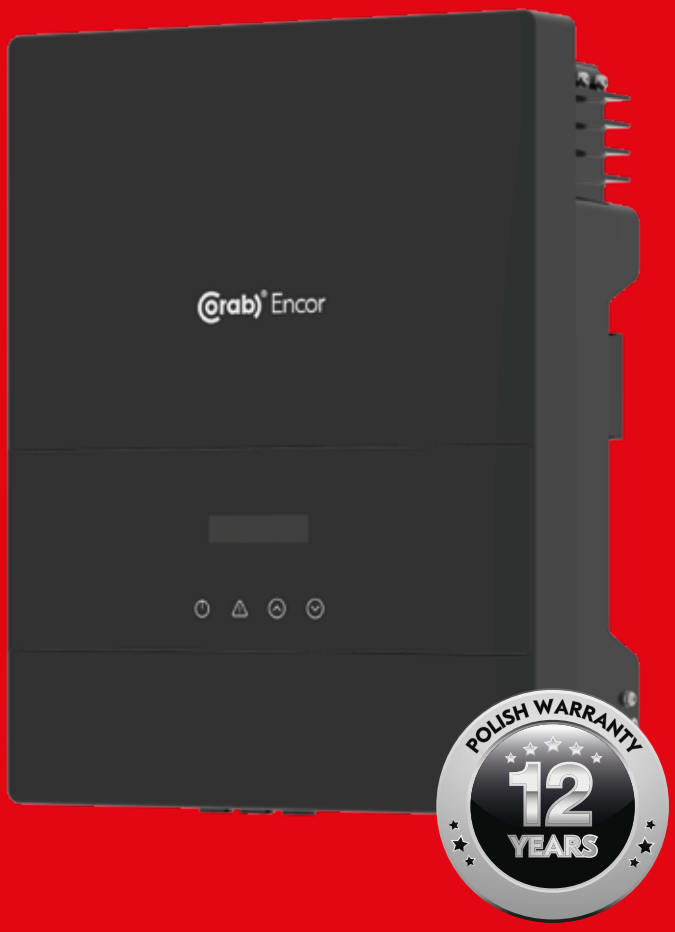
Corab® Encor

Year of release:
2024
version: 1

# Operating and assembly manual

Translation

No.: INS 003/0001.0001.0003/2024/001




## pt. III of III

List of elements and assembly

READ BEFORE ASSEMBLY
KEEP FOR THE WHOLE
LIFETIME OF THE DEVICE

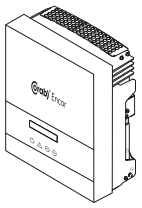
## Corab Encor Inverter

## 4k/6k/8k/10k/12k

en.corab.pl

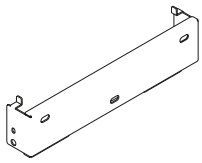
1. Inverter

Quantity:
1



2. Mounting bracket

Quantity:
1

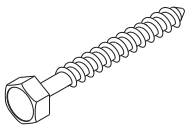


3. Screw anchor

Quantity:
3

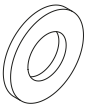
4. Screw for screw anchor

Quantity:
3



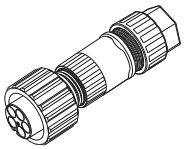
5. Round washer

Quantity:
3



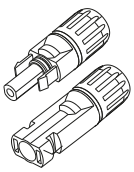
6. AC connector

Quantity:
1



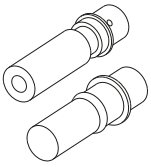
7. DC connector

Quantity:
4/6 **



8. DC contact

Quantity:
2/3 positive
2/3 negative

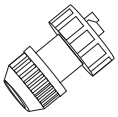


9. Earth terminal

Quantity:
1

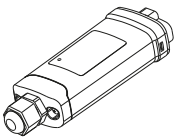
10. Waterproof coupling for RJ 45 plug

Quantity:
2 for AU
1 for UK



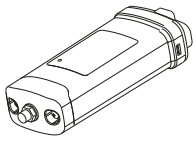
11. LAN communication module***

Quantity:
1



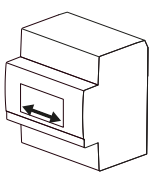
12. WiFi communication module

Quantity:
1

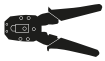


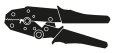
13. Meter***

Quantity:
1



Tools


Crimper for RJ plugs


Wire stripping pliers


Crimper for MC4 connectors


Crimper for ring terminals


Driller with ø10 drill


Torque screwdriver


5.0 mm slot screwdriver


Phillips screwdriver


Monkey wrench


Socket wrench, size 10


H X* Allen key


Hammer


Level


Marker pen

Tape measure

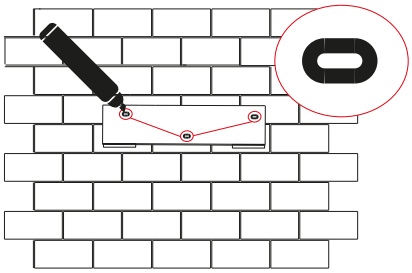

Multimeter


Tightening torque

X* Nm

* X value, variable part
** 6 DC connectors only in Corab Encor 12k
*** optional elements

1



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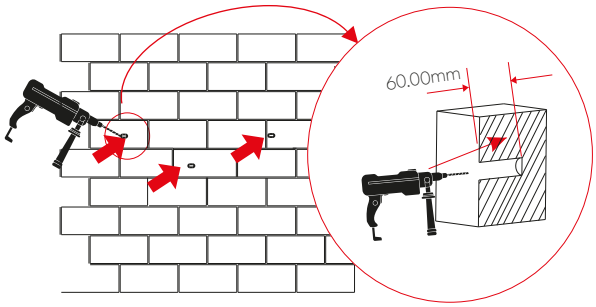


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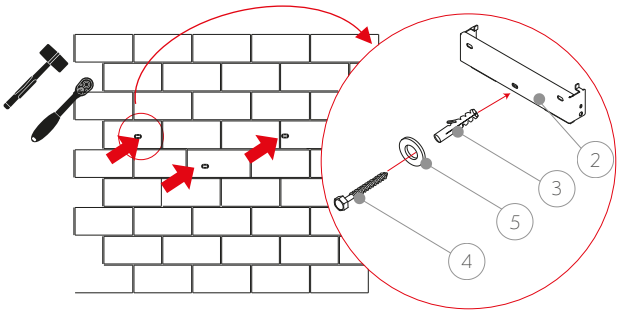


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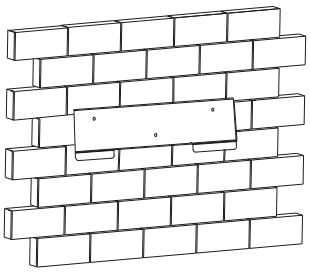
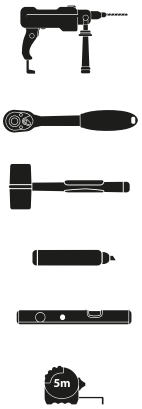
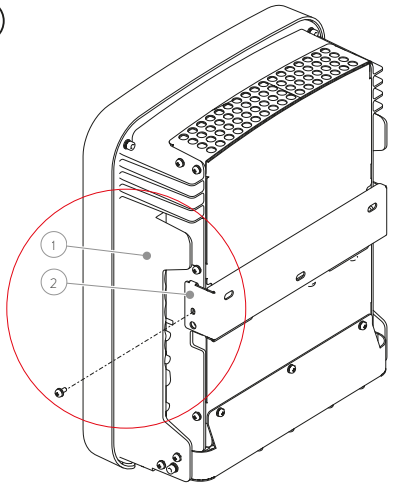


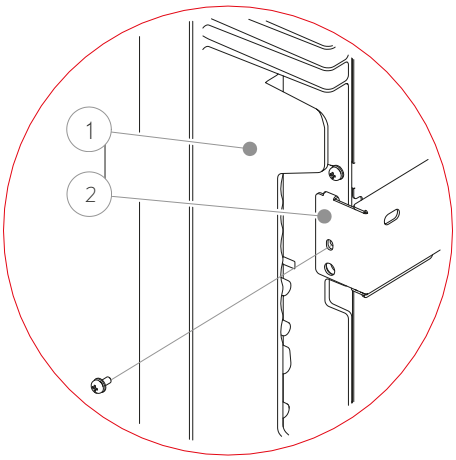
Tools



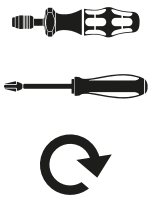

Follow these steps to install the bracket for the inverter:
1. Press the bracket of the inverter against the wall.
2. Mark 3 spots that you will use to drill holes (at least 60mm deep).
3. Press the bracket of the inverter against the wall.
4. Insert a screw anchor, wash and screw in each hole.

1



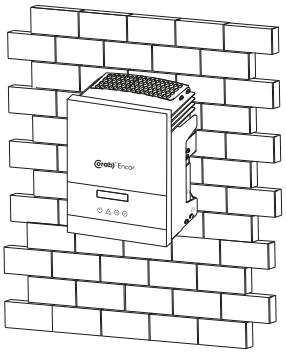




Tools



0,8-1,0 Nm

2



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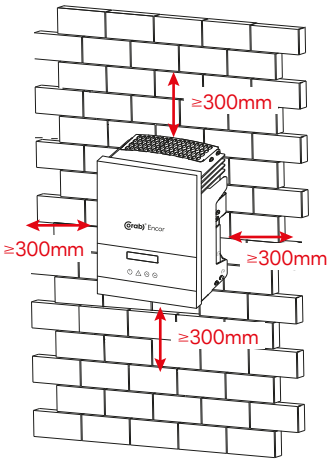
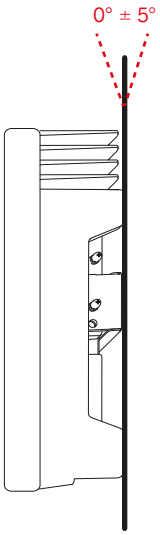



The screw is actually screwed into the enclosure of the inverter.
Remove it.
Use it to connect the enclosure of the inverter with its bracket.

General information:

NOTE
Before starting the installation, read Chapter 2 of part I of this operating manual.

- choose the fuse according to the applicable regulations of law and working conditions;

NOTE
Choose the DC protection between the PV modules and the inverter according to the nominal values of the device.

NOTE
The fuse base with fuse links are secured against short-circuit by the AC wire. It protects the secondary devices..

- choose the wire gauge to match the used protective element;

NOTE
The used protective elements must be approved by the relevant notified body.

- the AC wire must be secured against short-circuit and thermal overload;
- the AC wire must meet the requirements of standard PN-EN 60204-1:2018-12 on wiring in a wiring system and one loaded circuit;

DANGER
All the components of the PV installation should be selected according to the current rating and the maximum values of short-circuit current.

- choose the gauge of the DC wire according to the nominal values of PV modules and the maximum values of the input current;

DANGER
DC wires are live wires that can create a dangerous situation or lead to fatal electrocution.

DANGER
DC voltage must fall within the range of MPPT voltage. The voltage of the open DC circuit must be lower than the maximum DC voltage.

WARNING
Creating positive or negative earthing for PV modules is prohibited.

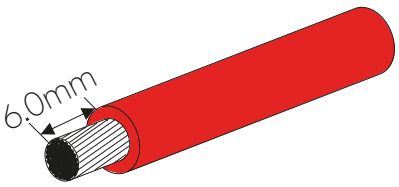
NOTE
Connect the inverter to PV modules with the same technical parameters, working in the same conditions.

HINT
The device is equipped with several DC inputs. It is allowed to connect two DC strings in parallel in one input.

HINT
Install the inverter as close to the PV modules as possible in order to reduce the losses in DC wires.

SAFETY INSTRUCTION
Follow the requirements of the manufacturer of PV modules that you connect to the inverter as well as the relevant regulations.

1

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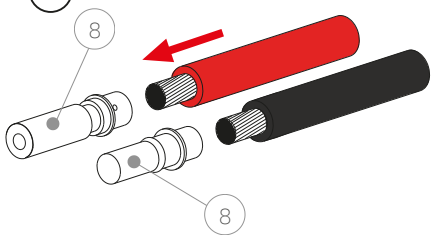
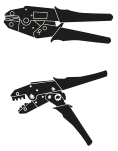



Tools



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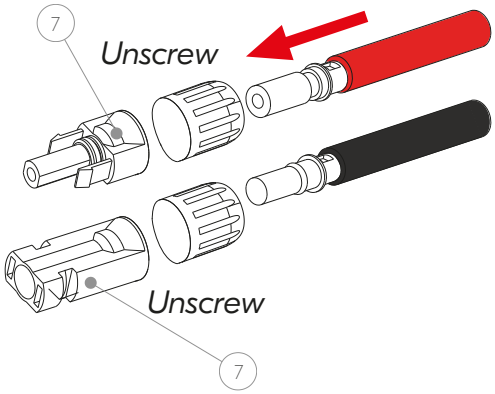


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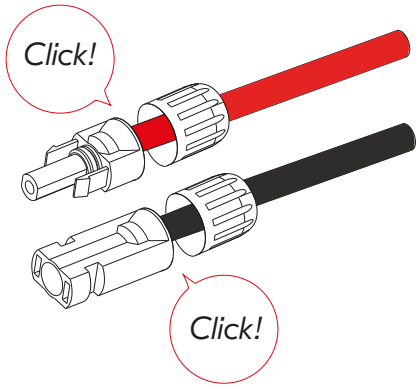


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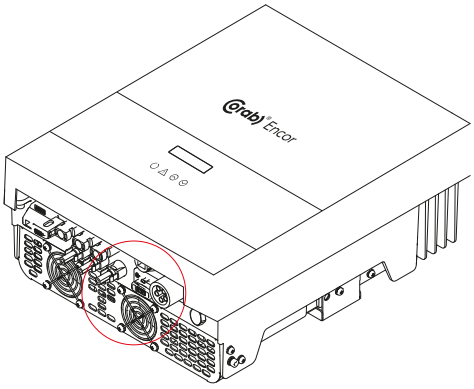
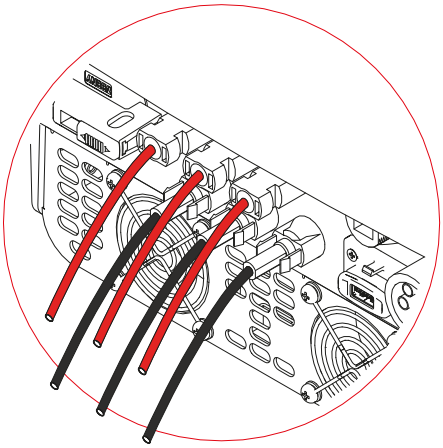
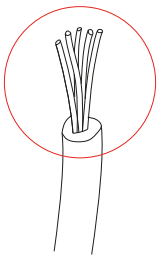
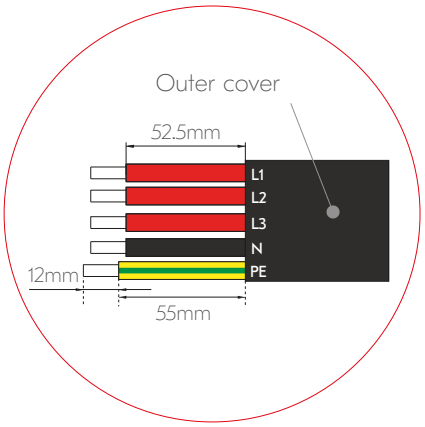


Prepare the DC connector according to the instructions below:
1. Prepare a wire with a gauge of 2.5-4 mm2.
2. Use wire stripping pliers to remove 6 mm of the wire cover.
3. Insert the bare part of the wire into the DC contact and clamp it with a crimper for MC4 connector.
4. Insert the DC contact with the wire into the loose nut of the DC connector.
5. Press the DC contact into the DC connector plug until it clicks.
6. Tighten the nut of the DC connector.

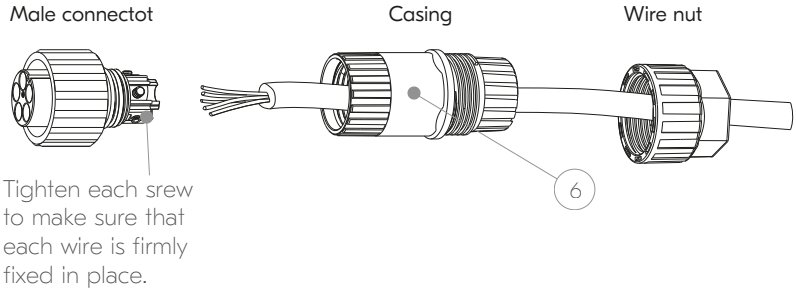
1






Tools


2




DANGER

Connecting the inverter to an electrical grid the voltage of which does not comply with the range specified in section 3.2 of part I of this manual is prohibited.

NOTE

The AC output must be protected with overcurrent protection on all connections to the electrical grid.

NOTE

Choose a wire that will be compatible with the environmental conditions and the local regulations on electrical grids for the place of installation. If possible, use wires and overcurrent safety switch with the following parameters:

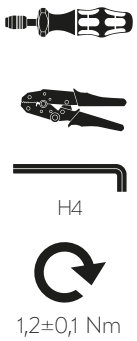
| **Parameter/ Model of the inverter** | **CE 4K** | **CE 6K** | **CE 8K** | **CE 10K** | **CE 12K** |
|---|---|---|---|---|---|
| L1, L2, L3, N wire gauge [mm²] | 4 | 6 | | | |
| Gauge of the earthing wire (P) [mm²] | 4 | 6 | | | |
| Overcurrent safety switch [A] | 16 | 20 | 32 | | |

HINT

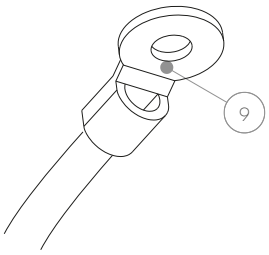
Prepare the AC connector according to the following instructions:

1. Check the voltage of the electrical grid;
2. Disconnect the AC power in the main switching station;
3. Secure the AC installation to make sure it will not turn on involuntarily;
4. Prepare the AC wire;
5. Remove 52.5 mm of the outer cover from L1, L2, L3 and N wires;
6. Remove 52.5 mm of the outer cover from the PE wire;
7. Use wire stripping pliers to remove 12.5 mm of insulation from all wire conductors;
8. Split the AC connector into three elements: wire nut, casing and male connector;
9. Insert the wire through the wire nut and casing;
10. Insert each wire conductor into the relevant hole in the male connector. Tighten the wire conductors in place.
11. Tighten the wire nut;
12. Align the groove on the male connector with the AC input on the inverter;
13. Tighten the male connector.

Tools




1

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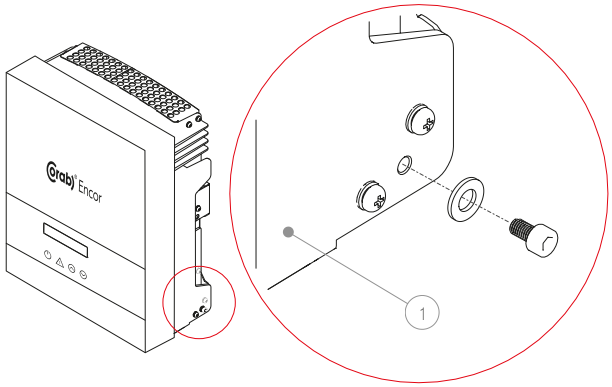


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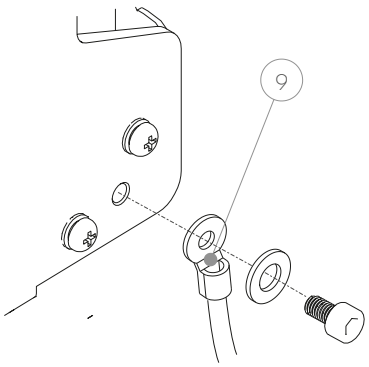


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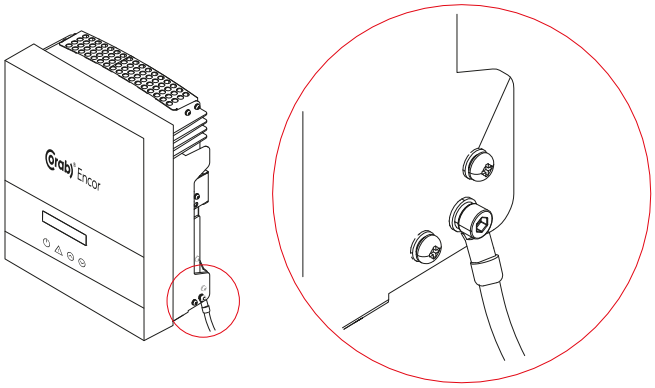
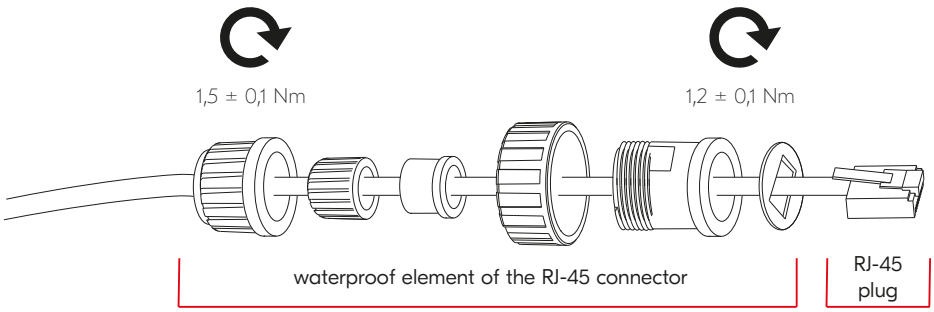


DANGER
Using the device without connected earthing is prohibited.

Prepare the PE connection according to the following instructions:
1. Prepare the earthing wire.
2. Strip enough of the wire to fit the earthing terminal.
3. Insert the wire into the earthing terminal.
4. Clamp the end with the wire by using a crimper for ring terminals.
5. Untighten the screw from the enclosure of the inverter and put the ring of the earthing terminal between the wash and the enclosure of the inverter.
6. Tighten the screw with an H4 Allen key.

Tools




HINT
Prepare the RJ-45 connector according to the following instructions:
1. Prepare the ETHERNET cable;
2. Use wire stripping pliers to remove insulation from a section of the cable;
3. Insert the cable through the waterproof element of the RJ-45 plug;
4. Insert the cable into the RJ-45 plug matching the PINs of the particular communication interface;
5. Use a crimper for RJ plugs on the RJ-45 connector;
6. Insert the RJ-45 plug into the port in the inverter;
7. Tighten the waterproof elements of the RJ-45 plug according to the markings presented above.

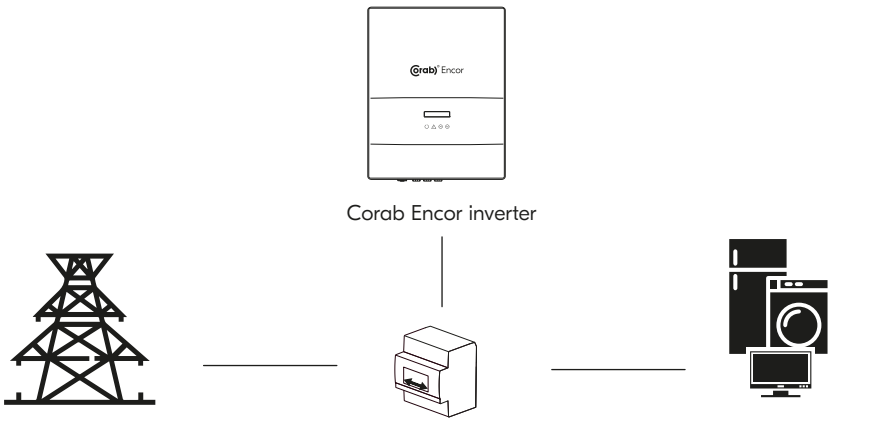
HINT
The RJ-45 plug allows starting the RS-485 communication interface, the electricity meter and the DRMs.

a. description of connector PINs / electricity meter


| PIN | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| CODE | 12V | DRM0 | RY-OUT | 485_A | 485_B | GND | NC | NC |


Corab Encor inverter — RS-485 interface — computer

WARNING
The meter must be autorized by the Manufacturer of the inverter. Otherwise, the Manufacturer shall not be liable for the lack of compatibility between the meter and the device.



Corab Encor inverter

electrical grid — 3-phase electricity meter — receivers of electricity

b. description of PINs of the DRMs connector


| PIN | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| CODE | +12V | DRM0 | - | - | - | - | - | - |

Corab® Encor

Corab S.A. ul. Michała Kajki 4, 10-547 Olsztyn, REGON: 510519084, NIP: 7390207757, entered in to the National Court Register manager by the District Court in Olsztyn, the 8th Commercial Division of the National Court Register under KRS no.: 0000950779. Share capital: PLN 1,184,000.00 fully paid-up.

Corab S.A.
ul. Michała Kajki 4,
10-547 Olsztyn, Poland

NIP: 739-020-77-57
REGON: 510519084

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