Multi - function power METER

ISO 9001

UM-A	Multi - function Power Meter (Energy)
UM-B	Multi - function Power Meter (Demand)
UM-C	3 phase V/A Meter
UM-D	Multi - function Power Meter

Specifications

- ***Display:*** Red LED 0.56" high, 3 Display at 5 digs.
- ***Over range Indication:*** " o.L "
- ***Conversion Rate:*** 1/sec.
- ***Isolation:*** Input/Output/Power/Case
- ***Operating Temp.:*** 0~50℃/Below 95% R.H.
- ***Storage Temp.:*** -10~60℃/Below 95% R.H.
- ***Temp. Coefficient:*** ±0.1% F.S/℃
- ***CT, PT ratio:*** 1~9999
- ***Interface:*** RS-485 (Standard), or RS-232
- ***Power Supply:*** AC 90~260V, 50/60Hz
- ***Power Consumption:*** Approx. 7VA
- ***Dielectric Strength:*** DIN-IEC688, AC 2.3KV/1min, between terminal.
  AC 2.8KV/1 min, between terminal and case.
- ***Standards:*** IEC 61036 class 1, 61268 class 2, ANSI/IEEE C37.90
- ***Isolation Resistance:*** DC 500V, 100MΩ at above terminals
- ***Protection degree:*** Front side IP 54- Case IP20
- ***Dimensions:*** 144(W) x 144(H) x 120(D)mm
- ***Panel Cut - Out:*** 136(W) x 136(H)mm

Features

- Display of all the electric parameters V, A, W, Var, VA, PF, Hz, WH, VarH etc.
- A powerful Acquisition Instrument for up 34 Measurements.
- True RMS conversion.
- Maximum function.
- Field programmable PT and CT ratio.
- Memory for all setup and energy data.
- DIN case 144 x144mm
- Password Protected
  Prevents accidental adjustment
- Option:
  Neutral current be can indicated.
  2 channels digital input
  2 channels analog (4~20mA) input.
  2 channels relay output.
  Total harmonic distortion

Input

- ***Voltage:*** V1, V2, V3, Neutral
  (These are the 3phase Voltage and neutral)
  Range: $208V_{L-L}/120V_{L-N}$
  $416V_{L-L}/240V_{L-N}$
  $600V_{L-L}/347V_{L-N}$
  (with isolation transformer)
- ***Current:*** 1S,1L, 2S, 2L, 3S, 3L
  (These are the 3phase currents)
  Range: 0~1A, 0~5A
- ***Over load:*** Voltage...750V continuous
  1.25 x rated continuous
  Current...3 x rated continuous
  10 x rated for 10sec.
- ***Burden:*** ≦0.2VA per Voltage circuit
  ≦0.2VA per Current circuit
- ***Frequency:*** 45~65Hz
- ***DI input:*** Digital input 2 x point

Output

RS-485 Interface

- ***Address:*** 1 ~ 255
- ***Baudrate:*** 19200, 9600, 4800, 2400, 1200
- ***Protocol:*** Modbus RTU Mode
- ***Do output:*** Contact Capacity:
  AC 250V, 1A resistive load
  DC 30V, 2A resistive load

USM®

Power Meter UM serials

Measurement	Items	UM-A	UM-B	UM-C	UM-D
V_{L-N}	V1,V2,V3, VE	●	●	●	●
V_{L-L}	V12,V23,V13,VE	●	●	●	●
A	A1, A2, A3	●	●	●	●
W	W1,W2,W3, ΣW	●	●		●
Var	Var1, Var2, Var3, ΣVar	●	●		●
VA	VA1, VA2, VA3, ΣVA	●	●		●
PF	PF1, PF2, PF3, ΣPF	●	●		●
Hz		●	●		●
WH	ΣWH	●	●		
VarH	ΣVarH	●	●		
Demand (Max.)	A, VA, W, Var (1~60min free setting)		●		
Total harmonic	A, V (Up to 31th harmonic)		●		
RS-485		●	●	●	

Programmable Measurement & Indicating

Items	L1	L2	L3	N phase	Total	Average	Accuracy(F.S)	Display (Max.)
V_{L-N}	V1	V2	V3			V_E	±0.25%(±0.2%)	9999V/KV
V_{L-L}	V12	V23	V13					
A	A1	A2	A3			A_E	±0.25%(±0.2%)	9999A/KA
W	W1	W2	W3		ΣW		±0.5%	±9999W/KW/MW
Var	Var1	Var2	Var3		ΣVar		±0.5%	±9999Var/Kvar/Mvar
VA	VA1	VA2	VA3		ΣVA		±0.5%	9999VA/KVA/MVA
PF	PF1	PF2	PF3		ΣPF		±0.5%	±0.999
WH					WH		±0.5%	9999999999WH/KWH/MWH
VarH					VarH		±0.5%	9999999999VarH/KvarH/MVarH
Hz							±0.1%	45.0~65.0Hz

Accuracy performance range
V : 10~100% PF : 0.5~±1.0
A : 5~100% Hz : 45~65Hz

Measurement range
V : 0~120%
A : 0~120%

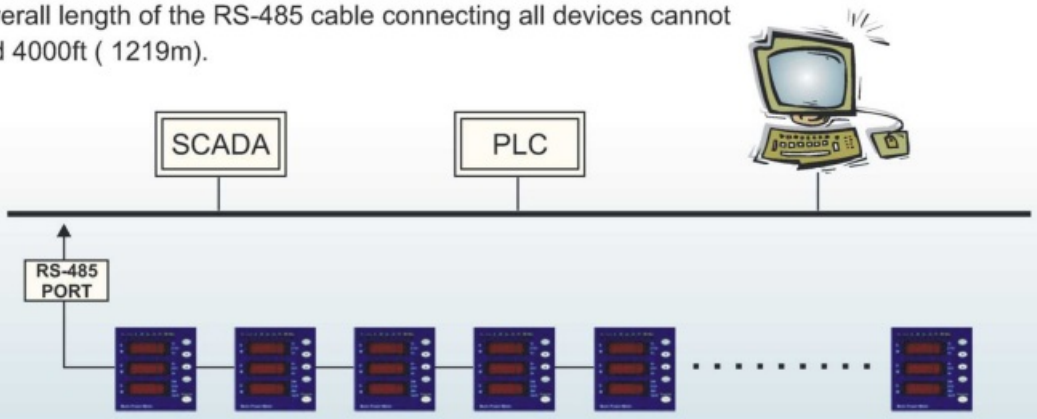
$V_E=(V_{12}+V_{23}+V_{13})/3$
$A_E=(A_1+A_2+A_3)/3$
$\Sigma W=W_1+W_2+W_3$

$\Sigma PF=\Sigma W/[V_1A_1+V_2A_2+V_3A_3]$
$\Sigma VAR=\sqrt{VA_1^2-W_1^2}+\sqrt{VA_2^2-W_2^2}+\sqrt{VA_3^2-W_3^2}$

RS-485 Communications

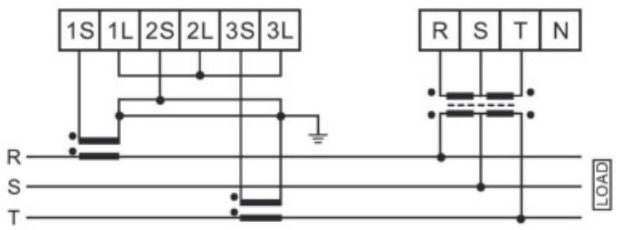
We use the most convenient and the easiest RS-485 as our standard output port, besides, we adopt Modbus RTU mode, one of the most popular protocol in the world, as our standard protocol.

RS-485 communications allows multiple devices to be connected on the same bus. Up to 30 devices can be connected on a single RS-485 bus, which consists of a shield twisted pair cable. The overall length of the RS-485 cable connecting all devices cannot exceed 4000ft (1219m).

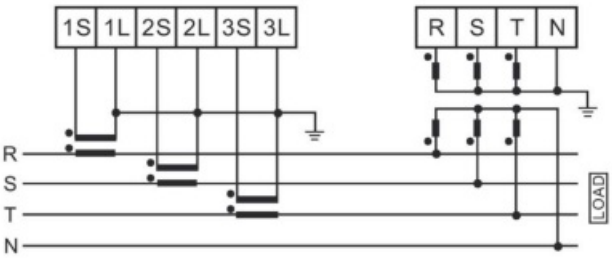


Example Connections

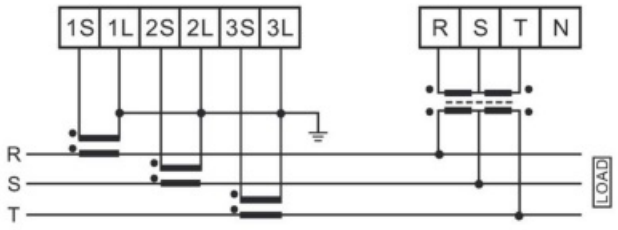
3phase 3wire (2CT. 2PT)



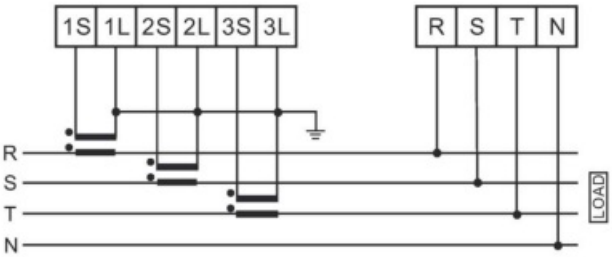
3phase 4wire (3CT. 3PT)



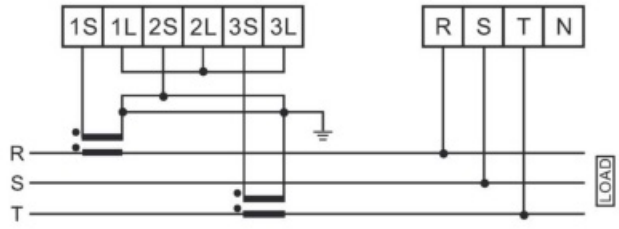
3phase 3wire (3CT. 2PT)



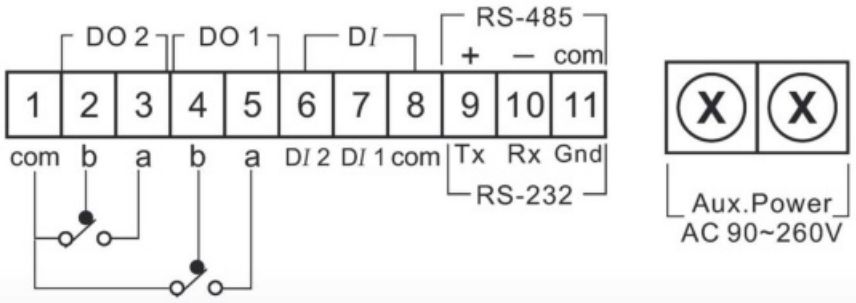
3phase 4wire (3CT. no PT)

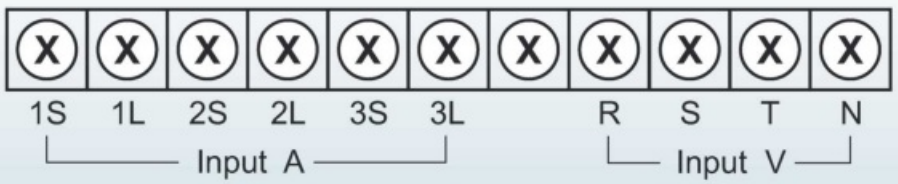


3phase 3wire (2CT. no PT)



Connection terminals





Multi - function power METER

Order Code

UM-A
UM-B
UM-C
UM-D

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Input ACV
1 : 208V_{L-L} / 120V_{L-N}
2 : 416V_{L-L} / 240V_{L-N}
3 : 600V_{L-L}/ 347V_{L-N}

Input ACA
1 : AC 5A
2 : AC 1A
Y : Option

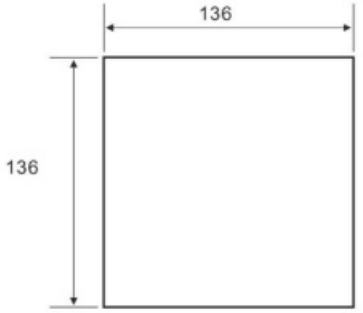
Interface
1 : RS-485(standard)
2 : RS-232

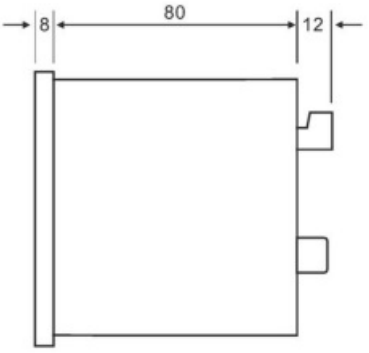
Power Supply
1 : AC 90~260V, 50/60Hz
2 : DC 24V
3 : DC 120V
4 : on request

Option
1 : 2 digital input
2 analog (4~20mA) input
2 : 2 Relay output
3 : Option 1+2
N : None

Dimensions (mm)

Panel Cut out





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