



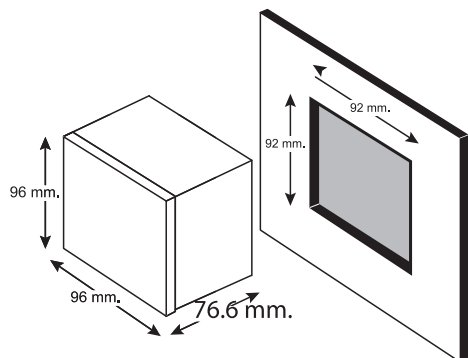
KM-03N



TECHNICAL SPECIFICATION

Power Supply		230 VAC ±15 % 50-60 Hz 115 VAC ±15 % 50-60 Hz
Power consumption		2.5 VA
Display		7-Segment, Size 0.56 Inch 4 Digit 3 Rows
Input	Volt	Single Phase
	Volt Phase (Vfull)	21-500 VAC
	Current	Connection 1 CT, Direct
	Current (Direct)	0.02-10 A
	IB(Base Current)	5 A
	Current Transformer Ratio	1-2000
	Primary	9999 A
	Secondary	0.2-5 A
Communication	Accuracy	± 1.0% FS
	Protocol	MODBUS RTU
	Baud Rate	2400, 4800, 9600, 19200 38400 bps
	Parity	None, Even, Odd
	Data Bit	8 bit
Ambient Operation	Stop Bit	1, 2
	Support Device Node	128
	Temperature	-10 °C to 60 °C
Ambient Storage	Humidity	85 % RH Non-Condensing
	Humidity	<75 % RH Non-Condensing
Protection Degree	Front Protection Rating	IP52
	Case Protection Rating	IP30
Installation		Panel Mounting
Material		ABS-V0
Size		96 x 96 x 76.6 mm.
Weight		355 g.

DIMENSION



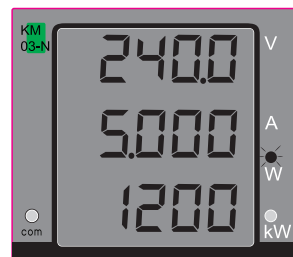
DESCRIPTION

- KM-03N is a device that measures electrical voltage Volt, Amp, Watt system 1 phase.
- Can be combined with CT up to 10,000 / 5 A.
- 7-Segment display size 0.56 in 4 digits, 3 rows
- High accuracy TRUE RMS measurement.
- LED status indicator and power unit.
- Data can be recorded to computer via RS-485 MODBUS RTU PROTOCOL

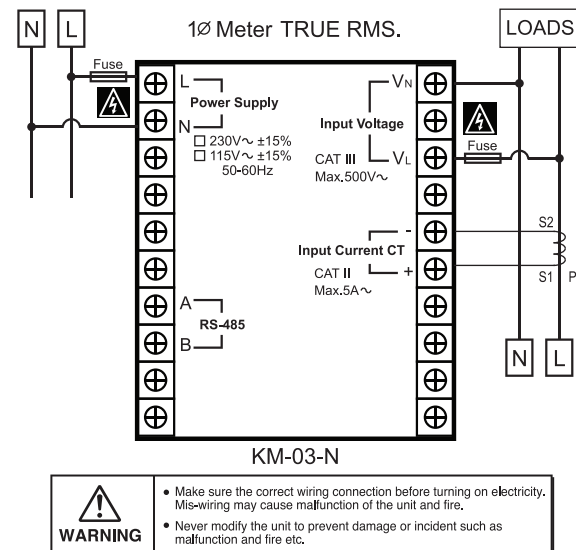
OPERATION

The display will have a 1 page display Volt, Amp, Watt measured at the current time.

The LED com (Communication) will flash every time communication is made via RS-485, MODBUS RTU



WIRING DIAGRAM

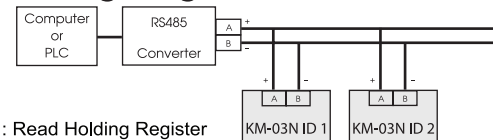


SERIAL COMMUNICATION

Meter KM - 03N can read parameters measured in real time with BUS RS - 485 by PROTOCOL communication is MODBUS RTU Mode.

A set of commands that can be used with the Meter

Wiring Diagram



- 0x03 : Read Holding Register
- 0x04 : Read Input Register
- 0x06 : Preset Single Register
- 0x10 : Preset Multi Register

Modbus table of km - 03 n as show in the following table

Address		Contents	Format	Word	Access
Decimal	Hex				
0-1	00-01	Current Register	Unsigned long	2	Read Only
2-3	02-03	Volt Register	Unsigned long	2	Read Only
4	04	Power Factor Register	Unsigned int	1	Read Only
5	05	Hz	Unsigned int	1	Read Only
6	06				
7	07				
8-9	08-09	Watt Register	Unsigned long	2	Read Only

Address		Contents	Format	Word	Access
Decimal	Hex				
256	0x100	CT Ratio Register	Unsigned int	1	R/W
257	0x101	Meter ID	Unsigned int	1	Read Only
258	0x102	Baud Rate	Unsigned int	1	Read Only
259	0x103	Comm (Parity, Stop Bit)	Unsigned int	1	Read Only

Example of sending command reads the register volt value by meter ID is 1

Slave ID	Fun	Hi Order Address	Low Order Address	Hi Order Word	Low Order Word	CRC Hi Order	CRC Low Order
01	03	00	00	00	02	C4	0B

Note Sample data displayed as All Hex.

Using MODBUS RTU with PLC / HMI

PROTOCOL of KM - 03N is designed according to the standard of MODBUS RTU.

In the case of PLC / HMI, the readings on the register register for the Holding Register (03) must start at Address 40001 and for the Input Register (04) must start at Address 30001.

Sample Meter KM - 03N

To read the Volt Register must set the address to read at 30001 (for Fun 4) and to read the value at Watt Register must set the address used to read 30008 (for Fun 04)

Readable Register Values

$$\text{Volt} = \frac{\text{Volt reg}}{10} \quad \text{Watt} = \frac{\text{Watt reg}}{10} \quad \text{PF} = \frac{\text{PF reg}}{1000}$$

$$\text{Current} = \frac{\text{Current reg}}{1000} \quad \text{Hz} = \frac{\text{Hz reg}}{10}$$

OPERATION SETTING

KM-03N

Measurement Display

0000 V

Press hold 2 seconds

1. CT Ratio

CT 1 to 2000

Press 1 time

2. Device Address for MODBUS RTU

Setting Address 1 to 128

Press 1 time

3. RS-485 Baud Rate

Baud Rate

2.4 kbps	19.2 kbps
4.8 kbps	38.4 kbps
9.6 kbps	

Press 1 time

4. Communication Stop bit/Parity Bit

None parity, 1 stop bit
Even parity, 1 stop bit
Odd parity, 1 stop bit
None parity, 2 stop bit
Even parity, 2 stop bit
Odd parity, 2 stop bit

Register baud rate read value

- 1: 2.4 kbps
- 2: 4.8 kbps
- 3: 9.6 kbps
- 4: 19.2 kbps
- 5: 38.4 kbps

Register Comm (Parity, stop bit)read value

- 0: none parity, 1 stop bit
- 1: even parity, 1 stop bit
- 2: odd parity, 1 stop bit
- 3: none parity, 2 stop bit
- 4: even parity, 2 stop bit
- 5: odd parity, 2 stop bit

ORDERING CODE

KM-03N-		OPTION		
		Option	Power Supply	
None	-	None	230 VAC	
M	RS-485	115	115 VAC	