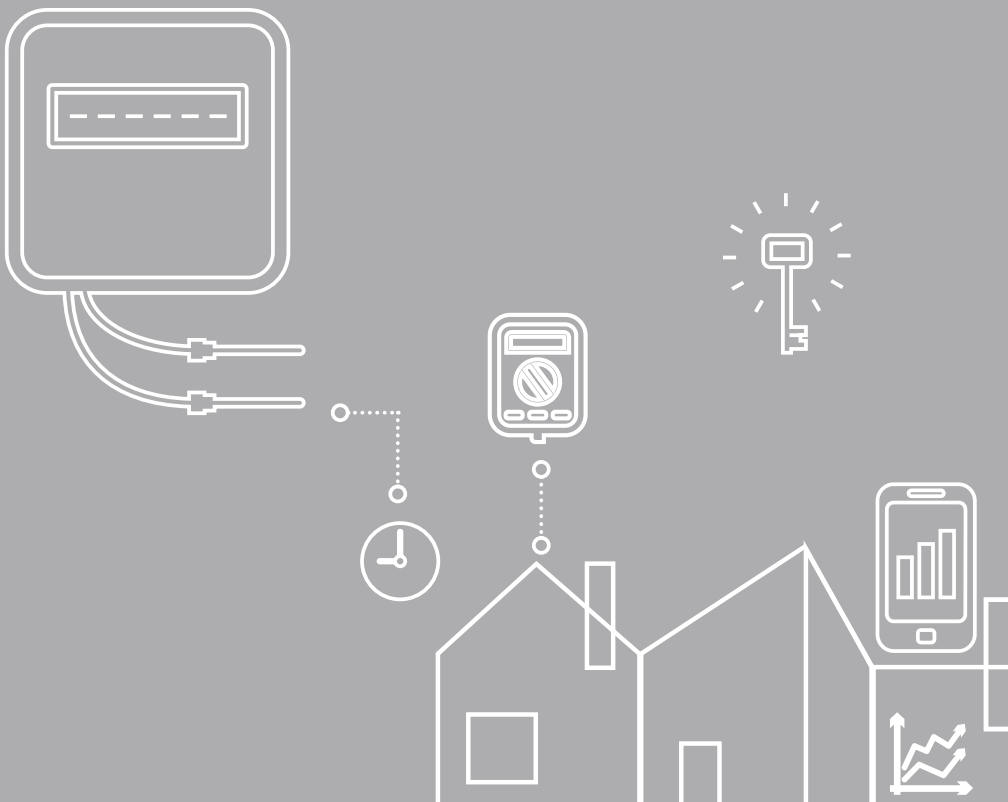
SYCOUS®

M-Bus

Wired MBus Network & Data Logger Installation Guide



Introduction

This document is designed to provide guidance on the installation of an MBus network and suitable data logger. The guide will support in selecting the most appropriate topology for your MBus network and provide wiring details for the data logger.

What is MBus?

MBus (Meter-Bus) is a European standard (EN 13757-2 physical and link layer, EN 13757-3 application layer) for the remote reading of sub meters i.e.. heat, water & electric. MBus is also usable for other types of consumption meters (e.g. Heat, Hot Water, Cold Water etc.).

The MBus interface is made for communication on two wires, making it very cost effective. A radio variant of MBus (Wireless MBus) is also specified in EN 13757-4.

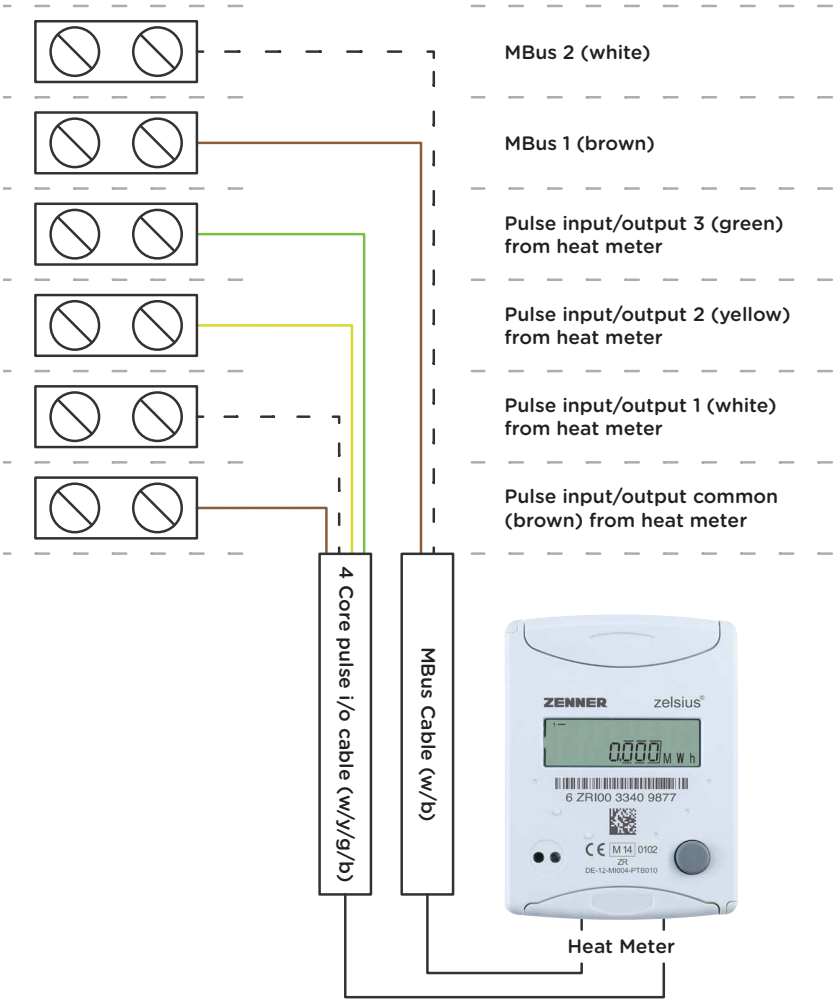
ZENNER C5

ZENNER

The ZENNER C5 ultrasonic heating and cooling meter operates with an innovative ultrasonic technology, specially developed for a broad scope of application from sub-metering to district heating.

This guide assumes that the installer is utilising the Zenner C5 Heat Meter with MBus. Other third party MBus meters can be utilised but compatibility must be checked with Sycous prior to installation.

Typical MBus Wiring Connections for ZENNER C5



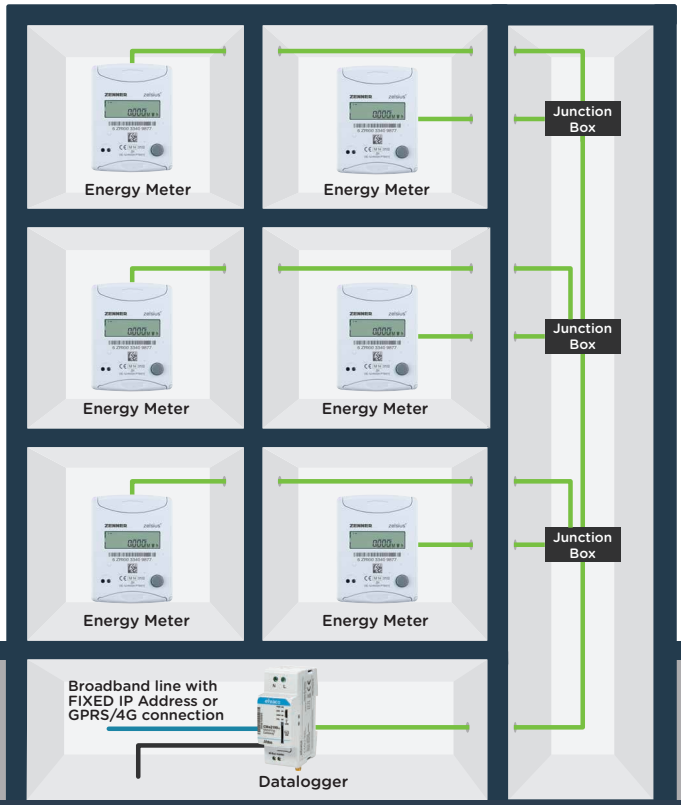
Advised Installation of the MBus Network

MBus unshielded Belden Cable No. 8444 (CAT 5 is not recommended)

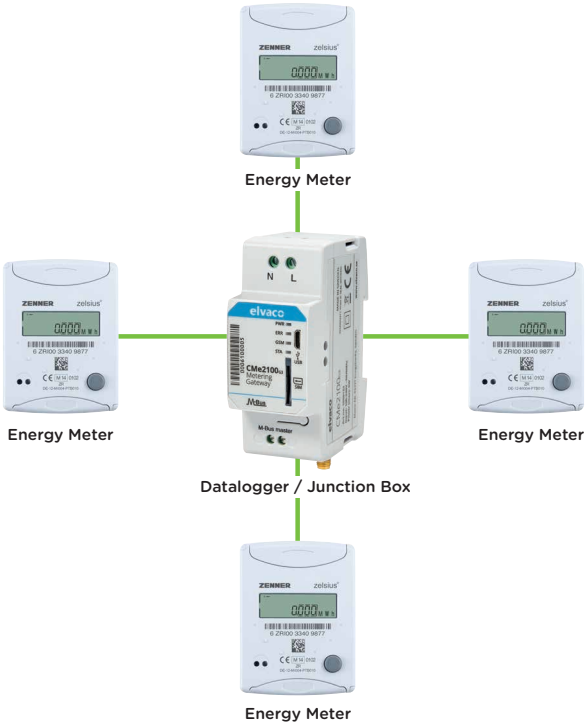
LAN RJ45 (CAT 5/6 to broadband router/modem) or GPRS/4G connection depending on model selected

Mains Power, 230V AC, 50/60 Hz, 3A or 5A unswitched fused spur

A suitable 4G/GPRS connection is needed to be able to remotely read meters. Please ensure that signal is available in the location of the data logger. Sycous can provide a signal test on site. Please contact our sales team for further information.



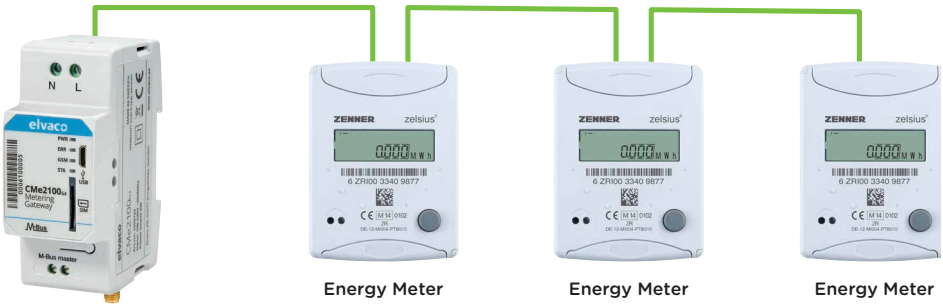
Star Topology (Strongly Advised)



Advantages

- Only one apartment is required when replacing damaged cabling.
- If one single meter goes offline the rest of the system will still function correctly.
- Cost effective maintenance in the future.

Daisy Chain Topology

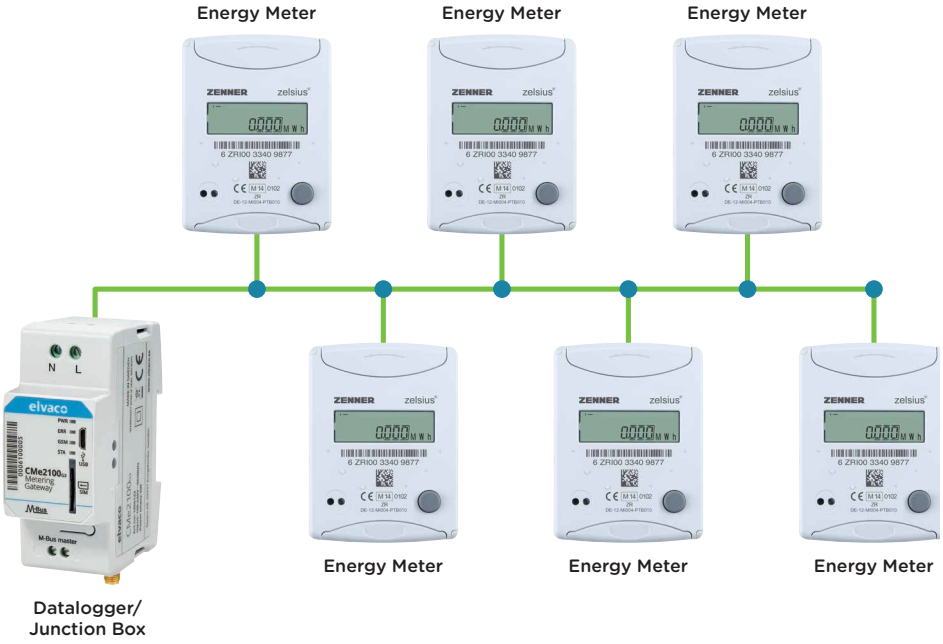


Datalogger/
Junction Box

Important

- If one singular meter goes offline the entire downstream system will also go offline.
- Network repairs may take longer due to access being required for more than one property.
- Less robust than the star topology. Not recommended.

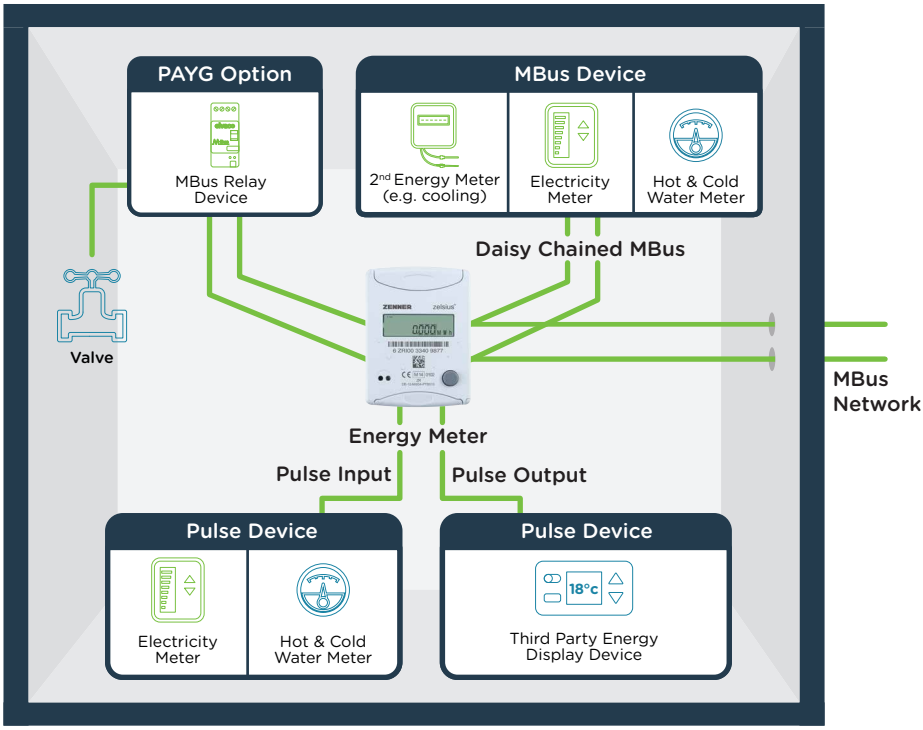
Bus Topology



Important

- If cabling needs to be repaired, access will only be required for one property.
- If using Bus Topology, further junction boxes and connections will be required compared to star topology.
- In the event of any damages to the main spine of the network, all of the downstream energy meters will no longer function.
- Higher number of failure points compared to star topology.

Optional Connections to ZENNER C5 within Apartment



Important

- Pulse input and pulse meters are not recommended by Sycous.
- Pulse input requires on-site commissioning.
- The devices that can be connected depends on the specifications of the energy meter.
- **Note:** System setup may differ from those illustrated, depending on system specification.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Elvaco Dataloggers

Getting the right meter is only half the challenge, making sure the meter can be remotely read ensures you will have a robust metering solution.

Sycous are the UK's largest partner of Elvaco and as a Premium Partner can ensure you receive the best solutions at the most competitive prices.

Elvaco CMe3100

- For connection to a fixed broadband line. Broadband line provided by third party.
- Can be connected up to 512 meters.
- Software licences available from 8, 32, 64, 128, 256 and 512 meter points. A suitable expander must be utilised to collect more than 32 meters.

Elvaco CMe2100 & LTE Version

- CMe2100 can be connected up to 128 meters.
- CMe2100 LTE can be connected up to 256 meters.
- Software licences available for the LTE version are from 8, 32, 64, 128 and 256 meter points. Software license for the GRPS version is 128 meter points as standard. A suitable expander must be utilised to collect more than 8 meters.

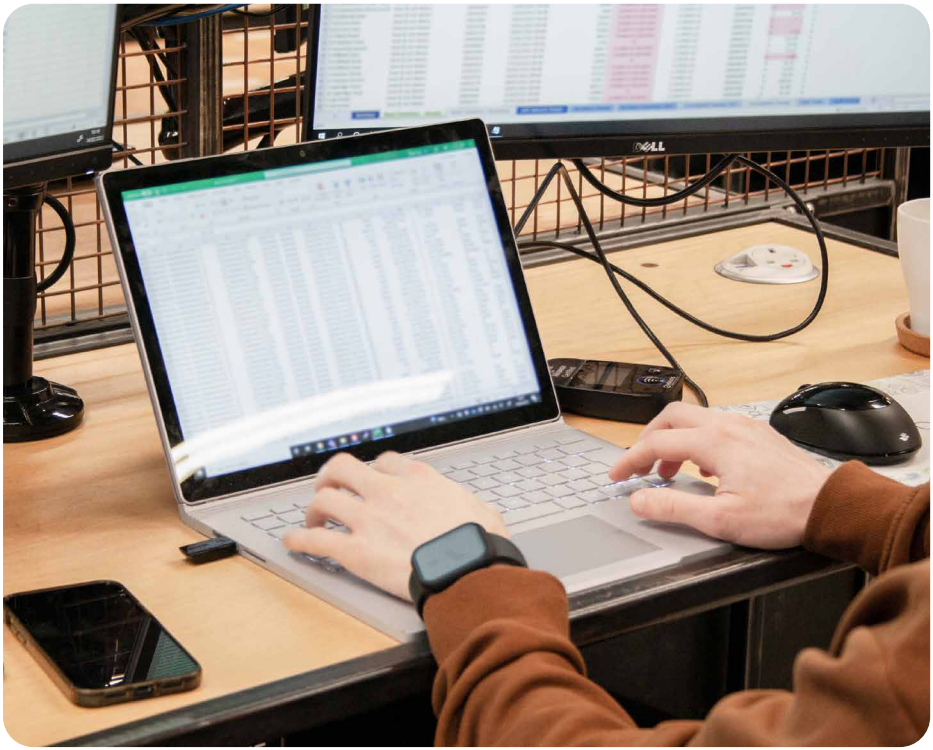
Elvaco CMeX

CMeX10-13S range is an MBus Master which, by providing additional drive strength, extends the number of meters a CMe Series Gateway is able to use. The product is equipped with a unique IR Pass through feature which enables up to four CMe/CMeX Series devices to communicate via IR, by stacking them side-by side.

The S version will also support integration with existing MBus systems through RS232. This also allows for local reading through suitable software.

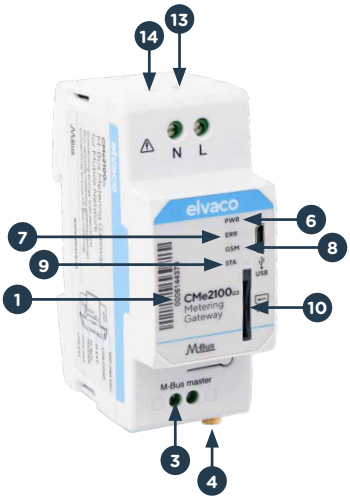
The S version includes an RS232 connection for local reading if required.

- CMeX10 can be connected up to 32 meters.
- CMeX11 can be connected up to 64 meters.
- CMeX12S can be connected up to 128 meters.
- CMeX13S can be connected up to 256 meters
- Depends on which gateway is selected to export data. CMe3100, CMe2100 or CMe2100LTE.



CMe2100 only

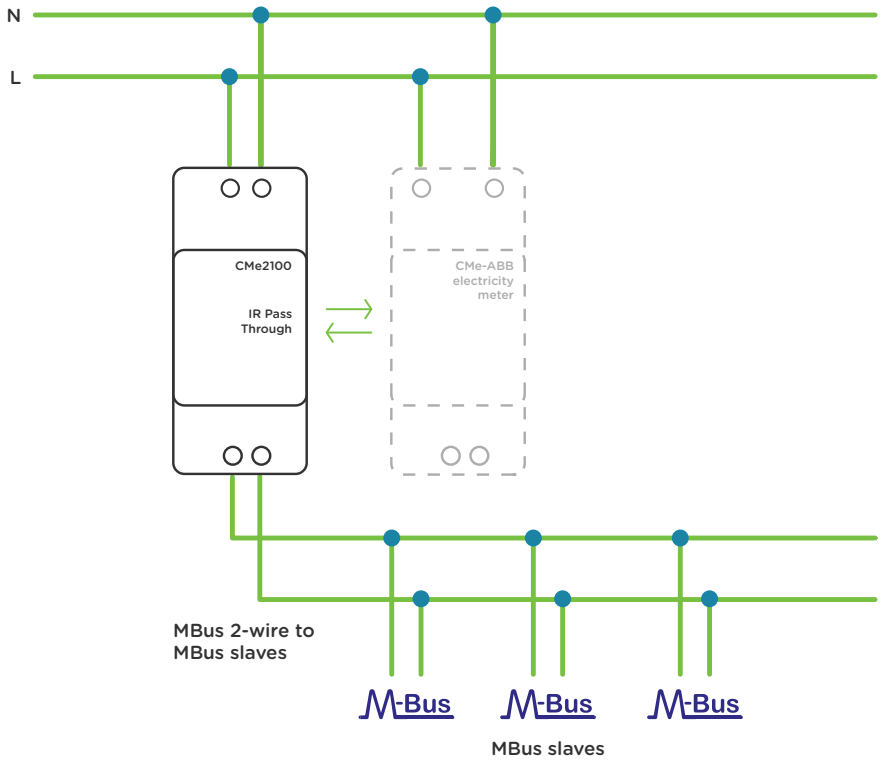
1. Serial Number
2. Push Button
3. MBus Connector
4. Antenna SMA Connector
5. IR interface
6. Status LED (green)
7. Error LED (red)
8. Network LED (yellow)
9. Blue LED (not used)
10. SIM Card Holder
11. USB Slave Connector
12. USB Master Connector
13. Power Supply L
14. Power Supply N



Important

The CMe2100 handles up to 128 meters (GPRS version) and up to 256 meters (LTE version) depending on the software license ordered. Use an MBus extender for installations with more meters than the product limit.

All connected MBus slaves must have unique primary or secondary MBus addresses depending on addressing mode.



Power Supply

The installation should be performed by a qualified electrician or installer with required knowledge and training. The power supply connected should be clearly labelled, easily accessible and within close proximity of the data logger. The power supply should be of an unswitched type.

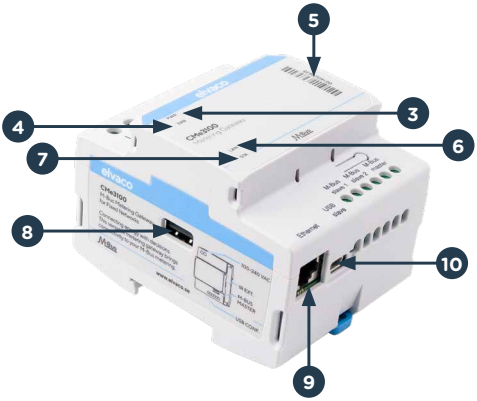
The main supply should be connected to screw terminal (13) and (14). Main supply voltage should be in the range of 100-240 VAC, 50/60 Hz.

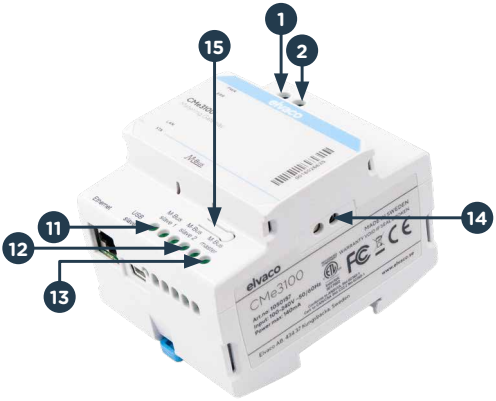
General Notes

- The MBus system is non polarity sensitive.
- Do not exceed the maximum cable length of 1000M for the CMe2100.
- Please always read the manufacture instructions for installation details. This document is designed as a guide only.

CMe3100 only

1. Power Supply L
2. Power Supply N
3. Power LED (green)
4. Error LED (red)
5. Serial Number
6. LAN LED (yellow)
7. Blue LED
8. USB Master
9. Ethernet Connection
10. USB Slave
11. MBus slave 1
12. MBus slave 2
13. MBus Master Port
14. IR interface
15. Push Button

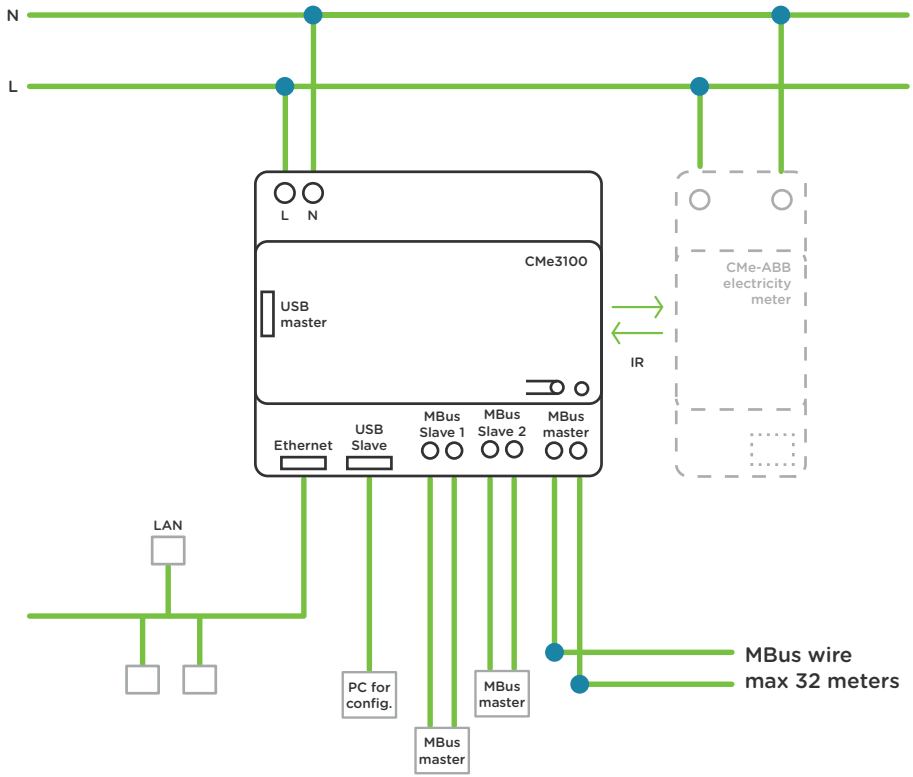




Important

The CMe3100 handles up to 512 meters depending on the software license ordered. Use an MBus extender for installations with more meters than the product limit.

All connected MBus slaves must have unique primary or secondary MBus addresses depending on addressing mode.



Power Supply

The installation should be performed by a qualified electrician or installer with required knowledge and training. The power supply connected should be clearly labelled, easily accessible and within close proximity of the data logger. The power supply should be of an unswitched type.

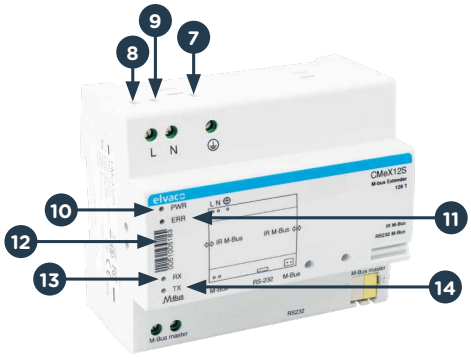
The main supply should be connected to screw terminal (13) and (14). Main supply voltage should be in the range of 100-240 VAC, 50/60 Hz.

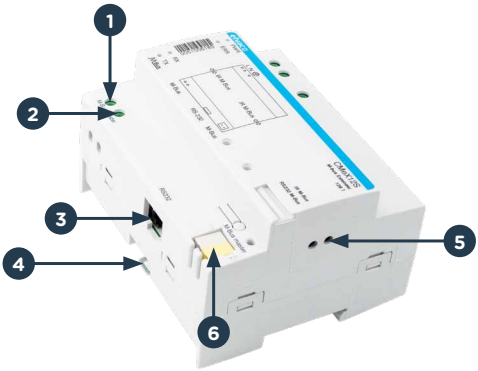
General Notes

- The MBus system is non polarity sensitive.
- Do not exceed the maximum cable length of 1000M for the CMe3100.
- Please always read the manufacture instructions for installation details. This document is designed as a guide only.

CMe2100/3100 with Expander

1. MBus out
2. MBus out
3. RS232 in
4. DIN-rail lock
5. IR interface
6. MBus out
7. Protective earth
8. Power Supply N
9. Power Supply L
10. Power LED (green)
11. Error LED (red)
12. Serial Number
13. RX LED (yellow)
14. TX LED (yellow)

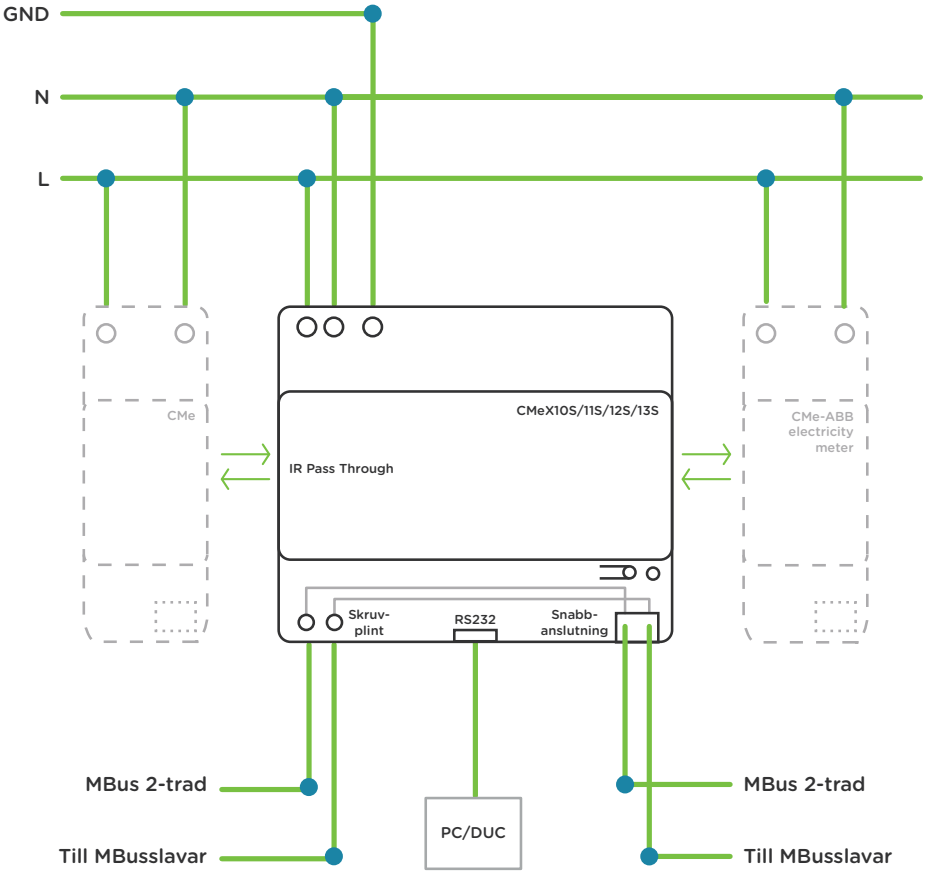




Important

The CMeX range is designed to expand either the CMe2100 or CMe3100 to read additional meters.

All connected MBus unit loads must have unique primary or secondary. MBus addresses depending on addressing mode.



General Notes

- The MBus system is non polarity sensitive
- Do not exceed the maximum cable length of 1000M for the CMeX10-11 range
- Do not exceed the maximum cable length of 5000M for the CMeX10S-13S range
- Please always read the manufacture instructions for installation details. This document is designed as a guide only.

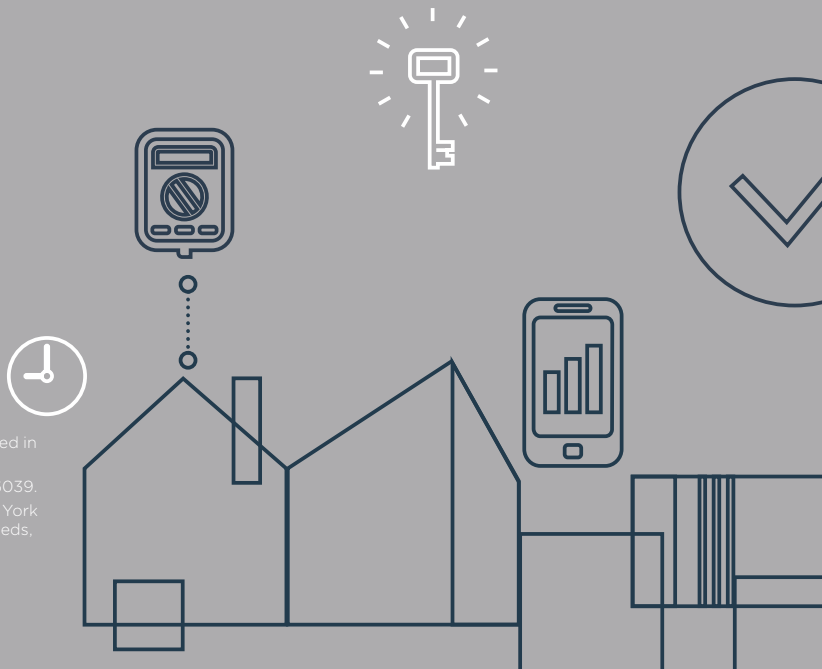
Notes

Notes

Need Help?

Contact our team on **01133604776** or email **info@sycous.com**

Our offices are open Monday to Friday 8:30 am to 5:30pm excluding bank holidays.



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