EMN 20 .. 100 - W3 (Dual Phase)

The EMN (Energy Meter Node) series is an AC energy submeter with a wireless mesh network communications output. The W3 is designed for split-single phase networks with a line-to-neutral voltage up to 300V rms. This module is compatible with the MeshGate L or XL.

### Electrical data

<table>
<thead>
<tr>
<th>I_{PN}</th>
<th>Primary nominal current rms (A)</th>
<th>Types</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>EMN 20 W3</td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>EMN 100 W3</td>
<td></td>
</tr>
<tr>
<td>I_{PM}</td>
<td>Primary current, measuring range (of I_{PN})</td>
<td>120</td>
</tr>
<tr>
<td>V_{PM}</td>
<td>Primary voltage, measuring range (neutral/phase) 1)</td>
<td>90 .. 300 V_{rms}</td>
</tr>
<tr>
<td>f</td>
<td>Frequency</td>
<td>50/60 Hz</td>
</tr>
<tr>
<td>S</td>
<td>Output signal: radio frequency communication 2) see Mesh Gate datasheet</td>
<td></td>
</tr>
<tr>
<td>V_{PN}</td>
<td>Primary nominal voltage, (neutral/phase)</td>
<td>100 .. 272 V_{rms}</td>
</tr>
<tr>
<td>P_{C}</td>
<td>Maximum power consumption</td>
<td>2 W</td>
</tr>
</tbody>
</table>

### Features

- Wide range of electrical parameters measurement
- Wireless communication on license free 2.4 GHz-transmit RF power maximum
- EIRP: 10 dBm (10 mW)
- Class 1 accuracy active energy.

### Advantages

- Fast & easy mounting:
  - Wireless communication
  - Split core CT
  - Self powered from voltage line
- Compact
- Gateway interface: RS 232/485 Modbus RTU
- Ideal for retrofit applications.

### Applications

- Energy sub-metering
- Network condition monitoring
- Energy audit & diagnostic
- Building energy management.

### Application domain

- Energy Solutions.

---

1) See connection diagram
2) RF Certification: CE, FCC, IC, Japan (pending)
3) Class 1 guaranteed for Power Factor \( \geq 0.65 \).
EMN 20 .. 100 - W3 (Dual Phase)

Isolation characteristics

- Isolation class II
- IEC 61010-1 CAT III 300 V rms
- Pollution degree: PD2

Safety

CB test Certificate N° FR 583050 IEC System for mutual recognition of test certificates for electrical equipment (IECEE) CB Scheme.

⚠️ This transducer must be used in electric/electronic equipment with respect to applicable standards and safety requirements in accordance with the manufacturer’s operating instructions.

⚠️ Caution, risk of electrical shock: do not remove any parts of the EMN - W3

🚫 For current transformer (CT) mounting: make sure that the power cable on which the CT will be attached is powered off.
Dimensions EMN 20 .. 100 - W3 (Dual Phase) (in mm.)

**Mechanical characteristics**

- General tolerance: ± 1 mm
- Primary through-hole of current transducer: hole Ø 16 mm
- Current transformer output cable length: 1 m
- Module fixing DIN rail rear box
- Module fastening: 2 slots Ø 4.2 mm
  - 2 M4 steel nuts
- Recommended fastening torque:
  - 2.8 Nm
  - 4 M3
- Voltage terminal block
- Recommended fastening torque: 0.5 Nm
- Input voltage terminal: use cable max cross section 2.5 mm²

**Remarks**

- Temperature of the primary conductor should not exceed 65°C.
- EMN module must be installed vertically as shown on the diagram above.