

 CARLO GAVAZZI	
EM530	
 Installation instruction Power analyzer for three-phase and two-phase systems	
 Istruzioni per l'installazione Analizzatore di potenza per sistemi trifase e bifase	
 Installationsanweisung Leistungsanalysator für Drei-und Zweiphasensysteme	
 Instructions pour l'installation Analyseur de puissance pour systèmes triphasé et biphasé	
 Instrucciones para la instalación Analizador de potencial para sistemas trifásicos y bifásicos	
 Veiledning til installation Analyseapparat effekt til trefasede og tofasede systemer	
 EN Operating temperature From -25 to +55 °C/from -13 to +131 °F Storage temperature From -25 to +70 °C/from -13 to +158 °F Protection degree IP40 (not UL evaluated) Overvoltage/Measurement category III Altitude Max 2000 m Consumption <1.3 W/2.6 VA (W value not UL evaluated) Digital output V_{ON} 2.5 V ac/dc, max 100 mA. V_{OFF} 42 V ac/dc max Digital input Contact measuring voltage: 5 V dc +/- 5%. Contact measuring current: 5 mA max Weight 180 g Note: R.H. < 90 % non-condensing @ 40 °C / 104 °F.	
 IT Temperatura di esercizio Da -25 a +55 °C/da -13 a +131 °F Temperatura di stoccaggio Da -25 a +70 °C/da -13 a +158 °F Grado di protezione IP40 (non valutato UL) Categoria di sovratensione/misura III Altitudine Max 2000 m Consumo <1,3 W/2,6 VA (il valore W non è stato verificato da UL) Uscita digitale V_{ON} 2,5 V ca/cc, max 100 mA. V_{OFF} 42 V ca/cc max Ingresso digitale Tensione misura contatto: 5 V cc +/- 5%. Corrente misura contatto: max 5 mA Peso 180 g Note: U.R. < 90 % senza condensa @ 40 °C / 104 °F.	
 DE Betriebstemperatur -25 bis +55 °C/ -13 bis +131 °F Lagertemperatur -25 bis +70 °C/ -13 bis +158 °F Schutzklasse IP40 (nicht UL-geprüft) Überspannungs-Messungskategorie III Höhe Max 2000 m Verbrauch <1.3 W/2.6 VA (W-Wert nicht von UL verifiziert) Digitalausgang V_{ON} 2.5 V ac/dc, max 100 mA. V_{OFF} 42 V ac/dc Digitaleingang Kontakt für Spannungsmessung: 5 V DC +/- 5%. Kontakt für Strommessung: 5 mA max. Gewicht 180 g HINWEIS: R.L. < 90 % nicht kondensierend @ 40 °C / 104 °F.	
 FR Température de fonctionnement De -25 à +55 °C/de -13 à +131 °F Température de stockage De -25 à +70 °C/de -13 à +158 °F Indice de protection IP40 (non évaluée par UL) Catégorie de surtension/mesure III Altitude Max 2000 m Consommation <1.3 W/2.6 VA (valeur W non vérifiée par UL) Sortie logique V_{ON} 2,5 V ca/cc, max 100 mA. V_{OFF} 42 V ca/cc Entrée logique Contact mesurant la tension : 5 V dc +/- 5%. Contact mesurant le courant : 5 mA max Poids 180 g Note : U.R. < 90 % sans condensation @ 40 °C / 104 °F.	
 ES Temperatura de funcionamiento De -25 a +55 °C/de -13 a +131 °F Temperatura de almacenamiento De -25 a +70 °C/de -13 a +158 °F Grado de protección IP40 (sin evaluación UL) Categoría de sobretensión/medida III Altitud Máx 2000 m Consumo <1.3 W/2.6 VA (el valor de W no está verificado por UL) Salida digital V_{ON} 2,5 V ca/cc, max 100 mA. V_{OFF} 42 V ca/cc Entrada digital Tensión de medición del contacto: 5 V CC +/- 5%. Intensidad de medición del contacto: 5 mA máx. Peso 180 g Note: U.R. < 90 % sin condensación @ 40 °C / 104 °F.	
 DA Driftstemperatur Fra -25 til +55 °C/fra -13 til +131 °F Opbevaringstemperatur Fra -25 til +70 °C/fra -13 til +158 °F Beskyttelsesgrad IP40 (ikke UL evalueret) Overspændings-målekategori Kat. III Højde Maks. 2000 m Forbrug <1.3 W/2.6 VA (W-værdien er ikke bekræftet af UL) Digitale udgang V_{ON} 2.5 V ac/dc, max 100 mA. V_{OFF} 42 V ac/dc Digitale indgang Målespænding for kontakt: 5 V dc +/- 5% Målestrøm for kontakt: 5 mA max Vægt 180 g Bemærk: R.F. < 90 % uden kondens @ 40 °C /104 °F.	

ENGLISH	ITALIANO	DEUTSCH	FRANÇAIS	ESPAÑOL	DANSK
Warnings DANGER! Live parts. Heart attack, burns and other injuries. - Disconnect the power supply and loads before connecting/disconnecting the electrical wires. - Only use the analyzer at the specified voltage and current. - The analyzer should only be installed by qualified personnel experienced in working in safety. - Access to the terminals is reserved for qualified personnel for maintenance operations. - The system installer is liable for the safety of any system that includes the analyzer	Avvertenze PERICOLO! Parti sotto tensione. Arresto cardiaco, bruciature e altre lesioni. - Scollegare l'alimentazione e i carichi prima di collegare/scollegare i cavi elettrici. - Utilizzare l'analizzatore solo alla tensione e corrente specificate. - L'installazione degli analizzatori deve essere eseguita solo da personale specializzato. - L'accesso ai terminali è riservato a personale specializzato per operazioni di manutenzione. - La sicurezza di qualsiasi sistema che incorpora l'analizzatore ricade sotto la responsabilità dell'installatore del sistema.	Hinweise GEFAHR! Unter Spannung stehende Teile. Herzstillstand, Verbrennungen und sonstige Verletzungen. - Bevor Stromkabel angeschlossen/gelöst werden, muss die Stromversorgung und die Last unterbrochen werden. - Den Analysator ausschließlich mit der angegebenen Spannung und dem angegebenen Strom betreiben. - Die Installation der Analysatoren darf ausschließlich von Personen vorgenommen werden, die in der Lage sind, unter Sicherheitsbedingungen zu arbeiten. - Der Zugang zu den Klemmen ist qualifiziertem Personal für Wartungsarbeiten vorbehalten. - Die Sicherheit jedes Systems, in welches des Analysator eingebaut wird, liegt in der Verantwortung derjenigen Person, die das System installiert.	Avertissements DANGER! Pièces sous tension. Crise cardiaque, brûlures et autres blessures. - Débrancher l'alimentation et les charges avant de brancher/débrancher les câbles électriques. - Utiliser l'analyseur seulement à la tension et au courant spécifiés. - L'installation des analyseurs dot être effectuée seulement par des personnes sachant opérer en sécurité. - L'accès aux bornes est réservé au personnel qualifié pour la maintenance. - La sécurité de tout système qui incorpore l'analyseur retombe sous la responsabilité de l'installateur du système.	Advertencias ¡PELIGRO! Elementos sometidos a tensión. Ataque al corazón, quemaduras u otras lesiones. - Desconectar la alimentación y las cargas antes de conectar/conectar los cables eléctricos. - Utilizar el analizador solo a la tensión y corriente especificadas. - La instalación de los analizadores solo deberá correr a cargo de personas que sepan operar de forma segura. - El acceso a los terminales está reservado solo para personal calificado para operaciones de mantenimiento. - La seguridad de cualquier sistema que incorpora el analizador será responsabilidad del instalador del sistema.	Advarsler FARE! Spændingsførende dele. Hjerteranfald, forbrændinger og andre kvæstelser. - Forsyningen og belastningen frakobles inden tilslutning/frakobling de elektriske kabler. - Analyseapparatet må kun bruges ved den angivne spænding og strøm. - Analysatoren må kun installeres af fagkyndigt/autoriseret personale, som ved, hvordan man arbejder i sikkerhed. - Adgang til terminaler er forbeholdt kvalificeret personale til vedligeholdelse. - Sikkerheden for et hvilket som helst system, som omfatter analyseapparatet, er installatørens ansvar.

 NOTICE: only use the analyzer at the specified voltage and current to avoid permanent damage. NOTICE: no one is authorized to open the analyzer. This operation is reserved exclusively for CARLO GAVAZZI technical service personnel. Protection may be impaired if the instrument is used in a manner not specified by the manufacturer.	 AVVISO: utilizzare l'analizzatore solo alla tensione e corrente specificate per evitare danni permanenti. AVVISO: nessuno è autorizzato ad aprire l'analizzatore. Solo il personale dell'assistenza tecnica CARLO GAVAZZI può farlo. La protezione può essere compromessa se lo strumento viene usato in un modo non specificato dal costruttore.
---	--

 	 This manual is an integral part of the product. It must be consulted for analyzer installation. It must be kept in good condition and in a clean location accessible to all operators.
--	---

 	 Cleaning Use a slightly dampened cloth to clean the display. Do not use abrasives or solvents.
--	--

 	 Responsibility for disposal The product must be disposed of at the relative recycling centers specified by the government or local public authorities. Correct disposal and recycling will contribute to the prevention of potentially harmful consequences to the environment and persons.
--	---

 	 Service and warranty In the event of malfunction, fault, requests for information or to purchase accessory modules, contact the CARLO GAVAZZI branch or distributor in your country. Installation and use of analyzers other than those indicated in the provided instructions void the warranty.
--	---

 	 UL notes: The instrument must be installed taking care of leaving the external disconnecting device easily accessible. The current transformers may not be installed in equipment where they exceed 75 percent of the wiring space of any cross-sectional area within the equipment. Restrict installation of current transformer in an area where it would block ventilation openings. Restrict installation of current transformer in an area of breaker arc venting. Secure current transformer and route conductors so that they do not directly contact live terminals or bus. Warning: to reduce the risk of electric shock, always open or disconnect circuit from power-distribution system (or service) or building before installing or servicing current transformers. For use with Listed or R/C Energy Monitoring Current Sensors rated for basic Insulation. An external switch or circuit-breaker that must be mounted near the instrument is required. To be used in a pollution degree 2 or better environment only Indoor use only Auxiliary inputs/outputs (Digital input, Digital output, RS485, M-Bus) must be connected only to Limited-Energy Circuit in accordance with UL/CSA 61010-1 or Class 2 supply source which complies with the National Electrical Code (NEC), NFPA 70, Clause 725.121 and Canadian Electrical Code (CEC), Part I, C22.1 Evaluated as open type device; it is intended to be installed inside a dedicated NRTL certified fire/electrical enclosure (overall enclosure) or inside end-product equipment enclosure; it is not intended for retrofit installations in the enclosure of switchgears or panel boards.
--	---

Installing EM530 / Installare EM530 / Installation des EM530 / Installer le EM530 / Instalar el EM530 / Installer EM530

1. Mount EM530 on DIN rail.
2. Open terminal caps.
3. Complete measuring input connections.

Un (L-N)	120 ... 240 V
Un (L-L)	208...415 V
Voltage tolerance	-20 +15%
Frequency	50...60 Hz
Note: for MID versions the voltage range is limited to 3x230 (400) V, frequency to 50Hz.	
In	5 A
Imax	6 A

4. Close the terminal caps.
5. Seal the terminal caps (MID requirement).
6. Connect inputs and digital output, RS485 or M-Bus.
7. Turn on power and check correct operation.
8. Complete the MID programming (only PF version). The CT ratio must be set before use. Once set, the CT ratio cannot be changed. Follow the guided procedure on the display to set the CT ratio.
9. Configure EM530.

1. Montare EM530 su guida DIN.
2. Aprire i coprimorsetti.
3. Eseguire i collegamenti degli ingressi di misura.

Un (L-N)	120 ... 240 V
Un (L-L)	208...415 V
Tolleranza tensione	-20 +15%
Frequenza	50...60 Hz
Nota: per le versioni MID il range di tensione è limitato a 3x230(400)V, la frequenza a 50Hz.	
In	5 A
Imax	6 A

4. Chiudere i coprimorsetti.
5. Sigillare i coprimorsetti (requisito MID).
6. Collegare ingressi e uscita digitale, RS485 o M-Bus.
7. Alimentare e verificare il corretto funzionamento.
8. Eseguire la programmazione MID (solo versione PF). Il rapporto TA deve essere programmato prima dell'uso. Una volta programmato, il rapporto TA non può essere modificato. Seguire la procedura guidata sul display per impostare il rapporto TA.
9. Configurare l' EM530.

1. EM530 auf DIN-Schiene montieren.
2. Anschlussabdeckungen öffnen.
3. Eingangsanschlüsse komplett durchmessen.

Un (L-N)	120 ... 240 V
Un (L-L)	208...415 V
Spannungstoleranz	-20 +15%
Frequenz	50...60 Hz
Hinweis: bei MID-Versionen ist der Spannungsbereich auf 3 x 230 (400) V und die Frequenz auf 50 Hz begrenzt.	
In	5 A
Imax	6 A

4. Anschlussabdeckungen schließen.
5. Siegeln Sie die Anschlussabdeckungen (MID-Anforderung).
6. Eingänge und digitalen Ausgang, RS485 oder M-Bus anschließen.
7. Die Stromversorgung einschalten und die einwandfreie Funktion prüfen.
8. MID-Programmierung (nur PF-Version). Das CT-Verhältnis muss vor der Verwendung programmiert werden. Einmal programmiert, kann das CT-Verhältnis nicht mehr geändert werden. Folgen Sie dem Konfigurationsablauf auf dem Display, um den CT-Verhältnis einzustellen.
9. Konfigurieren Sie das EM530.

1. Monter EM530 sur un rail DIN.
2. Ouvrir les cache-bornes.
3. Compléter la mesure des connexions d'entrée.

Un (L-N)	120 ... 240 V
Un (L-L)	208...415 V
Tolérance de tension	-20 +15%
Fréquence	50...60 Hz
Remarque: pour les versions MID, la plage de tension est limitée à 3x230 (400) V et la fréquence à 50Hz.	
In	5 A
Imax	6 A

4. Fermer les cache-bornes.
5. Sceller les cache-bornes (exigence MID).
6. Connecter les entrées et les sorties numériques, RS485 ou M-Bus.
7. Alimenter et vérifier le fonctionnement correct.
8. Programmation MID (seulement version PF). Le rapport CT doit être programmé avant utilisation. Une fois programmé, le rapport CT ne peut être modifié. Suivre la procédure guidée sur l'afficheur pour programmer le rapport CT.
9. Configurer EM530.

1. Montar el EM530 en el carril DIN.
2. Abrir los tapones para terminales.
3. Realizar las conexiones de las entradas de medición.

Un (L-N)	120 ... 240 V
Un (L-L)	208...415 V
Tolerancia de tensión	-20 +15%
Frecuencia	50...60 Hz
Nota: para las versiones MID, el rango de tensión está limitado a 3x230 (400) V, la frecuencia a 50Hz.	
In	5 A
Imax	6 A

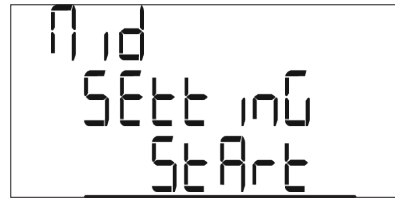
4. Cerrar los tapones para terminales.
5. Sellar los cubrebornes (requisito MID).
6. Conectar las entradas y la salida digital, RS485 o M-Bus.
7. Alimentar y comprobar el correcto funcionamiento.
8. Programación MID (solo versión PF). La relación CT debe programarse antes del uso. Una vez programada, la relación CT no se puede modificar. Seguir el procedimiento guiado en el display para configurar la relación CT.
9. Configurar el EM530.

1. Monter EM530 på DIN-skinne.
2. Åbn klemmedæksler.
3. Udfør måling af indgangsforbindelser.

Un (L-N)	120 ... 240 V
Un (L-L)	208...415 V
Spændingstolerance	-20 +15%
Frekvens	50...60 Hz
Bemærkninger: for MID-versioner er spændingsområdet begrænset til 3x230 (400) V, frekvens til 50Hz.	
In	5 A
Imax	6 A

4. Luk klemmedækslerne.
5. Forsegle klemmedæksler (MID krav).
6. Tilslut indgange og digital udgang, RS485 eller M-Bus.
7. Sæt strøm til, og kontrollér den korrekte drift.
8. Programmering af MID (kun PF-version). CT-forholdet skal programmeres inden brug. Når det er programmeret, kan CT-forholdet ikke ændres. Følg den trinvis procedure på displayet for at indstille CT-forholdet.
9. Konfigurer EM530.

8



9



User manual



UCS Desktop



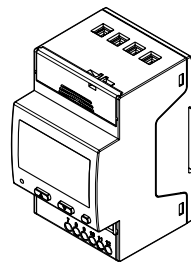
Keypad



RS485



OR



User manual

www.productselection.net/MANUALS/UK/EM500_im_use.pdf

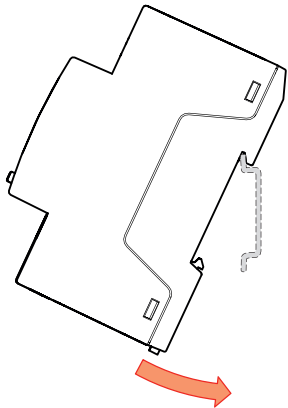
UCS Desktop

www.productselection.net/Download/UK/ucs.zip

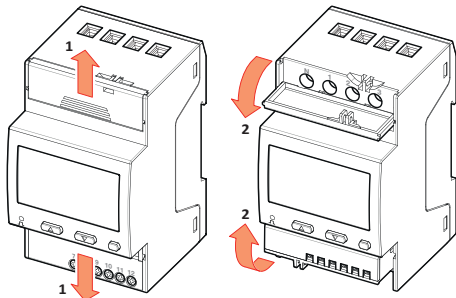


CARLO GAVAZZI Controls SpA
via Safforze, 8 32100 Belluno (BL)Italy
www.gavazziautomation.com
info@gavazzi-automation.com
info: +39 0437 355811 / fax: +39 0437 355880

1



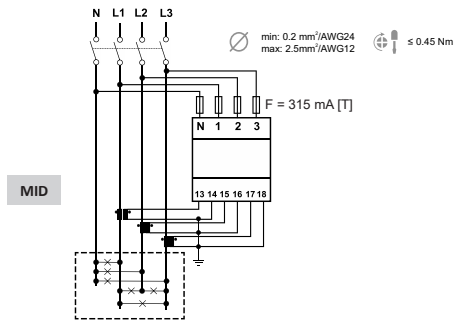
2



3

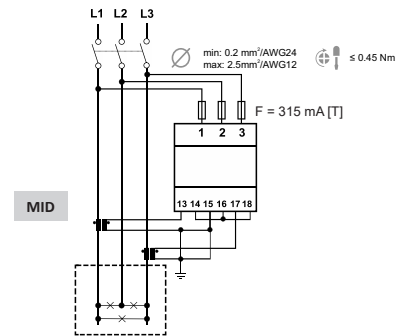
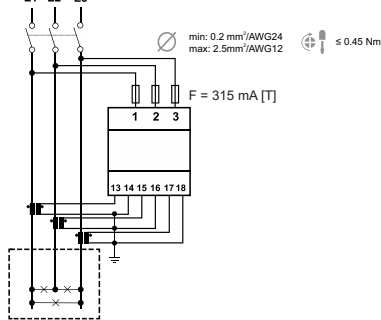
3P.n

EN: three-phase system with neutral
IT: sistema trifase con neutro
DE: dreiphasiges System mit Neutralleiter
FR: système triphasé avec neutre
ES: sistema trifásico con carga neutral
DA: trefasesystem med neutral



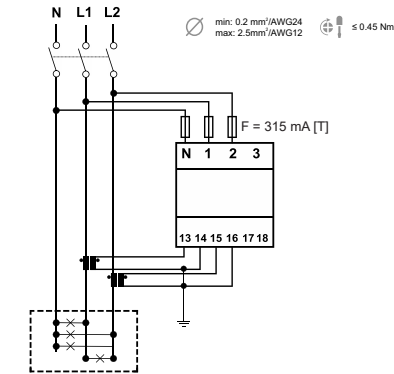
3P

EN: three-phase system without neutral
IT: sistema trifase senza neutro
DE: dreiphasiges System mit Neutralleiter
FR: système triphasé avec neutre
ES: sistema trifásico con carga neutral
DA: trefasesystem med neutral

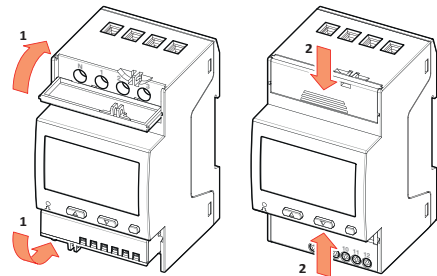


2P

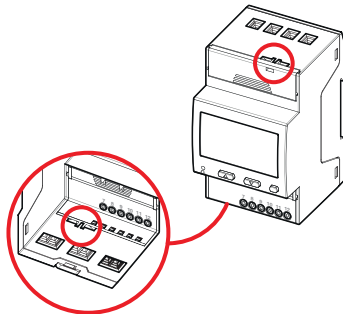
EN: two-phase system
IT: sistema bifase
DE: zweiphasiges System
FR: système biphasé
ES: sistema bifásico
DA: tofasesystem



4



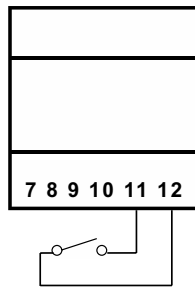
5



6

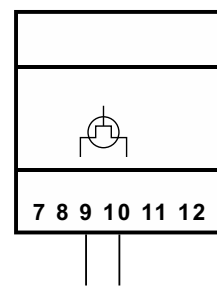
EN: Digital input
IT: Ingresso digitale
DE: Digitaleingang
FR: Entrée logique
ES: Entrada digital
DA: Digital indgang

min: 0.2 mm²/AWG24
max: 1.5 mm²/AWG14

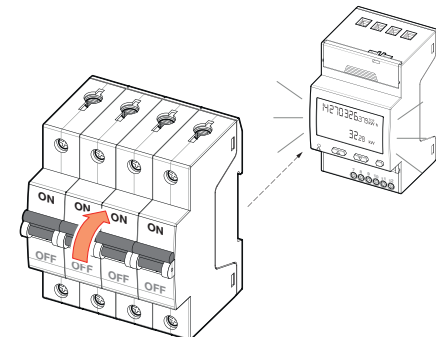


EN: Digital output (option O1)
IT: Uscita digitale (opzione O1)
DE: Digitalausgang (Option O1)
FR: Sortie logique (option O1)
ES: Salida digital (opción O1)
DA: Digital udgang (option O1)

min: 0.2 mm²/AWG24
max: 1.5 mm²/AWG14

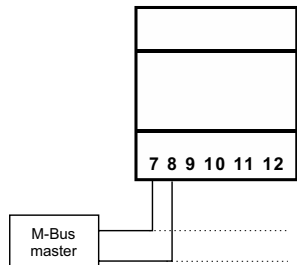


7



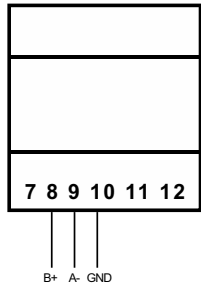
EN: M-Bus port (option M1)
IT: Porta M-Bus (opzione M1)
DE: M-Bus Port (Option M1)
FR: Port M-Bus (option M1)
ES: Puerto M-Bus (opción M1)
DA: M-Bus-port (option M1)

min: 0.2 mm²/AWG24
max: 1.5 mm²/AWG14



EN: RS485 port (option S1)
IT: Porta RS485 (opzione S1)
DE: RS485 Port (Option S1)
FR: Port RS485 (option S1)
ES: Puerto RS485 (opción S1)
DA: RS485-port (option S1)

min: 0.2 mm²/AWG24
max: 1.5 mm²/AWG14



EN: RS485 terminalization. Last device on RS485
IT: Terminalizzazione RS485. Ultimo dispositivo su RS485
DE: RS485-Terminierung. Letztes Gerät auf RS485
FR: Terminaison RS485. Dernier dispositif sur RS485
ES: Terminalización RS485. Último dispositivo en RS485
DA: Terminering af RS485. Sidste anordning på RS485

min: 0.2 mm²/AWG24
max: 1.5 mm²/AWG14

