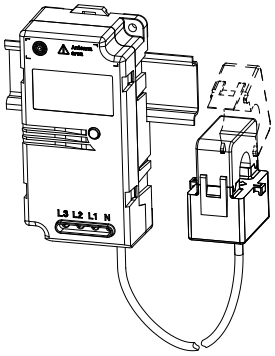
EMN 20 .. 100 - W2 (Single Phase)

The EMN series (Energy Meter Node) is an AC electricity sub-meter with wireless mesh network communication output.
This module is compatible with the Mesh Gate L or XL.



Electrical data

I_{PN}	Primary nominal current rms (A)	**Types**	
	20	**EMN 20 W2**	
	100	**EMN 100 W2**	
I_{PM}	Primary current, measuring range (of I_{PN})	120	%
V_{PM}	Primary voltage, measuring range (neutral/phase) [1]	90 .. 300	V_{rms}
	Permanent overload voltage (neutral/phase)	300	V_{rms}
f	Frequency	50/60	Hz
S	Output signal: radio frequency communication [2]	see Mesh Gate datasheet	
	Power supply	Line powered between N-L1 inputs	
V_{PN}	Primary nominal, voltage (neutral/phase)	100 .. 272 [2]	V_{rms}
P_C	Maximum power consumption	2	W

Measurement Values

	Configurable reading interval: 5 .. 30 min Internal base values			Cummulated values
	Av	Min	Max	
Current (A)				
Voltage (V)				
Active Energy (KWh)				
Reactive Energy (kVarh)				
Apparent Energy (kVA)				

f Frequency measured in 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) [3]	± 1	%
	Reactive Energy (refer to IEC 62053-23 class 3)	± 3	%

General data

T_A	Ambient operating temperature (90 % RH max)	- 10 .. + 55	°C
T_S	Ambient storage temperature	- 25 .. + 85	°C
m	Mass	400	g
IPxx	Protection index	P 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] Class 1 guaranteed for Power Factor ≥ 0.65.

Features

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

EMN 20 .. 100 - W2 (Single Phase)

Isolation characteristics

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

Safety

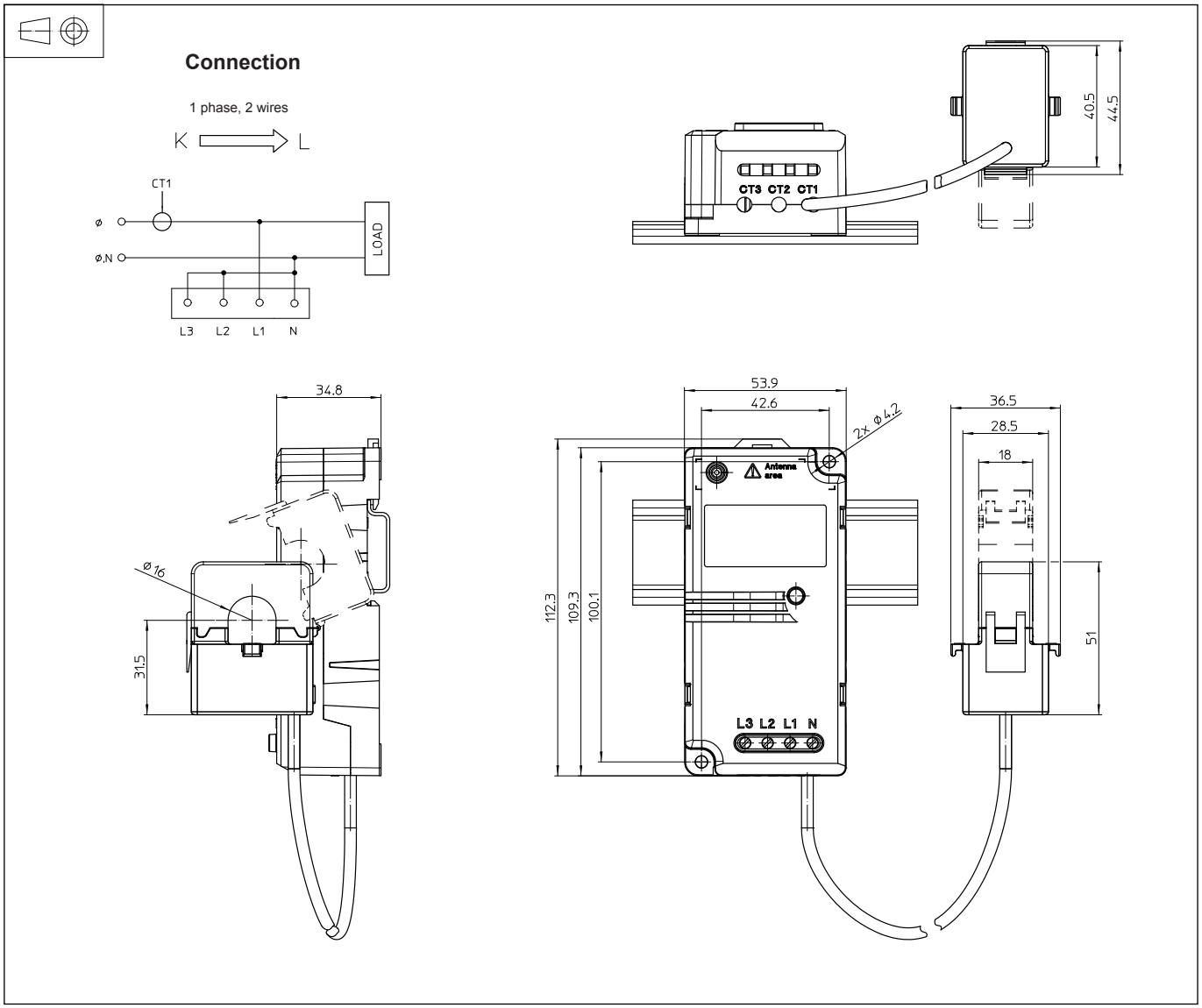
CB test Certificate N° FR 583050 IEC System for mutual recognition of test certificates for electrical equipment (IECEE) CB Scheme.

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 - W2

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 - W2 (Single Phase) (in mm)



Mechanical characteristics

• General tolerance	± 1 mm
• Primary through-hole of current transducer	hole Ø 16
• Current transformer output cable	length: 1 m
• Module fixing DIN rail rear box or	
• Module fastening	2 slots Ø 4.2 mm 2 M4 steel nuts
• Recommended fastening torque	2.8 Nm
• Voltage terminal block	4 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.