

MMA AC Current Digital Meter

AC&M

■ FEATURES

- Programmable CT ratio
 - Output: 0-20mA/4-20mA or 0-5V/1-5V/0-10V
 - RS 485 MODBUS RTU and 4 Alarm Setting Function
 - Small size (Depth< 90mm)
 - Selectable Sampling Speed: (High/Medium/Low)
- *Sampling speed is determined by the buffer size.
Buffer size=The number of measurements for RMS.



■ MMA Code1 - Code2 - Code3 - Code4 - Code5 R.M.S

MMAR Code1 - Code2 - Code3 - Code4 - Code5 T.R.M.S

Code 1	Input Current	Code 2	Alarm Setting	Code 3	Output 1	Code 4	Output 2	Code 5	Aux. Power
1	X / 5A	2	2 Alarm Setting	1	DC 0~10mA	6	RS 485	1	AC 110/220V
2	X / 1A	4	4 Alarm Setting	2	DC 0~20mA	0	None	2	AC 220V
3	0 ~ 10A	0	None	3	DC 4~20mA	Y	Other	3	DC 22~72V
Y	Other			4	DC 0~5V			6	AC/DC 85~265V
				5	DC 1~5V			Y	Other
				6	DC 0~10V				
				0	None				
				Y	Other				

SPECIFICATIONS:

INPUT:

Input Frequency : 45 ~ 70Hz.
Input Burden : 0.25VA at 60Hz.
Input Over : Normal AC 5A, Current Over 20A Continuous

OUTPUT & DISPLAY:

DC Current: 0 – 20 mA DC

Load resistance drive: output drive 10 VDC maximum

Output	Load Resistance
0 – 10 mA :	1000 Ω
0 – 20 mA :	500 Ω
4 – 20 mA :	500 Ω

DC Voltage: 0 – 10 V DC

Load resistance drive: output drive 5 mA maximum

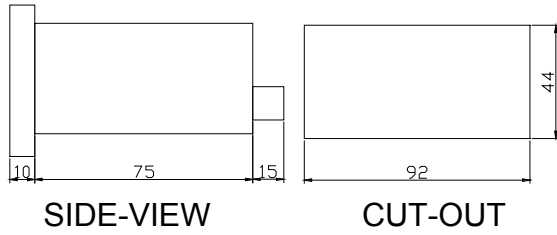
Output	Load Resistance
0 – 5 V :	1 KΩ
1 – 5 V :	1 KΩ
0 – 10 V :	2 KΩ

Output Response Time : ≤1 Sec. (programmable per 100ms/unit)
Output Protection : Without Damage for Output Open or Short Circuit.
Digital Output : RS-485 Output, 1200,2400,4800,9600,19200 Baud Rate, User Selectable.
Display Range : 0.56" High brightness RED LED , 5 Digits, -19999 ~ 99999Counts..

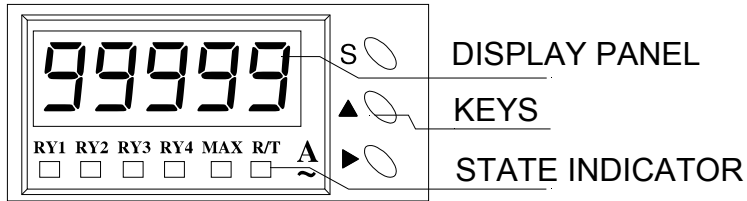
INSTALLATION & PERFORMANCE:

Accuracy : 0.15%FS+1 Counts. Avg. Typically at 23°C±3°C. 0.25%FS+1 Counts. TRMS Typically at 23°C±3°C.
Setting Function : 4 Alarm Setting, Setting Function(Hi or Lo) User Selectable.
Setting Range : -19999 ~ 99999 Counts User Selectable.
Dead Band : 0 ~ 9999 Counts User Selectable.
Time Delay : 0 ~ 999 Sec. User Selectable.
SPDT Capacity : AC 120V 3A,, DC 30V 3A.
Dielectric Strength : 2KV AC / Min Between Input / Power / Case.
Impulse : 5 KV 1.2x50 uS, ANSI C37.90a / 1983.DIN IEC 255 — 4.
Stability : ≤0.2%/Year.
Temperature Coefficient : ≤60ppm / °C From 0 ~ 60°C ; ≤50ppm/25°C ±5°C
Operating Condition : -10°C ~ +55°C 20 ~ 95% RH Non-Condensed.
Storage Condition : -40°C ~ +75°C 20 ~ 95% RH Non-Condensed.
Consumed Power : ≤3VA, PF = 1
Power Supply : AC or DC ±20%, 50 / 60Hz.
Outline Dimension : 1/8 DIN 96W X 48H X 100D mm.
Mounting : Panel Flush Mounting.

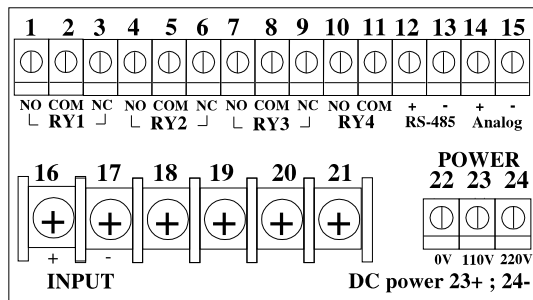
■ Dimension (mm)



■ Panel Keys



■ Connection Diagram



MMAZ Zero Phase AC Current Digital Meter

AC&M

■ FEATURES

- Programmable CT ratio
- High accuracy ZCT, with better linear.
- RS 485 MODBUS RTU
- 4 Alarm setting function
- Small size (Depth< 90mm)
- Selectable sampling speed: (High/Medium/Low)



*Sampling speed is determined by the buffer size.

Buffer size=The number of measurements for RMS

■ MMAZ - Code 1 - Code 2 - Code 3 - Code 4 - Code 5 - Code 6

Code 1	System Current	Code 2	Zero Phase Input	Code 3	Alarm Setting	Code 4	Output 1	Code 5	Output 2	Code 6	Aux. Power
1	5A	1	0.1A	2	2 Alarm	1	DC 0~10mA	6	RS 485	1	AC110/220V
2	1A	2	0.5A	4	4 Alarm	2	DC 0~20mA	0	None	2	AC 220V
		3	1A	0	None	3	DC 4~20mA	Y	Other	3	DC 22~72V
Y	Other	4	5A			4	DC 0~5V			6	AC/DC 85~265V
		Y	Other			5	DC 1~5V			Y	Other
						6	DC 0~10V				
						0	None				
						Y	Other				

SPECIFICATIONS:

INPUT:

Input Frequency : 45 ~ 70Hz.
 Input Burden : 0.25VA at 60Hz.
 Input Over : Normal AC 5A, Current Over 20A Continuous

OUTPUT & DISPLAY:

DC Current: 0 – 20 mA DC

Load resistance drive: output drive 10 VDC maximum

Output	Load Resistance
0 – 10 mA :	1000 Ω
0 – 20 mA :	500 Ω
4 – 20 mA :	500 Ω

DC Voltage: 0 – 10 V DC

Load resistance drive: output drive 5 mA maximum

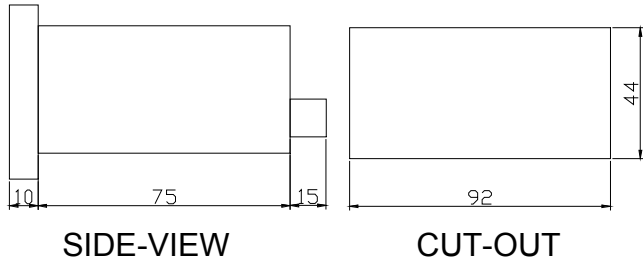
Output	Load Resistance
0 – 5 V :	1 KΩ
1 – 5 V :	1 KΩ
0 – 10 V :	2 KΩ

Output Response Time : ≤ 1 Sec. (programmable per 100ms/unit)
 Output Protection : Without Protection for Output Open or Short Circuit.
 Digital Output : RS-485 Output, 1200,2400,4800,9600,19200 Baud Rate, User Selectable.
 Display Range : 0.56" High brightness RED LED , 5 Digits, -19999 ~ 99999Counts..

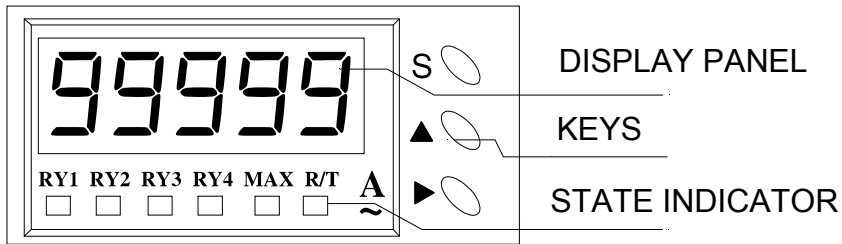
INSTALLATION & PERFORMANCE:

Accuracy : 0.15%FS+1 Counts. Avg. Typically at 23°C±3°C. 0.25%FS+1 Counts. TRMS Typically at 23°C±3°C.
 Setting Function : 4 Alarm Setting, Setting Function(Hi or Lo) User Selectable.
 Setting Range : -19999 ~ 99999 Counts User Selectable.
 Dead Band : 0 ~ 9999 Counts User Selectable.
 Time Delay : 0 ~ 999 Sec. User Selectable.
 SPDT Capacity : AC 120V 3A,, DC 30V 3A.
 Dielectric Strength : 2KV AC / Min Between Input / Power / Case.
 Impulse : 5 KV 1.2x50 uS, ANSI C37.90a / 1983.DIN IEC 255 — 4.
 Stability : ≤ 0.2%/Year.
 Temperature Coefficient : ≤ 60ppm / °C From 0 ~ 60°C ; ≤ 50ppm/25°C ±5°C
 Operating Condition : -10°C ~ +55°C 20 ~ 95% RH Non-Condensed.
 Storage Condition : -40°C ~ +75°C 20 ~ 95% RH Non-Condensed.
 Consumed Power : ≤ 3VA, PF = 1
 Power Supply : AC or DC ±20%, 50 / 60Hz.
 Outline Dimension : 1/8 DIN 96W X 48H X 100D mm.
 Mounting : Panel Flush Mounting.

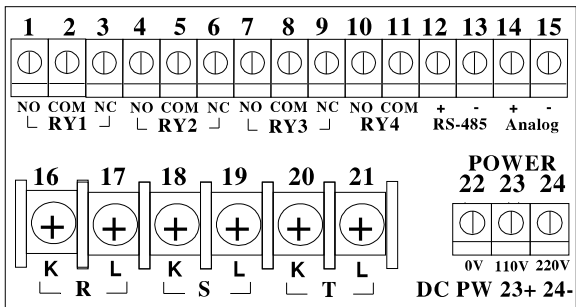
■ Dimension (mm)



■ Panel Keys



■ Connection Diagram



MMD DC Current, Voltage Digital Meter

AC&M

FEATURES

- Programmable for Output & Display
- RS 485 MODBUS RTU
- 2 or 4 Alarm Setting Function
- Small Size (Depth < 90mm)
- Selectable Sampling Speed: (High/Medium/Low)



*Sampling speed is determined by the buffer size.
Buffer size=The number of measurements for RMS.

MMD

Code 1 - Code 2 - Code 3 - Code 4 - Code 5

Code 1	Input Signal	Code 2	Alarm Setting	Code 3	Output 1	Code 4	Output 2	Code 5	Aux. Power
1	DC 0~2V	2	2 Alarm Setting	1	DC 0~10mA	6	RS 485	1	AC 110/220V
2	DC 0~20V	4	4 Alarm Setting	2	DC 0~20mA	0	None	2	AC 220V
3	DC 0~200V	0	None	3	DC 4~20mA	Y	Other	3	DC 22~72V
4	DC 0~600V			4	DC 0~5V			6	AC/DC85~265V
5	Shunt X / 50mV			5	DC 1~5V			Y	Other
6	Shunt X / 60mV			6	DC 0~10V				
7	DC 0~2A			0	None				
8	DC 0~10A			Y	Other				
Y	Other								

SPECIFICATIONS:

INPUT:

Input Impedance : Voltage Input $\geq 1M\Omega$, Current Input $\leq 75\Omega$.

OUTPUT:

DC Current: 0 – 20 mA DC

Load resistance drive: output drive 10 VDC maximum

DC Voltage: 0 – 10 V DC

Load resistance drive: output drive 5 mA maximum

Output	Load Resistance
0 – 10 mA :	1000 Ω
0 – 20 mA :	500 Ω
4 – 20 mA :	500 Ω

Output	Load Resistance
0 – 5 V :	1 K Ω
1 – 5 V :	1 K Ω
0 – 10 V :	2 K Ω

Output Response Time : ≤ 1 Sec. (programmable per 100ms/unit)

Output Protection : Without Damage for Output Open or Short Circuit.

Digital Output : RS-485 Output, 1200,2400,4800,9600,19200 Baud Rate, User Selectable.

Display Range : 0.56" High Brightness RED LED , 5 Digits, -19999 ~ 99999Counts

INSTALLATION & PERFORMANCE:

Accuracy : 0.1%FS + 2 Counts at 23 $^{\circ}$ C \pm 3 $^{\circ}$ C.

Setting Function : 4 Alarm Setting Function, Setting Function (Hi-Lo) User Selectable.

Setting Range : -19999 ~ 99999 Counts

Dead Band : 0 ~ 9999 Counts.

Time Delay : 0 ~ 999 Sec. User Selectable.

SPDT Capacity : AC 120V 3A , DC 30V 3A.

Dielectric Strength : 2KV AC / Min Between Input / Power / Case.

Impulse : 5 KV 1.2x50 uS, ANSI C37.90a / 1983.DIN IEC 255 – 4.

Stability : $\leq 0.2\%$ /Year.

Temperature Coefficient : ≤ 60 ppm / $^{\circ}$ C From 0 ~ 60 $^{\circ}$ C ; ≤ 50 ppm/25 $^{\circ}$ C $\pm 5^{\circ}$ C.

Operating Condition : -10 $^{\circ}$ C ~ +55 $^{\circ}$ C 20 ~ 95% RH Non-Condensed.

Storage Condition : -40 $^{\circ}$ C ~ +75 $^{\circ}$ C 20 ~ 95% RH Non-Condensed.

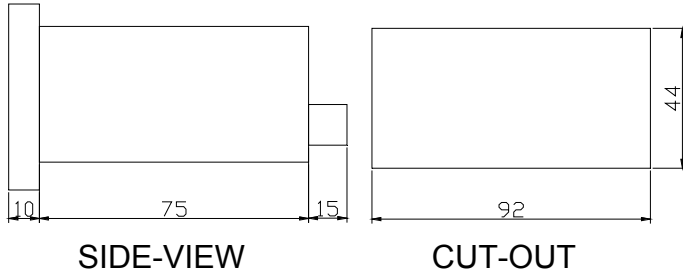
Power Supply : AC or DC $\pm 20\%$, 50 / 60Hz.

Consumed Power : ≤ 3 VA , PF = 1

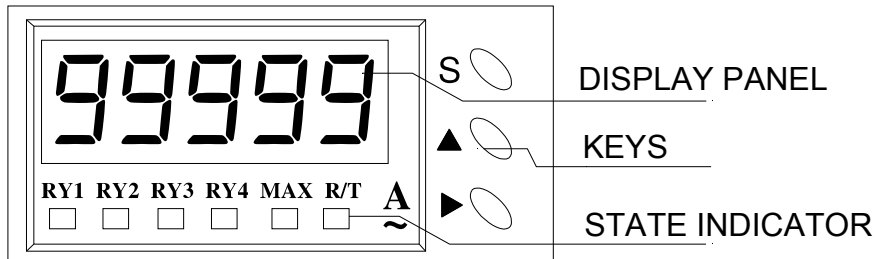
Outline Dimension : 1/8 DIN 96W X 48H X 100D mm.

Mounting : Panel Flush Mounting.

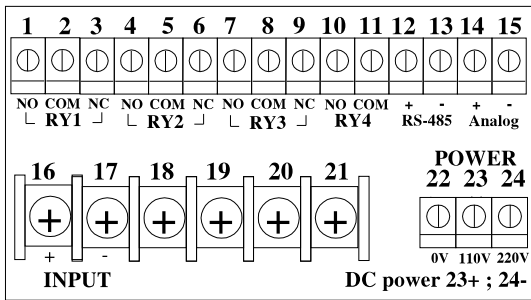
■ Dimension (mm)



■ Panel Keys



■ Connection Diagram



MMD DC Current, Voltage Digital Meter

AC&M

FEATURES

- Programmable for Output & Display
- RS 485 MODBUS RTU
- 2 or 4 Alarm Setting Function
- Small Size (Depth < 90mm)
- Selectable Sampling Speed: (High/Medium/Low)



*Sampling speed is determined by the buffer size.
Buffer size=The number of measurements for RMS.

MMD Code 1 - Code 2 - Code 3 - Code 4 - Code 5

Code 1	Input Signal	Code 2	Alarm Setting	Code 3	Output 1	Code 4	Output 2	Code 5	Aux. Power
1	DC 0~2V	2	2 Alarm Setting	1	DC 0~10mA	6	RS 485	1	AC 110/220V
2	DC 0~20V	4	4 Alarm Setting	2	DC 0~20mA	0	None	2	AC 220V
3	DC 0~200V	0	None	3	DC 4~20mA	Y	Other	3	DC 22~72V
4	DC 0~600V			4	DC 0~5V			6	AC/DC85~265V
5	Shunt X / 50mV			5	DC 1~5V			Y	Other
6	Shunt X / 60mV			6	DC 0~10V				
7	DC 0~2A			0	None				
8	DC 0~10A			Y	Other				
Y	Other								

SPECIFICATIONS:

INPUT:

Input Impedance : Voltage Input $\geq 1M\Omega$, Current Input $\leq 75\Omega$.

OUTPUT:

DC Current: 0 – 20 mA DC

Load resistance drive: output drive 10 VDC maximum

Output	Load Resistance
0 – 10 mA :	1000 Ω
0 – 20 mA :	500 Ω
4 – 20 mA :	500 Ω

DC Voltage: 0 – 10 V DC

Load resistance drive: output drive 5 mA maximum

Output	Load Resistance
0 – 5 V :	1 K Ω
1 – 5 V :	1 K Ω
0 – 10 V :	2 K Ω

Output Response Time : ≤ 1 Sec. (programmable per 100ms/unit)

Output Protection : Without Damage for Output Open or Short Circuit.

Digital Output : RS-485 Output, 1200,2400,4800,9600,19200 Baud Rate, User Selectable.

Display Range : 0.56" High Brightness RED LED , 5 Digits, -19999 ~ 99999Counts

INSTALLATION & PERFORMANCE:

Accuracy : 0.1%FS + 2 Counts at 23 $^{\circ}$ C \pm 3 $^{\circ}$ C.

Setting Function : 4 Alarm Setting Function, Setting Function (Hi-Lo) User Selectable.

Setting Range : -19999 ~ 99999 Counts

Dead Band : 0 ~ 9999 Counts.

Time Delay : 0 ~ 999 Sec. User Selectable.

SPDT Capacity : AC 120V 3A , DC 30V 3A.

Dielectric Strength : 2KV AC / Min Between Input / Power / Case.

Impulse : 5 KV 1.2x50 uS, ANSI C37.90a / 1983.DIN IEC 255 – 4.

Stability : $\leq 0.2\%$ /Year.

Temperature Coefficient : ≤ 60 ppm / $^{\circ}$ C From 0 ~ 60 $^{\circ}$ C ; ≤ 50 ppm/25 $^{\circ}$ C $\pm 5^{\circ}$ C.

Operating Condition : -10 $^{\circ}$ C ~ +55 $^{\circ}$ C 20 ~ 95% RH Non-Condensed.

Storage Condition : -40 $^{\circ}$ C ~ +75 $^{\circ}$ C 20 ~ 95% RH Non-Condensed.

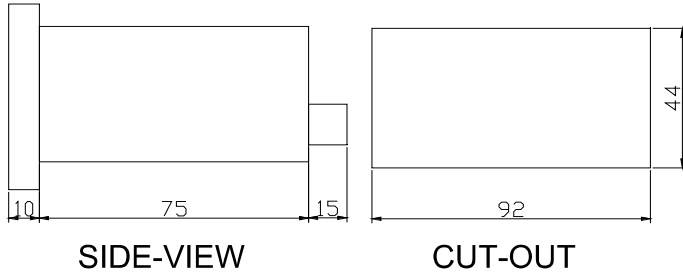
Power Supply : AC or DC $\pm 20\%$, 50 / 60Hz.

Consumed Power : ≤ 3 VA , PF = 1

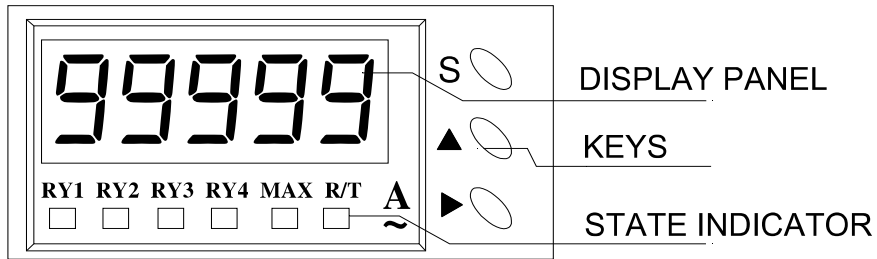
Outline Dimension : 1/8 DIN 96W X 48H X 100D mm.

Mounting : Panel Flush Mounting.

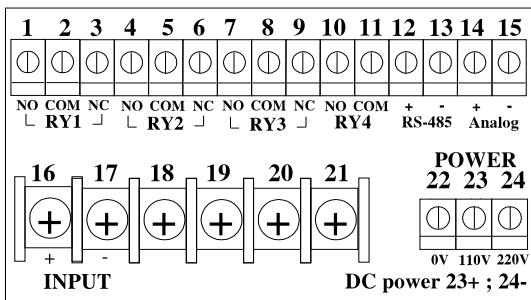
■ Dimension (mm)



■ Panel Keys



■ Connection Diagram



■ FEATURES

- Set as MASTER or SLAVE mode
- Suitable for Modbus RTU instruments
- Programmable address for data write and data read
- Data form: Unsigned Int / Signed Int
- Write data: 06H ; 16H
- Max. Baud rate: 38400
- Address: 1 ~ 255
- With analog output and alarm setting



MMG - Code 1 - Code 2 - Code 3 - Code 4

Code 1	Input Signal	Code 2	Alarm Setting	Code 3	Output	Code 4	Aux. Power
1	RS-485	2	2 Alarm Setting	1	DC 0~10mA	1	AC 110/220V
2	RS-232	4	4 Alarm Setting	2	DC 0~20mA	2	AC 220V
3	RS-485+232	0	None	3	DC 4~20mA	3	DC 22~72V
4	RS-422			4	DC 0~5V	6	AC/DC 85~265V
5	Ethernet			5	DC 1~5V	Y	Other
6	Other			6	DC 0~10V		
				0	None		
				Y	Other		

INPUT:

Display Range : 0.56" High brightness RED LED, 5 Digits. Unsigned Int: 0~65535 Counts. Signed Int: -32767~32767 Counts.
 Input Frequency : 45 ~ 400Hz.
 Response Time : ≤ 200 msec
 Mode : Master or Slave
 Communication Protocol : Modbus RTU
 Baud rate : 4800-9600-19200-38400 (programmable)
 Address : 1~255
 Parity Check : NONE-ODD-EVEN (programmable)
 Stop Bit : 1 or 2 (programmable)
 Data Bit : 8 bit
 Data Form : Unsigned Int / Signed Int
 Parity Check : NONE-ODD-EVEN (programmable)
 Stop Bit : 1 or 2 (programmable)

OUTPUT & DISPLAY:

DC Current: 0 – 20 mA DC

Load resistance drive: output drive 10 VDC maximum

Output	Load Resistance
0 – 10 mA :	1000 Ω
0 – 20 mA :	500 Ω
4 – 20 mA :	500 Ω

DC Voltage: 0 – 10 V DC

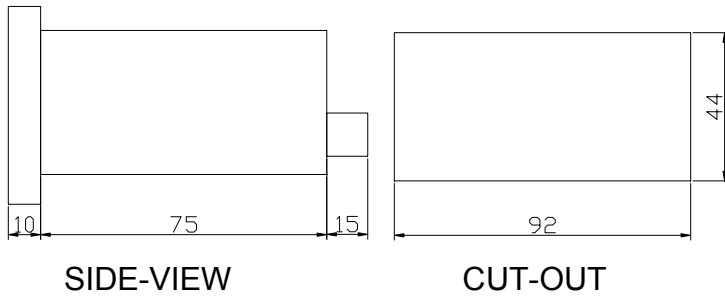
Load resistance drive: output drive 5 mA maximum

Output	Load Resistance
0 – 5 V :	1 KΩ
1 – 5 V :	1 KΩ
0 – 10 V :	2 KΩ

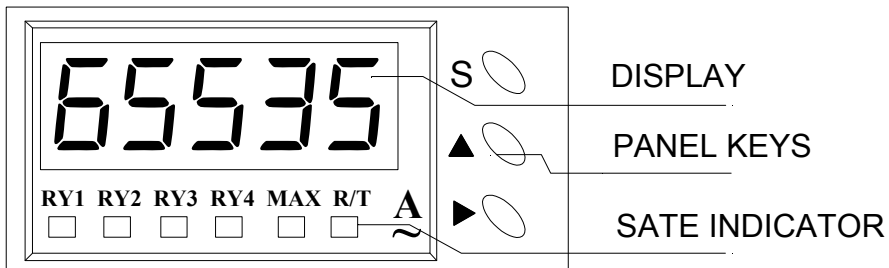
INSTALLATION & PERFORMANCE:

Alarm Setting : 2 or 4 Alarm Setting. Setting Function(Hi or Lo) User Selectable.
 Setting Range : -19999 ~ 99999 Counts User Selectable.
 Dead Band : 0 ~ 9999 Counts User Selectable.
 Time Delay : 0 ~ 999 Sec. User Selectable.
 SPDT Capacity : AC 120V 3A,, DC 30V 3A.
 Dielectric Strength : 2KV AC / Min Between Input / Power / Case.
 Operating Condition : -10°C ~ +55°C 20 ~ 95% RH Non-Condensed.
 Storage Condition : -40°C ~ +75°C 20 ~ 95% RH Non-Condensed.
 Consumed Power : ≤ 3VA, PF = 1
 Power Supply : AC or DC ±20%, 50 / 60Hz.
 Outline Dimension : 1/8 DIN 96W X 48H X 100D mm.
 Mounting : Panel Flush Mounting.

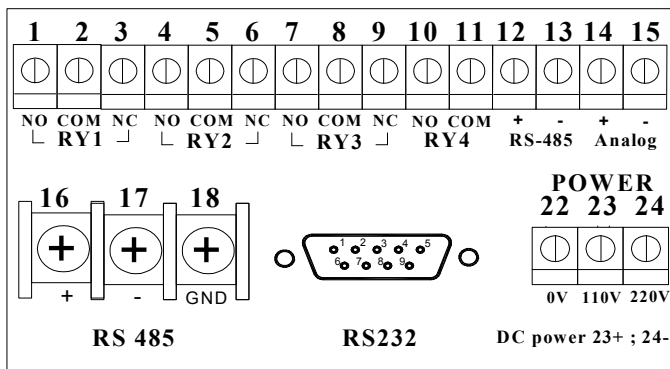
Dimension (mm)



■ Panel Keys

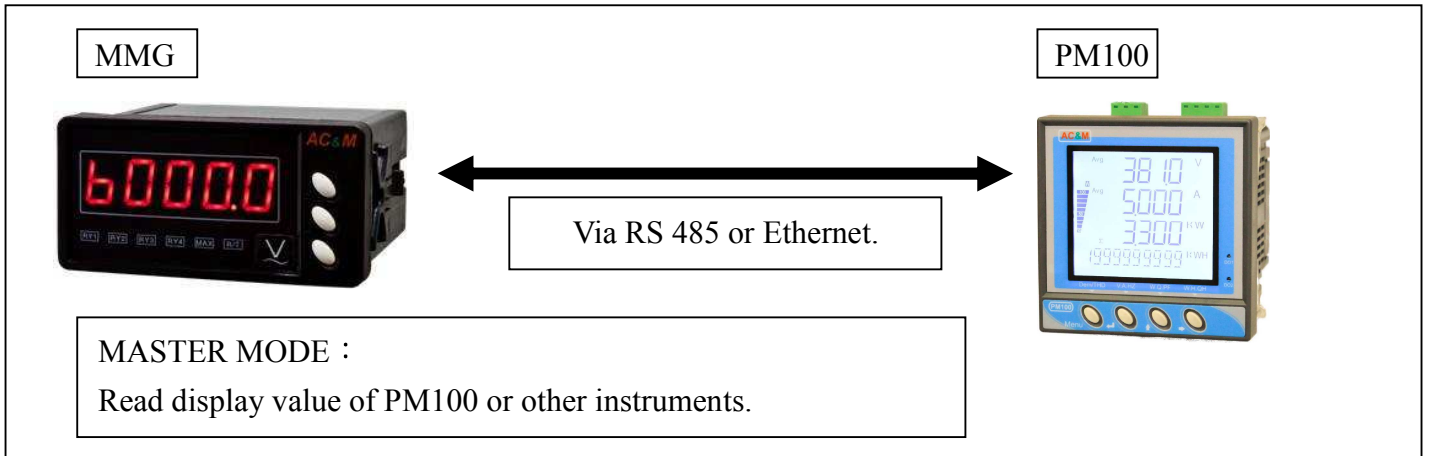


■ Connection Diagram

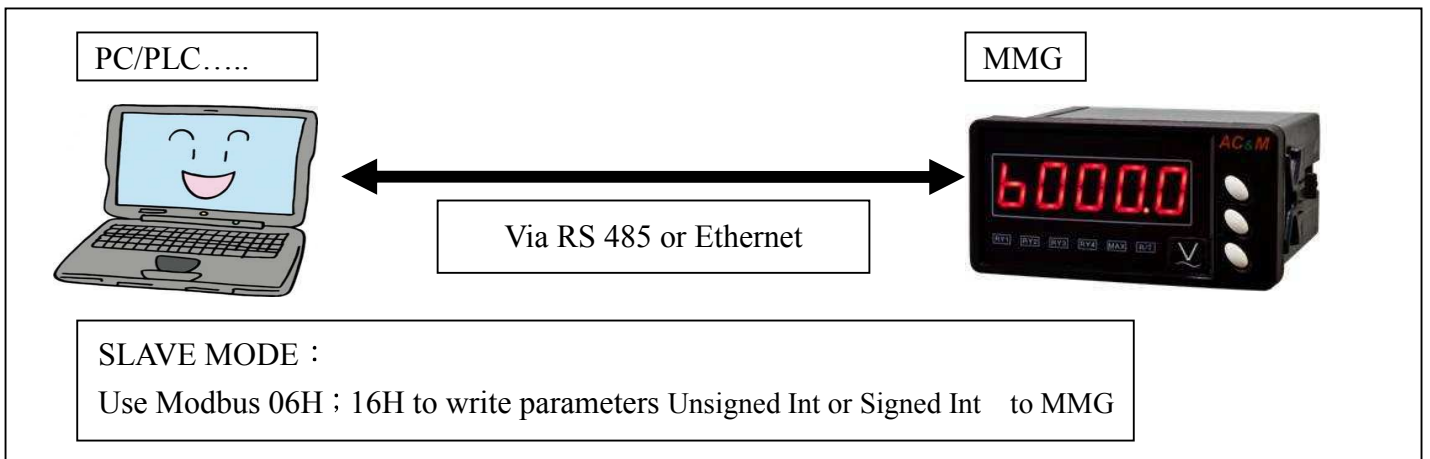


■ APPLICATION

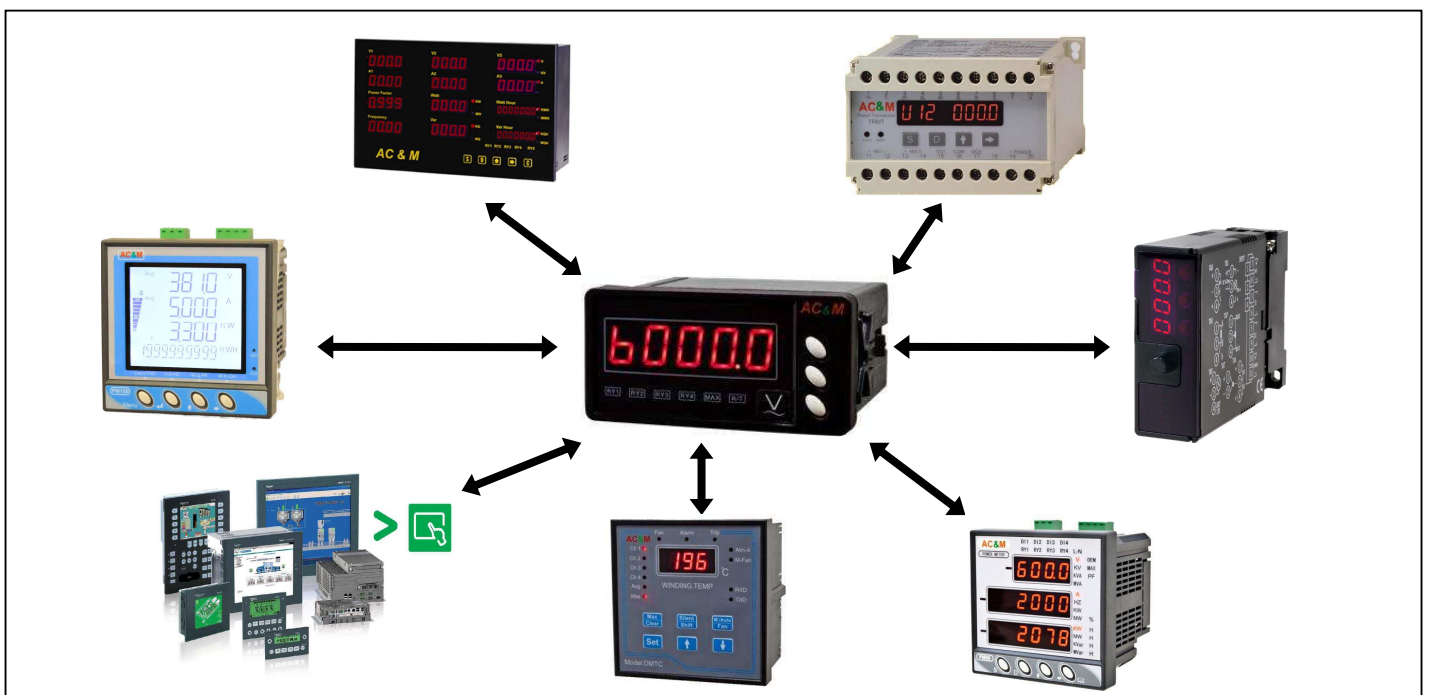
MASTER MODE



SLAVE MODE



ILLUSTRATION



FEATURES

- Suitable for 1 ϕ 2W / 1 ϕ 3W / 3 ϕ 3W / 3 ϕ 4W system
- Size: 96 W x 48 H x 100 D (mm)
- 8 digits display: ± 99999999 Count
- RS-485 Modbus RTU output
- Dual pulse output(Secondary value)
- Bi-direction measurement and display



FUNCTION SELECTION

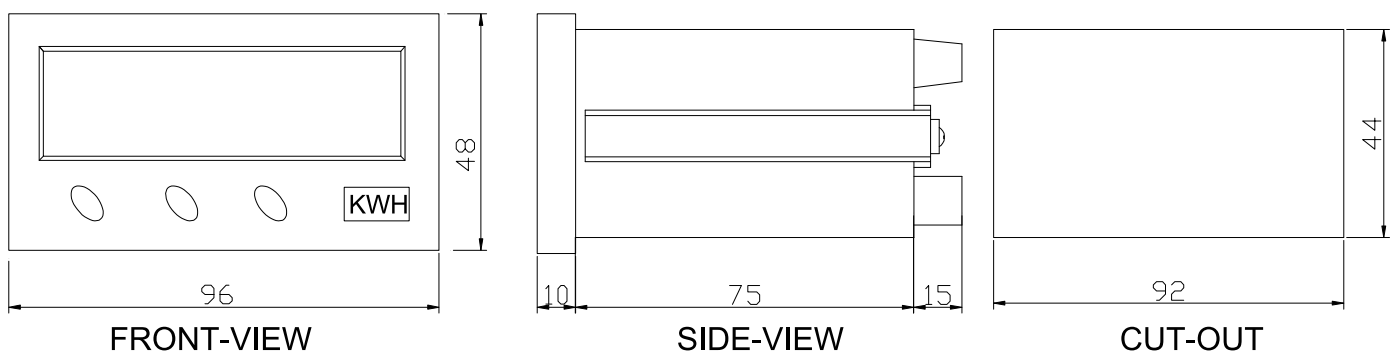
MMQH - code1 code2 code3 code4 code5 code6

CODE 1 INPUT VOLTAGE		CODE 2 INPUT CURRENT		CODE 3 INPUT FREQUENCY		CODE 4 OUTPUT 1		CODE 5 OUTPUT 2		CODE 6 AUX. POWER	
1	55-440V(L-L)	1	1A	1	50 HZ	1	Dual Pulse	1	RS-485	3	DC 22~72V
		2	5A	2	60 HZ				ModbusRTU	6	AC/DC85~265V
						0	None	0	None		
Y	Other	Y	Other	Y	Other	Y	Other	Y	Other	Y	Other

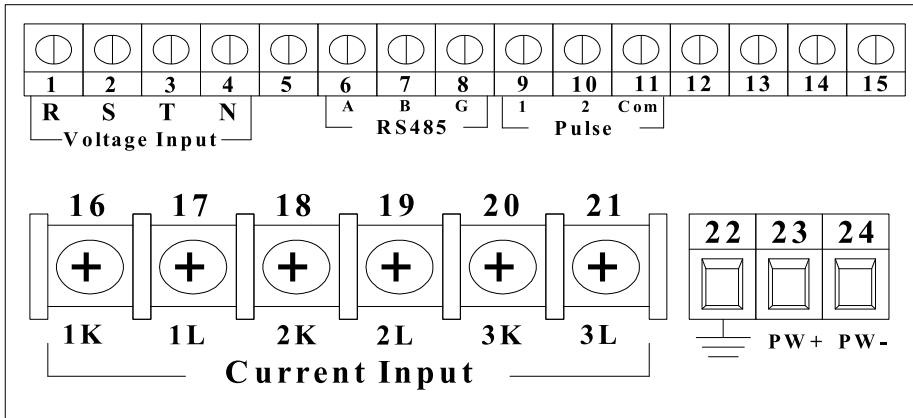
SPECIFICATIONS

Accuracy	: $\pm 0.5\%$ RD at 23°C $\pm 3^\circ\text{C}$.	Pulse output	: Dual pulse output Corresponding to +QH / -QH 1QH 1/10/100/0.1/0.01Pulse
Display Range	: 0.4" high brightness red LED 8 digits display: ± 99999999	Dielectric Strength	: 2.0KV 50/60HZ AC / Min Between Input / Power / Case.
Input Range	: Input 55~440V(L-L) (Max: 500V L-L) Normal Current 5A, Effective Range 0~6A. Normal Current 1A, Effective Range 0~1.5A.	Power Supply	: AC 85~265V 50 / 60Hz DC 100~300V
Input Frequency	: 45~70HZ	Dimension	: 96 W X 48 H X 100 D mm.
Input Over	: Normal AC 5A, Current Over 15A Continuous Normal AC 440V, Voltage Over 600V Continuous	Cut-out	: 92W x 44H < mm >
Digital Output Load	: RS-485 MODBUS RTU	Mounting	: Panel Flush Mounting
Baudrate	: 2400.4800.9600.19200.38400.57600	Housing Material	: ABS Plastic, Self-Extinguishing
		Operating Condition	: -10°C~55°C 20 ~ 95% RH Non-Condensed.
		Storage Condition	: -40°C~75°C 20 ~ 95% RH Non-Condensed.

SIZE (mm)

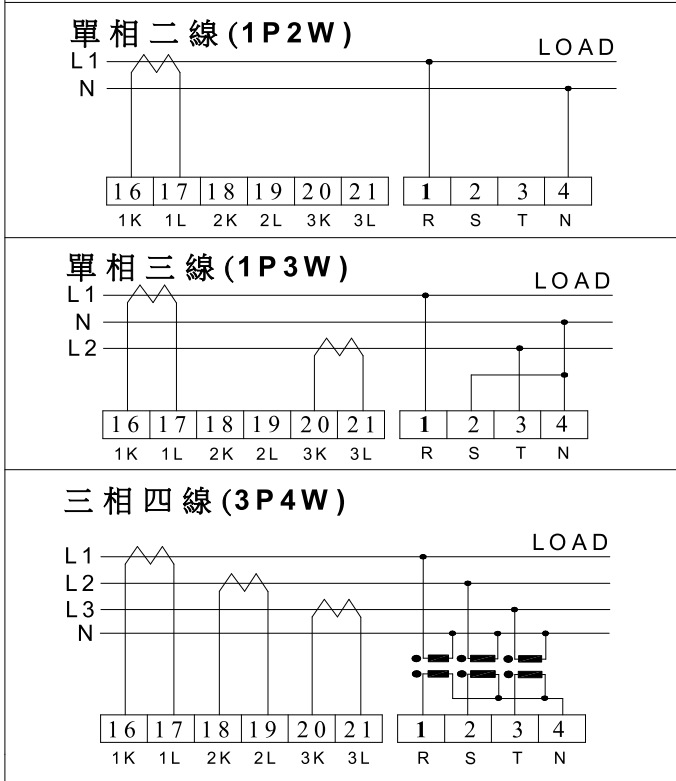


TERMINALS



CONNECTION DIAGRAM

INPUT Voltage and Current



Aux.power and Output Connetion



FEATURES

- Suitable for 1 ϕ 2W / 1 ϕ 3W / 3 ϕ 3W / 3 ϕ 4W system
- Size: 96 W x 48 H x 100 D (mm)
- 5 Digit display: -32768~32767 Count
- Optional RS-485 Modbus RTU
- Optional DC 4~20mA output
- Bi-direction measurement and display



FUNCTION SELECTION

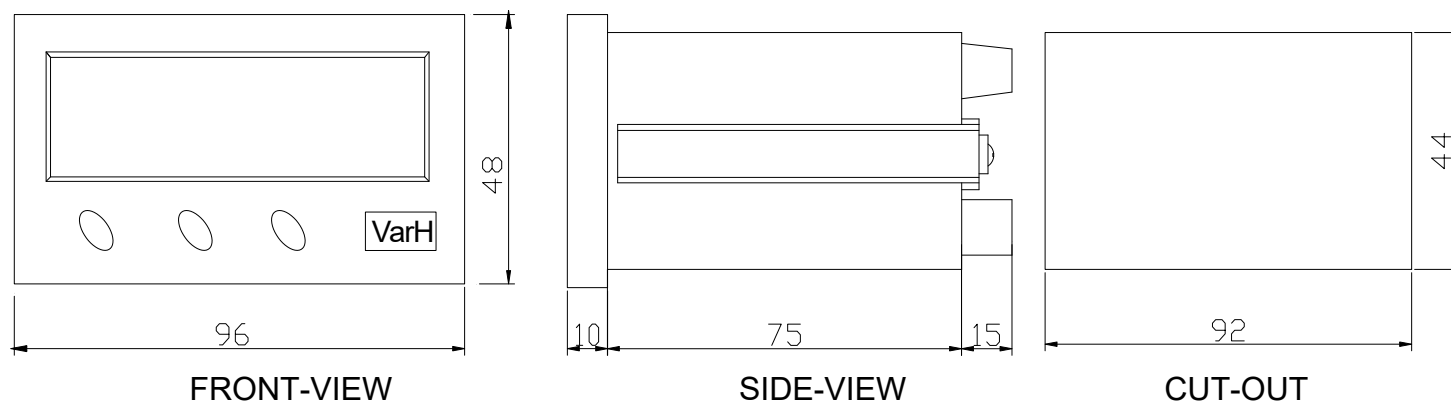
MMQ - code1 code2 code3 code4 code5 code6

CODE 1 INPUT VOLTAGE		CODE 2 INPUT CURRENT		CODE 3 INPUT FREQUENCY		CODE 4 OUTPUT 1		CODE 5 OUTPUT 2		CODE 6 AUX. POWER	
1	55-440V(L-L)	1	1A	1	50 HZ	1	2Alarm	1	RS-485	3	DC 22~72V
		2	5A	2	60 HZ	3	DC 4~20mA		ModbusRTU	6	AC/DC85~265V
						0	None	0	None		
Y	Other	Y	Other	Y	Other	Y	Other	Y	Other	Y	Other

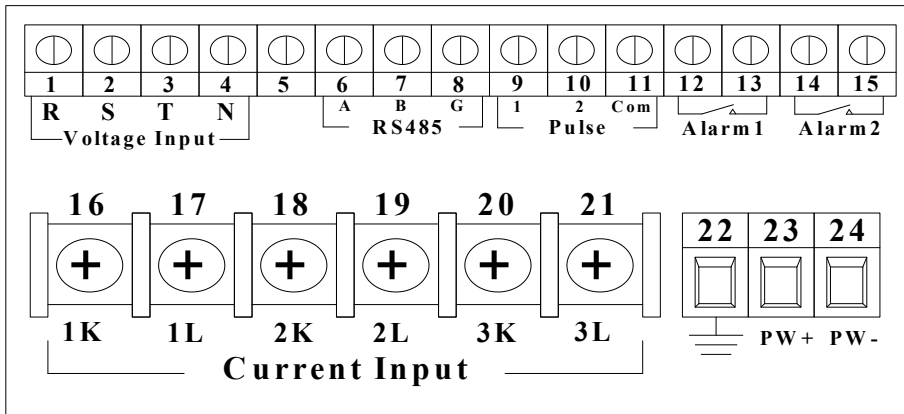
SPECIFICATIONS

Accuracy	: $\pm 0.5\%RD$ at 23°C $\pm 3^\circ C$	Output Function	: 4~20mA330 Ω at 20ma (Optional)
Display Range	: 0.4"High brightness red LED 5-digit -32768~32767	Alarm Function	: 2Alarm Setting (Optional)
Input Range	: Input 55~440V(L-L) (Max: 500V L-L) Normal Current 5A, Effective Range 0~6A Normal Current 1A, Effective Range 0~1.5A.	Dielectric Strength	: 2.0KV 50/60HZ AC / Min Between Input / Power / Case.
Input Burden	: Voltage0.25VA ; Current0.2VA@50/60Hz	Power Supply	: AC 85~265V 50 / 60Hz DC 100~300V
Input Frequency	: 45~70HZ	Dimension	: 96 W X 48 H X 100 D mm.
Input Over	: Normal AC 5A, Current Over 15A Continuous Normal AC 440V, Voltage Over 600V Continuous	Cut-out	: 92W x 44H < mm >
Digital Output Load	: RS-485 MODBUS RTU	Mounting	: Panel Flush Mounting
Baudrate	: 2400.4800.9600.19200.38400.57600	Housing Material	: ABS Plastic, Self-Extinguishing
Address	: 1~255	Operating Condition	: -10°C~55°C 20 ~ 95% RH Non-Condensed.
		Storage Condition	: -40°C~75°C 20 ~ 95% RH Non-Condense

SIZE (mm)

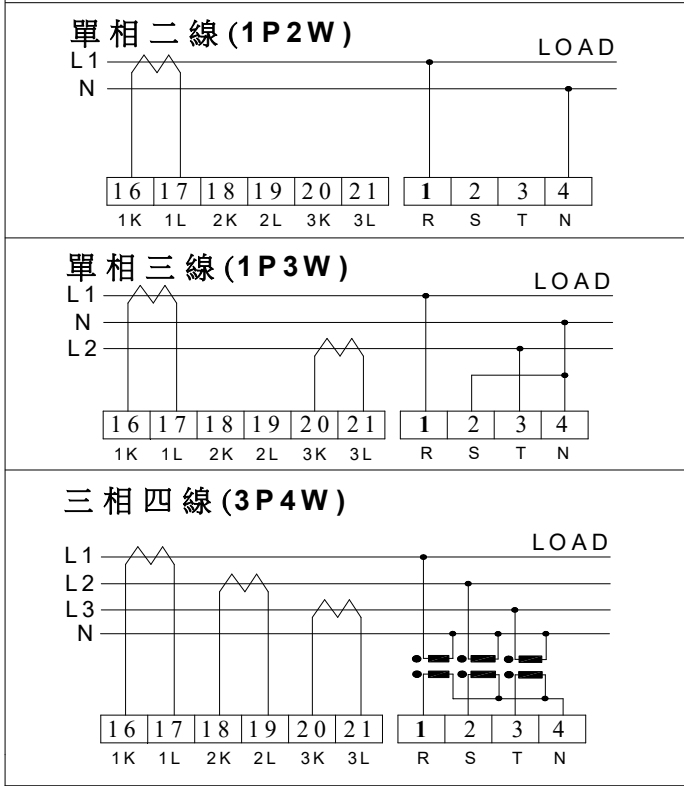


TERMINALS

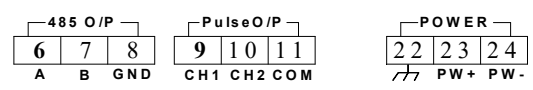


CONNECTION DIAGRAM

電壓及電流輸入 INPUT Voltage and Current



輔助電源 & 輸出



以上接線必須配合輸入模式設定

MMR RTD Temperature Digital Meter

AC&M

FEATURES

- Malfunction Indicator
- Protection to prevent high mA output.
- Output 0-20/4-20 or 0-5V/0-10V1-5V
- Display Max. Temperature.
- Switch °C / °F
- RS 485 MODBUS RTU
- 2 or 4 Alarm Setting Function
- Small Size (Depth< 90mm)



MMR Code1 - Code2 - Code3 - Code4 - Code5

Code 1	Input Signal	Code 2	Alarm Setting	Code 3	Output 1	Code 4	Output 2	Code 5	Aux. Power
1	PT100Ω -100~400°C / -150~800°F	2	2 Alarm Setting	1	DC 0~10mA	6	RS 485	1	AC 110/220V
2	CU10Ω -100~400°C / -150~800°F	4	4 Alarm Setting	2	DC 0~20mA	0	None	2	AC 220V
3	PT500Ω -100~400°C / -150~800°F	0	None	3	DC 4~20mA	Y	Other	3	DC 22~72V
4	NI1000 -100~400°C / -150~800°F			4	DC 0~5V			6	AC/DC85~265V
Y	Other			5	DC 1~5V			Y	Other
				6	DC 0~10V				
				0	None				
				Y	Other				

SPECIFICATIONS

INPUT:

Input Configuration : Three Wires Connection Compatible with Two Wires.

OUTPUT & DISPLAY:

DC Current: 0 – 20 mA DC

DC Voltage: 0 – 10 V DC

Load resistance drive: output drive 10 VDC maximum

Load resistance drive: output drive 5 mA maximum

Output	Load Resistance
0 – 10 mA :	1000 Ω
0 – 20 mA :	500 Ω
4 – 20 mA :	500 Ω

Output	Load Resistance
0 – 5 V :	1 KΩ
1 – 5 V :	1 KΩ
0 – 10 V :	2 KΩ

Output Response Time : ≤1 Sec.

Digital Output Load : RS-485 Output, 1200,2400,4800,9600,19200 Baud Rate, User Selectable.

Display Range : 0.56" High Brightness RED LED , 5 Digits, -19999 ~ 99999 Counts , Resolution 0.1°C.or °F

INSTALLATION & PERFORMANCE:

Accuracy : 0.15%FS + 0.3°C at 23°C±3°C.

Setting Function : 4 Alarm Setting Setting Function(Hi or Lo) User Selectable.

Setting Range : ±19999 Counts User Selectable.

Dead Band : 0 ~ 9999 Counts User Selectable.

Time Delay : 0 ~ 999 Sec. User Selectable.

SPDT Capacity : AC 120V 5A, 250V 3A, DC 24V 3A.

Dielectric Strength : 2KV AC / Min Between Input / Power / Case.

Impulse : 5 KV 1.2x50 uS, ANSI C37.90a / 1983.DIN IEC 255 – 4.

Stability : ≤0.2%/Year.

Temperature Coefficient : ≤60ppm / °C From 0 ~ 60°C ; ≤50ppm/25°C ±5°C.

Operating Condition : -10°C ~ +55°C 20 ~ 95% RH Non-Condensed.

Storage Condition : -40°C ~ +75°C 20 ~ 95% RH Non-Condensed.

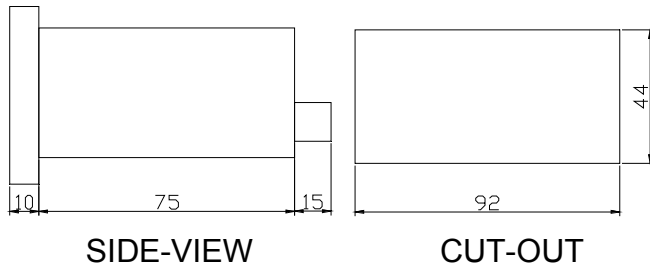
Power Supply : AC or DC ±20%, 50 / 60Hz.

Consumed Power : ≤3VA , PF = 1

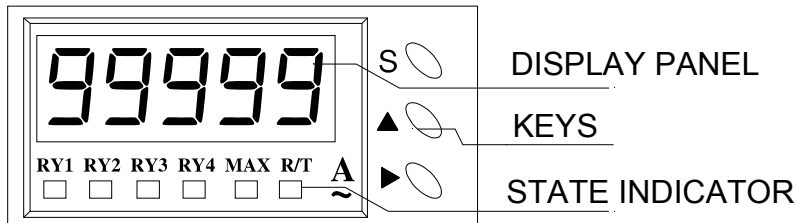
Outline Dimension : 1/8 DIN 96W X 48H X 100D mm.

Mounting : Panel Flush Mounting.

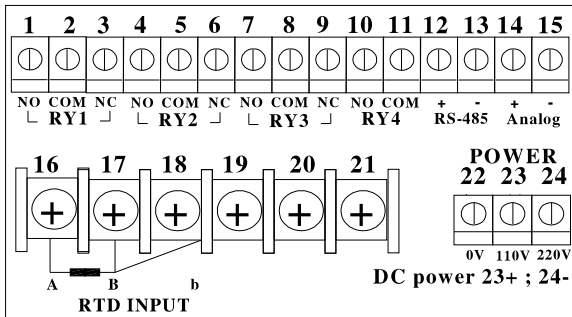
■ Dimension (mm)



■ Panel Keys



■ Connection Diagram



VER1.0 DATE:2011.9

MMS DC Rated & Setting Digital Meter

AC&M

FEATURES

- Input: DC0-5V/1-5V/0-10V/0-20ma/4-20ma
- 2Wire Input (Loop Power Ext: DC24V)
- RS 485 MODBUS RTU
- 2 or 4 Alarm Setting Function
- Small size (Depth<90mm)



MMS Code1 - Code1 - Code3 - Code4 - Code5

Code 1	Input Signal	Code 2	Alarm Setting	Code 3	Output 1	Code 4	Output 2	Code 5	Aux.Power
1	DC 0~10mA	2	2 Alarm Setting	1	DC 0~10mA	6	RS 485	1	AC 110/220V
2	DC 0~20mA	4	4 Alarm Setting	2	DC 0~20mA	0	None	2	AC 220V
3	DC 4~20mA 2Wire EXT:DC 24V	0	None	3	DC 4~20mA	Y	Other	3	DC 22~72V
4	DC 0~5V			4	DC 0~5V			6	AC/DC85~265V
5	DC 1~5V			5	DC 1~5V			Y	Other
6	DC 0~10V			6	DC 0~10V				
Y	Other			0	None				
				Y	Other				

SPECIFICATIONS:

INPUT:

Input Impedance : Voltage Input $\geq 30K\Omega$, Current Input $\leq 75\Omega$.

OUTPUT & DISPLAY:

DC Current: 0 – 20 mA DC

Load resistance drive: output drive 10 VDC maximum

Output	Load Resistance
0 – 10 mA :	1000 Ω
0 – 20 mA :	500 Ω
4 – 20 mA :	500 Ω

DC Voltage: 0 – 10 V DC

Load resistance drive: output drive 5 mA maximum

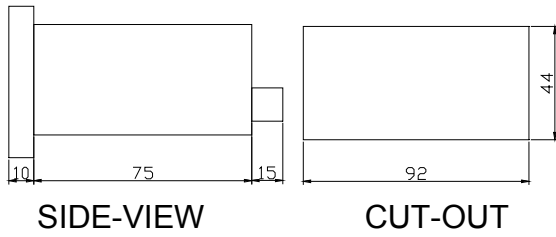
Output	Load Resistance
0 – 5 V :	1 k Ω
1 – 5 V :	1 K Ω
0 – 10 V :	2 k Ω

Output Response Time : ≤ 1 Sec. (programmable per 100ms/unit)
 Output Protection : Without Damage for Output Open or Short Circuit.
 Display Range : 0.56" High Brightness RED LED , 5 Digits, -19999 ~ 99999Counts
 Digital Output : RS-485 Output, 1200,2400,4800,9600,19200 Baud Rate, User Selectable.

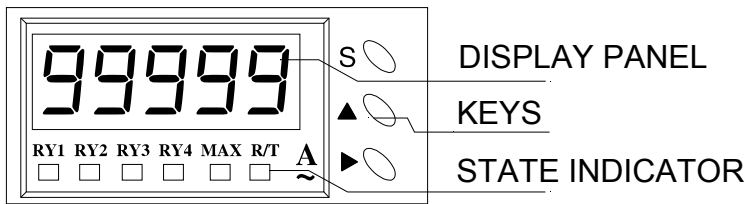
INSTALLATION & PERFORMANCE:

Accuracy : 0.05%FS + 2 Counts at 23 $^{\circ}$ C \pm 3 $^{\circ}$ C.
 Power Supply : Loop Power DC 24V \pm 10% ; \leq 30mA
 Short Circuit Current : \leq 30mA.
 Load Resistance : \leq 250 Ω .
 Input Resistance : Current Input $\leq 20\Omega$.
 Setting Function : 4 Alarm Setting, Setting Function(Hi or Lo) User Selectable.
 Setting Range : -19999 ~ 99999 Counts
 Dead Band : 0 ~ 9999 Counts User Selectable.
 Time Delay : 0 ~ 999 Sec. User Selectable.
 SPDT Capacity : AC 120V 3A , DC 30V 3A.
 Dielectric Strength : 2KV AC / Min Between Input / Power / Case.
 Impulse : 5 KV 1.2x50 uS, ANSI C37.90a / 1983.DIN IEC 255 — 4.
 Stability : \leq 0.2%/Year.
 Temperature Coefficient : \leq 60ppm / $^{\circ}$ C From 0 ~ 60 $^{\circ}$ C ; \leq 50ppm/25 $^{\circ}$ C \pm 5 $^{\circ}$ C
 Operating Condition : -10 $^{\circ}$ C ~ +55 $^{\circ}$ C 20 ~ 95% RH Non-Condensed.
 Storage Condition : -40 $^{\circ}$ C ~ +75 $^{\circ}$ C 20 ~ 95% RH Non-Condensed.
 Power Supply : AC or DC \pm 20%, 50 / 60Hz.
 Consumed Power : \leq 3VA , PF = 1
 Outline Dimension : 1/8 DIN 96W X 48H X 100D mm.
 Mounting : Panel Flush Mounting.

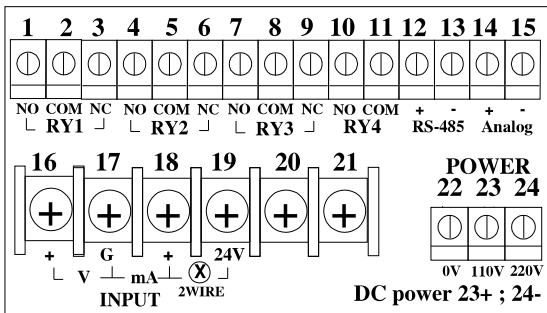
■ Dimension (mm)



■ Panel Keys



■ Connection Diagram



MMT Thermocouple Temperature Digital Meter

AC&M

■ FEATURES

- Selectable input type: K-E-J-T-R-S
- Malfunction Indicator
- Switch between °C / °F
- Display Max. Temperature
- Output protection: No output for wrong temperature.
- Output 0-20/4-20 or 0-5V/0-10V1-5V
- RS 485 MODBUS RTU
- 2 or 4 Alarm Setting Function
- Small Size (Depth< 90mm)



MMT

Code 1 - Code 2 - Code 3 - Code 4 - Code 5

Code 1	Input Signal	Code 2	Alarm Setting	Code 3	Output 1	Code 4	Output 2	Code 5	Aux. Power
K	K Type -270~1370°C/-520~2500°F	2	2 Alarm Setting	1	DC 0~10mA	6	RS 485	1	AC 110/220V
E	E Type -270~800°C/-520~1500°F	4	4 Alarm Setting	2	DC 0~20mA	0	None	2	AC 220V
J	J Type -210~760°C/-410~1300°F	0	None	3	DC 4~20mA	Y	Other	3	DC 22~72V
T	T Type -210~400°C/-410~760°F			4	DC 0~5V			6	AC/DC85~265V
R	R Type 0~1700°C/32~3100°F			5	DC 1~5V			Y	Other
S	S Type 0~1700°C/-32~3100°F			6	DC 0~10V				
				0	None				
				Y	Other				

SPECIFICATIONS:

INPUT:

Input Resistance : $\geq 20M\Omega$.

OUTPUT & DISPLAY:

DC Current: 0 – 20 mA DC

Load resistance drive: output drive 10 VDC maximum

Output	Load Resistance
0 – 10 mA :	1000 Ω
0 – 20 mA :	500 Ω
4 – 20 mA :	500 Ω

DC Voltage: 0 – 10 V DC

Load resistance drive: output drive 5 mA maximum

Output	Load Resistance
0 – 5 V :	1 K Ω
1 – 5 V :	1 K Ω
0 – 10 V :	2 K Ω

Output Response Time : ≤ 1 Sec.

Digital Output Load : RS-485 Output, 1200,2400,4800,9600,19200 Baud Rate, User Selectable.

Display Range : 0.56" High Brightness RED LED , 5 Digits, -19999 ~ 99999 Counts , Resolution 0.1°C.or °F.

INSTALLATION & PERFORMANCE:

Accuracy : 0.2%FS + 0.3°C at 23°C $\pm 3^\circ\text{C}$.

Break Detection : 19999 Flash.

CJC : $\leq 0.03^\circ\text{C}/^\circ\text{C}$, Within 0 ~ 40°C.

Setting Function : 4 Alarm Setting Setting Function(Hi or Lo) User Selectable

Setting Range : ± 19999 Counts User Selectable.

Dead Band : 0 ~ 9999 Counts User Selectable.

Time Delay : 0 ~ 999 Sec. User Selectable.

SPDT Capacity : AC 120V 5A, 250V 3A, DC 24V 3A.

Dielectric Strength : 2KV AC / Min Between Input / Power / Case.

Impulse : 5 KV 1.2x50 uS, ANSI C37.90a / 1983.DIN IEC 255 — 4

Stability : $\leq 0.2\%$ /Year.

Temperature Coefficient : $\leq 60\text{ppm}/^\circ\text{C}$ From 0 ~ 60°C ; $\leq 50\text{ppm}/25^\circ\text{C} \pm 5^\circ\text{C}$.

Operating Condition : -10°C ~ +55°C 20 ~ 95% RH Non-Condensed.

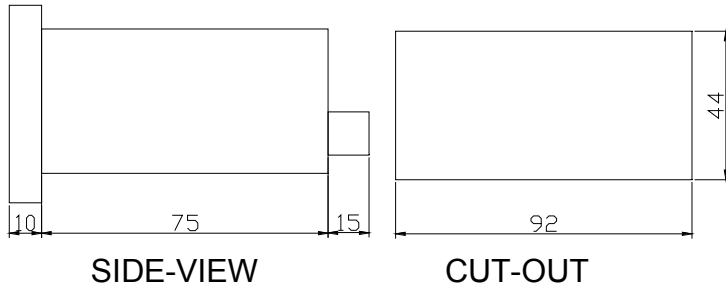
Storage Condition : -40°C ~ +75°C 20 ~ 95% RH Non-Condensed.

Power Supply : AC or DC $\pm 20\%$, 50 / 60Hz.

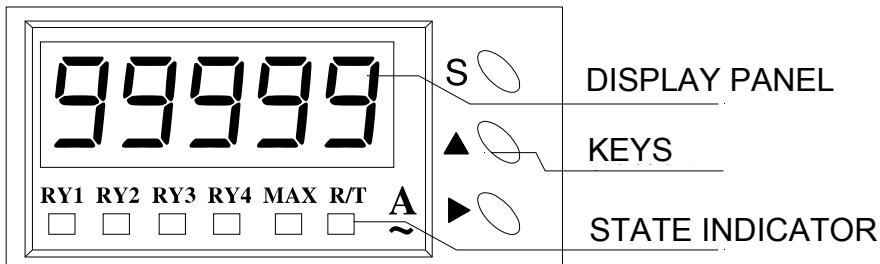
Outline Dimension : 1/8 DIN 96W X 48H X 110 D mm.

Mounting : Panel Flush Mounting.

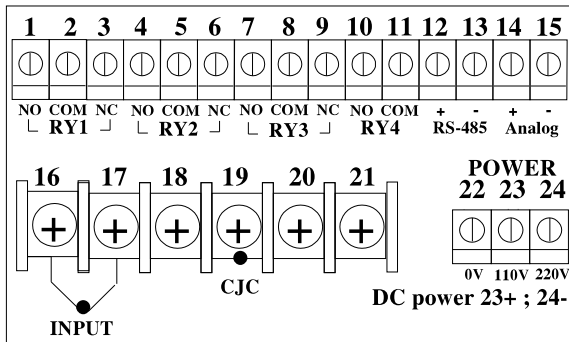
■ Dimension (mm)



■ Panel Keys



■ Connection Diagram



■ FEATURES

- Programmable PT ratio
- Output: 0-20mA/4-20mA or 0-5V/1-5V/0-10V
- RS 485 MODBUS RTU and 4 Alarm Setting Function
- Small size (Depth< 90mm)
- Selectable Sampling Speed: (High/Medium/Low)

*Sampling speed is determined by the buffer size.

Buffer size=The number of measurements for RMS.



MMV Code1 - Code2 - Code3 - Code4 - Code5 R.M.S

MMVR Code1 - Code2 - Code3 - Code4 - Code5 T.R.M.S

Code 1	Input Current	Code 2	Alarm Setting	Code 3	Output 1	Code 4	Output 2	Code 5	Aux. Power
1	AC 0-440V	2	2 Alarm Setting	1	DC 0~10mA	6	RS 485	1	AC 110/220V
		4	4 Alarm Setting	2	DC 0~20mA	0	None	2	AC 220V
Y	Other	0	None	3	DC 4~20mA	Y	Other	3	DC 22~72V
				4	DC 0~5V			6	AC/DC 85~265V
				5	DC 1~5V			Y	Other
				6	DC 0~10V				
				0	None				
				Y	Other				

SPECIFICATIONS:

INPUT:

- Input Frequency : 45 ~ 70Hz.
- Input Burden : 0.25VA at 60Hz.
- Input Over : Normal AC 440V(Max: AC 500V), Over voltage 600V Continuous. 1.2KV 10sec/Hr

OUTPUT & DISPLAY:

DC Current: 0 – 20 mA DC

Load resistance drive: output drive 10 VDC maximum

Output	Load Resistance
0 – 10 mA :	1000 Ω
0 – 20 mA :	500 Ω
4 – 20 mA :	500 Ω

DC Voltage: 0 – 10 V DC

Load resistance drive: output drive 5 mA maximum

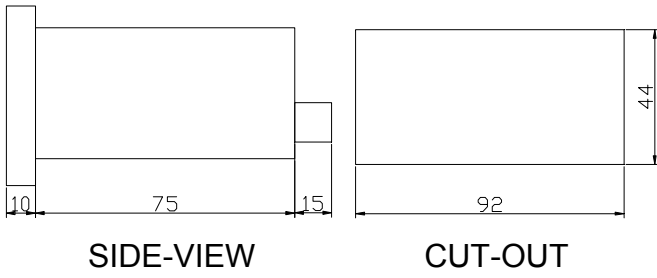
Output	Load Resistance
0 – 5 V :	1 KΩ
1 – 5 V :	1 KΩ
0 – 10 V :	2 KΩ

- Output Response Time : ≤1 Sec. (programmable per 100ms/unit)
- Output Protection : Without Damage for Output Open or Short Circuit.
- Digital Output : RS-485 Output, 1200,2400,4800,9600,19200 Baud Rate, User Selectable.
- Display Range : 0.56" High brightness RED LED , 5 Digits, -19999 ~ 99999Counts..

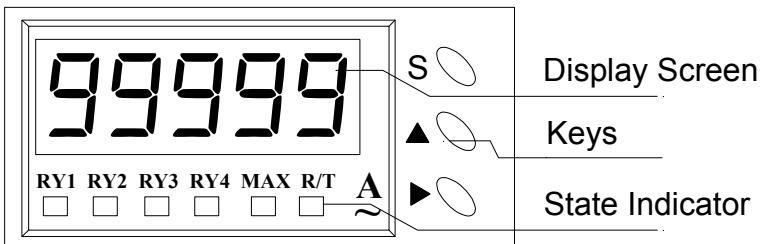
INSTALLATION & PERFORMANCE:

- Accuracy : 0.15%FS+1 Counts. Avg. Typically at 23°C±3°C. 0.25%FS+1 Counts. TRMS Typically at 23°C±3°C.
- Setting Function : 4 Alarm Setting, Setting Function(Hi or Lo) User Selectable.
- Setting Range : -19999 ~ 99999 Counts User Selectable.
- Dead Band : 0 ~ 9999 Counts User Selectable.
- Time Delay : 0 ~ 999 Sec. User Selectable.
- SPDT Capacity : AC 120V 3A,, DC 30V 3A.
- Dielectric Strength : 2KV AC / Min Between Input / Power / Case.
- Impulse : 5 KV 1.2x50 uS, ANSI C37.90a / 1983.DIN IEC 255 – 4.
- Stability : ≤0.2%/Year.
- Temperature Coefficient : ≤60ppm / °C From 0 ~ 60°C ; ≤50ppm/25°C ±5°C
- Operating Condition : -10°C ~ +55°C 20 ~ 95% RH Non-Condensed.
- Storage Condition : -40°C ~ +75°C 20 ~ 95% RH Non-Condensed.
- Consumed Power : ≤3VA , PF = 1
- Power Supply : AC or DC ±20%, 50 / 60Hz.
- Outline Dimension : 1/8 DIN 96W X 48H X 100D mm.
- Mounting : Panel Flush Mounting.

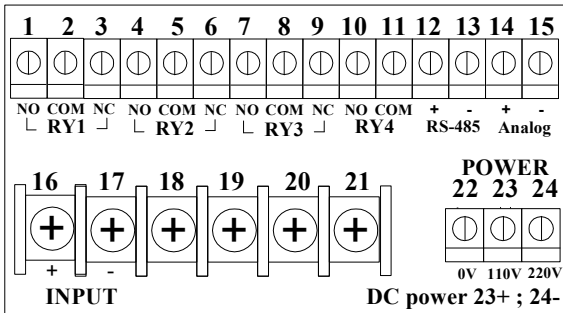
■ Dimension (mm)



■ Panel Keys



■ Connection Diagram



FEATURES

- Suitable for 1 ϕ 2W / 1 ϕ 3W / 3 ϕ 3W / 3 ϕ 4W system
- Size: 96 W x 48 H x 100 D (mm)
- 8 digits display: ± 99999999 Count
- RS-485 Modbus RTU output
- Dual pulse output(Secondary value)
- Bi-direction measurement and display



FUNCTION SELECTION

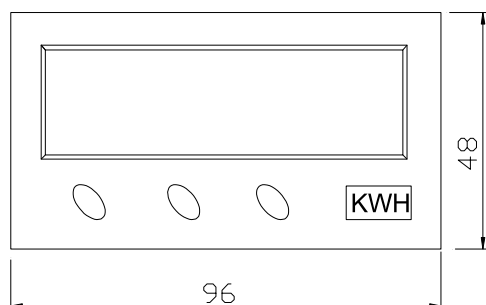
MMWH - code1 code2 code3 code4 code5 code6

CODE 1		CODE 2		CODE 3		CODE 4		CODE 5		CODE 6	
INPUT VOLTAGE		INPUT CURRENT		INPUT FREQUENCY		OUTPUT 1		OUTPUT 2		AUX. POWER	
1	55-440V(L-L)	1	1A	1	50 HZ	1	Dual Pulse	1	RS-485	3	DC 22~72V
		2	5A	2	60 HZ				ModbusRTU	6	AC/DC85~265V
						0	None	0	None		
Y	Other	Y	Other	Y	Other	Y	Other	Y	Other	Y	Other

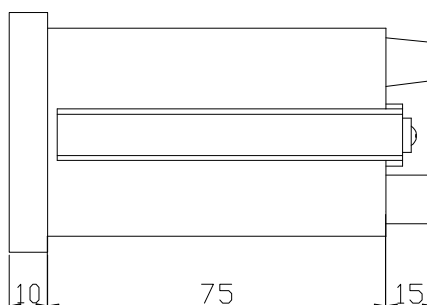
SPECIFICATIONS

Accuracy	: $\pm 0.5\%$ RD at 23°C $\pm 3^\circ\text{C}$.	Pulse output	: Dual pulse output Corresponding to +WH / -WH 1WH 1/10/100/0.1/0.01Pulse
Display Range	: 0.4" high brightness red LED 8 digits display: ± 99999999	Dielectric Strength	: 2.0KV 50/60HZ AC / Min Between Input / Power / Case.
Input Range	: Input 55~440V(L-L) (Max: 500V L-L) Normal Current 5A, Effective Range 0~6A. Normal Current 1A, Effective Range 0~1.5A.	Power Supply	: AC 85~265V 50 / 60Hz DC 100~300V
Input Frequency	: 45~70HZ	Dimension	: 96 W X 48 H X 100 D mm.
Input Over	: Normal AC 5A, Current Over 15A Continuous Normal AC 440V, Voltage Over 600V Continuous	Cut-out	: 92W x 44H < mm >
Digital Output Load	: RS-485 MODBUS RTU	Mounting	: Panel Flush Mounting
Baudrate	: 2400.4800.9600.19200.38400.57600	Housing Material	: ABS Plastic, Self-Extinguishing
Address	: 1~255	Operating Condition	: -10°C~55°C 20 ~ 95% RH Non-Condensed.
		Storage Condition	: -40°C~75°C 20 ~ 95% RH Non-Condensed.

SIZE (mm)



FRONT-VIEW

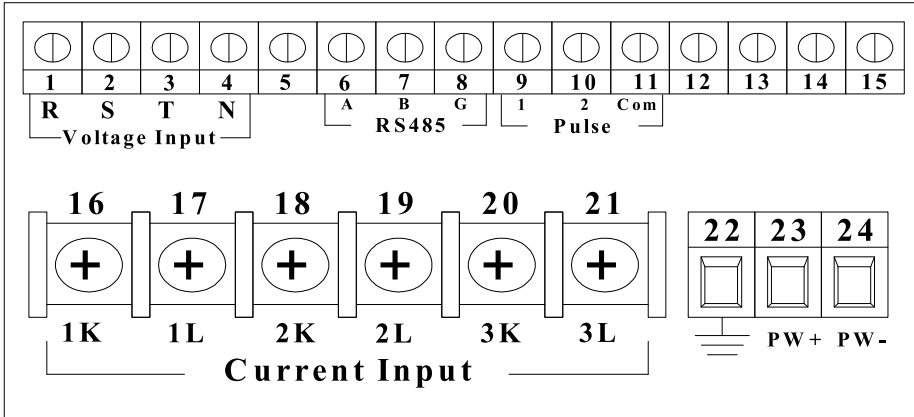


SIDE-VIEW

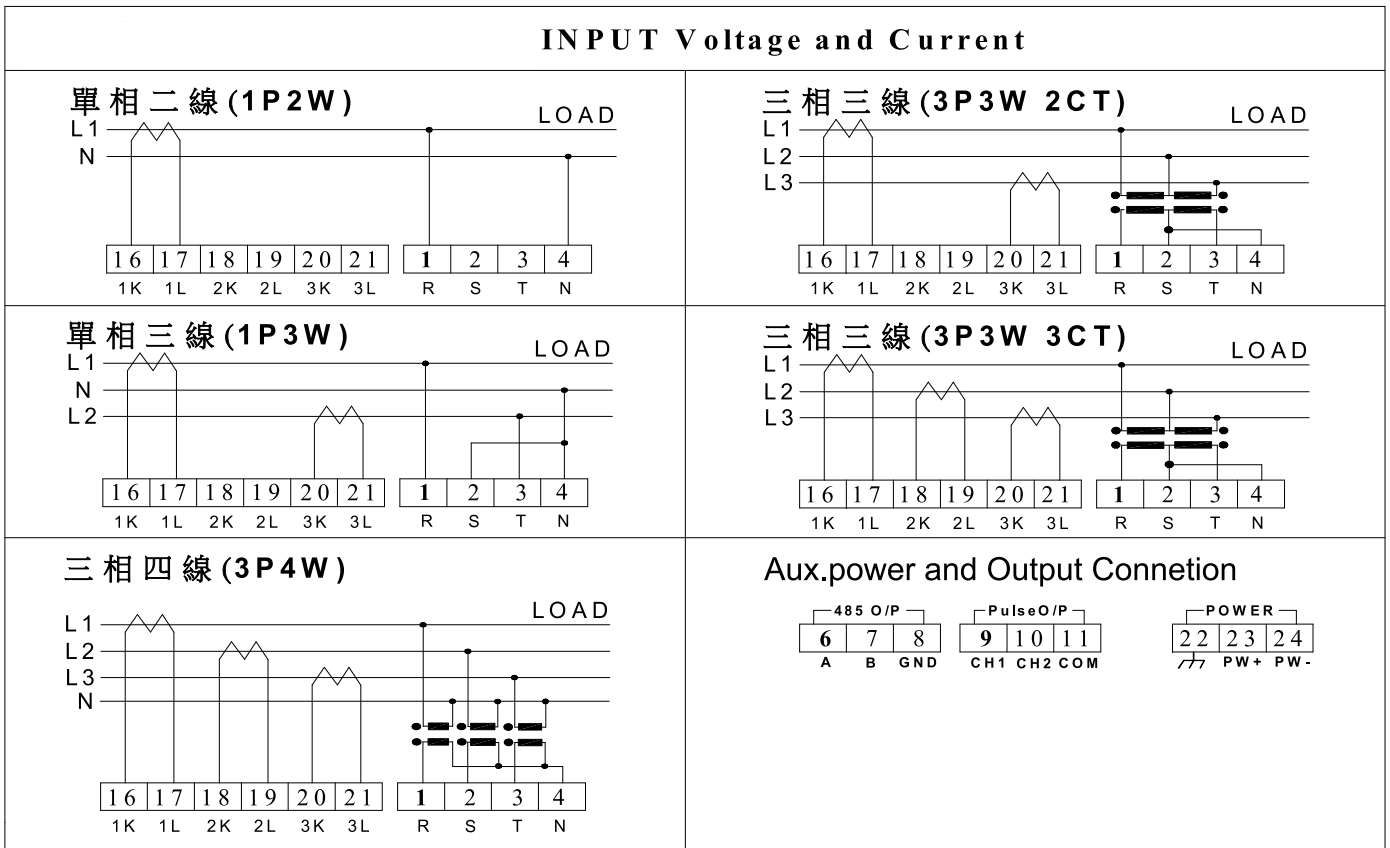


CUT-OUT

TERMINALS

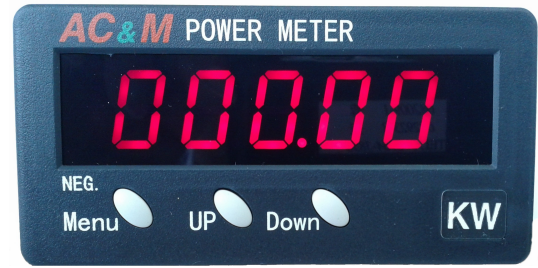


CONNECTION DIAGRAM



FEATURES

- Suitable for 1 ϕ 2W / 1 ϕ 3W / 3 ϕ 3W / 3 ϕ 4W system
- Size: 96 W x 48 H x 100 D (mm)
- 5 Digit display: -32768~32767 Count
- Optional RS-485 Modbus RTU
- Optional DC 4~20mA output
- Bi-direction measurement and display



FUNCTION SELECTION

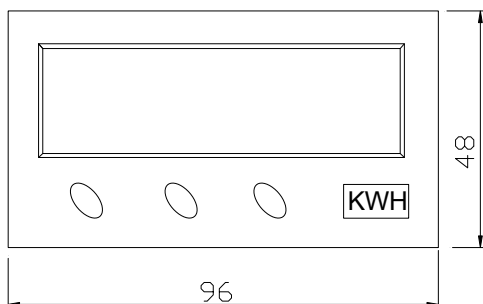
MMW - code1 code2 code3 code4 code5 code6

CODE 1 INPUT VOLTAGE		CODE 2 INPUT CURRENT		CODE 3 INPUT FREQUENCY		CODE 4 OUTPUT 1		CODE 5 OUTPUT 2		CODE 6 AUX. POWER	
1	55-440V(L-L)	1	1A	1	50 HZ	1	2 Alarm	1	RS-485	3	DC 22~72V
		2	5A	2	60 HZ	3	DC 4~20mA		ModbusRTU	6	AC/DC85~265V
						0	None	0	None		
Y	Other	Y	Other	Y	Other	Y	Other	Y	Other	Y	Other

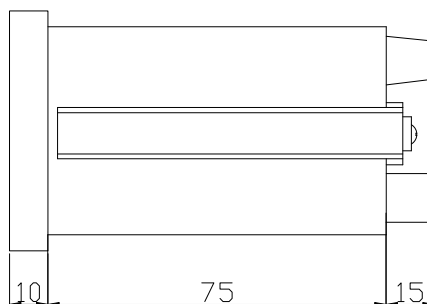
SPECIFICATIONS

Accuracy	: $\pm 0.5\%RD$ at 23°C $\pm 3^\circ C$	Output Function	: 4~20mA330 Ω at 20ma (Optional)
Display Range	: 0.4"High brightness red LED 5-digit -32768~32767	Alarm Function	: 2Alarm Setting (Optional)
Input Range	: Input 55~440V(L-L) (Max: 500V L-L) Normal Current 5A, Effective Range 0~6A Normal Current 1A, Effective Range 0~1.5A.	Dielectric Strength	: 2.0KV 50/60HZ AC / Min Between Input / Power / Case.
Input Burden	: Voltage0.25VA ; Current0.2VA@50/60Hz	Power Supply	: AC 85~265V 50 / 60Hz DC 100~300V
Input Frequency	: 45~70HZ	Dimension	: 96 W X 48 H X 100 D mm.
Input Over	: Normal AC 5A, Current Over 15A Continuous Normal AC 440V, Voltage Over 600V Continuous	Cut-out	: 92W x 44H < mm >
Digital Output Load	: RS-485 MODBUS RTU	Mounting	: Panel Flush Mounting
Baudrate	: 2400.4800.9600.19200.38400.57600	Housing Material	: ABS Plastic, Self-Extinguishing
Address	: 1~255	Operating Condition	: -10°C~55°C 20 ~ 95% RH Non-Condensed.
		Storage Condition	: -40°C~75°C 20 ~ 95% RH Non-Condense

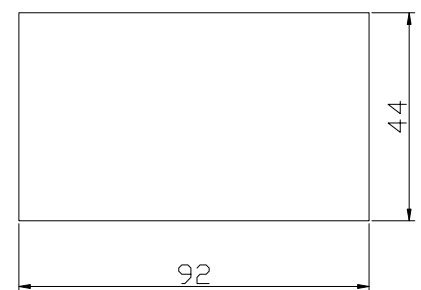
SIZE (mm)



FRONT-VIEW

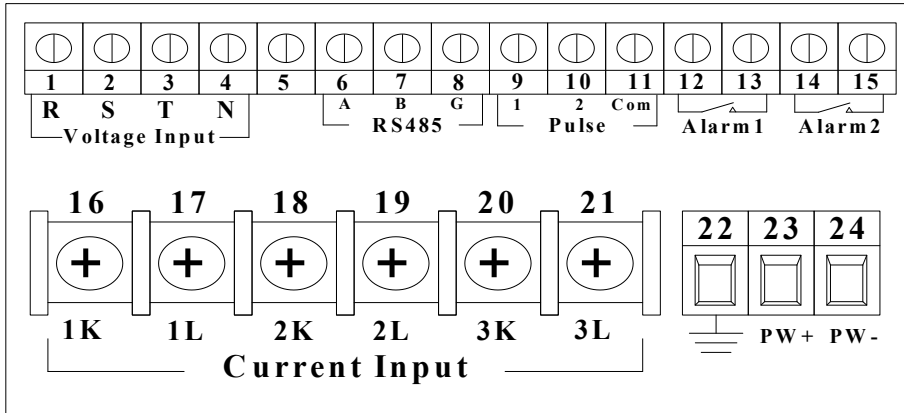


SIDE-VIEW



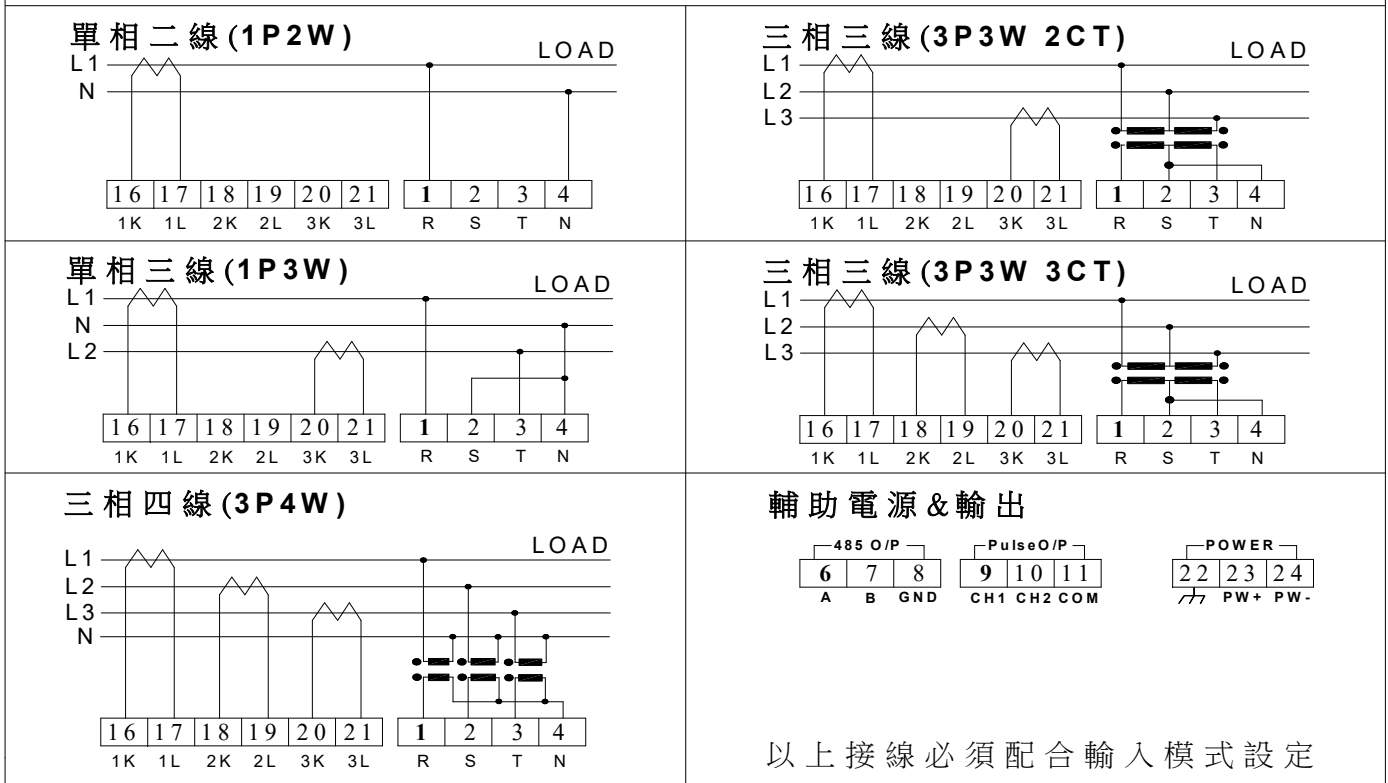
CUT-OUT

TERMINALS



CONNECTION DIAGRAM

電壓及電流輸入 INPUT Voltage and Current



FEATURES

- Suitable for 1 ϕ 2W / 1 ϕ 3W / 3 ϕ 3W / 3 ϕ 4W system
- Size: 96 W x 48 H x 100 D (mm)
- 5 digits display for W -32768~32767
8 digits display for WH \pm 99999999 Count
- RS-485 Modbus RTU and DC 4~20mA output
- Dual pulse output(Secondary value)
- Bi-direction measurement and display



FUNCTION SELECTION

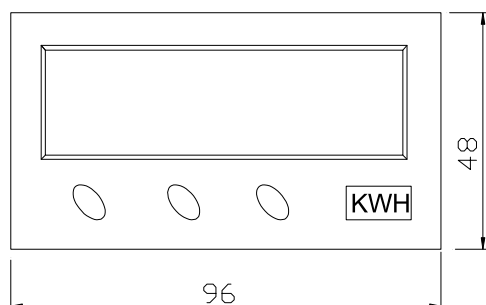
MMWWH - code1 code2 code3 code4 code5 code6

CODE 1 INPUT VOLTAGE		CODE 2 INPUT CURRENT		CODE 3 INPUT FREQUENCY		CODE 4 OUTPUT 1		CODE 5 OUTPUT 2		CODE 6 AUX. POWER	
1	55-440V(L-L)	1	1A	1	50 HZ	1	2 Pulse	1	RS-485Modbus	3	DC 22~72V
		2	5A	2	60 HZ			2	DC 4-20mA	6	AC/DC85~265V
						0	None	3	RS485+DC4-20mA		
Y	Other	Y	Other	Y	Other	Y	Other	Y	Other	Y	Other

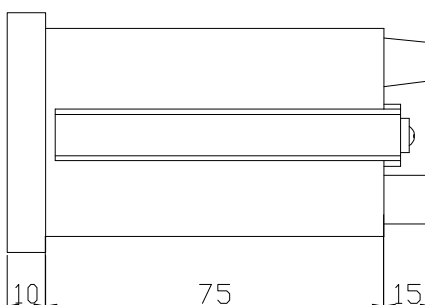
SPECIFICATIONS

Accuracy	: $\pm 0.5\%$ RD at 23°C $\pm 3^\circ\text{C}$.	Address	: 1~255
Display Range	: 0.4" high brightness red LED 5 digit display for W -32768~32767 8 digits display for WH \pm 99999999	Pulse output	: Dual pulse output Corresponding to +WH / -WH 1WH 1/10/100/0.1/0.01Pulse
Input Range	: Input 55~440V(L-L) (Max: 500V L-L) Normal Current 5A, Effective Range 0~6A. Normal Current 1A, Effective Range 0~1.5A.	Output Function	: 4~20mA330 Ω at 20ma (Optional)
Input Frequency	: 45~70HZ	Dielectric Strength	: 2.0KV 50/60HZ AC / Min Between Input / Power / Case.
Input Over	: Normal AC 5A, Current Over 15A Continuous Normal AC 440V, Voltage Over 600V Continuous	Power Supply	: AC 85~265V 50 / 60Hz DC 100~300V
Digital Output Load	: RS-485 MODBUS RTU	Dimension	: 96 W X 48 H X 100 D mm.
Baudrate	: 2400.4800.9600.19200.38400.57600	Cut-out	: 92W x 44H < mm >
		Mounting	: Panel Flush Mounting
		Housing Material	: ABS Plastic, Self-Extinguishing
		Operating Condition	: -10°C~55°C 20 ~ 95% RH Non-Condensed.
		Storage Condition	: -40°C~75°C 20 ~ 95% RH Non-Condensed.

SIZE (mm)



FRONT-VIEW

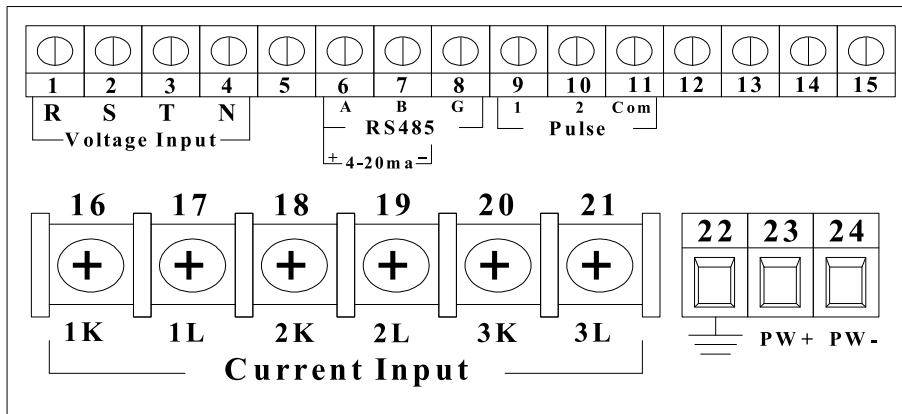


SIDE-VIEW



CUT-OUT

TERMINALS



CONNECTION DIAGRAM

電壓及電流輸入 INPUT Voltage and Current

