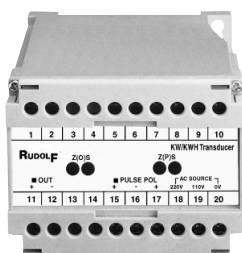


# RUDOLF™ Transducer

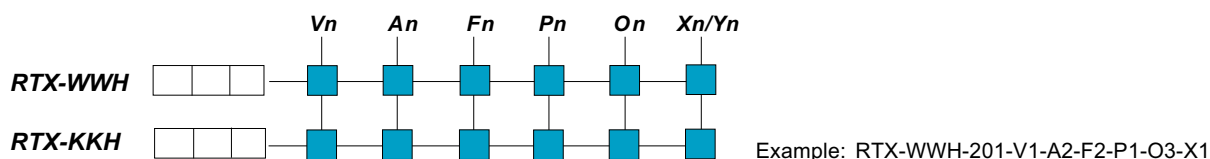
## Watt/Watthour & Var/Varhour Transducer



### 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 (1.2x50µs)
- Surge test (ring wave) IEC 255-4 (2.5KkV - 0.25ms/1 MHz)

### Order Form



Connection	Model	Standard Analog Calibration		
			1A	5A
1 Phase 2 Wire	RTX-WWH-101	V1 = 120V V2 = 240V V3 = 415V	100 200 400	500 1K 1.5K
3 Phase 3 Wire Balance	RTX-WWH-200 RTX-KKH-200	V1 = VL = 120V V2 = VL = 240V V3 = VL = 415V	100 200 400	500 1K 1.5K
3 Phase 3 Wire Unbalance	RTX-WWH-201 RTX-KKH-201	V1 = VL = 120V V2 = VL = 240V V3 = VL = 415V	200 400 800	1K 2K 4K
3 Phase 4 Wire Unbalance	RTX-WWH-301 RTX-KKH-301	V0 = VP = 69.3V V1 = VP = 120V V2 = VP = 240V V3 = VP = 415V	200 300 600 1.2K	1K 1.5K 3K 6K

**Note:**  
Voltage input:  
Phase voltage for 3 phase 4 wire (VP)  
Line to line voltage for 3 phase 3 wire (VL)

### Input & Output Parameters

Vn: Voltage input	Vn rating range	V0 69.3V AC 45-86V AC	V1 120V AC 85-150V AC	V2 240V AC 180-300V AC	V3 415V AC 300-500V AC	On : Output		
						O1 0-20mA	O2 0-20mA	O3 (uni.) 4-20mA
An: Current input	An rating range	A1 1A 0-1.2A	A2 5A 0-6A			O4 4-12-20mA	O5 0-10mA	O6 0-1V
						O7 0-5V	O8 0-10V	O9 2-10V
Fn: Frequency input	Fn rating range	F1 50Hz 48-52Hz	F2 60Hz 58-62Hz			O10 (uni.) 1-5V	O11 (bi.) 1-3-5V	
Pn: Auxiliary power input	Pn rating	P1 120V AC	P2 240V AC	P3 415V AC	P4 30V DC	P5 110V DC		
Xn: Standard pulse output for uni-direction	Xn rating	X1 / X3 1 pulse / wh or varh		X2 / X4 10 pulse / wh or varh		X1, X2, Y1, Y2 : open collector type X3, X4, Y3, Y4 : reed relay type		
Yn: Optional pulse output for bi-direction	Yn rating	Y1 / Y3 1 pulse / wh or varh		Y2 / Y4 10 pulse / wh or varh				

- Note:**
1. uni. = uni-direction = 0 to +span  
Example: 4-20mA = 0 to +1000W  
bi. = bi-direction = -span to 0 to +span  
4-12-20mA = -1000W to 0 to +1000W
  2. For uni-directional transducers watts for forward power and vars for lagging power
  3. For internal powered type .... zero based outputs and Vn operation range 85% ~115%

# RUDOLF™ Transducer

## Watt/Watthour & Var/Varhour Transducer

### Specification

- Accuracy : 0.2% F.S. (23 ± 5°C)
- Temp. coefficient : 100ppm/°C (0-50°C)
- Input burden : ≤ 0.2VA (voltage)  
≤ 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 : ≤ 250ms (0-90%)
- Output ripple (p-p) : < 0.1% F.S.
- Output drive capability : ≤ 10mA for voltage mode  
≤ 10V for current mode
- Output of WH or VarH : Open collector type, max. 50V/30mA
- 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 50μs)
- 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 ± 20% (50/60Hz) ≤ 3.5VA (Optional DC 48V or DC 110V ± 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).

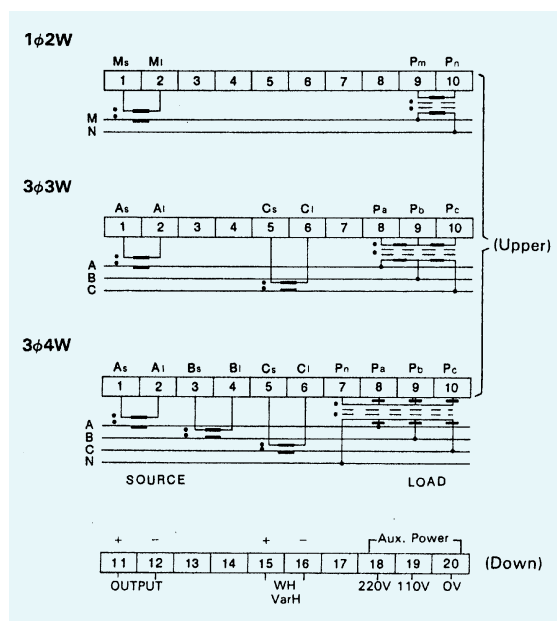
### Insulation

- 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 C37
- 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



### Dimension (unit: mm)

