Matrix Metering Ltd: MX3-100 Three Phase Credit Meter

Kilowatt Hour Credit Meter

Order Code MX3-100

Amperage 40 –100amps Voltage 230/400 Volts Frequency 50/60Hz

Class 2.0 Manufactured to BS5685 IEC 521

Size – 170mm wide 158 mm deep 202 mm high

Weight – 4.1kg

Meter Case – Phenolic moulded base and integral terminal block with a glazed phenolic meter cover – security screws optional

Terminal Size - 8.2 mm diameter brass construction to BS 5685 Pt 1

<table>
<thead>
<tr>
<th>Typical Technical Information</th>
<th>Current Rating 40 –100 amp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rotor Speed : rev min (at basic current 230 v)</td>
<td>14.4</td>
</tr>
<tr>
<td>Torque: gcm (at basic current 230 v)</td>
<td>13.1</td>
</tr>
<tr>
<td>Rotor weight: (g)</td>
<td>28.0</td>
</tr>
</tbody>
</table>

Losses (at 50Hz)

| Voltage Coil; (at 230v) Power Loss | 1.0 |
| Voltage Coil; (at 230v) Burden VA  | 5.5  |
| Current Coil (basic current) Power W | 1.0  |
| Current Coil (basic current) Burden VA | 0.8  |
| Two Rate Actuator Coil (230v) Power W | 1.0  |

Magnetic Suspension Bearings:

A symmetrical magnetic field set up between fixed and moving high coercivity permanent magnets, supports the rotor, leaving only small transverse forces to be contained by fixed pin and guide bearings. Polished stainless steel guide pins run in bearing which are precision moulded from low friction material. Temperature compensation maintains a constant field strength thus minimising variations in disc height. The Bearing system is fully illustrated.
Matrix Metering Ltd: MX3-100 Three Phase Credit Meter

Registers:
Two types of interchangeable register

Single Rate 6 figure cyclometer with quick-change number and transfer mechanism

Dual Rate 6 figure cyclometer with two sets of number wheels

All registers have precision moulded gears with low friction coefficient, and polished stainless steel shafts

Calibration Points:

Terminal Block

<table>
<thead>
<tr>
<th>Red Phase</th>
<th>Yellow Phase</th>
<th>Blue Phase</th>
<th>Neutral (s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>M</td>
<td>M</td>
<td>N</td>
</tr>
<tr>
<td>L</td>
<td>L</td>
<td>L</td>
<td>N</td>
</tr>
</tbody>
</table>

Power Factor

Low Load

Unity
Matrix Metering Ltd: MX3-100 Three Phase Credit Meter

**Typical Performance Curves**

40-100 amps

**Balanced Load**

- Load Current - Amp
- % Error

**Unbalanced Load, One Element Only Load**

- % Balance Voltage

**Variation due to change in voltage**

**Variation due to change in temperature**

- Ambient Temperature, °C

**Variation due to change in frequency**

- 100% Frequency
- % Error
Matrix Metering Ltd: MX3-100 Three Phase Credit Meter

Rotor Shafts
Driven by a highly polished worm gear, cut into the rotor shaft

Non-Reverse Device
Fitted at the top of the rotor shaft preventing non reverse power flow

Rotor System
Is a light and rigid aluminium disc, which is a diecast to an aluminium alloy shaft

Brake Magnets
The four-pole system has two Alcomax bar magnets with soft iron pole pieces die cast into a rigid aluminium housing. The design minimises rotor vibration and variations in braking torque with disc height

Meter Coils
Are encapsulated in polypropylene

Anti Creep
Two holes in the disc prevent rotation on voltage alone

Testing
Disc has 200 black marking around its edge for testing purposes and a 15mm black edge line
Matrix Metering Ltd: MX3-100 Three Phase Credit Meter

Front

Back

Side

Drawing Not To Scale