

	<b>EM640</b>
<b>Installation instruction</b> Energy meter for three phase, two phase and single phase systems	
<b>Istruzioni per l'installazione</b> Contatore di energia per sistemi trifase, bifase e monofase	
<b>Installationsanweisung</b> Energiezähler für Drei-, Zwei- und Einphasensysteme	
<b>Instructions pour l'installation</b> Compteur d'énergie pour systèmes triphasés, biphasés et monophasés	
<b>Instrucciones para la instalación</b> Contador de energía para sistemas trifásicos, bifásicos y monofásicos	
<b>Vejlledning til installation</b> Energimåler til trefasede, tofasede og enfasede systemer	
<b>EN</b>	
<b>Operating temperature</b>	From -25 to +70 °C (-13 to +158 °F) at I <sub>max</sub> = 45 A From -25 to +55 °C (-13 to +131 °F) at I <sub>max</sub> = 65 A
<b>Storage temperature</b>	From -30 to +70 °C / from -22 to +158 °F
<b>Protection degree</b>	Terminals: IP20; front: IP51
<b>Overvoltage/Measurement category</b>	III, 4kV rated impulse voltage
<b>Utilization category</b>	UC2
<b>Protective class</b>	II
<b>Altitude</b>	Max 3000 m / 9842.52 ft
<b>Consumption</b>	6 VA
<b>Weight</b>	370 g / 0.82 lb
<b>LED constant</b>	1000 pulse/kWh
<i>Note: R.H. &lt; 90 % non-condensing @ 40 °C / 104 °F.</i>	

<b>IT</b>	
<b>Temperatura di esercizio</b>	Da -25 a +70 °C (-13 a +158 °F) con I <sub>max</sub> = 45 A Da -25 a +55 °C (-13 a +131 °F) con I <sub>max</sub> = 65 A
<b>Temperatura di stoccaggio</b>	Da -30 a +70 °C / da -22 a +158 °F
<b>Grado di protezione</b>	Terminali: IP20; frontale: IP51
<b>Classe di protezione</b>	II
<b>Categoria di sovratensione/ misura</b>	III, tensione di impulso nominale 4kV
<b>Categoria di utilizzo</b>	UC2
<b>Altitudine</b>	Max 3000 m / 9842,52 ft
<b>Consumo</b>	6 VA
<b>Peso</b>	370 g / 0,82 lb
<b>Costante LED</b>	1000 impulso/kWh
<i>Note: U.R. &lt; 90 % senza condensa @ 40 °C / 104 °F.</i>	

<b>DE</b>	
<b>Betriebstemperatur</b>	Von -25 bis +70 °C (-13 bis +158 °F) bei I <sub>max</sub> = 45 A Von -25 bis +55 °C (-13 bis +131 °F) bei I <sub>max</sub> = 65 A
<b>Lagertemperatur</b>	-30 bis +70 °C / -22 bis +158 °F
<b>Schutzklasse</b>	Anschlüsse: IP20; Front: IP51
<b>Schutzklasse</b>	II
<b>Überspannungs-Messungskategorie</b>	III, 4kV Nennimpulsspannung
<b>Einsatzkategorie</b>	UC2
<b>Höhe</b>	Max 3000 m / 9842,52 ft
<b>Leistungsaufnahme</b>	6 VA
<b>Gewicht</b>	370 g / 0,82 lb
<b>LED Konstant</b>	1000 Impulse/kWh
<i>Note: R.L. &lt; 90 % nicht kondensierend @ 40 °C / 104 °F.</i>	

<b>FR</b>	
<b>Température de fonctionnement</b>	De -25 à +70 °C (-13 à +158 °F) à I <sub>max</sub> = 45 A De -25 à +55 °C (-13 à +131 °F) à I <sub>max</sub> = 65 A
<b>Température de stockage</b>	De -30 a +70 °C / de -22 a +158 °F
<b>Classe de protection</b>	Bornes <span> </span> : IP20 <span> </span> ; face avant <span> </span> : IP51
<b>Catégorie d'emploi</b>	II
<b>Catégorie de surtension/mesure</b>	III, Tension d'impulsion nominale 4kV
<b>Classe de protection</b>	UC2
<b>Altitude</b>	Max 3000 m / 9842,52 ft
<b>Consommation</b>	6 VA
<b>Poids</b>	370 g / 0,82 lb
<b>Constante DEL</b>	1000 impulsions/kWh
<i>Note: U.R. &lt; 90 % sans condensation @ 40 °C / 104 °F.</i>	

<b>ES</b>	
<b>Temperatura de funcionamiento</b>	De -25 a +70 °C (-13 a +158 °F) a I <sub>max</sub> = 45 A De -25 a +55 °C (-13 a +131 °F) a I <sub>max</sub> = 65 A De -30 a +70 °C / de -22 a +158 °F
<b>Temperatura de almacenamiento</b>	
<b>Grado de protección</b>	Terminales: IP20; frontal: IP51
<b>Clase de protección</b>	II
<b>Categoría de sobretensión/ medida</b>	III, tensión de pulso nominal 4kV
<b>Classe de protection</b>	UC2
<b>Altitud</b>	Máx 3000 m / 9842,52 ft
<b>Consumo</b>	6 VA
<b>Peso</b>	370 g / 0,82 lb
<b>Constante LED</b>	1000 pulsos/kWh
<i>Note: U.R. &lt; 90 % sin condensación@ 40 °C / 104 °F.</i>	

<b>DA</b>	
<b>Driftstemperatur</b>	Fra -25 til +70 °C (-13 til +158 °F) ved I <sub>max</sub> = 45 A Fra -25 til +55 °C (-13 til +131 °F) ved I <sub>max</sub> = 65 A
<b>Opbevaringstemperatur</b>	Fra -30 til +70 °C / fra -22 til +158 °F
<b>Beskyttelsesgrad</b>	Terminaler: IP20; front: IP51
<b>Beskyttelsesklasse</b>	II
<b>Overspændings-målekategori</b>	III, 4kV nominal impulsspænding
<b>Brugskategori</b>	UC2
<b>Højde</b>	Maks 3000 m / 9842,52 ft
<b>Forbrug</b>	6 VA
<b>Vægt</b>	370 g / 0,82 lb
<b>LED Konstant</b>	1000 pulserende/kWh
<i>Bemærk: R.F. &lt; 90 % uden kondens @ 40 °C / 104 °F.</i>	

<b>ENGLISH</b>	
<b>Warnings</b>	  <b>⚠️ DANGER!</b> Live parts. Heart attack, burns and other injuries.
<ul style="list-style-type: none"><li>Disconnect the power supply and loads before connecting/disconnecting the electrical wires.</li> <li>Only use the analyzer at the specified voltage and current.</li> <li>The analyzer should only be installed by qualified personnel experienced in working in safety.</li> <li>Access to the terminals is reserved for qualified personnel for maintenance operations.</li></ul>	

**NOTICE:** *The system installer is liable for the safety of any system that includes the analyzer.*

**NOTICE:** *Always use electrical wires according to all applicable local and international regulations.*

**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.*

 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**

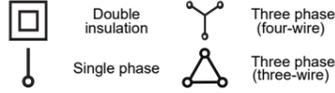
 The product must be disposed of at the relative recycling centers specified by the government or local public authorities. Correct disposal and recycling will contribute to the prevention of potentially harmful consequences to the environment and persons.

**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.

**Notes**

- The instrument must be installed taking care of leaving the external disconnecting device easily accessible.
- 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.
- Use copper conductors only.



<b>ITALIANO</b>	
<b>Avvertenze</b>	  <b>⚠️ PERICOLO!</b> Parti sotto tensione. Arresto cardiaco, bruciature e altre lesioni.
<ul style="list-style-type: none"><li>Scollegare l'alimentazione e i carichi prima di collegare/scollegare i cavi elettrici.</li> <li>Utilizzare l'analizzatore solo alla tensione e corrente specificate.</li> <li>L'installazione degli analizzatori deve essere eseguita solo da personale specializzato.</li> <li>L'accesso ai terminali è riservato a personale specializzato per operazioni di manutenzione.</li></ul>	

**AVVISO:** *La sicurezza di qualsiasi sistema che incorpora l'analizzatore ricade sotto la responsabilità dell'installatore del sistema.*

**AVVISO:** *utilizzare sempre cavi elettrici conformi a tutte le normative locali e internazionali applicabili.*

**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.*

 Questo manuale è parte integrante del prodotto. Deve essere consultato per l'installazione dell'analizzatore. Deve essere mantenuto in buone condizioni e conservato in un luogo pulito e accessibile agli operatori.

**Pulizia**

Per mantenere pulito il display usare un panno leggermente umidito. Non usare abrasivi o solventi.

**Responsabilità di smaltimento**

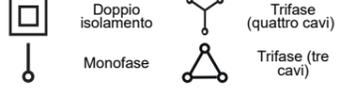
 Smaltire con raccolta differenziata tramite le strutture di raccolta indicate dal governo o dagli enti pubblici locali. Il corretto smaltimento e il riciclaggio aiuteranno a prevenire conseguenze potenzialmente negative per l'ambiente e per le persone.

**Assistenza e garanzia**

In caso di malfunzionamento, guasto, necessità informazioni o per acquistare moduli accessori, contattare la filiale CARLO GAVAZZI o il distributore nel paese di appartenenza. L'installazione e l'uso dell'analizzatore diversi da quanto indicato nelle istruzioni fornite invalidano la garanzia.

**Note**

- Lo strumento deve essere installato facendo attenzione a lasciare il dispositivo di sezionamento esterno facilmente accessibile.
- È richiesto un interruttore o interruttore automatico esterno che deve essere montato vicino allo strumento.
- Devono essere utilizzati soltanto in un ambiente con grado di inquinamento 2 o migliore.
- Solo per uso in ambienti interni.
- Utilizzare soltanto conduttori in rame.



<b>DEUTSCH</b>	
<b>Hinweise</b>	  <b>⚠️ GEFAHR!</b> Unter Spannung stehende Teile. Herzstillstand, Verbrennungen und sonstige Verletzungen.
<ul style="list-style-type: none"><li>Bevor Stromkabel angeschlossen/gelöst werden, muss die Stromversorgung und die Last unterbrochen werden.</li> <li>Den Analysator ausschließlich mit der angegebenen Spannung und dem angegebenen Strom betreiben.</li> <li>Die Installation der Analysatoren darf ausschließlich von Personen vorgenommen werden, die in der Lage sind, unter Sicherheitsbedingungen zu arbeiten.</li> <li>Der Zugang zu den Klemmen ist qualifiziertem Personal für Wartungsarbeiten vorbehalten</li></ul>	

**HINWEIS:** *Die Sicherheit jedes Systems, in welches des Analysator eingebaut wird, liegt in der Verantwortung derjenigen Person, die das System installiert.*

**HINWEIS:** *Immer elektrische Kabel gemäß allen anwendbaren lokalen und internationalen Regulationen verwenden.*

**HINWEIS:** *den Analysator ausschließlich mit der angegebenen Spannung und dem angegebenen Strom betreiben, um dauerhafte Schäden zu vermeiden.*

**HINWEIS:** *es ist niemandem gestattet, den Analysator zu öffnen. Dies ist nur dem Kunden-dienstpersonal der Fa. CARLO GAVAZZI gestattet. Die Schutzfunktion kann beeinträchtigt werden, wenn das Instrument anders als vom Hersteller vorgesehen benutzt wird.*

 Diese Anleitung ist wesentlicher Bestandteil des Produkts. Sie muss zur Installation des Analysators herangezogen werden. Diese Anleitung muss in einwandfreiem Zustand gehalten und in einem sauberen, für die Bediener zugänglichen Ort aufbewahrt werden.

**Reinigung**

Zur Reinigung des Displays ein leicht angefeuchtetes Tuch verwenden. Keine Scheuer- oder Lösungsmittel verwenden.

**Verantwortlichkeit für Entsorgung**

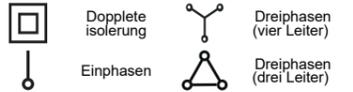
 Dieses Produkt muss bei einem geeigneten von der Regierung oder lokalen öffentlichen Autoritäten anerkannten Recyclingbetrieb entsorgt werden. Ordnungsgemäße Entsorgung und Recycling tragen zur Vermeidung möglicher schädlicher Folgen für Umwelt und Personen bei.

**Kundendienst und Garantie**

Bei Funktionsstörungen, Ausfall, Anforderung von Informationen oder Erwerb von Zusatzmodulen bitte Kontakt mit der Filiale CARLO GAVAZZI oder mit dem Händler im Installationsland aufnehmen  
Von den Angaben dieser Anleitung abweichende Installation und Betrieb des Analysators führen zur Ungültigkeit der Garantie.

**Hinweise**

- Beim Installieren des Instruments muss dafür gesorgt werden, dass die externe Abtrennvorrichtung leicht zugänglich gelassen wird.
- Ein externer Schalter oder Schutzschalter, der nahe beim Instrument montiert sein muss, ist erforderlich.
- Nur in einer Umgebung mit Verschmutzungsgrad 2 oder besser verwenden.



<b>FRANÇAIS</b>	
<b>Avertissements</b>	  <b>⚠️ DANGER!</b> Pièces sous tension. Crise cardiaque, brûlures et autres blessures.
<ul style="list-style-type: none"><li>Débrancher l'alimentation et les charges avant de brancher/débrancher les câbles électriques.</li> <li>Utiliser l'analyseur seulement à la tension et au courant spécifiés.</li> <li>L'installation des analyseurs dot être effectuée seulement par des personnes sachant opérer en sécurité.</li> <li>L'accès aux bornes est réservé au personnel qualifié pour la maintenance.</li></ul>	

**AVIS :** *La sécurité de tout système qui incorpore l'analyseur retombe sous la responsabilité de l'installateur du système.*

**AVIS:** *utiliser toujours des fils électriques conformes à toutes les réglementations locales et internationales applicables.*

**AVIS :** *utiliser l'analyseur seulement à la tension et au courant spécifiés pour éviter des dommages permanents.*

**AVIS :** *personne n'est autorisé à ouvrir l'analyseur. Seul le personnel de l'assistance technique CARLO GAVAZZI peut le faire. La protection peut être compromise si l'instrument est utilisé d'une manière non spécifiée par le fabricant.*

 Ce manuel fait partie intégrante du produit. Il doit être consulté pour l'installation de l'analyseur. Il doit être maintenu dans de bonnes conditions et conservé dans un lieu propre et accessible aux opérateurs.

**Nettoyage**

Pour maintenir l'afficheur propre utiliser un chiffon légèrement humidifié. Ne pas utiliser d'abrasifs ou de solvants.

**Responsabilité en matière d'élimination**

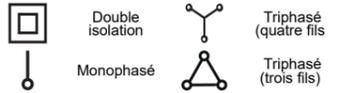
 Éliminer selon le tri sélectif avec les structures de récupération indiquées par l'État ou par les organismes publics locaux. Bien éliminer et recycler aidera à prévenir des conséquences potentiellement néfastes pour l'environnement et les personnes.

**Service et garantie**

En cas de dysfonctionnement, de panne, de besoin d'informations, ou pour acheter des modules accessoires, contacter la filiale ou le distributeur CARLO GAVAZZI de votre pays. Une installation et une utilisation de l'analyseur autres que celles indiquées dans les instructions fournies invalident la garantie.

**Notes**

- L'instrument doit être installé en faisant attention à laisser un accès facile à l'appareil de déconnexion externe.
- Un interrupteur ou disjoncteur externe devant être monté à proximité de l'instrument est requis.
- A utiliser uniquement dans un environnement de degré de pollution 2 ou supérieur.
- Utilisation en intérieur uniquement.
- Utiliser uniquement des conducteurs en cuivre.
- Les entrées/sorties auxiliaires (entrée numérique, sortie numérique, RS485, M-Bus) doivent être connectés uniquement au circuit à énergie limitée



<b>ESPAÑOL</b>	
<b>Advertencias</b>	  <b>⚠️ PELIGRO!</b> Elementos sometidos a tensión. Ataque al corazón, quemaduras u otras lesiones
<ul style="list-style-type: none"><li>Desconectar la alimentación y las cargas antes de conectar/conectar los cables eléctricos.</li> <li>Utilizar el analizador solo a la tensión y corriente especificadas.</li> <li>La instalación de los analizadores solo deberá correr a cargo de personas que sepan operar de forma segura.</li> <li>El acceso a los terminales está reservado solo para personal calificado para operaciones de mantenimiento.</li></ul>	

**AVISO:** *La seguridad de cualquier sistema que incorpora el analizador será responsabilidad del instalador del sistema.*

**AVISO:** *use hilos eléctricos en cumplimiento con las regulaciones locales e internacionales de aplicación en todo momento.*

**AVISO:** *utilizar el analizador solo a la tensión y corriente especificadas para evitar daños permanentes.*

**AVISO:** *nadir está autorizado para abrir el analizador. Solo el personal de la asistencia técnica CARLO GAVAZZI puede hacerlo. El uso del instrumento de un modo no especificado por el fabricante podría afectar a la protección.*

Este manual forma parte integrante del producto. Debe consultarse para instalar el analizador. Debe mantenerse en buenas condiciones y conservarse en un lugar limpio y accesible a los operadores.

**Limpieza**

Para mantener limpio el display, usar un paño ligeramente húmedo. No usar abrasivos ni disolventes.

**Responsabilidad de eliminación**

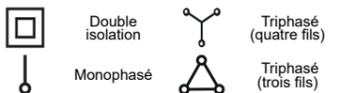
 Eliminar mediante recogida selectiva a través de las estructuras de recogida indicadas por el gobierno o por los entes públicos locales. La correcta eliminación y el reciclaje ayudarán a prevenir consecuencias potencialmente negativas para el medioambiente y para las personas.

**Asistencia y garantía**

En caso de fallo de funcionamiento, avería, necesidad de información o para adquirir módulos accesorios, contactar a la filial CARLO GAVAZZI o al distribuidor en el país de pertenencia. La instalación y el uso del analizador diferentes de lo indicado en las instrucciones facilitadas invalidan la garantía.

**Notas**

- El instrumento debe instalarse procurando que el dispositivo de desconexión externo quede fácilmente accesible.
- Se requiere montar un interruptor o disyuntor externo cerca del instrumento.
- Para uso exclusivo en ambientes con un grado de contaminación 2 o mejor.
- Solo para uso en interiores.
- Los conductores de cobre exclusivamente.
- Las entradas/salidas auxiliares (Entrada



<b>DANSK</b>	
<b>Advarsler</b>	  <b>⚠️ FARE!</b> Spændingsførende dele. Hjerteranfald, forbrænding og andre kvæstelser.

- Forsyningen og belastningen frakobles inden tilslutning/frakobling de elektriske kabler.
- Analyseapparatet må kun bruges ved den angivne spænding og strøm.
- Analysatøren må kun installeres af fagkyndigt/autoriseret personale, som ved, hvordan man arbejder i sikkerhed.
- Adgang til terminaler er forbeholdt kvalificeret personale til vedligeholdelse.

**ADVARSEL:** *Sikkerheden for et hvilket som helst system, som omfatter analyseapparatet, er installatørens ansvar.*

**ADVARSEL:** *Brug altid elektriske ledninger i henhold til alle gældende lokale og internationale regler.*

**ADVARSEL:** *Analyseapparatet må kun bruges ved den angivne spænding og strøm for at undgå permanent skade.*

**ADVARSEL:** *Ingen er autoriseret til at åbne analyseapparatet. Kun teknikere fra CARLO GAVAZZI må gøre dette. Beskyttelsen kan blive forringet, hvis instrumentet bruges på anden vis end det, der er angivet af fabrikanten.*

 Denne manual er en integreret del af produktet. Den skal læses før installation af analyseapparatet. Den skal opbevares i god stand på et rent sted, som er let tilgængeligt for operatørerne.

**Rengøring**

Brug en klud, som er lidt fugtig, til rengøring af displayet. Brug aldrig slibemidler eller opløsningsmidler.

**Ansvar for bortskaffelse**

 Produktet skal bortskaffes på en lokal, godkendt genbrugsstation. Korrekt bortskaffelse og genbrug vil bidrage til at mindske eventuelle skadelige konsekvenser for miljøet, mennesker og dyr.

**Service og garanti**

Hvis der opstår fejlfunktioner og defekter, eller hvis der er brug for oplysninger, eller der skal købes tilbehørsmoduler, bedes du kontakte den lokale CARLO GAVAZZI-forhandler eller -afdeling. Ved installation og brug af analyseapparatet som ikke er overensstemmende med det, der er angivet i vejledningen, bortfalder garantien.

**Bemærkninger**

- Instrumentet installeres. Sørg for at lade den eksterne frakoblingsanordning være let tilgængelig.
- En ekstern kontakt eller strømafbryder, som skal monteres i nærheden af instrumentet, er påkrævet.
- Kun til brug ved en forureningsgrad på 2 eller bedre.



<b>Display icons</b>	
Symbol	Description
	Off: Ethernet link inactive (cable disconnected or no link)  ON: Ethernet link active (cable connected and link detected)  <b>Note:</b> The icon shows only the physical link status. Correct network settings required for communication.
	Off: Wi-Fi LAN disabled Blinking: Wi-Fi LAN active but not connected Fixed: Wi-Fi LAN connected
	Wiring info: virtual correction via UCS
	Current overrange: the measured value is still displayed
	Voltage overrange: the measured value is still displayed

**Installing EM640 / Installare EM640 / Installation des EM640 / Installer le EM640 / Instalar el EM640 /**

1. Mount EM640 on DIN rail.
2. Open terminal caps.
3. Connect current and voltage inputs.

Nominal voltage, U <sub>n</sub> (L-N)	120 ... 277 V
Nominal voltage, U <sub>n</sub> (L-L)	208...480 V
Voltage tolerance	0.8...1.15 U <sub>n</sub>
Frequency	50/60 Hz

Note: for MID versions the voltage range is limited to 3x120 (208)...3x230 (400)V, frequency to 50 Hz.

Base current, I <sub>b</sub>	5 A
Max. current, I <sub>max</sub>	65 A

4. Close and seal the terminal caps.
5. Connect communication.

- A: Digital input,  
B: Digital output,  
C: M-Bus port,  
D: RS485 port,  
E: Ethernet port.

Note: Digital input, digital output, M-bus and RS485 port have reinforced insulation from mains circuit.

6. Turn on the EM640 and configure.

1. Montare EM640 sulla guida DIN.
2. Aprire i coprimorsetti.
3. Collegare gli ingressi di corrente e tensione.

Tensione nominale, U <sub>n</sub> (L-N)	120 ... 277 V
Tensione nominale, U <sub>n</sub> (L-L)	208...480 V
Tolleranza tensione	0.8...1.15 U <sub>n</sub>
Frequenza	50/60 Hz

Nota: per le versioni MID il range di tensione è limitato a 3x120 (208)...3x230 (400)V, la frequenza a 50 Hz.

Corrente base, I <sub>b</sub>	5 A
Corrente max., I <sub>max</sub>	65 A

4. Chiudere e sigillare i coprimorsetti
5. Connettere la comunicazione.

- A: entrata digitale,  
B: uscita digitale,  
C: porta M-Bus,  
D: porta RS485,  
E: porta Ethernet.

Nota: L'ingresso digitale, l'uscita digitale, la porta M-bus e la porta RS485 e quella ethernet sono dotati di isolamento rinforzato dal circuito di rete.

6. Accendi e configura EM640.

1. EM640 auf DIN-Schiene montieren.
2. Anschlussabdeckungen öffnen.
3. Strom- und Spannungseingänge

Nennspannung, U <sub>n</sub> (L-N)	120 ... 277 V
Nennspannung, U <sub>n</sub> (L-L)	208...480 V
Spannungstoleranz	0.8...1.15 U <sub>n</sub>
Frequenz	50/60 Hz

Hinweis: bei MID-Versionen ist der Spannungsbereich auf 3x120 (208)...3x230 (400)V und die Frequenz auf 50 Hz begrenzt.

Basisstrom, I <sub>b</sub>	5 A
Maximalstrom, I <sub>max</sub>	65 A

4. Anschlussabdeckungen schließen und versiegeln.
5. Verbindung der Kommunikation.

- A: Digitaleingang,  
B: Digitalausgang,  
C: M-Bus-port,  
D: RS485-port,  
E: Ethernet-port.

Hinweis: Digitaleingang, Digitalausgang, M-Bus und RS485-Port haben verstärkte

1. Monter EM640 sur un rail DIN.
2. Ouvrir les cache-bornes.
3. Connecter les entrées de courant et de tension.

Tension nominale, U <sub>n</sub> (L-N)	120 ... 277 V
Tension nominale, U <sub>n</sub> (L-L)	208...480 V
Tolérance de tension	0.8...1.15 U <sub>n</sub>
Fréquence	50/60 Hz

Remarque: pour les versions MID, la plage de tension est limitée à 3x120 (208)...3x230 (400)V et la fréquence à 50 Hz.

Courant de base, I <sub>b</sub>	5 A
Courant max., I <sub>max</sub>	65 A

4. Fermer et sceller les cache-bornes.
5. Connecter la communication.

- A: entrée numérique,  
B: sortie numérique,  
C: port M-Bus,  
D: port RS485,  
E: port Ethernet.

Note: l'entrée numérique, la sortie numérique, le M-bus et le port RS485 ont une isolation renforcée du circuit secteur.

6. Allumer et configurer le EM640.

1. Monte el EM640 en el carril DIN.
2. Abrir las tapas de los terminales.
3. Conectar las entradas de intensidad y tensión.

Tensión nominal, U <sub>n</sub> (L-N)	120 ... 277 V
Tensión nominal, U <sub>n</sub> (L-L)	208...480 V
Tolerancia de tensión	0.8...1.15 U <sub>n</sub>
Frecuencia	50/60 Hz

Nota: para las versiones MID, el rango de tensión está limitado a 3x120 (208)...3x230 (400)V, la frecuencia a 50 Hz.

Intensidad base, I <sub>b</sub>	5 A
Intensidad máx., I <sub>max</sub>	65 A

4. Cerrar y sellar las tapas de los terminales.
5. Conectar la comunicación.

- A: entrada digital,  
B: salida digital,  
C: puerto M-Bus,  
D: puerto RS485,  
E: puerto Ethernet.

Note: la entrada digital, la salida digital, el M-bus y el puerto RS485 cuentan con aislamiento reforzado frente a la red eléctrica.

6. Encender y configurar el EM640.

1. Montere EM640 på DIN-skinne.
2. Åbn terminalernes dæksler.
3. Tilslut strøm- og spændingsindgange.

Nominal spænding, U <sub>n</sub> (L-N)	120 ... 277 V
Nominal spænding, U <sub>n</sub> (L-L)	208...480 V
Spændingstolerance	0.8...1.15 U <sub>n</sub>
Frekvens	50/60 Hz

Bemærkning: for MID-versioner er spændingsområdet begrænset til 3x120 (208)...3x230 (400)V, frekvens til 50 Hz.

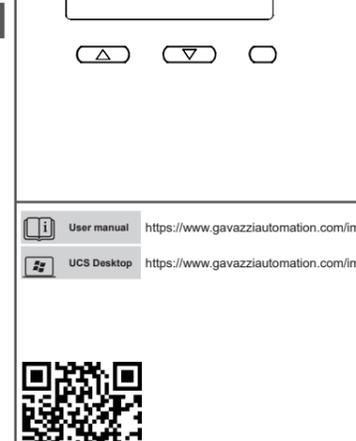
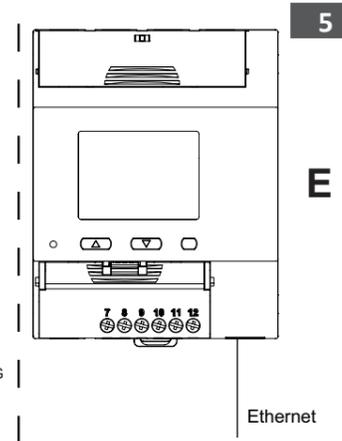
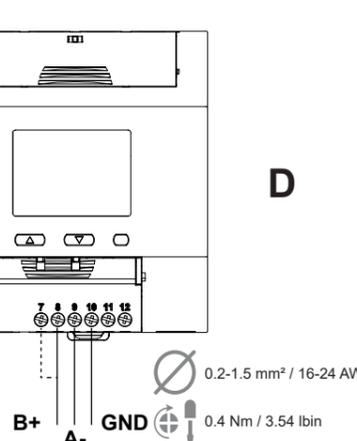
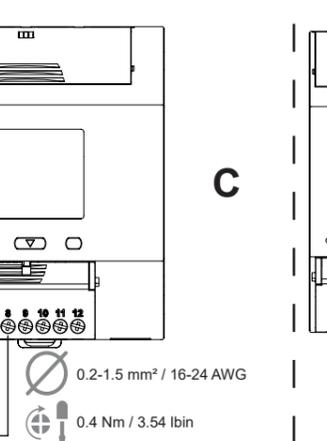
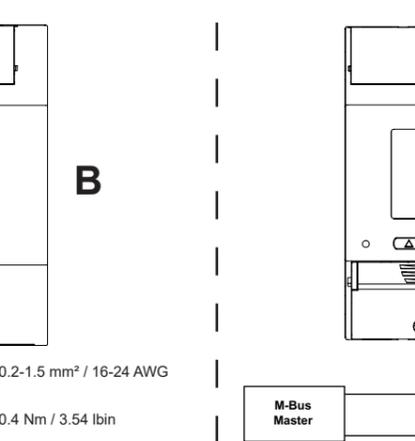
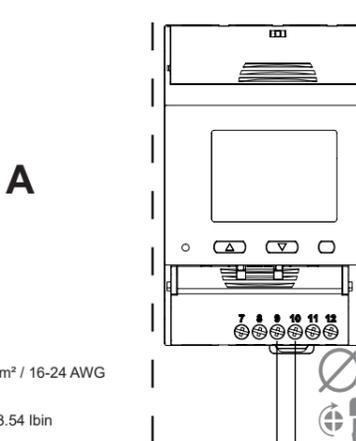
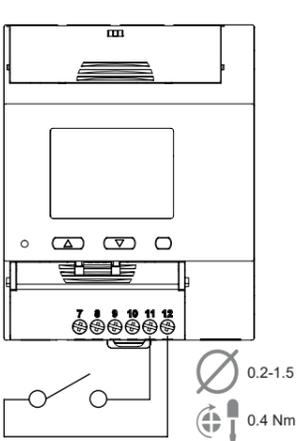
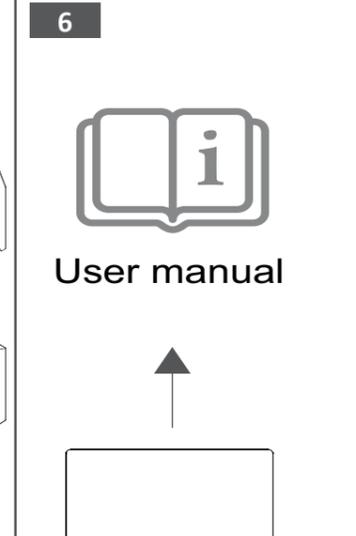
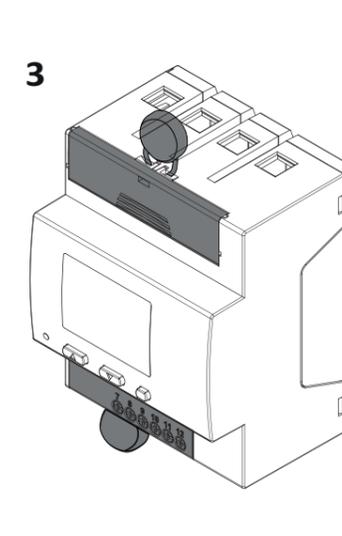
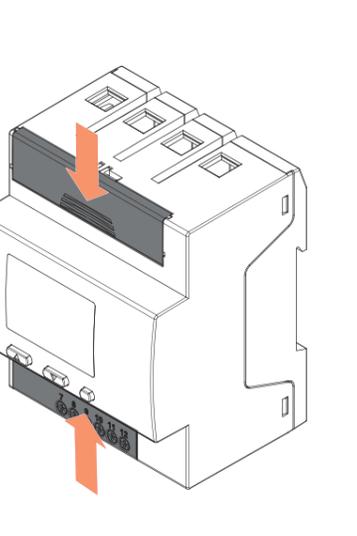
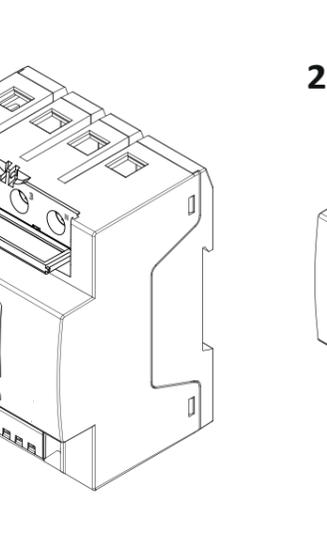
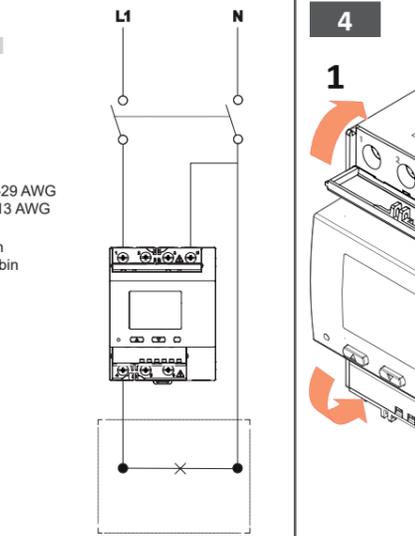
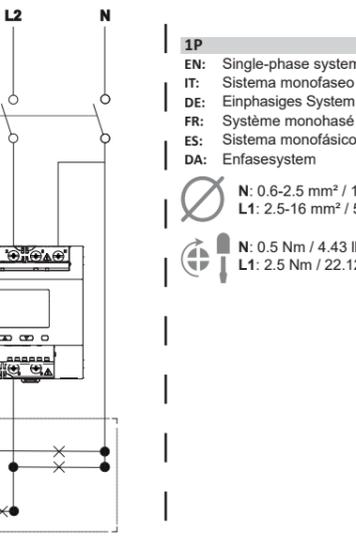
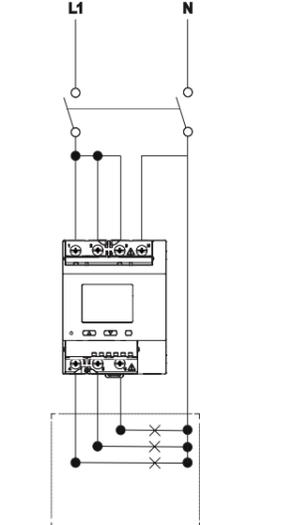
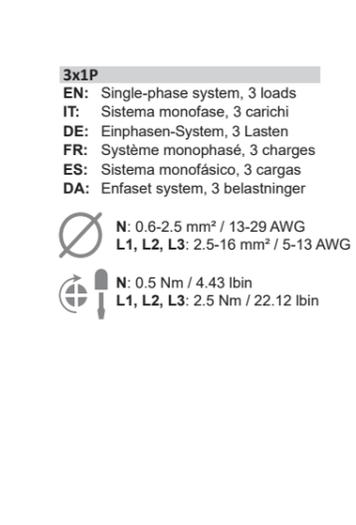
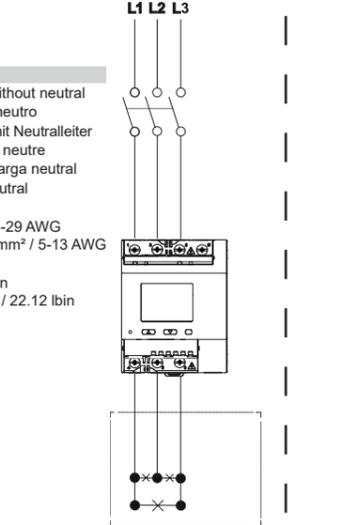
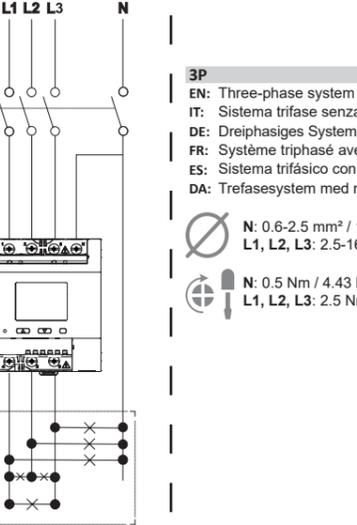
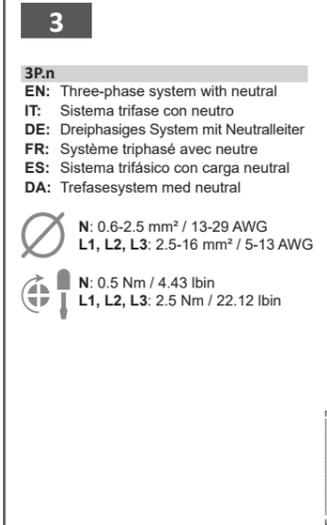
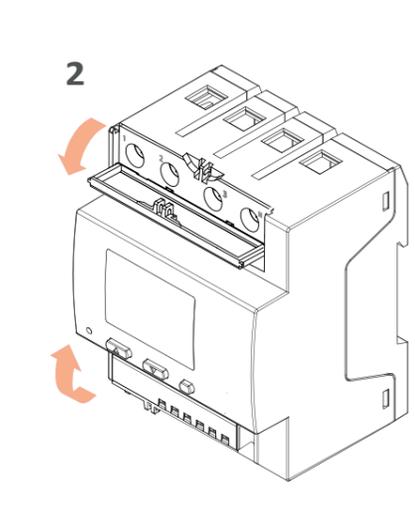
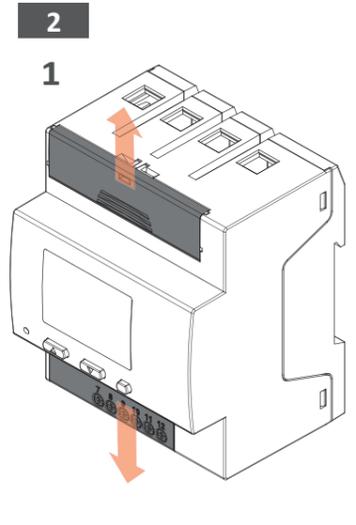
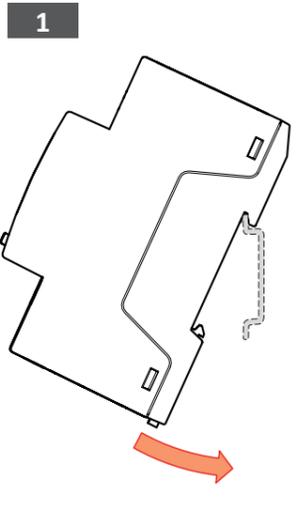
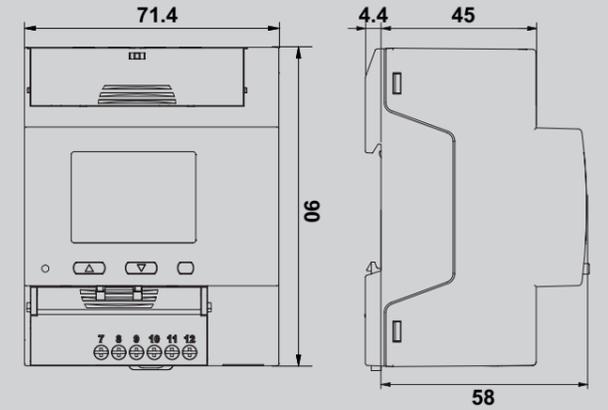
Basestrøm, I <sub>b</sub>	5 A
Maxstrøm, I <sub>max</sub>	65 A

4. Luk og forsegl terminalernes dæksler.
5. Tilslut kommunikation.

- A: Digital indgang,  
B: Digital udgang,  
C: M-Bus-port,  
D: RS485-port,  
E: Ethernet-port.

Bemærk: Digital indgang, digital udgang, M-bus og RS485-port har forstærket isolering fra hovedkredsløbet.

6. Tænd og konfigurér EM640.



User manual [https://www.gavazziautomation.com/images/PIM/MANUALS/ENG/EM600\\_IM\\_USE.pdf](https://www.gavazziautomation.com/images/PIM/MANUALS/ENG/EM600_IM_USE.pdf)  
 UCS Desktop <https://www.gavazziautomation.com/images/PIM/OTHERSTUFF/ucs.zip>



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# EM640

## Installation instruction

Power analyzer for three-phase and two-phase systems

### 安装说明

三相和两相系统的功率分析仪

### 安裝說明

三相和兩相系統的功率分析儀

<b>EN</b>	
<b>Operating temperature</b>	From -25 to +70 °C (-13 to +158 °F) at I <sub>max</sub> = 45 A From -25 to +55 °C (-13 to +131 °F) at I <sub>max</sub> = 65 A
<b>Storage temperature</b>	From -25 to +75 °C / from -13 to +167 °F
<b>Protection degree</b>	Terminals: IP20; front: IP51
<b>Overvoltage/Measurement category</b>	III, 4kV rated input voltage
<b>Utilization category</b>	UC2
<b>Protective class</b>	II
<b>Altitude</b>	Max 3000 m / 9842.52 ft
<b>Consumption</b>	6 VA
<b>Weight</b>	500 g / 1.10 lb
<b>LED</b>	1000 pulse/kWh
<i>Note: R.H. &lt; 90 % non-condensing @ 40 °C / 104 °F.</i>	

<b>ZH-SC</b>	
<b>工作温度</b>	在 I <sub>max</sub> = 45 A 時：-25至+70 °C (-13至+158 ° F) 在 I <sub>max</sub> = 65 A 時：-25至+55 °C (-13至+131 ° F)
<b>存储温度</b>	-25 至 +70 °C/-13 至 +158 ° F
<b>防护等级 (未经 UL 评估)</b>	端子：IP20；前面板：IP51
<b>过电压/测量类别</b>	III, 4kV 额定输入电压
<b>设施类别</b>	UC2
<b>防护等级</b>	II
<b>海拔高度</b>	Max 3000 m / 9842.52 ft
<b>数字输入</b>	6 VA
<b>重量</b>	500 g / 1.10 lb
<b>LED</b>	1000 pulse/kWh
<i>备注：相对湿度&lt; 90 % 非冷凝 @ 40°C / 104°F。</i>	

<b>ZH-TC</b>	
<b>作業溫度</b>	在 I <sub>max</sub> = 45 A 時：-25至+70 °C (-13至+158 ° F) 在 I <sub>max</sub> = 65 A 時：-25至+55 °C (-13至+131 ° F)
<b>保存溫度</b>	-25 到 +70 °C/-13 到 +158 ° F
<b>防護等級 (未經 UL 評估)</b>	端子：IP20；正面：IP51
<b>過電壓/量測類別</b>	III, 4kV 額定輸入電壓
<b>使用類別</b>	UC2
<b>防護等級</b>	II
<b>海拔高度</b>	Max 3000 m / 9842.52 ft
<b>數位輸入</b>	6 VA
<b>重量</b>	500 g / 1.10 lb
<b>LED</b>	1000 pulse/kWh
<i>備註：相對濕度&lt; 90 % 未凝結 @ 40 °C / 104 °F。</i>	

## ENGLISH

### Warnings

  **⚠️ DANGER!** Live parts. Heart attack, burns and other injuries.

- Disconnect the power supply and loads before connecting/disconnecting the electrical wires and installing or servicing current transformers.
- 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.

**NOTICE:** The system installer is liable for the safety of any system that includes the analyzer

**NOTICE:** Always use electrical wires according to all applicable local and international regulations.

**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.

 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

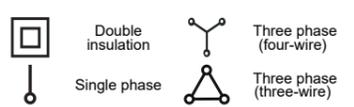
 The product must be disposed of at the relative recycling centers specified by the government or local public authorities. Correct disposal and recycling will contribute to the prevention of potentially harmful consequences to the environment and persons.

### 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.

### Notes

- The instrument must be installed taking care of leaving the external disconnecting device easily accessible.
- 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.
- Use copper conductors only.
- Auxiliary inputs/outputs (Digital input, Digital output, RS485, M-Bus) must be connected only to Limited-Energy Circuit in accordance with IEC/EN 61010-1.
- The product is intended to be installed inside a certified fire/electrical enclosure.



## Display icons

Symbol	Description
	Off: Ethernet link inactive (cable disconnected or no link) ON Ethernet link active (cable connected and link detected) <b>Note:</b> The icon shows only the physical link status. Correct network settings required for communication.
	Off: Wi-Fi LAN disabled Blinking: Wi-Fi LAN active but not connected Fixed: Wi-Fi LAN connected
	Wiring info: virtual correction via UCS
	Current overrange: the measured value is still displayed
	Voltage overrange: the measured value is still displayed
	Voltage underrange: the measured value is still displayed
	Frequency outrange
	Fixed: internal failure Blinking: alarm signal
	Wiring error
	Communication: reading or writing command is addressed to EM630

## 简体中文

### 警告

  **⚠️ 危险!** 带电部件。可能导致心脏病发作、烧伤及其他伤害。

- 在连接/断开电线之前，请先断开电源和所有负荷。
- 只可在规定电压和电流下使用分析仪。
- 分析仪只能由具备安全工作经验的合格人员安装。
- 只有合格人员才能使用端子，以进行维护操作。

**注意：**系统安装人员负责保证任何包含分析仪的系统的安全性。

**注意：**只可在规定电压和电流下使用分析仪，以避免发生永久性损坏。

**注意：**意，务必使用符合当地和国际规范要求的电气线材。

**注意：**任何人都不得拆开分析仪。只有 CARLO GAVAZZI 的技术服务人员才可进行此项操作。如果以制造商未指定的方式使用仪器，可能会损害保护功能。

 本手册是产品不可或缺的一部分。安装分析仪时必须查阅本手册。必须将其妥善保存在所有操作人员都可轻松取得的显眼位置。

### 清洁

使用略微蘸湿的布清洁显示屏。请勿使用研磨剂或溶剂。

### 处置责任

 本产品必须在政府或当地公共机构所指定的相关回收中心进行处置。正确处置和回收可以防止对环境 and 人身安全造成潜在危害。

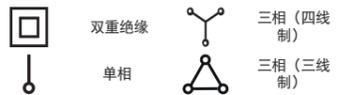
### 维修和保修

如果发生故障、错误，或需要了解信息或购买附属模块，请联系 CARLO GAVAZZI 在您所在国家/地区的分公司或经销商。

若未按照附带说明书所载方式安装和使用分析仪，将导致保修失效。

### 注意事

安装仪器时必须确保外部断路器装置易于接近。仪器附近必须安装一个外部开关或断路器。仅可在污染等级为2或更佳的环境中使用。仅限室内使用。仅可使用铜导线。辅助输入/输出（数字输入、数字输出、RS485、M-Bus）必须仅连接到符合 IEC/EN 61010-1 的限能电路。本产品应安装在经过认证的防火/电气外壳中。



## 显示图标

符号	描述
	关闭：以太网链路未激活（电缆断开或无链路） 以太网链路处于活动状态（电缆已连接且检测到链路） 注意：图标仅显示物理链路状态。通信需正确配置网络设置。
	关闭：Wi-Fi局域网已禁用 闪烁：Wi-Fi局域网处于活动状态但未连接 已修复：Wi-Fi局域网已连接
	接线信息：通过ucs实现虚拟校正
	电流超量程：测量值仍显示
	电压过量程：测量值仍显示
	电压下限不足：测量值仍显示
	频率超出范围
	已修复：内部故障 闪烁：警报信号
	接线错误
	通信：读取或写入命令发送至EM630

## 繁體中文

### 警告

  **⚠️ 危險!** 帶電零件。可能導致心臟病發作、燒傷及其他傷害。

- 在連接/斷開電線之前，請先斷開電源和負載。
- 只可在規定電壓和電流下使用分析儀。
- 分析儀只能由具備安全工作經驗的合格人員安裝。
- 僅限合格人員使用端子，以進行維護操作。

**注意：**系統安裝人員負責保證任何包含分析儀的系統的安全性。

**注意：**只可在規定電壓和電流下使用分析儀，以避免發生永久性損害。

**注意：**始終依所有適用的當地和國際法規使用電線。

**注意：**任何人都不得拆開分析儀。此類操作必須由 CARLO GAVAZZI 技術服務人員進行。如果不依照製造商指定的方式使用儀器，可能會對防護等級造成損害。

 本手冊是產品不可或缺的一部分。安裝分析儀時必須查閱本手冊。請務必將手冊妥善存放在所有操作人員都能方便拿取的顯眼位置。

### 清潔

使用微濕抹布清潔顯示器。請勿使用研磨劑或溶劑。

### 廢棄責任

 必須將本產品交由政府或當地公共機關指定之相關回收中心進行廢棄。請按照正確方式廢棄和回收，避免對環境與個人造成潛在危害。

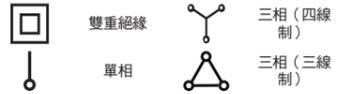
### 服務與保固

若功能異常、發生故障、需要資訊或購買配件模組，請聯絡您所在國家/地區的 CARLO GAVAZZI 分公司。

若未按照附帶說明書所載方式安裝和使用分析儀，將導致保固失效。

### 意事項

安裝儀器時必須確保外部断路器裝置易於接近。儀器附近必須安裝一個外部開關或断路器。僅限於污染等級為2或更佳的環境中使用。僅限室內使用。僅使用銅導線。輔助輸入/輸出（數位輸入、數位輸出、RS485、M-Bus）僅能連接至符合 IEC/EN 61010-1 的限能電路。本產品應安裝於經過認證的防火/電氣機箱內。



## 顯示圖示

符號	描述
	關閉：乙太網路鏈路未啟用（纜線未連接或無鏈路） 乙太網路鏈路已啟用（纜線已連接且偵測到鏈路） 注意：圖示僅顯示物理鏈路狀態。通訊需具備正確的網路設定。
	關閉：Wi-Fi 區域網路已停用 閃爍：Wi-Fi 區域網路處於活動狀態但未連接 已修復：Wi-Fi 區域網路已連線
	接線資訊：透過UCS進行虛擬校正
	電流超量程，測量值仍會顯示
	電壓超出量程，測量值仍會顯示
	電壓低於量程：測量值仍會顯示
	頻率超出範圍
	已修復：內部故障 閃爍：警報訊號
	接線錯誤
	通訊：讀取或寫入指令發送至EM630

# Installing EM640 / 安装 EM640 / 安裝 EM640

1. Mount EM640 on DIN rail.
2. Open terminal caps
3. Connect current and voltage inputs.

Nominal voltage, $U_n$ (L-N)	120 ... 277 V
Nominal voltage, $U_n$ (L-L)	208...480 V
Voltage tolerance	0.8...1.15 $U_n$
Frequency	50...60 Hz

Note: for MID versions the voltage range is limited to 3x230 (400) V, frequency to 50Hz.

Base current, $I_b$	5 A
Max. current, $I_{max}$	65 A

4. Close and seal the terminal caps
5. Connect communication.
  - A: Digital input,
  - B: Digital output,
  - C: M-Bus
  - D: RS485 port
  - E: Ethernet
- Note: Digital input, digital output, M-bus and RS485 port have reinforced insulation from mains circuit.
6. Turn on the EM640 and configure.

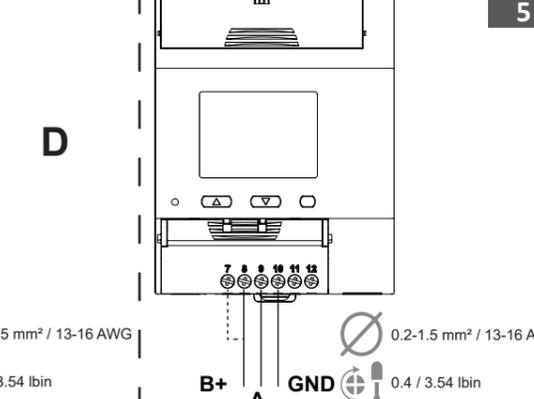
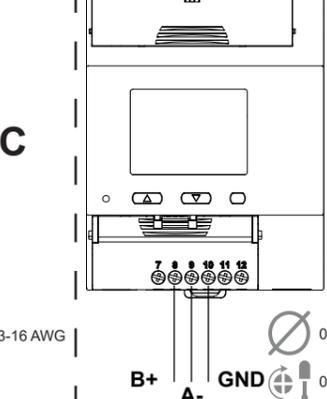
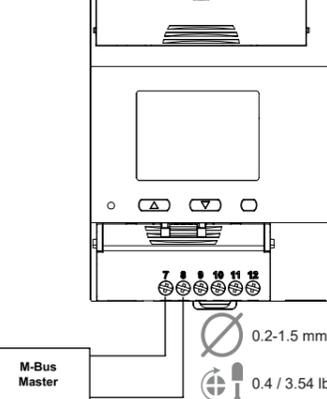
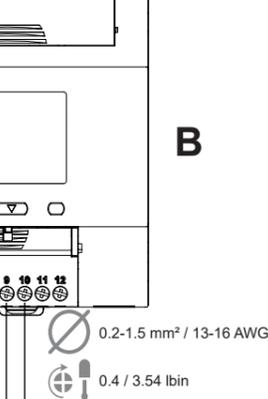
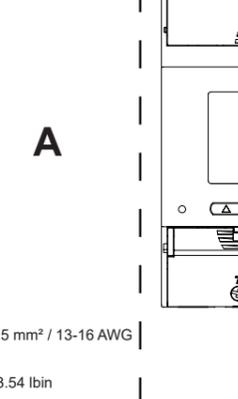
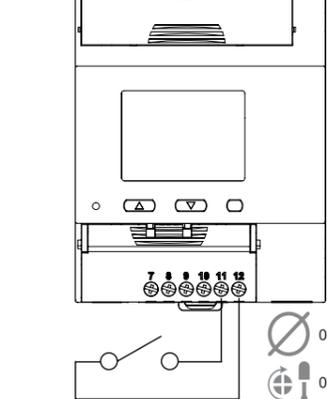
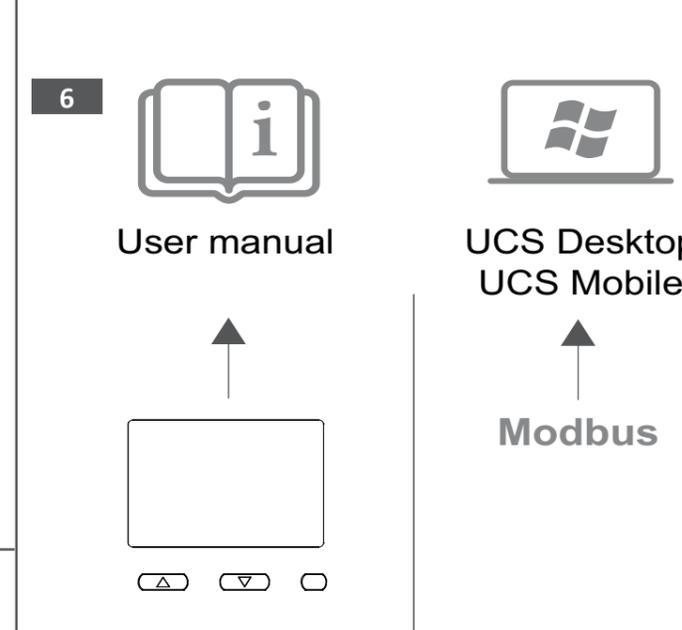
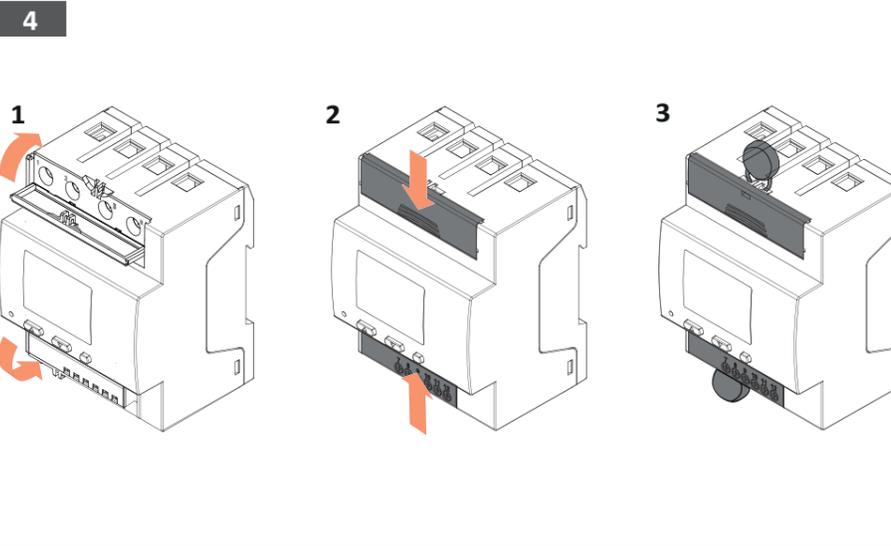
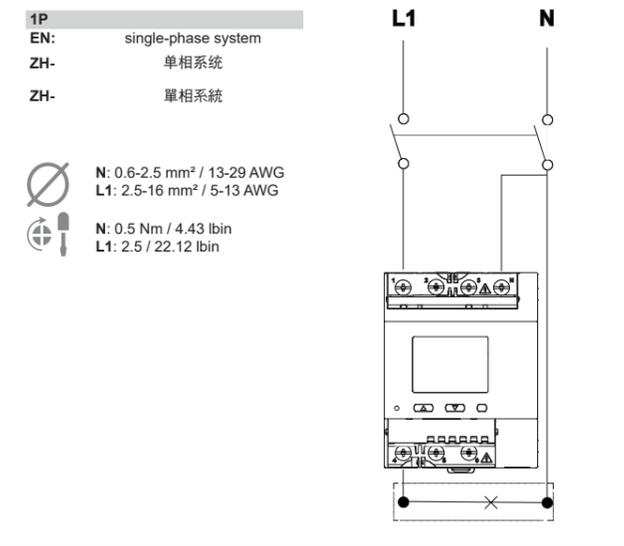
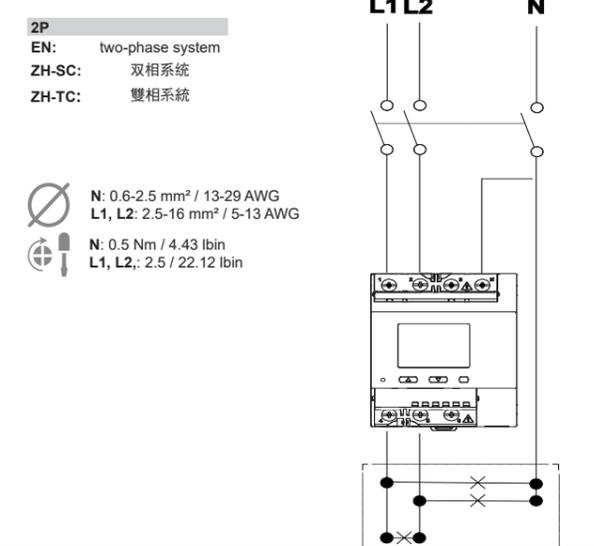
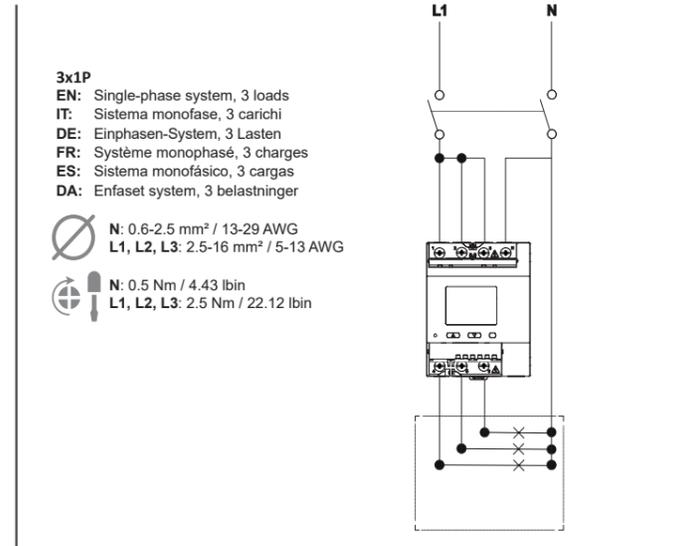
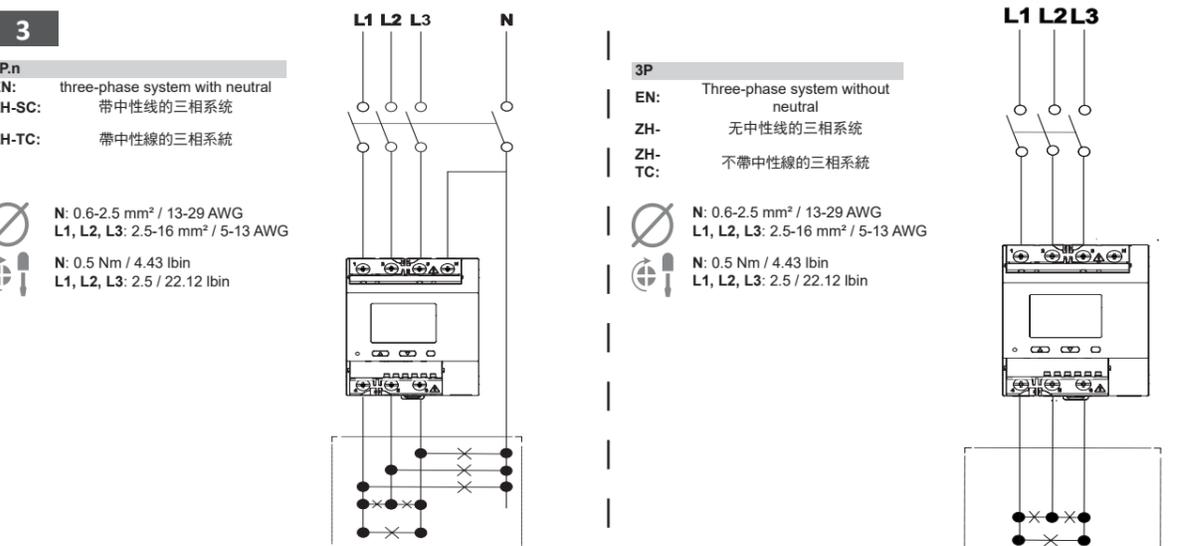
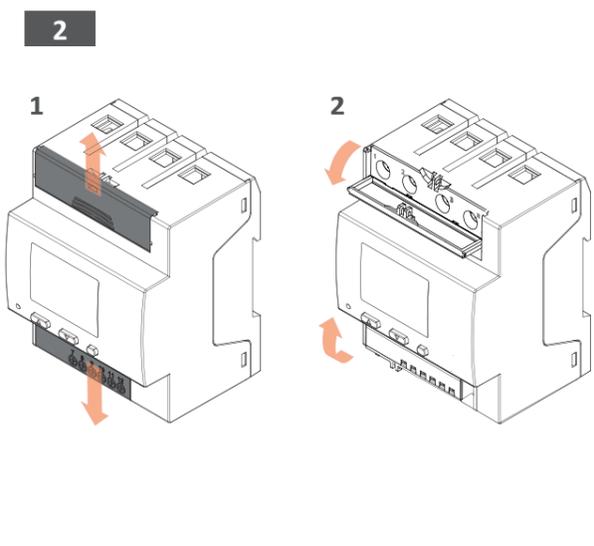
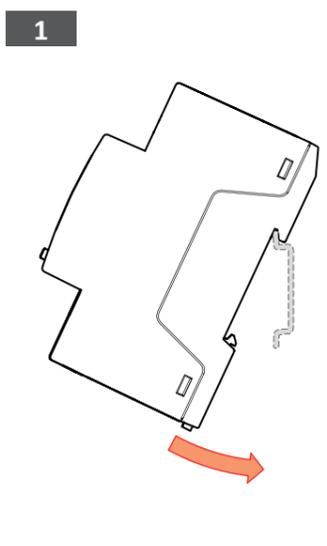
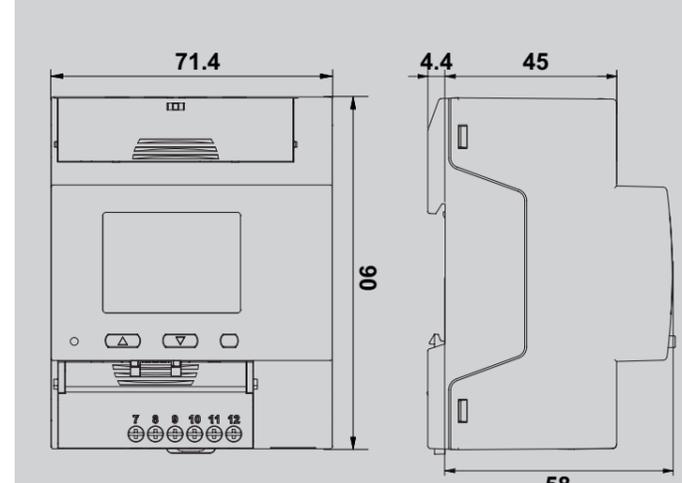
1. 將 EM640 安裝在 DIN 導軌上 (選購)
2. 打開連接蓋。
3. 電流和電壓輸入。

額定電壓, $U_n$ (L-N)	120 ... 277 V
額定電壓, $U_n$ (L-L)	208...480 V
電壓公差	0.8...1.15 $U_n$
頻率	50...60 Hz

注意: 對於 MID 版本, 電壓範圍限制為 3x230 (400) V, 頻率為 50Hz。

基本電流, $I_b$	5 A
最大電流, $I_{max}$	65 A

4. 關閉並封住端子蓋。
5. 連接通信。
  - A: 數位輸入,
  - B: 數位輸出,
  - C: M-Bus 接口,
  - D: RS485 接口,
  - E: Ethernet 接口。
- 注意: 數位輸入, 數位輸出, M-Bus 和 RS485 接口與主電路之間具有加強絕緣。
6. 啟動 EM640 並進行配置。



User manual [https://www.gavazziautomation.com/images/PIM/MANUALS/ENG/EM600\\_IM\\_USE.pdf](https://www.gavazziautomation.com/images/PIM/MANUALS/ENG/EM600_IM_USE.pdf)

UCS Desktop <https://www.gavazziautomation.com/images/PIM/OTHERSTUFF/ucs.zip>

The EU declaration of conformity and other relevant certificates/declarations can be downloaded from the product page available on the website [www.gavazziautomation.com](http://www.gavazziautomation.com), under the section "Certifica-"

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