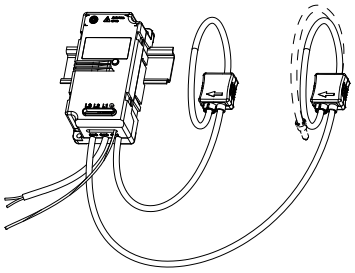
# EMN 200 .. 2000-D3/SP2 (3 phase Delta)

The EMN (Energy Meter Node) series is an AC energy submeter with a wireless mesh network communications output. The D3/SP2 is designed for three phase networks without the neutral and with an inter-phase voltage up to 500V rms. This module is compatible with the MeshGate L or XL.



## Electrical data

| $I_{PN}$ | Primary nominal current rms (A) | Types |
|---|---|---|
| | 200 (on request) | **EMN 200 D3/SP2** |
| | 500 | **EMN 500 D3/SP2** |
| | 1000 (on request) | **EMN 1000 D3/SP2** |
| | 2000 | **EMN 2000 D3/SP2** |

| | | | |
|---|---|---|---|
| $I_{PM}$ | Primary current, measuring range (of $I_{PN}$) | 120 | % |
| $V_{PM}$ | Primary voltage, measuring range (phase/phase) rms [1] | 90 .. 520 | V |
| **f** | Frequency | 50/60 | Hz |
| **S** | Output signal: radio frequency communication [2] see Mesh Gate datasheet | | |
| $V_C$ | External DC supply voltage (± 10%) [3] | + 24 | V |
| $I_C$ | Current consumption @ + 24 V | < 50 | mA |

## Measurement values

| | Configurable reading interval: 5 .. 30 min Interval base values | | | | | | | Counter values | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | L1 | | | L3 | | | SUM | L1 | L3 | SUM |
| | Av | Min | Max | Av | Min | Max | | | | |
| Current (A) | | | ■ | | | ■ | | | | |
| Voltage (V) | | ■ | | | ■ | | | | | |
| Active Energy (KWh) | ■ | | | ■ | | | ■ | ■ | ■ | ■ |
| Reactive Energy (kVarh) | ■ | | | ■ | | | ■ | ■ | ■ | ■ |
| Apparent Energy (kVA) | ■ | | | ■ | | | ■ | ■ | ■ | ■ |

**f** Frequency measured from phase 1 (L1)

## Accuracy

| | | | |
|---|---|---|---|
| **X** | Accuracy @ $T_A$ = 25°C | Max | |
| | Rms current @ $I_{PN}$ | 1.5 | % |
| | Rms voltage @ $V_P$ | 1.5 | % |
| | Active Energy (refer to IEC 62053-21 class 1) | ± 1 | % |
| | Reactive energy (refer to IEC 62053-23 class 3) | ± 3 | % |

| | | | |
|---|---|---|---|
| $T_A$ | Ambient operating temperature (90 % RH max) | - 10 .. + 55 | °C |
| $T_S$ | Ambient storage temperature | - 25 .. + 70 | °C |
| ***m*** | Mass | 400 | g |
| **IP**xx | Protection index | IP 2X | |
| | Standards | EN 50178: 1997 | |
| | | IEC 61010-1: 2001 | |
| | Range to Mesh Gate or Mesh Node (indoor, line of sight) | 30 | m |

Notes: [1] See connection diagram

[2] RF Certification: CE, FCC, IC, Japan (pending)

[3] Power supply must comply with limited-energy circuit criteria.

## Features

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

## Advantages

- Fast & easy mounting:
  - Wireless communication
  - High accuracy split core Rogowski coil
- 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.

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### Isolation characteristics

Isolation class I
IEC 61010-1 cat III 300 Vrms

This device must be connected to earth (ground),
use the green/yellow wire.

### Safety

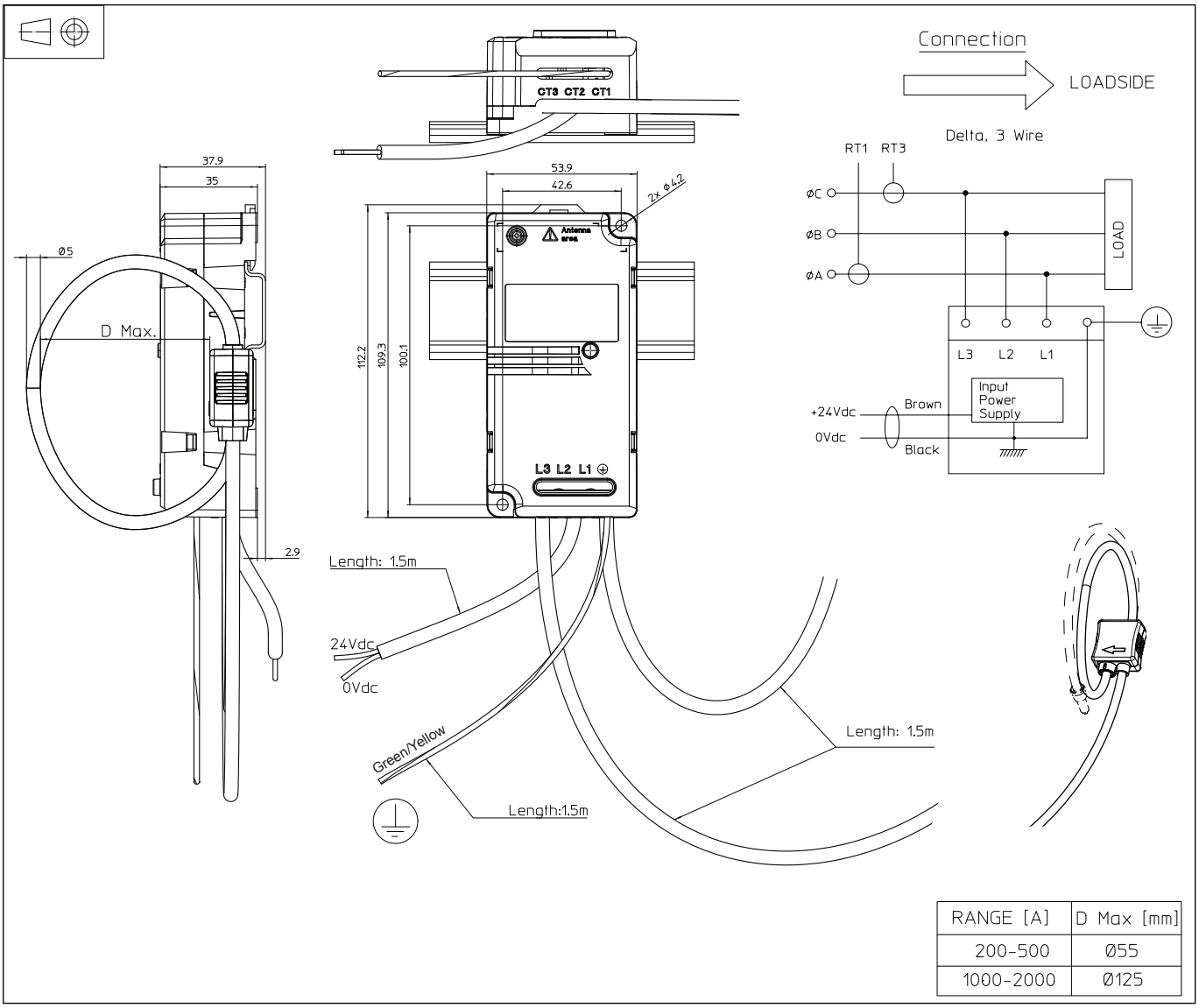
CB test Certificate N° FR 588764 IEC System for mutual recognition of test certificates for electrical equipment (IECEE) CB Scheme

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 - D3

For current sensor (Rogowski coil) mounting:
make sure that the power cable on which the Rogowski coil will be attached is powered off.

## Dimensions EMN 200 .. 2000-D3/SP2 (3 phase Delta) (in mm)




| RANGE [A] | D Max [mm] |
|---|---|
| 200-500 | Ø55 |
| 1000-2000 | Ø125 |

## Mechanical characteristics

- General tolerance ± 1 mm
- Primary through-hole of Rogowski coil. see drawing above
- All cables length: 1.5 m
- Module fixing DIN rail rear box
  or
- Module fastening 2 notches Ø 4.2 mm
  2 M4 steel nuts
  Recommended fastening torque 2.8 Nm Voltage connections 3 M3
  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.