

CHAIN2GATE ENERGY SUPERVISOR LTE

21/09/2023
Rel.1.6

Technical specifications – Meter Module

GENERAL INFO	<p>Size: 53.5 mm (L) x 90.5 mm (H) x 62 mm (D) (3 DIN Modules) Weight: almost 180g Protection grade: IP20 Flammability: UL94-V0</p>
POWER SUPPLY	<p>Voltage: 230 Vac single phase Operating voltage range 184 – 265 Vac Frequency: 50 Hz Consumption: 50 mA max Protections: Integrated fuse (F1: T3.15A 300V)</p>
USER INTERFACE	<p>Power LED (red): normally on, for indication of service signals Link LED (green): LTE connection indicator Button: service button</p>
CONNECTION	<p>Power supply and measurement: 8 Way connector Wiring Size (min – max): 0.5 ÷ 2.5 mmq</p> <p>BUS (UART power supply and serial communication towards mod. Meter): 5 Way connector Wiring Size (min – max): 0.2 ÷ 1 mmq Cable length: max 50 cm</p> <p>LTE Module: Antenna connector: SMA for mounting antenna (front of the product) SIM Card Holder: push-push type on front panel</p>
SHORT RANGE CONNECTIVITY	<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>
LONG RANGE CONNECTIVITY	<p>4G LTE Data rate: Cat-1 - Max. 10 Mbps (DL) / 5 Mbps (UL): Fallback 2G External Antenna</p> <ul style="list-style-type: none"> Foldable and rotatable external antenna with SMA connector on front panel. Prepared for extension cable. Antenna size: 115 x 38 x 10mm (90 ° folded) Frequency bands for the Italian / European market (B1 / B3 / B5 / B7 / B8 / B20). Fallback in 2G

	<ul style="list-style-type: none"> Slot for Micro-Sim Card (3FF) with slot on the front panel. Only pinless sims are supported.
ENERGY METER	<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 ($\pm 1\%$) for Active Energy (@ PF>0.8) Measurement Category: CAT II according to EN 61010-2-030 Measurements: Voltage rms • Current rms • Active power Current transformers: 60 A split core type. Not replaceable.</p>
CHAIN2 CONNECTIVITY	<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>
CERTIFICATIONS	<p>CE Marking RED Directive 2014/53/UE CE</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 Art. 3.1(b) EMC: <ul style="list-style-type: none"> Generic: EN 55032; EN 55035 (*); EN 61000-3-2; EN 61000-3-3; EN 61000-3-11; EN 61000-3-12 Wi-Fi/BT: ETSI EN 301 489-1; ETSI EN 301 489-17 4G: ETSI EN 301 489-1; ETSI EN 301 489-52 Art. 3.2 Radio: <ul style="list-style-type: none"> Wi-Fi/BT: ETSI EN 300 328; 4G: ETSI EN 301 511; ETSI EN 301 908-1; ETSI EN 301 908-13; ETSI EN 301 908-2 <p>(*) differential mode surge tested at 4 kV, beyond the standard level of the product standard (1kV)</p>
MANUFACTURER	<p>The CHAIN2GATE ENERGY METER is produced and distributed by MAC srl, Via XX Settembre, 23 62019 Recanati (MC) – Italy</p>

Technical specifications – I/O Module

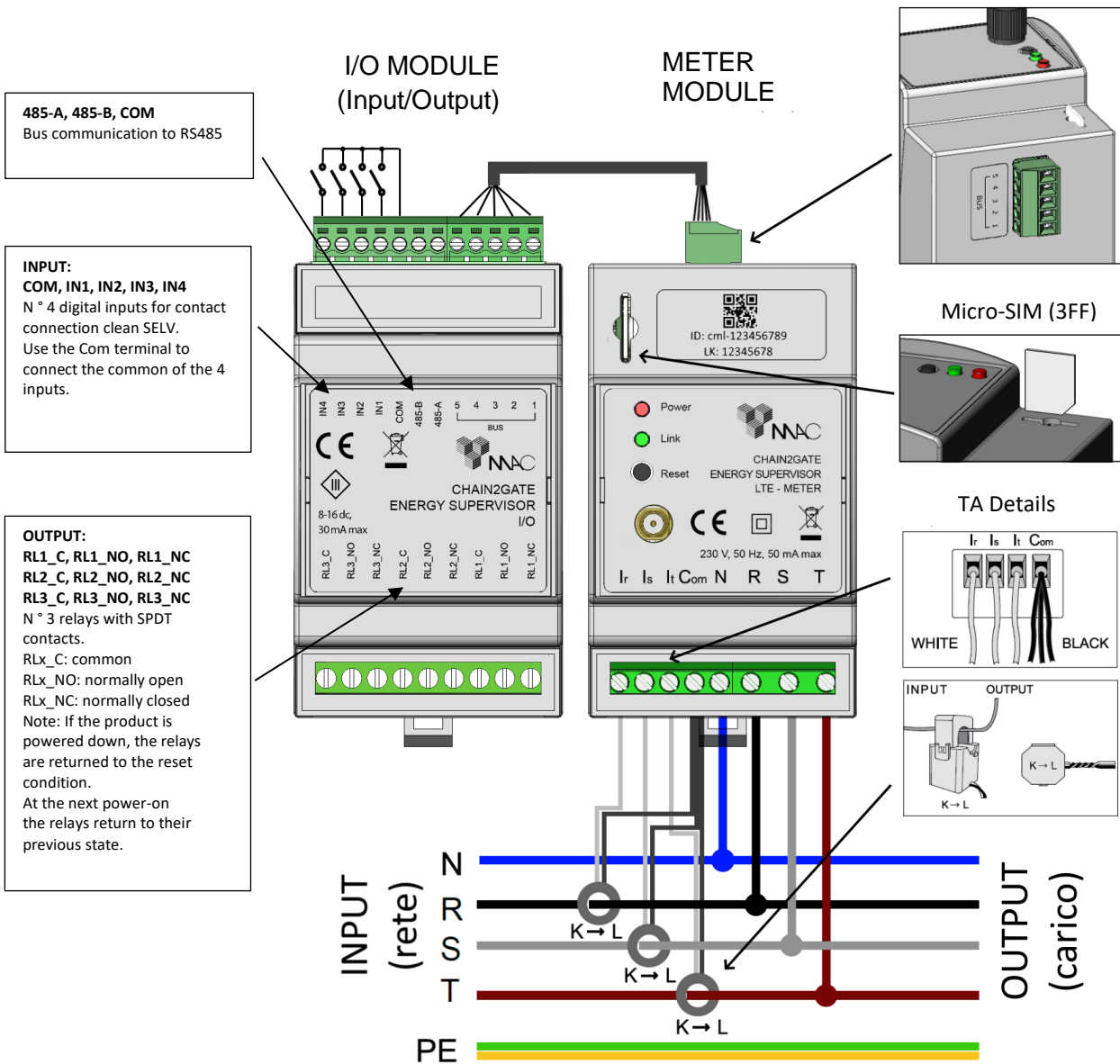
GENERAL INFO	<p>Size: 53.5 mm (L) x 90.5 mm (H) x 62 mm (D) (3 DIN Modules) not considering DIN RAIL Clip Weight: almost 200g Protection grade: IP20</p>
OPERATING CONDITION	<p>Operating Temperature: $-20^{\circ}\text{C} \div +55^{\circ}\text{C}$ Storage Temperature: $-30^{\circ}\text{C} \div +70^{\circ}\text{C}$ Humidity Percentage: 5% \div 95% Altitude: ≤ 2000 m Flammability: UL94-V0 Overvoltage category: II Pollution Degree: 2 Conformal coating: the boards are resin coated as an additional precaution against dust and humidity</p>
POWER SUPPLY	<p>Voltage: Provided by Meter Module Nominal Rating: 13 Vdc Operating voltage range: 8 – 16 Vdc Consumption: 30 mA max</p>
CONNECTION	<p>BUS (UART power supply and serial communication towards mod. Meter): 5 Way connector</p>

CHAIN2GATE

ENERGY AWARE

	<p>Wiring Size (min – max): 0.2 ÷ 1 mmq Cable length: max 50 cm INPUT AND RS-485 (ONLY PREPARED) 7 Way connector Wiring Size (min – max): 0.2 ÷ 1 mmq RELAY 9 Way connector Wiring Size (min – max): 0.5 ÷ 2.5 mmq</p>
OUTPUT	<p>Type: N° 3 general purpose relays NO / NC (***) Nominal voltage: 250 Vac Maximum current: 16 A (max rating for resistive load). Used for driving contactors or small systems (Max current = 5 A; maximum starting power of 150 VA) (***) the relays are bistable type, the FW manages the relays as monostable type, if the product is disconnected, the relays are brought back to the reset condition. At the next power-on, the relays return to their previous state.</p>
INPUT	N ° 4 digital inputs for SELV clean contact connection
BUS	RS-485 prepared for next step
BATTERY	<p>6V, 650mAh Ni-MH rechargeable battery. To support sending the last event via LTE before power-off (max 1 minute). The battery is charged slowly to limit consumption and extend its life. A full charge could take up to approximately 48 hours. (**) The battery charge is temporarily suspended, to ensure safety and reliability, if the internal temperatures rise above + 50 ° C or if they drop below 0 ° C. Battery operation at temperatures below -10 ° C is not guaranteed due to intrinsic battery limitations</p>
CERTIFICATIONS	<p>CE Marking: CE LVD Directive (2014/35/UE) and EMC (2014/30/EU) Safety: EN 61010-1, EN 61010-2-30 EMC: EN 55032; EN 55035; EN 61000-3-2; EN 61000-3-3</p>
MANUFACTURER	<p>The CHAIN2GATE MODULE I/O 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.
- 230 Vac power supply voltage between N and T. The same T line is used for voltage measurement.
- Chain2 communication takes place between T and N

For the neutral and the R, S, T lines, the installer must make derivations from the power cables with a section as specified in the METER MODULE technical specifications