



TYPE	L1	L2	W1	W2	H1	H2	M3	M1	M2	g
1A~100A	66	45	32	22	34	12	4	3	5	100

60mV or 50mV, Below 100A

LOAD CELL SENSOR



FEATURES

- Tension and/or Compression
- Stainless or Tool steel
- Strain gauge principle
- Excellent repeatability
- High stability

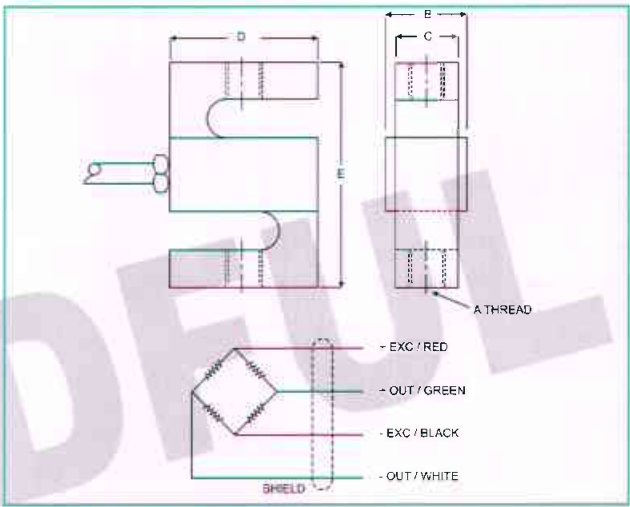
1. MODEL: PFS - LC - X Y

X : Capacity Range  
Y : Material    S=Stainless Steel  
                  T=Tool Steel

2. Specification

- Capacity : 100, 250, 500, 1000, 1500, 2000, 2500, 5000 kg
- Rated output : 2mV/V ±5%,
- Excitation : 10 VDC recommended
- Input impedance : 350 ohm
- Output impedance : 400 ohm
- Zero balance : 1% of R.O
- Non-linearity hysteresis : ±0.02% of R.O repeatability
- Creep at rated capacity : ±0.02% of R.O (20 Min)
- Temperature compensated : 0~50°C
- Over load : 1.5 rated
- Material : Stainless or Tool steel
- Operating condition : 0 ~ 55°C (20~90% RH non-condensed)
- Storage condition : 0 ~ 70°C (20~90% RH non-condensed)

3. Dimension & wiring diagram



Capacity	Dimensions					
		A	B	C	D	E
100kg	(mm)	M10x1.50	25.4	19.0	50.8	76.2
250lb	(inch)	3/8-24UNF-2B	0.75	0.50	2.00	3.00
250/500/750kg	(mm)	M12x1.75	25.4	19.0	50.8	76.2
500/750/1K/1.5K lb	(inch)	1/2-20UNF-2B	1.00	0.75	2.00	3.00
1000/1500kg	(mm)	M12x1.75	31.8	25.4	50.8	76.2
2K/2.5K/3K lb	(inch)	1/2-20UNF-2B	1.25	1.00	2.00	3.00
2000/2500/5000kg	(mm)	M18x1.50	31.8	25.4	76.2	108
5K/7.5K/10k lb	(inch)	3/4-16UNF-2B	1.25	1.00	3.00	4.25
15K lb	(inch)	1-14UNF-2B	1.50	1.25	3.94	5.50
20K lb	(inch)	1-1/4-12UNF-2B	2.00	1.94	4.94	7.00

# PRESSURE SENSOR



## FEATURES

- Ceramic wafer
- Thermal compensation
- Zero span adjustment
- Electromagnetic Compatibility
- High performance

## 1. MODEL: PFS - P - [Color] - [Color] - [Color] - [Color] - [Color] - [Color]

Example: PFS-P-G010-A1A-20B-1

G : Gauge Pressure  
A : Absolute Pressure

Range

Pressure Kg/cm <sup>2</sup>	-1~0	-1~1.5	-1~5	0~1	0~5	0~10
NO	100	115	150	001	005	010

Pressure Kg/cm <sup>2</sup>	0-25	0-60	0-100	0-250	0-400	0-600
NO	025	060	0100	0250	0400	0600

Accuracy

±0.5% F.S.  
±0.25% F.S.

1  
2

Wetted Parts

304 Stainless  
316 Stainless  
Brass  
Ptfе

A  
B  
C  
D

Output

2 wire 0-20mA 20  
2 wire 4-20mA 21  
3 wire 0-5V 30  
3 wire 0-10V 31

Electric Connection

DIN 43650- A IP65  
FLEX Protecting Cable 1.5M IP68  
SHUTTER Type Cable 1.5M IP68

A  
B  
C

Pressure Connection

1/4"PT 0  
1/4"NPT 1  
1/2"NPT 2

Sealing Material

• FPM Viton (Fluoro-Elastomer)  
• EPDM Ethylene Propylens  
• NBR Nitrile Butadiene  
• MVQ Silicone Polymer  
• CR Chloroprene

A  
B  
C  
D  
E

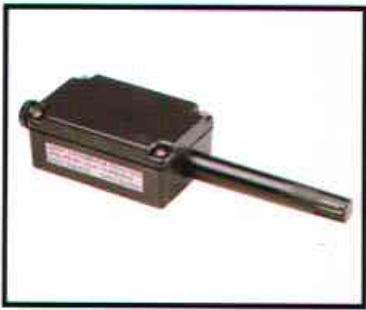
## 2. SPECIFICATION

- Range : -1~600kg gauge/absolute
- Pressure connection : 1/8" NPT, 1/4"NPT, 1/8"PT
- Pressure limit : 2 x nominal
- Sealing material : FPM, NBR, EPDM, MVQ
- Burst pressure : 3 x nominal
- Input resistance : 10KΩ
- Accuracy : ±0.5% F.S. (±0.25% F.S. optional)
- Response time : 5ms
- Operating temperature : -25~85°C, -25~125°C optional
- Enclosure protection : IP65/Nema 4x (IP68 optional)
- Excitation : 10-32 VDC
- Output : 0-5VDC, 0-10 VDC, 0-20 mA, 4-20mA
- Adjustment : Zero/Span ±15%
- Sensing element : Ceramic wafer
- Housing material : 304 Stainless steel
- Electrical connection : DIN 43650
- Wetted parts : 304 Stainless steel  
\*316 stainless steel  
\*brass or ptfе

## 3. WIRING

Output	Red	Black	White
V	+v	-v	Output
A	+v	-v	N/C

# HUMIDITY & TEMPERATURE TRANSMITTER



## FEATURES

- Easy installation, duct mounting or wall mounting
- Water resistant plastic mounting case
- High accuracy and fast response
- Long-term stability

## 1. MODEL: PFS-TRH - [Color] - [X] X = D duct mounting X = W wall mounting

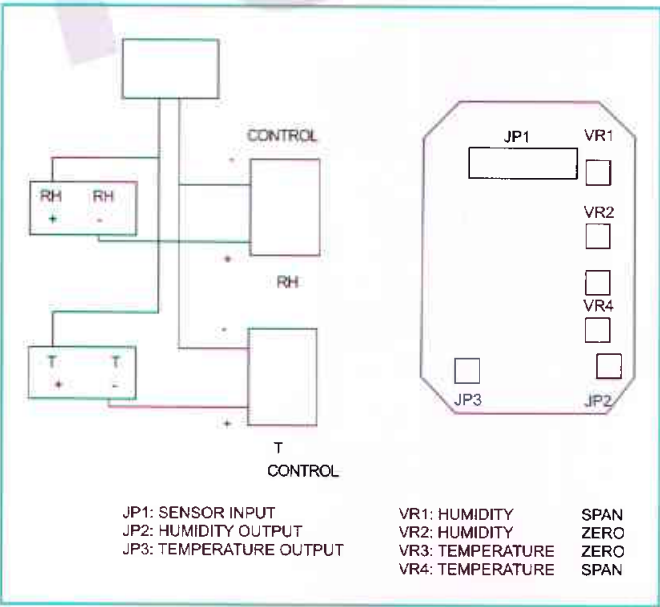
NO	Humidity Sensor	NO	Temp Sensor	NO	Humidity Output	NO	Temperature Output
0	NONE	0	NONE	N	NONE	N	NONE
1	WITH	1	WITH	H	0-10V	H	0-10V
				Q	4~20mA	Q	4~20mA
				R	SPECIFIED	R	SPECIFIED

H: Humidity, T: Temperature

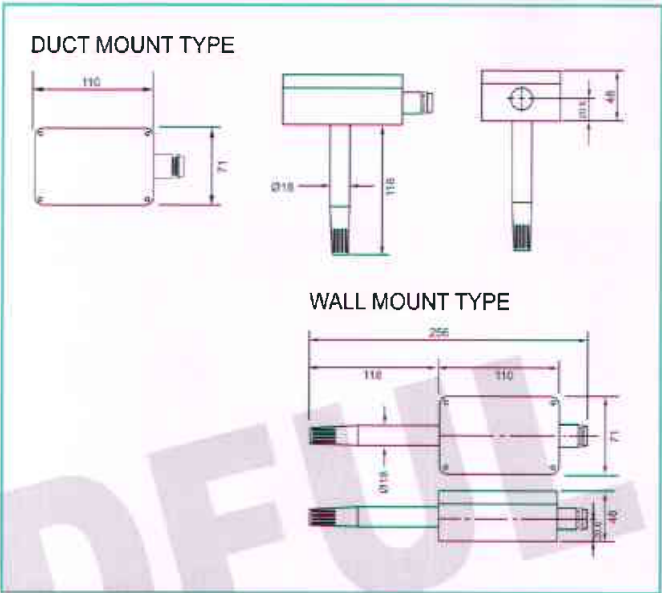
## 2. Specification

- Aux. power : 2 wire loop (external excitation 9- 40 VDC)
- Sensor element : Temperature: PT100 DIN, IEC751  
Humidity: Macro-molecule
- Measurement range : Temperature: -20 ~ + 80°C  
Humidity: 0° ~ 100%RH
- Accuracy : Temperature:  $\pm 0.4^{\circ}\text{C}$   
( $23^{\circ}\text{C} \pm 5^{\circ}\text{C}$ ) Humidity:  $\pm 2.5\% \text{RH}$  (30~90%RH)
- Analogue output : DC 4~20mA x 2  
(Temperature x 1, Humidity x 1)
- Output load : 600 $\Omega$  (excitation DC24V)
- Housing : Plastic mounting case (water resistant)
- Weight : Abt. 220g
- Operating temperature : -25 ~ +85°C

## 3. Connection diagram:

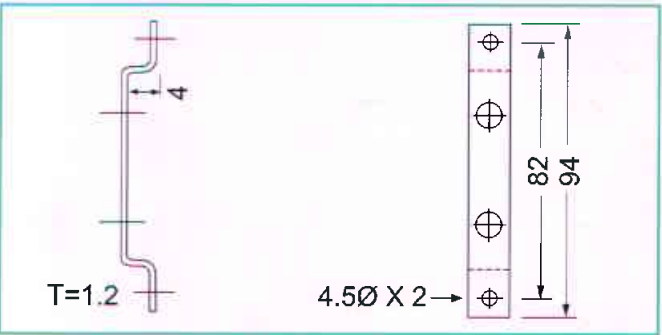


## 4. Dimension

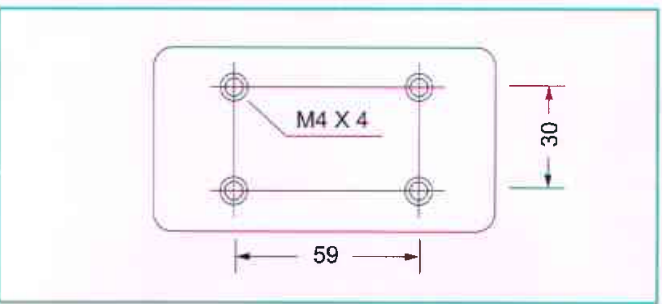


## 5. Installation

Fix with mounting plate



Fix with screw to case





FLOW SENSOR



FEATURES

- Tefzel® Paddle wheel rotor
- PVC or PP body
- Analog and/or pulse output optional
- DN15 to DN50 pipe size
- Chemical industry application

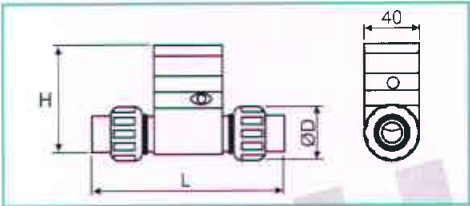
1. MODEL: PFS - F - U - [ ] - [ ] - [ ] - [ ] - X    X : See pipe size table

No.	Output 1 Analog	No.	Output 2 Pulse	No.	Body	No.	O-ring	No.	K value input
0	None	0	None	A	PVC	1	NBR	0	None
1	4~20mA	1	Open collector	B	PP	2	EPDM	1	RS232
2	0~5V	9	Specified					2	RS485
9	Specified								

2. Specification

- Wetted parts: Sensor body : PVC or PP
  - O-ring : NBR or EPDM
  - Pin : Al<sub>2</sub>O<sub>3</sub> / ZrO<sub>2</sub>
  - Rotor : Tefzel
  - Bearing : Al<sub>2</sub>O<sub>3</sub>
- Cable : PVC
- Pipe size : DN15~DN50
- Flow range : 0.3m/S to 10m/S
- Range ability : 10:1
- Operating Pressure : 5 Kg/cm<sup>2</sup>
- Temp. coefficient : 100ppm/°C
- Accuracy : 2% ( 25°C )
- Linearity : ± 1% F.S.
- Repeatability : ± 1% F.S.
- Operating condition : 5~55°C (20~90%RH non-condensed)
- Storage condition : 0~70°C (20~90%RH non-condensed)

3. Dimension



Pipe Size	Dimension		
	H	L	ØD
DN15	86	140	41
DN20	88	150	53
DN25	91.3	160	60
DN40	109.6	185	83
DN50	123.4	196.8	110

4. Wiring Diagram

Output		Cable Color					
Out1	Out2	Vs+	Vs-	Out1+	Out1-	Out2+	Shield
1	0	R	B/W	P	G	N	B
2	0	R	B/W	P	G	N	B
0	1	R	B/W	N	N	Y	B
1	1	R	B/W	P	G	Y	B
2	1	R	B/W	P	G	Y	B

R: Red, B/W: Black/White, P: Pink, G: Gray, Y: Yellow, B: Black

Standard Pipe Size: mm

DN	JIS	ANSI	DIN
15	Ø 18.40	Ø 21.34	Ø 20
20	Ø 26.45	Ø 26.67	Ø 25
25	Ø 32.55	Ø 33.27	Ø 32
40	Ø 48.70	Ø 48.26	Ø 50
50	Ø 60.80	Ø 60.20	Ø 63

Pipe Size Table

No.	Pipe size
1	DN15(1/2") 0-30LPM (STD) ~120LPM (MAX)
2	DN20(3/4") 0-60LPM (STD) ~175LPM (MAX)
3	DN25(1") 0-90LPM (STD) ~306LPM (MAX)
4	DN40(1 1/2") 0-200LPM (STD) ~851LPM (MAX)
5	DN50(2") 0-330LPM (STD) ~1364LPM (MAX)

# FLOW SENSOR



## FEATURES

- Paddle wheel rotor
- PVDF or PP molded body
- Self-powered flow rate
- DN15 to DN1000 pipes
- Simple insertion
- Easy installation
- Low pressure drop

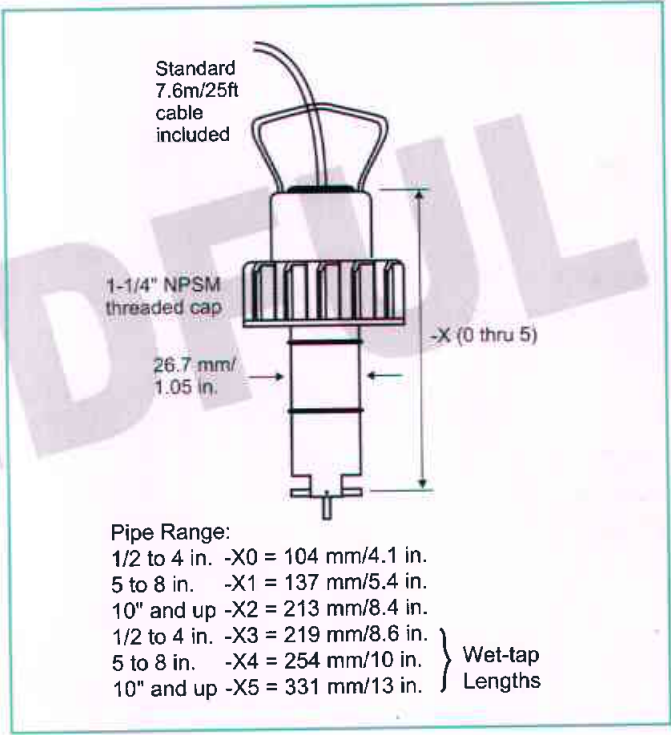
## 1. MODEL: PFS - F - I - [ ] - [ ] - [ ] - X      X : Pipe range table

No.	Body	No.	O-ring	No.	Pin
A	PP	1	FPM-VITON	A	PVDF
B	PVDF	2	EPDM	B	Titanium
C	PVC	3	FPM-Kalrez	C	Hastelloy
D	SS316			D	PVDF

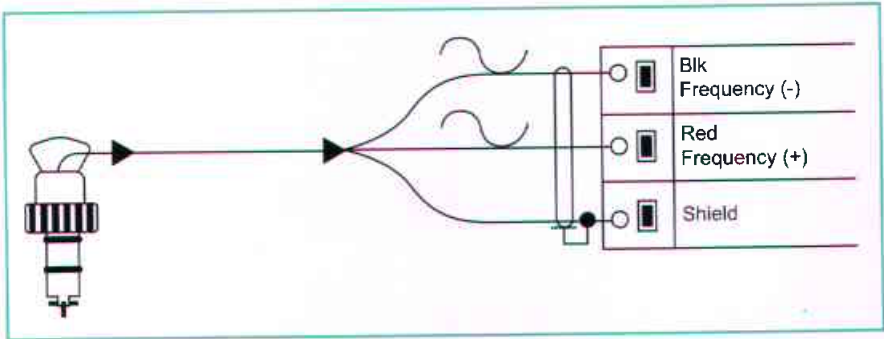
## 2. Specification

- Wetted parts : Sensor body : Glass filled PP or PVDF  
O-ring : FPM-VITON (ST) or EPDM or FPM -Kalrez  
Pin : Titanium or Hastelloy-C or PVDF  
Rotor : Black PVDF or Natural PVDF
- Cable : 2-conductor twisted pair (22AWG), with shield
- Pipe size : DN 15 - DN1000
- Temp. coefficient : 100ppm/°C
- Linearity : ± 1% F.S.
- Repeatability : ± 1% F.S.
- Operating condition : 0 ~ 55°C (20 ~ 90%RH non-condensed)
- Storage condition : 0 ~ 70°C (20 ~ 90%RH non-condensed)

## 3. Dimension



## 4. Wiring Diagram



# LVDT SENSOR



## 1. MODEL: PFS - LVDT - ■ ■

STROKE		SENSOR	
1	± 1mm	A	H LDT
2	± 2mm	B	T GT
3	± 3mm	C	RH
5	± 5mm	R	SPECIFIED
6	± 6mm	Details as PER Request	
10	± 10mm		
15	± 15mm		

# DC POWER SUPPLY



## FEATURES

- Compact design
- Field excitation power for sensor
- Plug-in 35mm DIN rail.
- High Stability
- Compact design

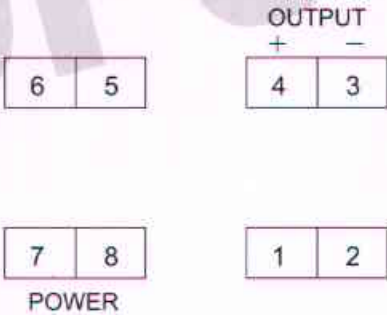
## 1. MODEL: PF - DPS - ■ ■ ■

NO	Input Power	NO	DC Output
1	AC 110V±20% (50/60Hz)	A	12V 120mA
2	AC 220V±20% (50/60Hz)	B	±12V 120mA
3	AC 380V±20% (50/60Hz)	C	15V 120mA
4	AC 110/220V±20% (50/60Hz)	D	±15V 120mA
5	AC 90-260V	E	24V
6	DC 24V	R	SPECIFIED
7	DC 110V		
8	DC 220V		
9	SPECIFIED		

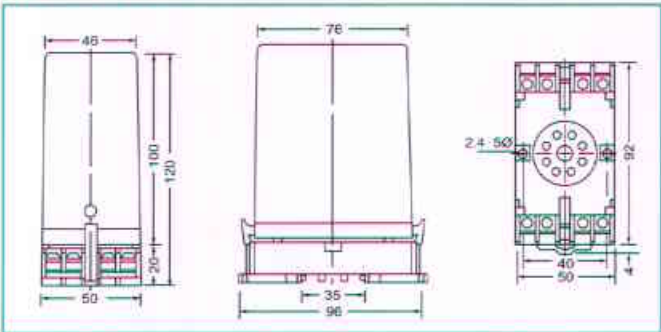
## 2. Specification

- Accuracy : ±0.1% F.S. (23±5°C)
- Output ripple : ±0.1% ( P-P)
- Temp. coefficient : 100ppm/°C
- Dielectric Strength : 1.6KVac (input/output)
- Operating condition : 0 ~ 55°C (20~90% RH non-condensed)
- Storage condition : 0 ~ 70°C (20~90% RH non-condensed)
- Construction : Socket /plug-in type with barrier terminals

## 3. TERMINAL CONNECTION



## 4. Dimension





# LARGE SIZE LED DISPLAY



## FEATURES

- High efficiency LED
- LED high 4cm, 6cm, 10cm, 15cm
- Anodized Aluminum frame
- Stability and durability
- Wall mounting, flush, or pendent

## 1. MODEL: PF- LL - [Color] - [Color] - [Color] - [Color] - [Color]

NO	Input	NO	Side	NO	LED Height	NO	Mounting	NO	Digit	NO	Output	NO	Aux. Power
A	DC	1	Single Side	4	4cm	F	Flush	2	2 Digits	N	None	1	AC 110V/220V(50/60Hz)
B	AC	2	Double Side	6	6cm	P	Pendent	3	3 Digits	1	DC 4-20mA	2	DC 24V
P	Pulse			10	10cm	W	Wall	4	4 Digits	2	DC 1-5V	3	AC 90-260V
R	RS232			15	15cm			5	5 Digits	6	DC 0-10V	9	SPECIFIED
S	RS485			19	SPECIFIED			6	6 Digits	7	RS232		
T	T/C							9	SPECIFIED	8	RS485		
V	BCD									9	SPECIFIED		

\*INPUT AND DISPLAY RANGE TO BE SPECIFIED

## 2. Specification

- Auxiliary power : AC 110/220V (50/60Hz)  
Switching AC90~260V
- Accuracy : ±0.1% F.S. DC  
(23±5°C) ±0.15% F.S. AC
- Output ripple : ±0.1% ( P-P)
- Temp. coefficient : 100ppm/°C
- Dielectric Strength : 1.6Kvac (input/output)
- Operating condition : 0 ~ 55°C (20~90% RH non-condensed)
- Storage condition : 0 ~ 70°C (20~90% RH non-condensed)
- Construction : Socket /plug-in type with barrier terminals

## 4. Wiring Diagram

1	2	3	4	5	6	7	8	9
IN (HI)	IN (LO)	+	-	OUTPUT	220	110	0	AC SOURCE

## 3. Dimension

Dimension: H x L x D (Unit : mm)

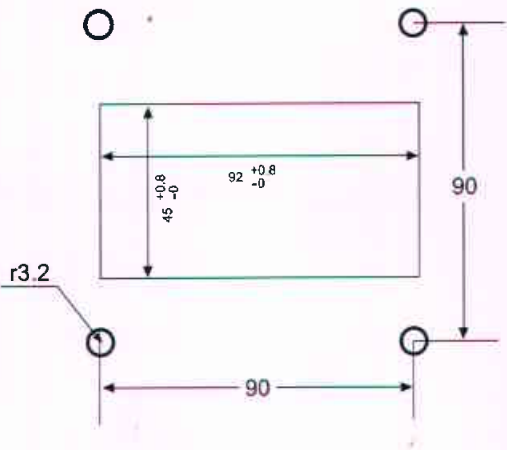
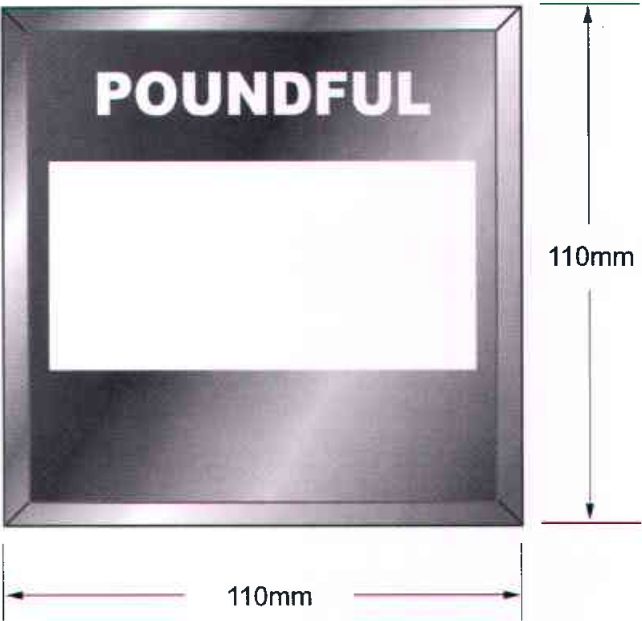
Display height		2 Digits	3 Digits	4 Digits	5 Digits	6 Digits
4cm	H35xW21	100x188x61	100x188x61	100x188x61	100x188x61	100x188x61
6cm	H57xW32	100x188x61	100x188x61	100x241x61	100x294x61	100x347x61
10cm	H102xW60	155x216x61	155x308x61	155x400x61	155x492x61	155x584x61
*15cm	H150xW90	240x360x60	240x510x61	240x660x61	240x810x61	240x960x61

\*15cm is Lamp Type for Outdoor

# 110 X 110 DECORATION BOARD

Model: PF-FPW110  
(Wide angle face plate)

## PANEL CUT-OUT



## Transducer Dimension (unit: mm)

PF-PA3, PF-PAN3, PF-PW , PF-PWH , PF-PWWH ,  
PF-PPF, PF-TDI, PF-QDI

