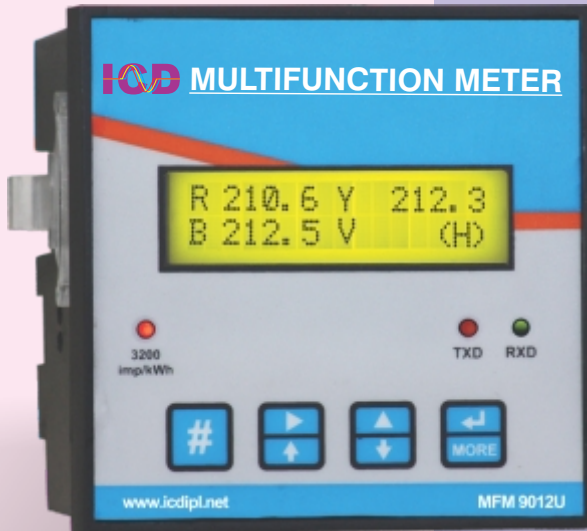


MULTIFUNCTION POWER METER

Single Meter suitable for all load conditions LT / HT, 5A / 1A, 4Wire / 3Wire



MFM 9012U



MFM 9013U

FEATURES

- True RMS Measurement
- Simultaneous sampling of voltage and current
- Confirms IS14697 for Accuracy Class 1 and Class 0.5
- Replaces several meter in the electrical panel
- Direct reading without multiplication factor
- Accurate on Harmonic Conditions
- 10 year back up for integrated energy data
- Available in both LCD (MFM9012U) and LED (MFM9013U) model
- Measures 4 quadrant power and 2 quadrant energy
- Run hour Indication
- Built in phase analyzer for proper connection
- Low PT, CT burden. (Less than 0.2 VA)
- Digital Calibration ensures drift free operation for long time
- High reliability and user friendly to configure and operate
- Sealed dust proof ABS plastic Enclosure
- Wide range of Auxiliary supply (90 to 270V AC or DC)

USER PROGRAMMABLE FEATURES

- Primary value of PT and CT
- CT Secondary 5A / 1A
- PT Secondary 415 / 110V AC
- Single phase, 3 phase Delta and 3 phase Star measurement
- Favourite display page selection
- Communication settings like baud rate, parity and stop bit

OPTIONAL FEATURES

- Optically isolated RS485 Communication output with MODBUS - RTU protocol
- Optically isolated RS485 Communication output with PROFIBUS – DP Slave protocol
- RJ45 Ethernet port with MODBUS – TCP protocol
- Accuracy Class 0.2 (IS14697)
- Separate energy register for export energy recording
- Total Harmonic distortion (THD) display of 3 phase voltage and current
- 2 number digital input for user defined function
- 1 number digital output for user defined function
- Energy pulse output for kWh
- Analog 4-20mA output for any one configurable Instant Parameter
- Current day and previous day energy and Run hour register

STANDARDS APPROVED

- Type test approved as per IS14697 Class 1 and Class 0.5
- Confirms EMI, EMC Regulations as per IS14697 standards

APPLICATIONS

- Energy management systems and Energy billing systems
- Panel metering in sub stations, Distribution panels and Genset Panels
- Pumps, Motors, Compressors and Individual Equipments
- Original equipment manufacturers
- Control panels and Test benches

TECHNICAL SPECIFICATION

MEASURED QUANTITIES

Parameter Shown : 1) 3 Phase, Phase to Neutral Voltage
 2) 3 Phase, Phase to Phase Voltage
 3) 3 Phase Current
 4) 3 Phase kVA, kW, kVAh & PF
 5) Average Voltage, Current, Total kVA, kW, kVAh, PF & Frequency
 6) Total kWh and Run Hour
 * 7) Total kVAh and Total kVAh (lag&lead)

RATINGS

Voltage Range : 30V to 520V AC (line to line)
 Secondary Current : 1A / 5A (programmable)
 Frequency Range : 40.00 to 60.00 Hz
 PF Range : 0.00 Lag to 0.00 Lead
 Auxiliary Supply : 90V - 270V AC or DC
 Operating Temperature : 55° C (Max.)

DISPLAY

Model : **MFM 9012U**
 Type : 2 Row 16 Character LCD with Backlit
 Character Size : 4.35 (H) x 2.95 (W) mm
 LCD Power Save Mode : Provided. When no key is pressed for 3 minutes, the LCD Backlit is switched OFF to save power and enhance the life of LCD. The LCD is switched ON when any key is Pressed

Model : **MFM 9013U**
 Type : 16 Digit 0.56" Hi bright Red LED Display

MEASUREMENT

Method : 3 Phase 4 wire or 3 Phase 3 wire (programmable)
 Accuracy : Class 0.5, 1

INPUT AND OUTPUT

Calibration LED output : 3200 Imp/kWh or kVAh
 Digital Input (Option) : 2 (Function user defined)
 Digital Output (Option) : 1 (Function user defined)

KEY FUNCTIONS

Key Pad : 4 Keys namely Index, Shift, Increment and Enter used for Program mode setting and Run mode selection
 Program mode Parameters : PT Primary / Secondary Voltage, CT Primary / Secondary Current, Measurement Mode, Device address, Energy and Run hour Reset and Communication settings
 Unauthorised Person Entry Protection : Provided through Password Facility
 Setting, Energy and Run hour Storage : EEPROM

COMMUNICATIONS (Option)

Type : RS485, RJ45
 Protocol : MODBUS - RTU, MODBUS - TCP, PROFIBUS DP-Slave
 Isolation : Provided
 Traffic Status : Indicated through Txd, Rxd LED

CASE AND DIMENSIONS

Enclosure : ABS Plastic
 Dimension : 96(H) x 96(W) x 45(D) mm or 96(H) x 96(W) x 80(D) mm
 Cutout : 92(H) x 92(W) mm
 Mounting : Flush / Panel

*The parameters are available only in model MFM 9014U and MFM 9015U

PARAMETERS DISPLAYED

PARAMETERS	RANGE	RESOLUTION	ACCURACY
R, Y, B Voltage (LT Meter)	50 V - 300 V	0.1 V	± 0.5% + 2 LSD
RY, YB, BR Voltage (LT Meter)	90 V - 520 V	0.1 V	± 0.5% + 2 LSD
R, Y, B Voltage (HT Meter)	20 V - 80 V	0.001 / 0.01 / 0.1 kV	± 0.5% + 2 LSD
RY, YB, BR Voltage (HT Meter)	30 V -140 V	0.001 / 0.01 / 0.1 kV	± 0.5% + 2 LSD
Current	0 - 100 A 100 A & above	0.1 A 1 A	± 0.5% + 2 LSD
kVA / kW / kVAh 3 Phase & Total	0 - 1000 1000 - 10000 10000 & above	0.1 kVA / kW / kVAh 1 kVA / kW / kVAh 0.01 MVA / MW / MVAh	± 0.5% + 2 least digit for kW/kVA ± 1.0% + 2 least digit for kVAh
3 Phase Power Factor & Total	0.000 lag to unity to 0.000 lead	0.001	± 0.5% + 2 LSD
Frequency	40.00 - 60.00 Hz	0.01 Hz	± 0.05%
kWh / kVAh / kVAh (Lag&Lead)	99999999.9	0.1 kWh	Class 1 or Class 0.5
Run Hour	9999.59 Hours Max.	1 Minute	± 1 Sec / Day

OUR RANGE OF PRODUCTS

Volt Meter, Ammeter, VAF Meter, Energy Meter, Dual Source Meter, Load Manager, Power Multimeter, Trivector Meter, Maximum Demand Controller, Harmonic Indicator, Power Factor Controller, Smart PF Controller, Power Factor Correction Panel, AC Voltage Controller, AC Current Controller, Motor Protection System, Voltage/Current/Power/Frequency Transducer, Power Transmitter, Energy Management and Billing Systems etc...



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Note: Specifications are subject to change without prior notice due to continuous improvement in product development.