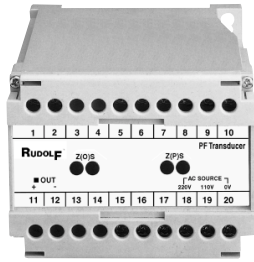


# RUDOLF™ Transducer

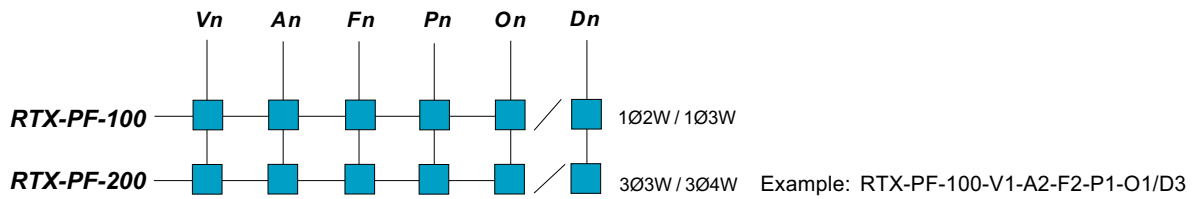
## Power Factor (cos $\theta$ ) Transducer



### Features

- Measuring & Conversion DIN-IEC 688
- Dielectric Strength DIN-IEC 688  
2 kVAC 50/60Hz/1 minute
- Impulse test ANSI C37.90a/1974, IEEE 587/1983,  
IEC 255-4, 5kV (1.2x50 $\mu$ s)
- Surge test (ring wave) IEC 255-4 (2.5KV - 0.25ms/1 MHz)

### Order Form



### Input & Output Parameters

Vn: Voltage input	Vn rating range	V1 120V AC 85~150V AC	V2 240V AC 180~300V AC	V3 415V AC 300~500V AC	On: Output		
					O1 0~1mA	O2 0~20mA	O3 (uni.) 4~20mA
An: Current input	An rating range	A1 1A 0~1.2A	A2 5V 0~6V		O4 (bi.) 4~12~20mA	O5 0~10mA	O6 0~1V
Fn: Frequency input	Fn rating range	F1 50Hz 48~52Hz	F2 60V 58~62V		O7 0~5V	O8 0~10V	O9 2~10V
Pn: Auxiliary power input	Pn rating	P1 120V AC	P2 240V AC	P3 415V AC	P4 30V DC	P5 110V DC	

- Note:** 1. Uni. = uni-direction = 0 to +span bi. = bi-direction = -span to 0 to +span referring to calibration  
2. For internal powered type .... zero based outputs and Vn operation range 85% ~115%

# RUDOLF™ Transducer

## Power Factor (cos $\theta$ ) Transducer

### Specification

- Accuracy : 0.2% F.S.  $\pm$  0.25° (23  $\pm$  5°C)
- Temp. coefficient : 100ppm/°C (0-50°C)
- Input burden :  $\leq$  0.2VA (voltage);  $\leq$  0.2VA (current)
- Maximum input over : Current related input: 3 x rated continuous, 10 x rated 30 sec, 25 x rated 3 sec, 50 x rated 1 sec  
Voltage related input: maximum 2 x rated continuous
- Response time :  $\leq$  250ms (0-90%)
- Output ripple (p-p) :  $<$  0.1% F.S.
- Output drive capability :  $\leq$  10mA for voltage mode  
 $\leq$  10V for current mode
- Dielectric strength : 2kVAC/1 min. (input / output / aux. power / case)
- Surge test : ANSI C37.90a/1974, DIN-IEC 255-4  
impulse voltage 5KV (1.2 x 50 $\mu$ s)
- Operating condition : 0~55°C (20 to 95% RH non-condensed)
- Storage condition : 0~70°C (20 to 95% RH non-condensed)
- Power supply : AC 110V/220V  $\pm$  20% (50/60Hz)  $\leq$  3.5VA (Optional DC 48V or DC 110V  $\pm$  20%)
- Magnetic effect :  $<$  0.005% change 1M center 100 ampere-turn, synchronized with line frequency
- Aux. power effect :  $<$  0.005% per voltage change
- Impulse/surge test IEC255-4 : IEC 688, 5 kV, 1.2/50ms waveform, IEC 255-22-1, 2.5 kV (1MHz/400Hz)
- Housing : Flame proof, self-extinguishing grey polycarbonate.  
Case IP 50 snap mounting on DIN EN 50022-35 or surface mounting.  
Compliance with IEC 529, BS 5490, DIN 40054  
Protection touch-proof terminals and enclosure meeting requirements of VBG 4 & VDE 0106 part 100 (Germany).

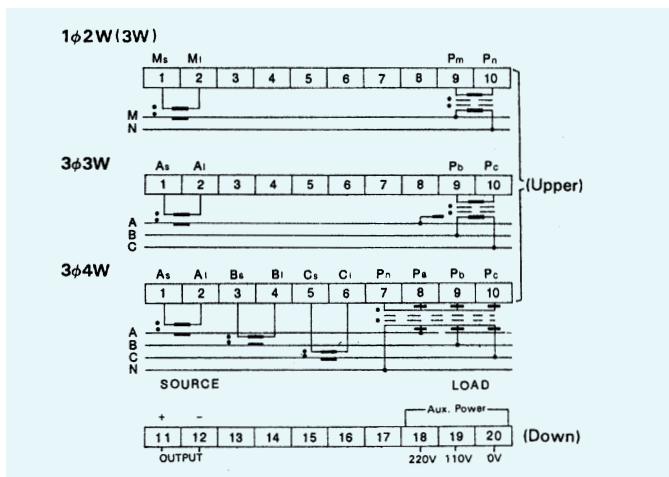
### Insulation

- Protection class : Class II complying with IEC 348 / BS 4735 / DIN 57411 / VDE 0411
- Test voltage : 4kV rms 50 Hz 1 min. between Input / Case / Auxiliary / Output

### Applied Standards

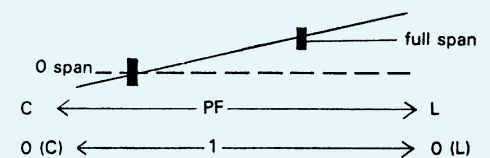
- General : IEC 688-1 / IEC 255-4 / BS 6253: Part 1
- Safety : IEC 348-1 / BS 4753 / DIN 57411 / VDE 0411 / ANSI C 37
- Surge withstand : IEC 801 / EN55020 / ANSI C37-90a
- Radio Screening : RFI degree N Complies with VDE 0875
- Adaptability for power system : EN 61010, IEC 0110-1

### Terminal Connection



### Calibration: Dn

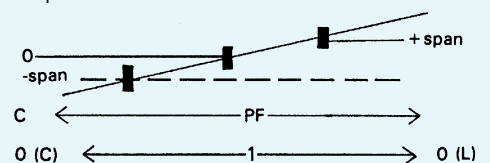
D1: 0.5(C) to 1 vs 0 to full span output  
D2: 0(C) to 1 vs 0 to full span output



**Note:** (C) Capacitive (L) Inductive Load

D3: 0.5(C) to 1 to 0.5(L) vs 0 to 1/2 span to full span output

D4: 0(C) to 1 to 0(L) vs 0 to 1/2 span to full span output



### Dimension (unit: mm)

