General Specifications

MWT7
Power Transducer
(w/Integrated Pulse Output by option)

JUXTA

This plug-in type power transducer receives sensor signal from power line and outputs 4~20mA DC or 1~5V DC signal after making calculation of electric power.

Feature

- Compact type, high reliability by use of ASIC (PMC)
- Integrated pulse output can also be manufactured by option.
- Full scale power can be set through Handy Terminal

Application

- Cost control through integration of power dissipation separately by working process of factory and building equipment.

MWT7-□□□□-□□

Model

Phase & Wire Type
1: Single phase 2 wire type
2: Single phase 3 wire type
3: Three phase 3 wire type

Rated Input Voltage/Current
1: 110V/1A AC
2: 110V/5A AC
3: 220V/1A AC
4: 220V/5A AC

Output Signal
A: 4~20mA DC
Z: (Custom Order) Current signal (within 20mA)
6: 1~5V DC
0: (Custom Order) Voltage signal (within ±10V)

Integrated Pulse Output Signal (Open Collector)
1: No
2: 2.778Hz when 100% input
3: (Custom order) pulse specified by customer
(Output frequency range 0.00277~9.999Hz)

Power Supply
3: 24V DC±10%
4: 85~132V AC/85~150V DC
5: 170~264V AC

CT Protector
0: None
1: 1 ea. (for single phase 2 wire type)
2: 2 ea. (for singal phase 3 wire type or three phase 3 wire type)

ORDERING INFORMATION

- Model Code : (Example) MWT7-32A3-42
- Full Scale Power : (Example) 0~360kW
- PT, CT ratio: (Example) PT6600/110V CT30/5A
- Pulse Width : (Example) 50ms ON pulse
- In case Custom order for integrated pulse output signal, specify pulse unit (Example : 2kWh/pulse) or pulse constant (Example : 0.5 pulse/kWh) or frequency (0.05Hz)
- Specify primary side value of full scale power and pulse in case PT, CT are set

* Ordering items should be filled in Transducer Work Sheet ⑨.

Input & Output

Phase & wire type	Single phase 2 wire type Single phase 3 wire type Three phase 3 wire type
Input frequency	45~65Hz
Rated input voltage	110V AC, 220V AC(line voltage)
Input voltage permissible	1.2 times of rated voltage (continuous) 1.5 times (10 seconds)
Rated input current	1A AC, 5A AC
Input current permissible	1.2 times of rated current (continuous) 2 times (10 seconds) 10 times (3 seconds)

Input Measuring Range :

- Single phase 2 wire

Input (AC)		Manufacturable	Approx. Dissipating VA	
	Ref. FS	FS range	Voltage side	Current side
110V/1A	100W	(±) 50~(±) 120W	0.2	0.4
110V/5A	500W	(±)250~(±) 600W		
220V/1A	200W	(±)100~(±) 240W	0.4	0.4
220V/5A	1000W	(±)500~(±)1200W		

- Single phase 3 wire

Input (AC)		Manufacturable	Approx. Dissipating VA	
	Ref. FS	FS range	Voltage side	Current side
200V/1A	200W	(±)100~(±) 240W	0.4/phase	0.4/phase
200V/5A	1000W	(±)500~(±)1200W		

- Three phase 3 wire

Input (AC)		Manufacturable	Approx. Dissipating VA	
	Ref. FS	FS range	Voltage side	Current side
110V/1A	200W	(±)100 ~(±) 240W	0.2/phase	0.4/phase
110V/5A	1000W	(±)500 ~(±)1200W		
220V/1A	400W	(±)200 ~(±) 480W	0.4/phase	0.4/phase
220V/5A	2000W	(±)1000~(±)2400W		

(Note) FS = full scale

When outer set of PT and CT and if the value calculated by the formula below is in the input range of above list, the unit is manufacturable.

MWT7 Power Transducer input [W]
(Secondary side full scale power)

$$= \frac{\text{primary side full scale power (W)}}{\text{(PT ratio) x (CT ratio)}}$$

If full scale power is not specified, the unit will be shipped at standard full scale value.
Manufacturable full scale range means A value of
0~A(W) when - side
-A~+A(W) when ± side

Analog output	4~20mA DC or 1~5V DC
Load resistance permissible	0~750Ω (when 4~20mA DC output) Over 2KΩ (when 1~5V DC output)
Zero adjust range	±5% of span
Span adjust range	±5% of span

Integrated output signal : Open collector
Output frequency is 0Hz when either input is below 1W or full scale power is below 0.1%
(Output capacity) 30V DC, 200mA
(Output on time) Can specify within range of
10~1270ms (10ms interval)
50ms when not specified
(2.778Hz when 100% input)
(Example) When primary side full scale power is 0~360kW

$$\frac{2.778\ [Hz] \times 3600\ [s]}{360\ [kW]} = 27.78\ [pulse/kWh]$$

(Pulse specified by customer)
Pulse unit : indicates kWh for 1 pulse at primary side of PT·CT. For example, 10kWh/pulse means 10kWh power is used at primary side of PT·CT for 1 pulse.
Output frequency

$$= \frac{\text{primary side full scale power [kw]}}{\text{primary side pulse unit [kWh/pulse]} \times 3600\text{[s]}}$$

The unit is manufactuable within output frquency range of 0.002778~9.999Hz

Standard Performance

Accuracy rating: ±0.5% of span
However, ±1% of span in case span shows in the list below

Single phase 2 wire type

110V/1A	50W~ 80W
110V/5A	250W~400W
220V/1A	100W~160W
220V/5A	500W~800W

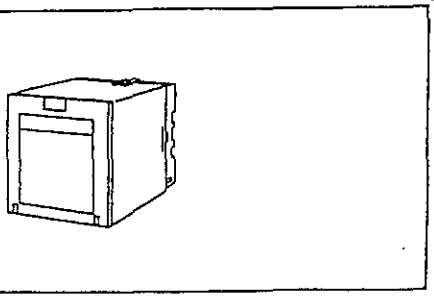
Single phase 3 wire type

200V/1A	100W~160W
200V/5A	500W~800W

3 phase 3 wire type

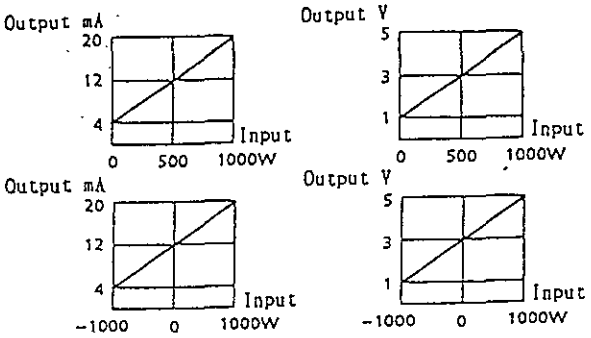
110V/1A	100W~ 160W
110V/5A	500W~ 800W
220V/1A	200W~ 320W
220V/5A	1000W~1600W

Response speed	99% response within 1s
Insulation resistance	More than 100MΩ (500V DC) between voltage input~current input~DC output~integrated pulse output~power supply~ground
Withstand voltage	2000V AC/minute between voltage input~current input~output~power supply~ground 500V AC/minute between DC output ~integrated pulse output
Impulse withstand voltage	5kV(1.2/50μs) between over-all input~output·ground
Temperature	0~50℃
Humidity	5~90% RH (non condensation)
Power voltage	24V DC±10%, 85~150V DC, 85~132V AC, 170~264V AC, 47~63Hz
Effect of power voltage fluctuation	Less than ±0.1% of span for fluctuation of power voltage
Effect of temperature change	Less than ±0.2% of span for change of 10℃
Effect of input frequency	Less than ±0.2% of span for 45~65Hz
Power dissipation	24V DC 94mA, 110V DC 18mA 100V AC 4VA, 200V AC 5.4VA

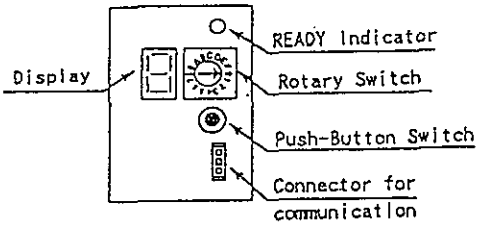


Mounting, Shape & Accessories	
Material	Case ABS plastic
Mounting method	Wall and DIN rail mountings (More than 5mm interval is required for access mounting)
Connecting method	M3.5 terminal screw
External dimension	85(H)x72(W)x132(D)mm (including socket)
Weight	Body : Abt. 300g, Socket : Abt. 110
Accessories	Tag Number Label.....2 Spacer..1 (Use for DIN rail mounting)

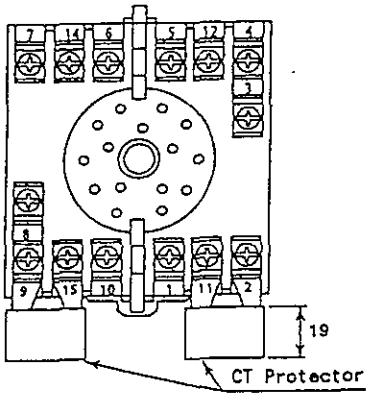
■ Relation between input-DC output (Example)



Adjustment through front switch
- Zero/span adjustment can be done through rotary switch and push button.
- Pulse constant can be setup through rotary switch, push button and display.



Terminal Arrangement

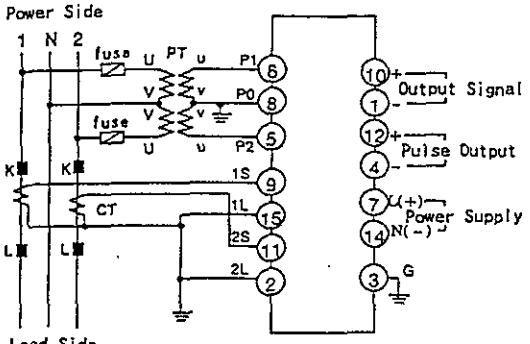


1	OUTPUT	(-)
2	INPUT	(3L)
3	GND	(G)
4	PULSE OUTPUT	(-)
5	INPUT	(P3)
6	INPUT	(P1)
7	SUPPLY	(L)
8	INPUT	(P2)
9	INPUT	(1S)
10	OUTPUT	(+)
11	INPUT	(3S)
12	PULSE OUTPUT	(+)
14	SUPPLY	(N)
16	INPUT	(1L)

CAUTION
Recommendable to set CT protector (CTP-5) on current input terminal connecting secondary side of CT. When removing transducer from socket without setting CT protector during power on, CT may be burned by inducement of high voltage on secondary side of CT.

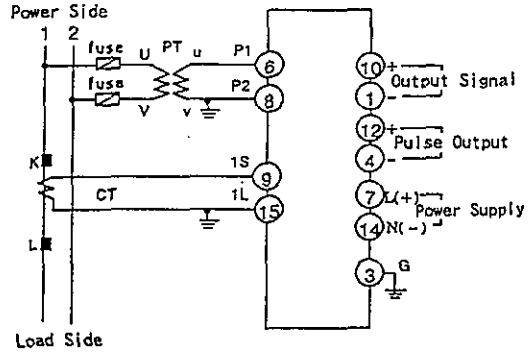
BLOCK DIAGRAM

Single Phase 3 Wire Type



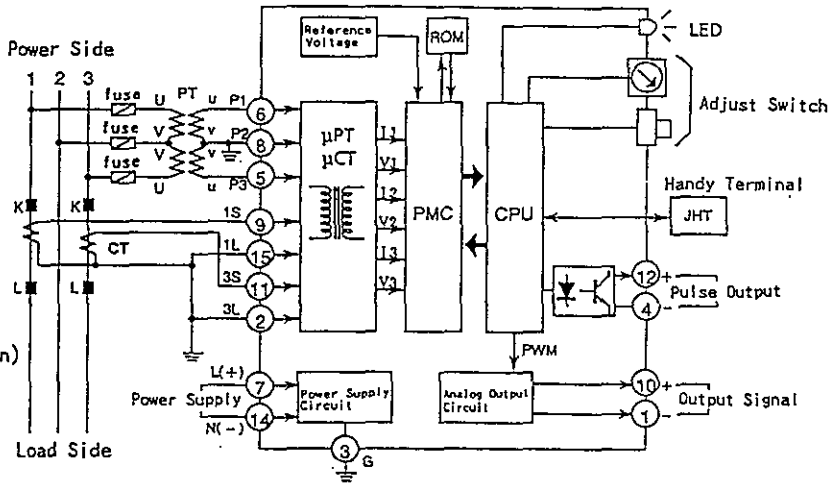
CAUTION : Put CT Protectors (CTP-5 option) between 9-15, 11-2 terminals

Single Phase 2 Wire Type



CAUTION : Put CT Protector (CTP-5 option) between 9-15 terminals

Three Phase 3 Wire Type



CAUTION : Put CT Protectors (CTP-5 option) between 9-15, 11-2 terminals

EXTERNAL DIMENSION

Unit : mm