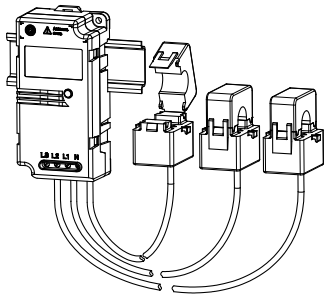
EMN 20 .. 100 - W0 (3 x Single Phase)

The EMN (Energy Meter Node) series is an AC energy submeter with a wireless mesh network communications output. The W0 is designed for single phase networks (up to three circuits) with a line-to-neutral voltage up to 300V rms. This module is compatible with the MeshGate L or XL.



Electrical data

I_{PN}	Primary nominal current rms (A)	**Types**		
	20	**EMN 20 W0**		
	100	**EMN 100 W0**		
I_{PM}	Primary current, measuring range (of I_{PN})		120	%
V_{PM}	Primary voltage, measuring range (neutral/phase) [1]		90 .. 300 [2]	V_{rms}
	Permanent overload voltage (neutral/phase)		300	V_{rms}
f	Frequency		50/60	Hz
S	Output signal: radio frequency communication [3]		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			
	L1			L2			L3			SUM	L1	L2	L3	SUM
	Av	Min	Max	Av	Min	Max	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) [4]	± 1	%
	Reactive Energy (refer to IEC 62053-23 class 3)	± 3	%

General data

T_A	Ambient operating temperature (90 % rH)	- 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] Series available Q2 2009
[3] RF Certification: CE, FCC, IC, Japan (pending)
[4] 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 & Automation.

Isolation characteristics

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

Safety

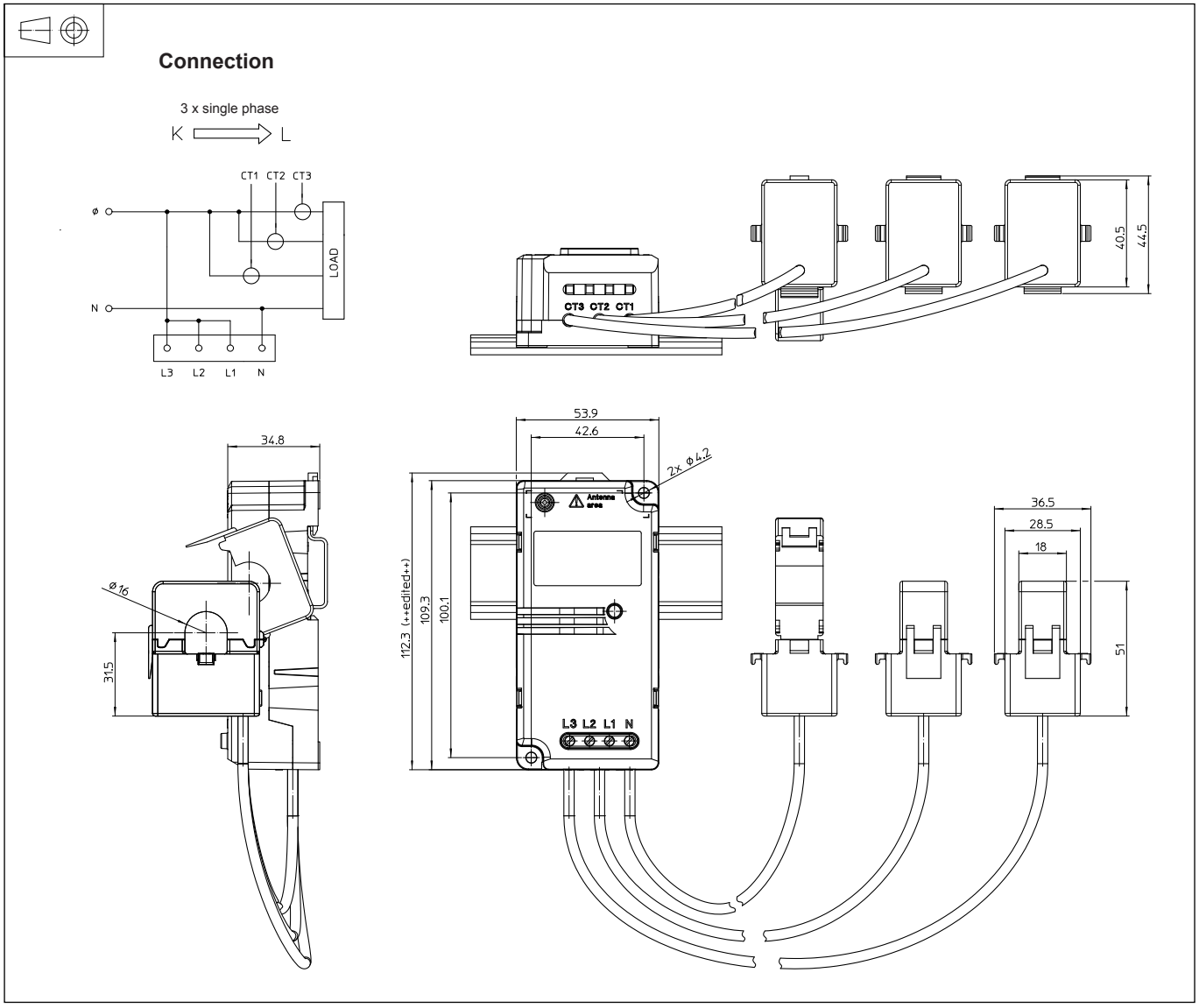
CB test Certificate N° FR 583050 IEC System for mutual recognition of test certificates for electrical equipment (IECEE) CB Scheme.

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 - W0

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 - W0 (3 x Single Phase) (in mm. 1mm = 0.0394 inch)



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 or 2.07 Lb.Ft.
• Voltage terminal block	4 M3
• Recommended fastening torque	0.5 Nm or 0.37 Lb.-Ft.
• 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.