
	<h2>CHAIN2GATE ENERGY METER 1P</h2>	<p>21/09/2023 Rel.1.8</p>
<p>GENERAL INFO</p>	<p>Size: 36.3 mm (L) x 90.5 mm (H) x 62 mm (D) (2 DIN Modules) Weight: almost 120g Protection grade: IP20 Flammability: UL94-V0 Case: PC/ABS</p>	
<p>OPERATING CONDITION</p>	<p>INDOOR Operating Temperature: -20°C ÷ +50°C Storage Temperature: -30°C ÷ +70°C Humidity Percentage: 5% ÷ 95% Altitude: <= 2000 m Over voltage category: II Pollution Degree: 2 Insulation Class: II</p>	
<p>POWER SUPPLY</p>	<p>Voltage: 230 Vac Operating voltage range: - 20%/+15% of the nominal voltage Frequency: 50 Hz Consumption: 90 mA max Protections: Integrated fuse (F1: T1A 300V)</p>	
<p>USER INTERFACE</p>	<p>LED: status visual indicator (red) BUTTON: Starting Configuration and reset</p>	
<p>CONNECTION</p>	<p>Connectors 3 Poles terminal block Wiring size (min ÷ max): 2.5 ÷ 10 mm²/ 12AWG ÷ 6AWG (See Wiring Table)</p>	
<p>SHORT RANGE CONNECTIVITY</p>	<p>Wi-Fi: 802.11 b/g/n (802.11n up to 150 Mbps) IoT Protocols: MQTT, WebSocket, REST Cloud Security: Client Certificate on TLS Bluetooth: Bluetooth v4.2 Antenna: integrated Frequency: 2.4 GHz</p>	
<p>CHAIN2 CONNECTIVITY</p>	<p>Modem C-Band, B-PSK Modulation Application: DLMS/COSEM IEC (IEC 62056-5-3), Data Model: COSEM Data Model (IEC 62056-6-1, IEC 62056-6-2) Compliant with Italian Standard Chain2full: TS CEI 13-82:2020-04, TS CEI 13-83:2020-04, TS CEI 13-84:2020-04</p>	
<p>ENERGY METER</p>	<p>Minimum Current: 100mA Reference Current: 5 A Nominal rating: 26A; for Power contract up to 6 KW Maximum range (only for short periods) 32 A; up to 7.4 KW Accuracy: class I (±1%) for Active Energy Measurement Category: CAT II according to EN 61010-2-030 Measurements: Voltage rms • Current rms • Active power Direct connection with shunt</p>	
<p>CERTIFICATIONS</p>	<p>CE Marking RED Directive 2014/53/UE</p> <ul style="list-style-type: none"> • Art. 3.1(a) – Safety: EN 61010-1/A1, EN 61010-2-30, • Art. 3.1(a) – Health EN 62311 • Art. 3.1(b) – EMC: EN 55032, EN 55035, EN 61000-3-2, EN 61000-3-3, EN 61000-3-11, EN 61000-3-12, ETSI EN 301 489-1, ETSI EN 301 489-17 • Art. 3.2 – Radio: ETSI EN 300 328 	

CHAIN2GATE

ENERGY AWARE

APPLICATION SW	<p>The Chain2Gate family of devices is based on the JCD Peer to Peer IOT Protocol Architecture. JCD is a message-oriented architecture in Json format for Peer To Peer communication on local and Cloud networks based on MQTT or WebSocket transport.</p> <p>The JCD architecture is also supported by the UCD Universal Cloud Downloader (Update FOTA) technology. UCD is a Cloud Architecture for the notification and distribution of new release files or software modules. The Universal Cloud Downloader service allows the firmware update of the devices remotely through a Cloud connection even if installed and operational in the field.</p> <p>The architecture supports forwarding the Cloud Certificates Upgrade for downloading certificates. The connection configuration to the MQTT broker is activated in a secure and authenticated way by exploiting the use of Server and Client certificates, as also required by the AWS IOT platform.</p>
MANUFACTURER	<p>The CHAIN2GATE ENERGY METER 1P is Produced and distributed by MAC srl. Via XX Settembre, 23 62019 Recanati (MC) – Italy</p>

CONNECTION SCHEME

Service Button

Service LED


1,8 Nm

12mm

1,2 x 6,5 PZ2

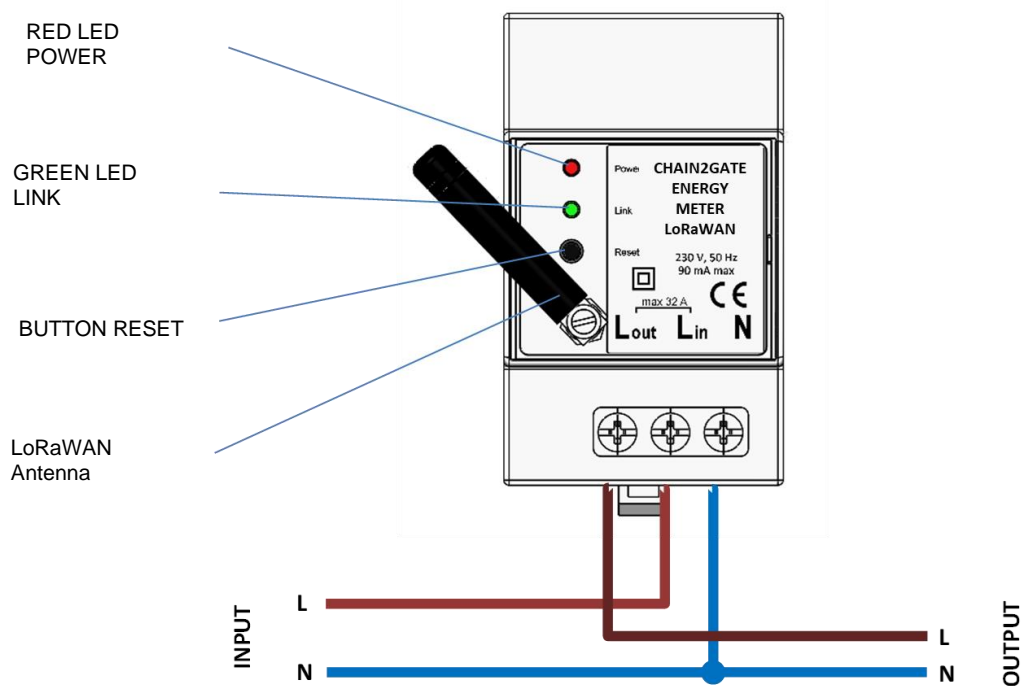
Vac Main between Lin and Lout.
The same line is used for Voltage Measure
The Chain2 Communication is available between T and N



WIRING TABLE			
Maximum peak current (A)	Up to 16 A	from 16 A to 25 A	from 25 A to 32 A
Minimum wire section (mmq)	2.5	4	6
Minimum wire section (AWG)	12	10	8

	<h2>CHAIN2GATE ENERGY METER LoRaWAN</h2>	<p>13/12/2023 Rel 1.6</p>
<p>GENERAL INFO</p>	<p>Size: 53.5 mm (L) x 90.5 mm (H) x 62 mm (D) (3 DIN Modules) Weight: almost 120g Protection grade: IP20 Flammability: UL94-V0 Case: PC/ABS</p>	
<p>OPERATINGCONDITION</p>	<p>Operating Temperature: -20°C ÷ +50°C Storage Temperature: -30°C ÷ +70°C Humidity Percentage: 5% ÷ 95% Altitude: <= 2000 m Overvoltage category: II Pollution Degree: 2 <input type="checkbox"/> Insulation Class: II <input type="checkbox"/></p>	
<p>POWER SUPPLY</p>	<p>Voltage: 230 Vac Frequency: 50 Hz Consumption: 90 mA max Protections: Integrated fuse (F1: T1A 250V)</p>	
<p>USER INTERFACE</p>	<p>LED: status visual indicator</p> <ul style="list-style-type: none"> • Red LED (Power): Power-on signal, normally on. • Green LED (Link): communication LoRaWAN status signal <p>BUTTON: to reactivate the device (> 5 sec) BUZZER: acoustic signal in case of exceed power or imminent interruption</p>	
<p>CONNECTION</p>	<p>Connectors: 3 poles terminal block (Line_In, Line_Out, Neutral) Wiring size (min ÷ max): 2.5 - 10 mm²/12 – 6AWG.</p>	
<p>SHORT RANGE CONNECTIVITY</p>	<p>Wi-Fi: 802.11 b/g/n (802.11n up to 150 Mbps) IoT Protocols: MQTT, WebSocket, REST Cloud Security: Client Certificate on TLS Bluetooth: Bluetooth v4.2 Antenna: integrated Frequency: 2.4 GHz</p>	
<p>CHAIN2 CONNECTIVITY</p>	<p>Modem C-Band, B-PSK Modulation Application: DLMS/COSEM IEC (IEC 62056-5-3), Data Model: COSEM Data Model (IEC 62056-6-1, IEC 62056-6-2) Compliant with Italian Standard Chain2full: TS CEI 13-82:2020-04, TS CEI 13-83:2020-04, TS CEI 13-84:2020-04</p>	
<p>LONG RANGE RADIO CONNECTIVITY</p>	<p>LoRaWAN Type: ¼ wavelenght monopole. With 90 ° joint Frequency: 868 MHz Dimensions: 8 x 48 mm Gain: 0 dBi Connector: SMA</p>	
<p>ENERGY METER</p>	<p>Minimum Current: 100mA Reference Current: 5 A Nominal rating: 26 A; for Power contract up to 6 KW Maximum range (only for short periods) 32 A; up to 7.4 KW Accuracy: class I (±1%) for Active Energy Measurement Category: CAT II according to EN 61010-2-030 Measurements: Voltage rms • Current rms • Active power Direct connection with shunt</p>	

CERTIFICATIONS	<p>CE Marking: RED Directive 2014/53/UE</p> <ul style="list-style-type: none"> • Art. 3.1(a) – Safety: EN 61010-1, EN 61010-2-30 • Art. 3.1(a) – Health: EN 62311, EN 62479 • Art. 3.1 (b) – EMC: EN 55032; EN 55035; EN 61000-3-2; EN 61000-3-3; ETSI EN 301 489-1; ETSI EN 301 489-3; ETSI EN 301 489-17 • Art. 3.2 – Radio: ETSI EN 300 328; ETSI EN 300 220-2 <p style="text-align: right;">CE</p>
MANUFACTURER	<p>The CHAIN2GATE ENERGY METER 1P LORAWAN is produced and distributed by MAC srl. Via XX Settembre, 23 62019 Recanati (MC) – Italy</p>

CONNECTION SCHEME




	<h2>CHAIN2GATE ENERGY METER 3P</h2>	<p>21/09/2023 Rel.1.7</p>
<p>GENERAL INFO</p>	<p>Size: 53.5 mm (L) x 90.5 mm (H) x 62 mm (D) (3 DIN Modules) Weight: almost 150g Protection grade: IP20 Flammability: UL94-V0 Case: PC/ABS</p>	
<p>OPERATING CONDITION</p>	<p>INDOOR Operating Temperature: -20°C ÷ +50°C Storage Temperature: -30°C ÷ +70°C Humidity Percentage: 5% ÷ 95% Altitude: <= 2000 m Over voltage category: II Pollution Degree: 2 <input type="checkbox"/> Insulation Class: II <input type="checkbox"/></p>	
<p>POWER SUPPLY</p>	<p>Voltage: 230 Vac single phase Operating voltage range: -20%/+15% of the nominal voltage Frequency: 50 Hz Consumption: 120 mA max Protections: Integrated fuse (F1: T1A 300V)</p>	
<p>USER INTERFACE</p>	<p>LED: status visual indicator (red and green) BUTTON: Starting Configuration and reset</p>	
<p>CONNECTION</p>	<p>Connectors: 8 Poles terminal block Wiring Size (min – max): 0.5 ÷ 2.5 mm²/ 22AWG ÷ 14AWG</p>	
<p>SHORT RANGE CONNECTIVITY</p>	<p>Wi-Fi: 802.11 b/g/n (802.11n up to 150 Mbps) IoT Protocols: MQTT, WebSocket, REST Cloud Security: Client Certificate on TLS Bluetooth: Bluetooth v4.2 Antenna: integrated Frequency: 2.4 GHz</p>	
<p>CHAIN2 CONNECTIVITY</p>	<p>Modem C-Band, B-PSK Modulation Application: DLMS/COSEM IEC (IEC 62056-5-3), Data Model: COSEM Data Model (IEC 62056-6-1, IEC 62056-6-2) Compliant with Italian Standard Chain2full: TS CEI 13-82:2020-04, TS CEI 13-83:2020-04, TS CEI 13-84:2020-04</p>	
<p>ENERGY METER</p>	<p>Minimum Current: 100mA Reference Current: 5 A Nominal rating: 45.5 A; for Power contract up to 10 KW Maximum range (only for short periods) 60 A; up to 13.8 KW Accuracy: class I (±1%) for Active Energy Measurement Category: CAT II according to EN 61010-2-030 Measurements: Voltage rms • Current rms • Active power</p>	
<p>CERTIFICATIONS</p>	<p>CE Marking RED Directive 2014/53/UE</p> <ul style="list-style-type: none"> • Art. 3.1(a) – Safety_ EN 61010-1/A1, EN 61010-2-30, • Art. 3.1(a) – Health EN 62311 • Art. 3.1(b) – EMC: EN 55032, EN 55035, EN 61000-3-2, EN 61000-3-3, EN 61000-3-11, EN 61000-3-12, ETSI EN 301 489-1, ETSI EN 301 489-17 • Art 3.2 – Radio: ETSI EN 300 328 	
<p>APPLICATION SW</p>	<p>The Chain2Gate family of devices is based on the JCD Peer to Peer IOT Protocol Architecture. JCD is a message-oriented architecture in Json format for Peer To Peer communication on local and Cloud networks based on MQTT or WebSocket transport.</p>	

	<p>The JCD architecture is also supported by the UCD Universal Cloud Downloader (Update FOTA) technology. UCD is a Cloud Architecture for the notification and distribution of new release files or software modules. The Universal Cloud Downloader service allows the firmware update of the devices remotely through a Cloud connection even if installed and operational in the field.</p> <p>The architecture supports forwarding the Cloud Certificates Upgrade for downloading certificates. The connection configuration to the MQTT broker is activated in a secure and authenticated way by exploiting the use of Server and Client certificates, as also required by the AWS IOT platform.</p>
<p>MANUFACTURER</p>	<p>The CHAIN2GATE ENERGY METER 3P is Produced and distributed by MAC srl. Via XX Settembre, 23 62019 Recanati (MC) – Italy</p>

CONNECTION SCHEME

The TA accepts a cable with a maximum diameter of 10mm, which typically corresponds to a section up to 16mm²
 Vac Main between N and T. The same line is used for Voltage Measure
 The Chain2 Communication is available between T and N

	<h2>CHAIN2GATE ENERGY METER 3P LTE</h2>	<p>21/09/2023 Rel.1.7</p>
<p>GENERAL INFO</p>	<p>Size: 53.5 mm (L) x 90.5 mm (H) x 62 mm (D) (3 DIN Modules) not considering DIN RAIL Clip Weight: almost 150g Protection grade: IP20 Flammability: UL94-V0 Case: PC/ABS</p>	
<p>OPERATING CONDITION</p>	<p>INDOOR Operating Temperature: -20°C ÷ +50°C Storage Temperature: -30°C ÷ +70°C Humidity Percentage: 5% ÷ 95% Altitude: <= 2000 m Over voltage category: II Pollution Degree: 2 Insulation Class: II</p>	
<p>POWER SUPPLY</p>	<p>Voltage: 230 Vac single phase Operating voltage range: -20%/+15% of the nominal voltage Frequency: 50 Hz Consumption: 50 mA max Protections: Integrated fuse (F1: T3.15A 300V)</p>	
<p>USER INTERFACE</p>	<p>LED: status visual indicator (red and green) BUTTON: Starting Configuration and reset</p>	
<p>CONNECTION</p>	<p>POWER SUPPLY Connectors: 8 Poles terminal block Wiring Size (min – max): 0.5 ÷ 2.5 mm²/ 22AWG ÷ 14AWG 4G MODULE: External antenna with 90 ° SMA connector on front panel. Prepared for extension cable. Antenna size: 115 x 8 x 18mm</p>	
<p>SHORT RANGE CONNECTIVITY</p>	<p>Wi-Fi: 802.11 b/g/n (802.11n up to 150 Mbps) IoT Protocols: MQTT, WebSocket, REST Cloud Security: Client Certificate on TLS Bluetooth: Bluetooth v4.2 Antenna: integrated Frequency: 2.4 GHz</p>	
<p>CHAIN2 CONNECTIVITY</p>	<p>Modem C-Band, B-PSK Modulation Application: DLMS/COSEM IEC (IEC 62056-5-3), Data Model: COSEM Data Model (IEC 62056-6-1, IEC 62056-6-2) Compliant with Italian Standard Chain2full: TS CEI 13-82:2020-04, TS CEI 13-83:2020-04, TS CEI 13-84:2020-04</p>	
<p>LONG RANGE RADIO CONNECTIVITY</p>	<p>4G LTE: Data rate: Cat-1 - Max. 10 Mbps (DL) / 5 Mbps (UL): Fallback 2G External Antenna</p>	
<p>ENERGY METER</p>	<p>Minimum Current: 100mA Reference Current: 5 A Nominal rating: 45.5 A; for Power contract up to 10 KW Maximum range (only for short periods) 60 A; up to 13.8 KW Accuracy: class I (±1%) for Active Energy Measurement Category: CAT II according to EN 61010-2-030 Measurements: Voltage rms • Current rms • Active power</p>	

<p>CERTIFICATIONS</p>	<p>CE Marking RED Directive 2014/53/UE</p> <ul style="list-style-type: none"> • Art 3.1(a) – Safety_ EN61010-1, EN61010-2-30, • Art 3.1(a) – Health EN62311 • Art 3.1(b) – EMC: EN 55032, EN 55035, EN 61000-3-2, EN 61000-3-3, EN 61000-3-11, EN 61000-3-12, ETSI EN 301 489-1, ETSI EN 301 489-17 • Art 3.2 – Radio: ETSI EN 300328 <p style="text-align: right;">CE</p>
<p>APPLICATION SW</p>	<p>The Chain2Gate family of devices is based on the JCD Peer to Peer IOT Protocol Architecture. JCD is a message-oriented architecture in Json format for Peer To Peer communication on local and Cloud networks based on MQTT or WebSocket transport.</p> <p>The JCD architecture is also supported by the UCD Universal Cloud Downloader (Update FOTA) technology. UCD is a Cloud Architecture for the notification and distribution of new release files or software modules. The Universal Cloud Downloader service allows the firmware update of the devices remotely through a Cloud connection even if installed and operational in the field.</p> <p>The architecture supports forwarding the Cloud Certificates Upgrade for downloading certificates. The connection configuration to the MQTT broker is activated in a secure and authenticated way by exploiting the use of Server and Client certificates, as also required by the AWS IOT platform.</p>
<p>MANUFACTURER</p>	<p>The CHAIN2GATE ENERGY METER 3P LTE is produced and distributed by MAC srl. Via XX Settembre, 23 62019 Recanati (MC) – Italy</p>

CONNECTION SCHEME

The TA accepts a cable with a maximum diameter of 10mm, which typically corresponds to a section up to 16mmq

Vac Main between N and T. The same line is used for Voltage Measure
The Chain2 Communication is available between T and N

