

Electronic Afzar  
Single Phase Digital Multi-tariff kWh Meter

1000  
imp/kWh

230V 50Hz  
CL.1  
IEC 62052

0.40924



Single Phase Multi Tariff  
**ENERGY METER**



**Electronic Afzar Azma**

[www.afzarazmaco.com](http://www.afzarazmaco.com)

**Single Phase Multi Tariff Energy Meter JM-110B (Rectangular Type)  
& JM110 (Round Type)**



**Technical Specification**

		JM110	JM110B
<b>General</b>			
Meter Type	Static, Single Phase, Active Energy, Unidirectional	●	●
Approval	IEC 62052-11, IEC 62053-21, IEC 62052-21, IEC 62054-21	●	●
Mechanical Compliance	BS & ANSI Standards	ANSI	BS
Connection Type	Single Phase 2 Wire	●	●
Reference Voltage / Frequency	220V 230V 240V / 50Hz	●	●
Operating Voltage Range	150 ... 300V	●	●
Over Voltage Operation	The Meter has been Designed to Withstand a Voltage of 420V for an Indefinite Period	●	●
Power Consumption	Voltage Circuit: $\leq 1.0\text{VA}$ , $\leq 0.7\text{Watt @ 230V}$	●	●
Class Index	Class 1	●	●
Basic Current	5A / 10A	10A	5A
Maximum Current	100A (Permanent)	●	●
Class Accuracy Current Range	Extended from 100mA up to 120A	●	●
Starting Current	$\leq 10\text{mA}$	●	●
Short Time Over Current	3.5KA for 5 Cycle	●	●
Meter Constant	1000 imp/kWh (Programmable)	●	●
Insulation Class	Double Insulation	●	●
Communications	Optical Port: IEC 62056-21 Read/Write Mode C	●	●
Battery	Internal Lithium Battery to Support the RTC and Additional Battery for R.W.P	●	●
Display	Long Life 8 Digit LCD (from Zero to Nine)	●	●
	Large Digit (10mm X 5mm) Viewing Angle $\pm 60^\circ$	●	●
	Special Annunciators for Power Metering (kWh, kVARh, A, kV, T <sub>n</sub> , MD, ...)	●	●
	Configurable to Show 7+1, 6+1, 5+1, 5+2, Decimal Digits	●	●
	LCD Self Test & Backlight	●	●
None-Volatile Memory	Retention Time More Than 40 Years	●	●
Real Time Clock Accuracy	$\leq \pm 5\text{ppm}$ or $\leq 0.5\text{Sec / day @ } 25^\circ\text{C}$	●	●
<b>Software</b>			
Registers	• Up to 6 Tariff Rates (T1, T2, ...)	●	●
	• Total Import Value (T)	●	●
	• Maximum Demand for each Tariff (MD)	●	●
	• Time & Date	●	●
	• Measured Voltage, Current, Active Power (kV, A, kW)	●	●
Historic Registers	16 Sets of Historic Data	●	●
Tariff Structure	• 6 Tariff Rates	●	●
	• 12 Switching Times for Each Day	●	●
	• 8 Day for Weeks (7 Normal Days & One Exclusion Date)	●	●
	• 30 Exception Days	●	●
	• 6 Weeks for Each Season	●	●
	• 6 Seasons for Each Year	●	●
Reserved Tariff	Reserved Tariff Table & Reserved Tariff Changeover Date	●	●
	Can be Programmed	●	●

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**Technical Specification**

**Software (Continue...)**

**JM110**

**JM110B**

Event Recording	<ul style="list-style-type: none"> <li>• Power ON &amp; OFF Time with Time Stamp</li> <li>• Maximum Demand Reset</li> <li>• Meter Reading</li> <li>• Change in Configuration</li> <li>• Time Adjustment, ...</li> </ul>	●	●
Maximum Demand	Maximum Demand Intervals is Adjustable from 1 to 60 Min.	●	●
Calendar	Support Christian & Iranian Calendar Including Correction for Leap Years, Daylight Savings Feature in Operating with Power & without Power	●	●
Watch dog Timer	Hardware & Software	●	●

**Climatic & Mechanical**

Operating Temperature Range	-35°C to +70°C	●	●
Limit Temperature Range of Operation	-40°C to +75°C	●	●
Storage Temperature	-40°C to +85°C	●	●
Relative Humidity	Up to 95% for 30 Days per Year	●	●
Mean Temperature Coefficient	≤ 0.03% / K@ PF=1 or PF=0.5ind over -40°C to +75°C	●	●
Degree of Protection	IP54 / IP54+Suction	IP54+	IP54
Terminal Material	Brass & Copper	●	●
Terminal Block Material	Reinforced Polycarbonate, Non-Flammable , Recyclable	●	●
Terminal Cover & Case Material	Polycarbonate	●	●
Window Material	Transparent Glass Polycarbonate	●	●
None-Repetitive Withstand Shocks	>30g, Half-Sine Wave, 18msec, in each of 6 Directions	●	●
Withstand Sinusoidal Vibration	In Comply with IEC 60068-2-6	●	●
Flammability	Non-Flammable, in Comply with 60695-2-11	●	●
Meter Weight	750g / 800g	800g	750g
Wiring Capacity	Main Cable Must be a Min. of 25 mm <sup>2</sup> & Max. of 35 mm <sup>2</sup>	●	●

**EMC-Compatibility**

Insulation Test	>4kV, 1Min., 50Hz	●	●
Impulse Withstand Test	>12kV / 6kV, 1.2/50 μSec 500Ω Source	12kV	6kV
Fast Transient Burst (EFT)	In Comply with IEC 61000-4-4 ±4kV on Line , & Null with 5kHz & 100kHz	●	●
Electrostatic Discharge Test (ESD)	In Comply with IEC 61000-4-2 (±15kV Air)	●	●
Surge Immunity Test	In Comply with IEC 61000-4-5 (±4kV Differential Mode)	●	●
Immunity to Electromagnetic RF Field	In Comply with IEC 61000-4-3 in Conjunction with IEC 62052-11 & IEC 62053-21	●	●
Immunity to conducted RF	In Comply with IEC 61000-4-6	●	●
Conducted & Radiated Emission	In Comply with CISPR 22 Class B	●	●
Voltage Dips & Interrupts	In Comply with IEC 62052-11	●	●
AC Power Magnetic Fields	In Comply with IEC 62053-21	●	●
DC Magnetic Fields	In Comply with IEC 62053-21	●	●



# JM-110

# JM-110B

- Comprehensive and flexible tariff structure
- Display available without main power
- Maximum demand for each tariff
- Large digit display with backlight
- BS and ANSI terminal configuration

Certified by:  
**KEMA (Netherland) & Tavanir Co. (Iran)**  
 Certified to IEC 62052-11, IEC 62053-21  
 IEC 62052-21, IEC 62054-21, IEC 62056-21



**Quality Management**



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