

ECM180D

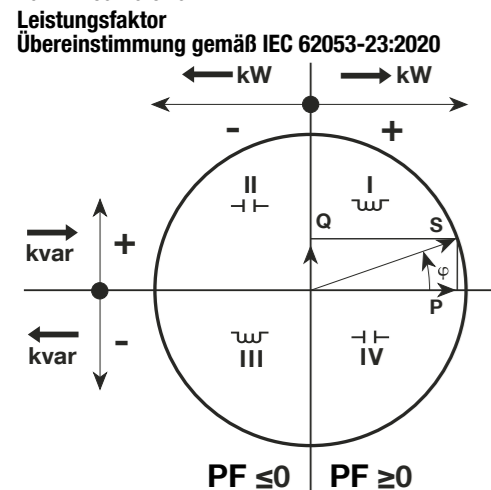
Ein Phasen-Energiezähler, Direktanschluss 80 A mit MID-Konformitätserklärung und M-Bus Kommunikation. Die MID-Zertifizierung betrifft nur die Wirkenergie. Bedienungsanleitung EU-Konformitätserklärung: M-Bus-Tabelle: Download von: http://hgr.io/r/ecm180d

Sicherheitsanweisungen

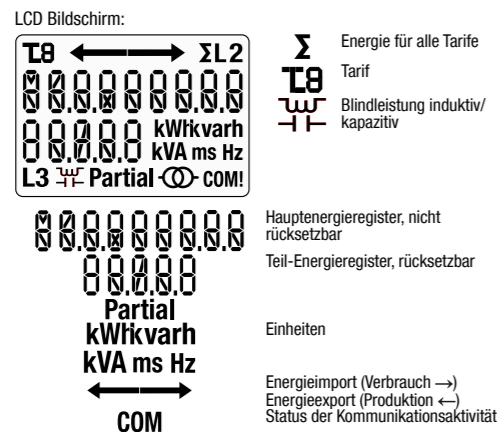
- Einbau und Montage in Innenbereichen dürfen nur durch eine Elektrofachkraft gemäß den geltenden lokalen Installationsstandards durchgeführt werden. Ein- Ausbau des Produktes nur bei ausgeschalteter Spannungsversorgung. Jegliche Eingriffe an den Produkten, einschließlich der Gehäuse, im Falle von Störungen oder Mängeln, können die Sicherheit des Betreibers gefährden...

Funktion

Dieser 4-Quadranten-M-Bus-Meter misst die in einer elektrischen Anlage verwendete Wirk- und Blindenergie. 2 Tarife, umschaltbar über 230 VAC Digitaleingang oder 2 gesteuert über Kommunikation. Gemäß der Messgeräterichtlinie (MID) darf nur das Register der gesamten positiven Blindenergie für die Rechnungsstellung berücksichtigt werden.



Geräteaufbau

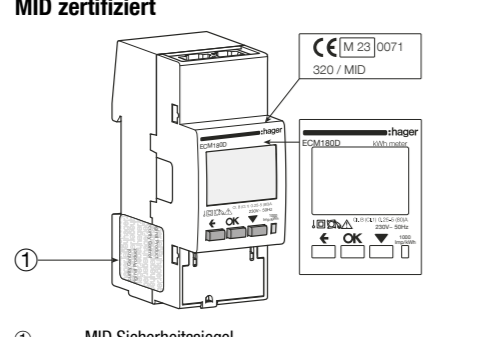


Befehle

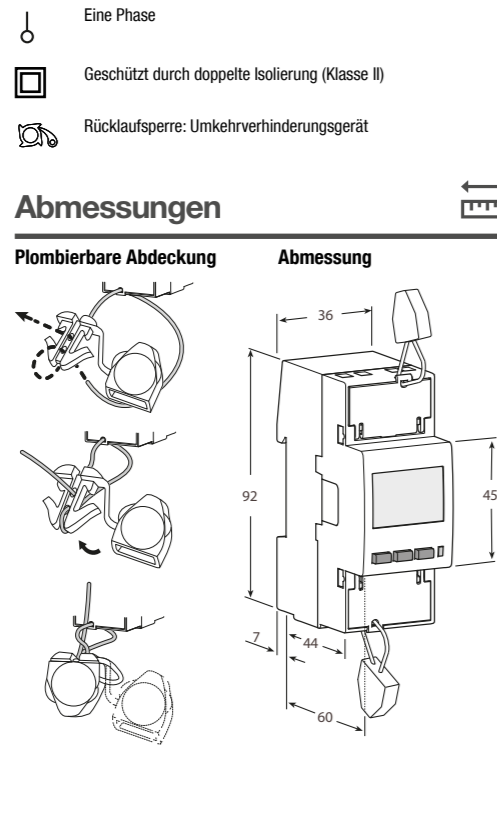
- OK-Taste: Wird verwendet, um eine Änderung eines Parameters (oder einer Ziffer eines numerischen Parameters) zu bestätigen oder um eine Frage zu beantworten. SCROLL-Taste: Zum Scrollen von Menüseiten oder zum Ändern des gesamten Wertes oder einer Ziffer eines Parameters.

MID zertifiziert

Hinweis: Wenn für mindestens 20 Sekunden keine Taste gedrückt wird, kehrt die Anzeige zur Hauptseite zurück und die Hintergrundbeleuchtung wird wieder ausgeschaltet.



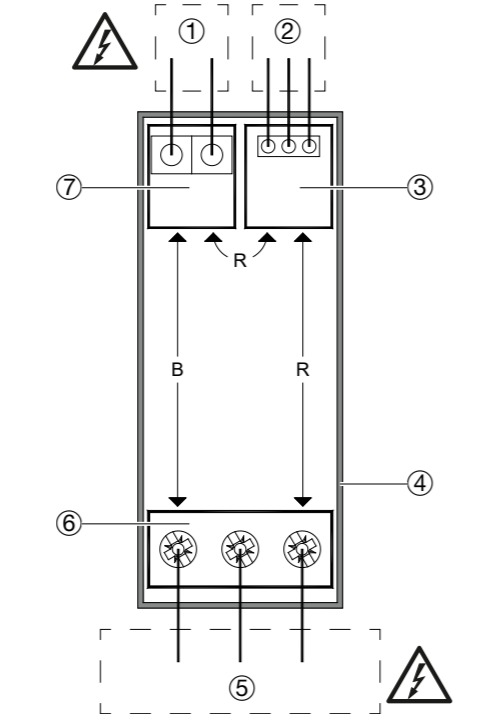
Abmessungen



Anschluss

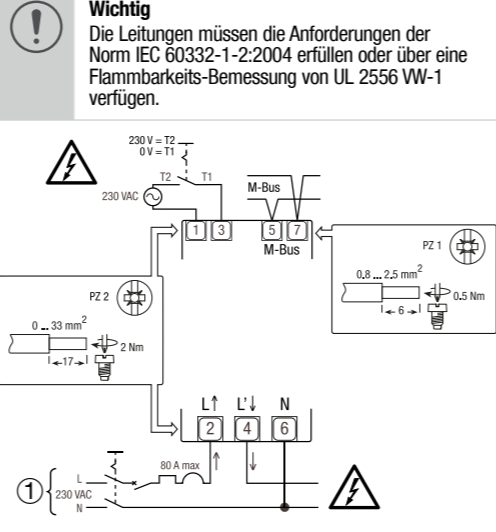
Bedienung der M-Bus-Kommunikation. M-Bus-Medien: In der Standardkonfiguration kann die M-Bus-Verbindung verwendet werden, um bis zu 250 * Produkte mit einem PC oder einer SPS über eine Reichweite von 1000 Metern ** zu verbinden.

M-Bus-Protokoll: Das M-Bus-Protokoll arbeitet mit einer Master / Slave-Struktur. ECM180D (Slave)-Einheiten sind sowohl mit primären als auch mit sekundären Adressierungsmodi kompatibel.



- 1 HLV (Gefährliche aktive Spannung)-KLEMME, 2 Klemmen für Tarifsteuereingänge. 2 SELV (Sicherheitskleinspannung)-KLEMMEN, 2 oder 3 Klemmen für Kommunikation. 3 SELV (Sicherheitskleinspannung)-STROMKREIS, (Kommunikation) Arbeitsspannung < 25 VAC, < 60 VDC.

Schaltplan



Installation

Das einspeisende Schalt- oder Schutzgerät (Nummer 1 im Anschlussplan) muss leicht zu identifizieren bzw. zu bedienen und zudem nahe am Zähler installiert sein. Die Installation muss im spannungsfreien Zustand und in einem Verteilergewähse (IP51 und VT) erfolgen.

Inbetriebnahme

- Empfehlungen: Folgende Punkte müssen vor der Inbetriebnahme beachtet werden: • Sicherstellen, dass keine gefährliche Spannung an den SELV-Klemmen anliegt. • Sicherstellen, dass keine Außenleiter an die Neutralleiterklemme angeschlossen wurde.

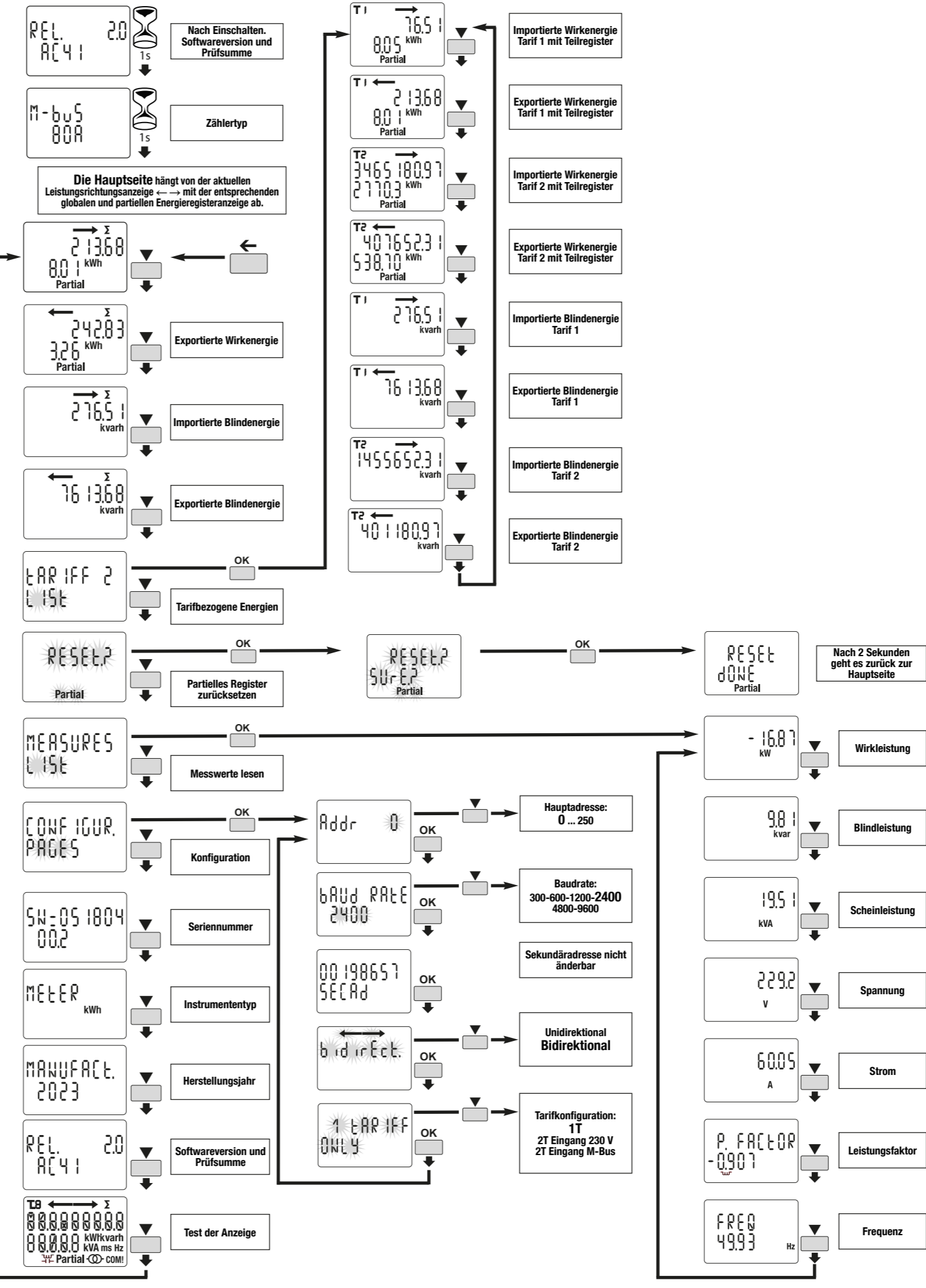
Wartung

- Sicherstellen, dass keine Spannung am Energiezähler anliegt. Es darf nur eine Trockenreinigung mit einem Naturfasertuch (bspw. aus Baumwolle oder Leinenstoff) oder einem Tuch aus synthetischem Stoff, das keine Restfasern auf der Oberfläche oder im Inneren des Zählers hinterlässt, durchgeführt werden.

Für diesen Energiezähler ist keine Wartung bzw. Reparatur und auch kein Ersetzen von Teilen vorgesehen. Solche Eingriffe sind untersagt. Im Fall einer Störung muss der Zähler ersetzt werden.

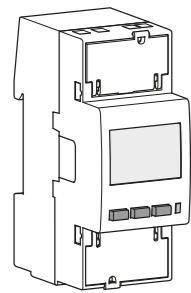
Hilfe bei Problemen

Fehlerbedingung: Bei blinkender Teil-Energie, Teil-Energieregister zurückssetzen (Register für maximale Teilenergie). Wenn auf dem Display die Meldung ERROR N02 oder ERROR N03 angezeigt wird, funktioniert der Zähler nicht korrekt und muss ausgetauscht werden.



Technische Daten

Tabelle der technischen Daten des ECM180D, einschließlich allgemeiner Charakteristiken, Bedienfunktionen, Versorgungs- und Stromverbrauch, Überlastungsfähigkeit, Messfunktionen und Anzeigefunktionen.



GB

ECM180D

One phase energy meter,
direct connection 80 A
with MID declaration of conformity
and M-Bus communication
MID certification concerns active energy only.
User instructions
EU declaration of conformity:
M-Bus table:
Download from: <http://hgr.io/r/ecm180d>

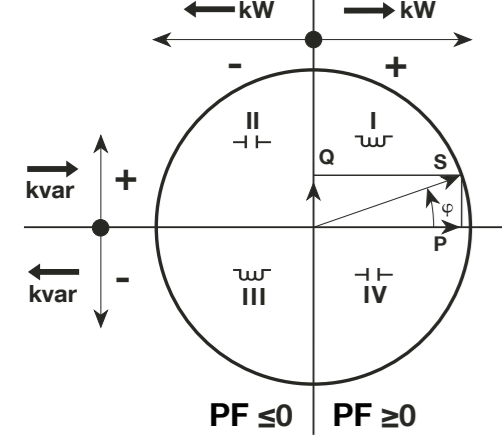
Safety instructions

- This device must be installed indoor only by a professional electrician fitter according to local applicable installation standards.
- Do not plug in or unplug this product when the power supplying is ON. Its use is only permitted within the limits shown and stated in the installation instructions. The device and the equipment connected can be destroyed by loads exceeding the values stated.
- Any type of intervention on the products, including cases in which they cease to function or present defects, can be dangerous for the operator's safety and relieves the Manufacturer from all civil and criminal liability.

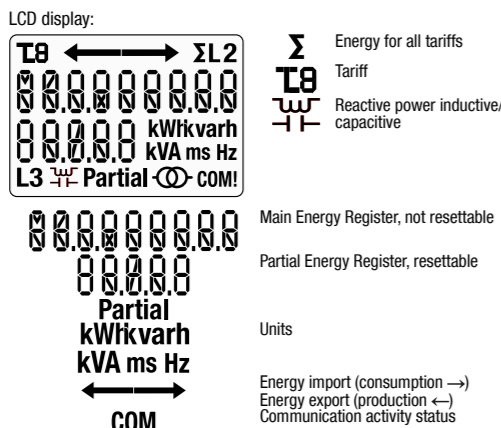
Function

This 4 quadrants M-Bus meter measures the active and reactive energy used in an electrical installation. This device can manage 2 tariffs by 230 VAC digital input or 2 controlled via communication. Only the total active energy register can be used for billing purposes according to measuring instrument directive (MID).
- Active Energy Class B (according to EN 50470-3:2022)
- Active Power Class 1 (according to IEC 62053-21:2020 and IEC 61557-12:2018)
- Reactive Energy Class 2 (according to IEC 62053-23:2020)
- Reactive Power Class 2 (according to IEC 62053-21:2020).
This device has a backlit LCD and 3 push-button keys to read Energies, V, I, PF, F, P, Q and to configure some parameters. The design and manufacture of this meter comply with Standard EN 50470-3:2022 requirements.

Power factor Convention according to IEC 62053-23:2020

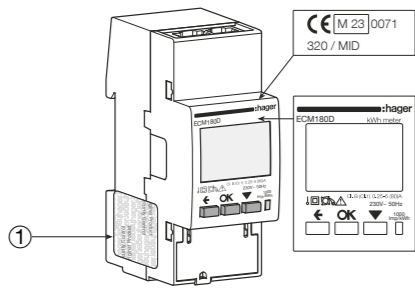


Presentation of device



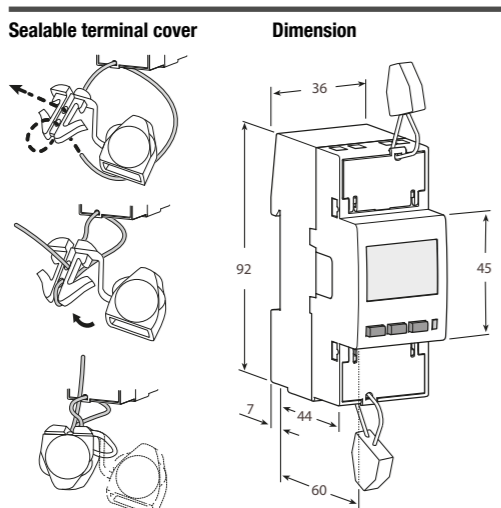
COM
OK button: used to confirm a modification of a parameter (or of a digit of a numerical parameter) or to answer to a question.
SCROLL button: used to scroll Menu pages or to modify the whole value or a digit of a parameter.
ESCAPE button: used to escape to main menu from anywhere or to skip back to the previous digit of the value under modification.
Optical metrological LED

MID certified



- MID safety sealing
- One phase
- Protected by double insulation (Class II)
- Backstop: Reversal preventing device

Dimensions



Wiring

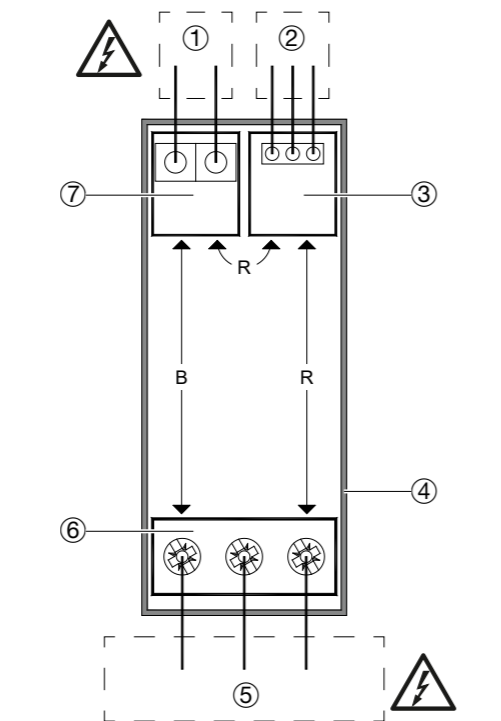
Operating M-Bus Communication

M-Bus Media:
In a standard configuration, a M-Bus connection can be used to link up to 250* products with a PC or PLC, over a range of 1000 meters**.
* depending on the M-Bus master.
** depending on the number of products and the communication speed.

Recommendations
The use of a JYSTY Nx2x0.8 mm (0.5 mm²) unshielded twisted pair is recommended. If the range of 1000 m and/or the limit of 250 products are exceeded, a repeater will need to be connected. If the 250 limit is exceeded: only use the secondary address.

M-Bus protocol:
The M-Bus protocol operates using a master/slave structure. ECM180D (slave) units are compatible with both primary and secondary addressing modes. Primary addressing can be configured via the product interface. Secondary addressing uses a fixed, unique address shown on the product. M-Bus ECM180D units also have the "Wildcard addressing" function which allows products to be searched.

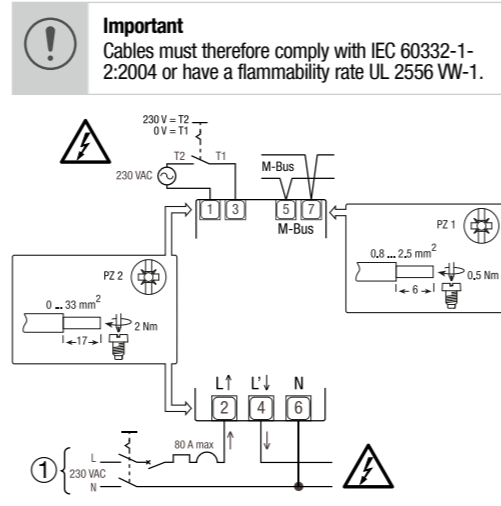
Intended use
The Energy Meter is suitable for use on both impedance grounded networks and not grounded networks.



There are no accessible parts
Legend:
B = Basic Insulation
D = Double Insulation
R = Reinforced Insulation

- ① HLV TERMINAL, 2 terminal for tariff Input
- ② SELV TERMINALS, 2 or 3 terminals for communication
- ③ SELV CIRCUIT, (communication) working voltage <25 Vac, < 60 Vdc
- ④ PLASTIC CASE (NOT EARTHED)
- ⑤ HLV TERMINAL, 3 terminals for mains
- ⑥ HLV CIRCUIT, (mains) Working Voltage = 300 Vac
- ⑦ HLV CIRCUIT, (tariff input) working voltage = 300 Vac

Wiring diagram



In-uninstallation

The four-pole disconnector (reference ① in the wiring diagrams) must be easy to identify and to operate and must be close to the Meter. They both must be in "OFF" position (open circuits) from the beginning to the end of the installation or of the uninstallation. The Energy Meter, the disconnectors and the overload current protection devices must be easily identifiable. They must be installed in an adequate cabinet (IP51 and V1) and it must be easy to intervene on them if necessary. Inside the cabinet, do not install any other device with a flammability class worse than V1.

Commissioning

Recommendations
Check the following before putting it into service:
• Make sure that no dangerous voltages are connected to the SELV terminals.
• Make sure that a phase has not been connected to the Neutral terminal (this would cause the internal protections to intervene and will damage the Meter).
• Check that the main page appears on the display (see menu description) and not the Phase Sequence Error page.

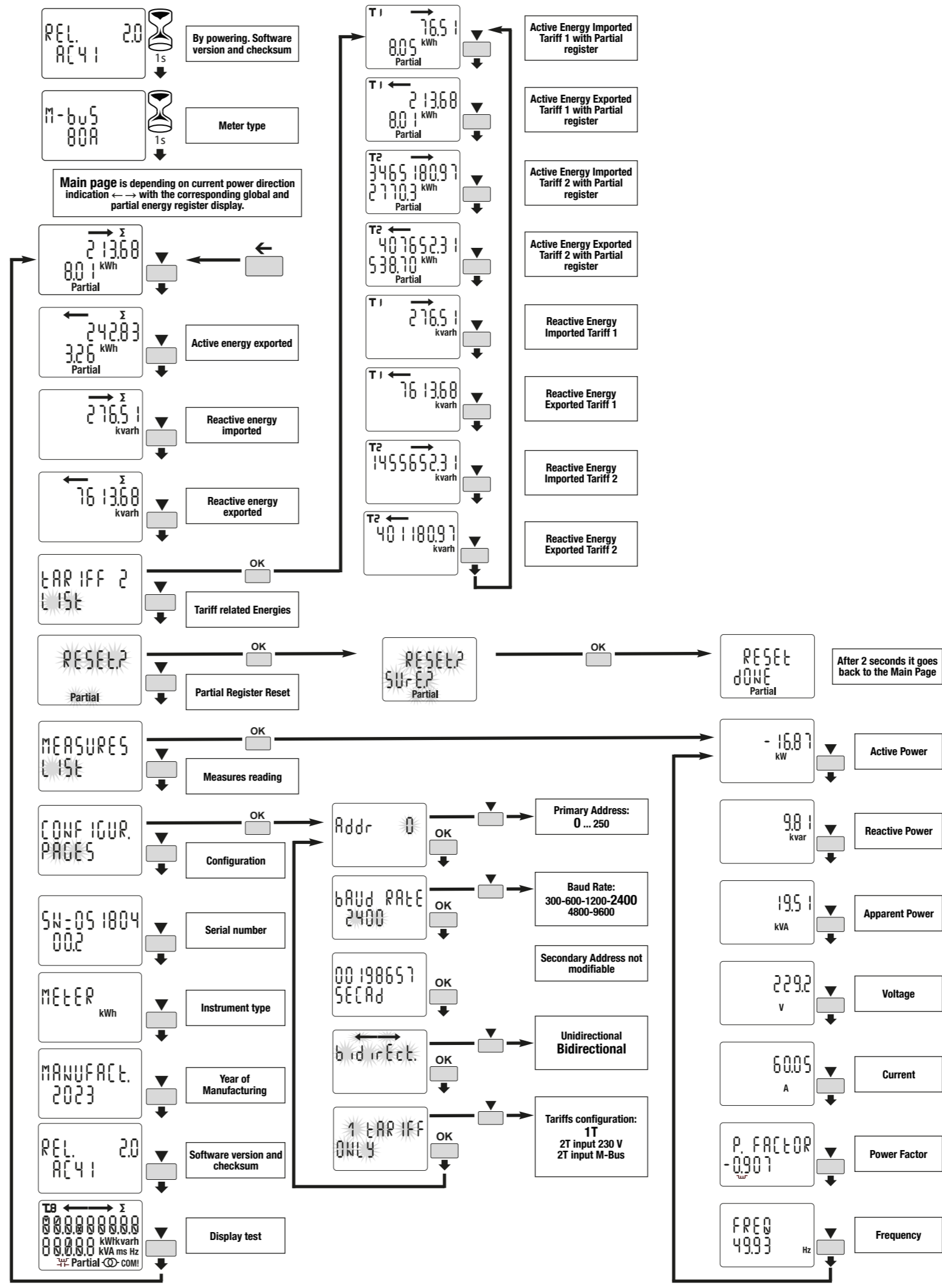
Maintenance

• Make sure that no voltage is applied to the instrument.
• Only dry cleaning is allowed with a natural fiber cloth (for example cotton or linen) or synthetic fabric that does not leave residual fibers that can remain on the surface of the Energy Meter or that can penetrate into the Energy Meter.

For this Energy meter, no maintenance, repair or replacement of parts is foreseen. Such interventions are to be considered prohibited. In case of malfunction, it must be replaced.

Help in case of problems

Error condition
When partial energy blinks, reset partial energy (maximum partial energy register). When the display shows the message **ERROR N02** or **ERROR N03**, the meter has got a malfunction and must be replaced.



Technical data

Data in compliance with EN 62052-11:2021+A11:2022, EN 62052-31:2016-06, IEC 62052-31, EN 62059-32-1:2012			
General characteristics			
Housing	DIN 43880	DIN	2
Mounting	EN 60715	DIN rail	35 mm
Depth		mm	60
Weight		g	175
Operating features			
Connection		to single-phase network - number of wires	- 2
Storage of energy values and configuration		Internal flash non volatile memory	- <input checked="" type="checkbox"/>
Tariff		for active and reactive energy	- T1 ... T2 230V - T1 ... T2 M-Bus
Approval (EN 62052-31:2016-06 EN 50470-3:2022)			
Reference Voltage (Un)		phase / neutral	VAC 230
Reference Current (In)			A 5
Minimum Current (Imin)			A 0.25
Maximum Current (Imax)			A 80
Starting Current (Ist)			A 0.015
Transitional Current (Itr)			A 0.05
Reference Frequency (fn)			Hz 50
Number of phases / number of wires			- 1 / 2
Certified Measures			kWh → kWh ← kWh
Accuracy			
- Active Energies (accord. to EN 50470-3:2022)		classe	B / 1
- Active Powers (accord. to IEC 62053-21:2020 and IEC 61557-12:2018)		classe	2
- Reactive Energies (accord. to IEC 62053-23:2020)			
- Reactive Power (accord. to IEC 62053-21:2020)			
Supply Voltage and Power Consumption			
Operating Supply Voltage range		V	92 ... 276
Maximum Power Consumption (Voltage circuit)		VA / W	≤2 / ≤1
Maximum VA burden (Current circuit) @ Imax		VA	≤1
Voltage Input Waveform			AC
Voltage impedance		MΩ	1
Current impedance		mS	≤20
Overload capability			
Voltage	continuous	phase / neutral	VAC 276
	temporary (1 s)	phase / neutral	VAC 300
Current	Maximum	A	96
	temporary (10 ms)	A	2400
Measuring Features			
Voltage range	phase / neutral	VAC	92 ... 276
Current range		A	0.25 ... 80
Frequency range		Hz	45 ... 65
Measured Quantities			- V, A, kWh, kvarh, PF, Hz, kW, kvar
Display features			
Display type	LCD with backlight		- 7.2 +3.2
Active Energy	7 digits + 2 decimal digits	kWh	0.01 ... 9999999.99
Voltage	3 digits + 1 decimal digit	V	92.0 ... 276.0
Current	2 digits + 2 decimal digits / 3+1 / 4+0	A	0.00 ... 80.00
Power factor	1 digit + 3 decimal digits with sign + capac./induc. indic.		-1.000 ... 1.000
Frequency	2 digits + 2 decimal digits	Hz	45.00 ... 65.00
Active Power	2 digits + 2 decimal digits	kW	0.00 ... 22.08
Reactive Power	2 digits + 2 decimal digits	kvar	0.00 ... 22.08
Running Tariff	1 digit		- T1 ... T2 230V - T1 ... T2 M-Bus
Display refresh period		s	1
Optical metrological LED			
Front mounted red LED (meter constant)	proportional to active imp/exp Energy	imp/kWh	1000
Safety			
Utilization category			- UC2
Overvoltage category			- 3
Protective class		classe	II
AC voltage test (EN 50470-3:2022)		kV	4
Degree of pollution			- 2
Operational voltage		V	300
Impulse voltage test (Uimp)		µs-kV	1.2/50 6.4
Housing material flame resistance	UL 94	classe	VO
Safety-sealing between upper and lower housing part			- <input checked="" type="checkbox"/>
Printed circuit board flammability class			- V1
Material Group			- IIIa
IR Connectable Communication Modules			
For communication modules			- <input checked="" type="checkbox"/>
Embedded M-Bus communication			
Baud rate	adjustable	bps	300 ... 9600
Address	adjustable		- 0 ... 250
Isolation class	SELV		- <input checked="" type="checkbox"/>
Tariff			
Tariff 1			- <input checked="" type="checkbox"/>
Tariff 2		VAC	230 ±20%
Input impedance		kΩ	224
Environmental conditions			
Storage temperature range		°C	-25 ... +70
Operating temperature range		°C	-25 ... +55
Mechanical environment			- M1
Electromagnetic environment			- E2
Installation	indoor only		- <input checked="" type="checkbox"/>
Altitude (max.)		m	≤2000
Humidity	yearly average, without condensation		- ≤75%
	on 30 days per year, without condensation		- ≤95%
IP rating	in built-in condition (front part)		- IP51
	terminal block		- IP20
Emission class compatibility CISPR 32		classe	B
Durability Certification	according to EN 62059-32-1		