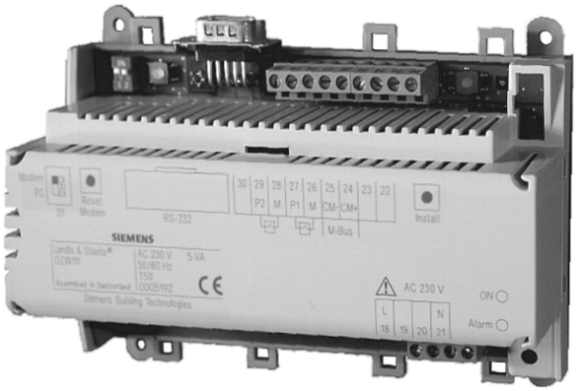
SIEMENS

5363



M-Bus Central Unit OZW111

The M-bus central unit is used for the remote readout, remote operation and supervision of an M-bus plant with a maximum of 5 consumption meters and controllers featuring an M-bus connection facility to EN 13757.

Use

The OZW111 central unit is a component of the M-bus system (refer to Data Sheet N5361).
It is designed for the remote supervision of community and district heating systems and for consumption cost billing in multifamily houses.

The following types of M-bus devices can be connected:

Metering devices:

- Heat meters SONOHEAT® 2WR4, 2WR5, 2WR6, UH50
- Heat meters SONOGYR® energy
- Heat meters SONOGYR® WSD…
- Heat meters MEGATRON®2
- Water meters VOLUTRON®2
- Consumption meters via pulse adapter AEW21.2, AEW310.2
- Consumption meters via pulse adapter RELAY PadpulsM1
- Electronic heat cost allocators MEMOTRON®2 WHE21

Controllers:

- District heating controllers RVD2…

Other types of M-bus devices on demand.

Functions

The M-bus central unit

- detects the connected M-bus devices via its automatic search run
- makes possible the direct access to the M-bus devices through a PC, connected either directly or via modem
- monitors periodically the M-bus devices and 2 potential-free digital inputs
- delivers alarms to a PC, either directly or via modem
- provides a clock function for alarms

Type summary

Type of device	*Type reference or part no.*
M-bus central unit	**OZW111**
Terminal covers	**74 111 0028 0**

When ordering, please give the type reference. The terminal covers must be ordered as separate items.

Equipment combinations

M-bus devices

A maximum of 5 M-bus devices can be connected directly to the M-bus central unit. Exception: A maximum of 3 SONOHEAT heat meters with M-bus module up to V1.06

Software

A PC with the following software can be connected to the unit's RS-232 port, either directly or via modem:

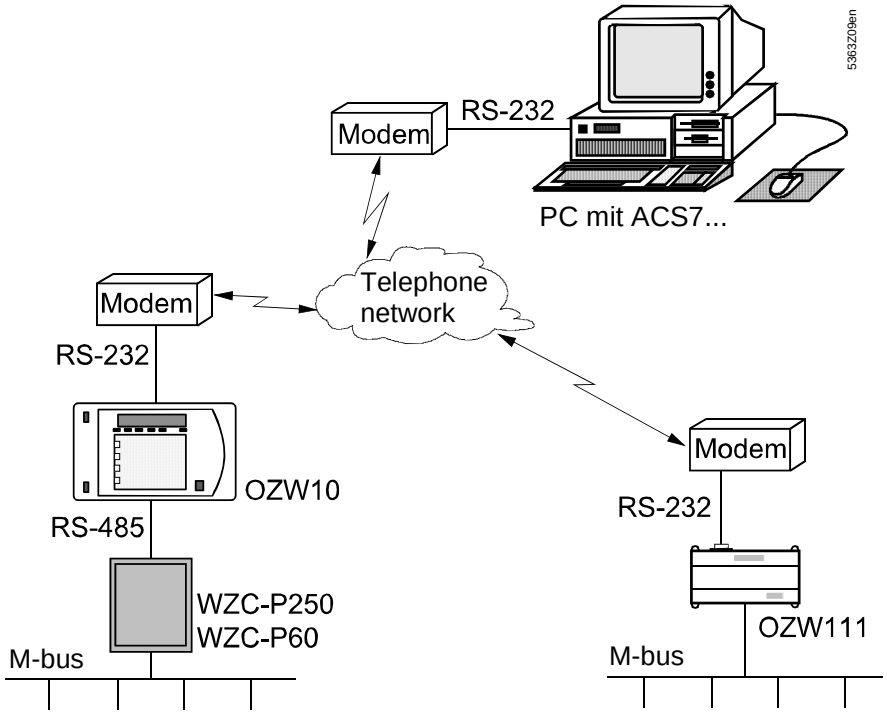
- ACS7… plant operating software (refer to Data Sheet N5640)

Technical design

Communication

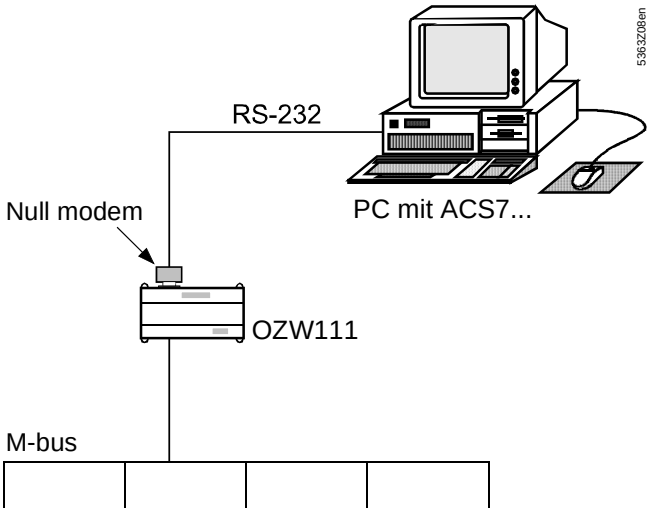
Telephone connection

In the case of a connection via the telephone network, a Hayes-compatible modem is required at each side.

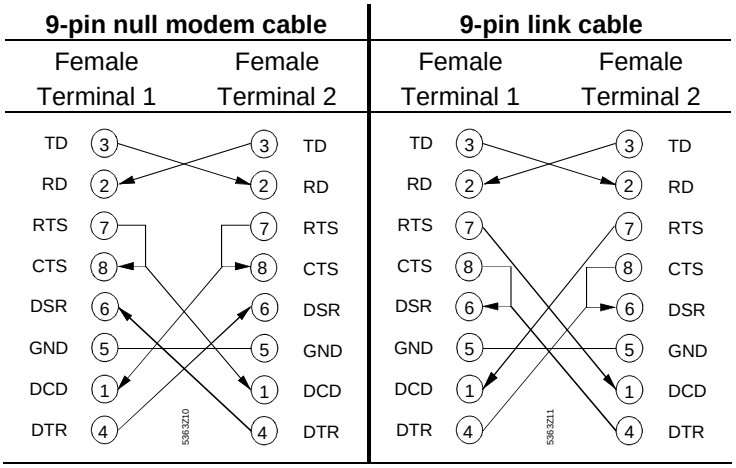


Direct connection

When using a direct connection, a null modem is required between M-bus central unit and PC.



Null modem



Parameter settings

The parameters of the M-bus central unit must be set with the help of a PC using the ACS7… plant operating software, connected either directly or via modem.

Acquisition of M-bus devices

Upon request, the M-bus central unit automatically searches for the M-bus devices used by the system. Supported are primary and secondary addressing and Baud rates of 300 and 2400 Baud. Both the type of addressing and the Baud rates can be selected. The device list remains stored in non-volatile memory.

Interrogation of M-bus devices

The M-bus central unit offers a number of choices for interrogating the M-bus devices. Its parameters must be appropriately set.

- Manual interrogation cycle:
  The data will be interrogated via M-bus only when requested
- Periodic interrogation cycle:
  To ensure supervision of the devices, the data will be periodically and automatically interrogated – hourly, daily, weekly or monthly. It should be noted that in the case of battery-powered M-bus devices, frequent interrogation will reduce battery life. If such devices are used by the system, no more than one interrogation per day should be made. For more detailed information, refer to the relevant product specification
- Alarm cycle:
  To ensure supervision, controllers can be interrogated more frequently.
  The alarm cycle can be set in one-minute steps.

Evaluation of consumption data

The data are made available via the RS-232 port where they can be read out with the help of appropriate software, either directly or via modem.
If a billing file is required, the M-bus central unit OZW10 can be used.

Digital inputs

The OZW111 has 2 digital inputs for the connection of potential-free contacts. The operating action of the contacts (active closed or active open) can be parameterized.

Alarms

The M-bus central unit is able to detect the following types of faults:

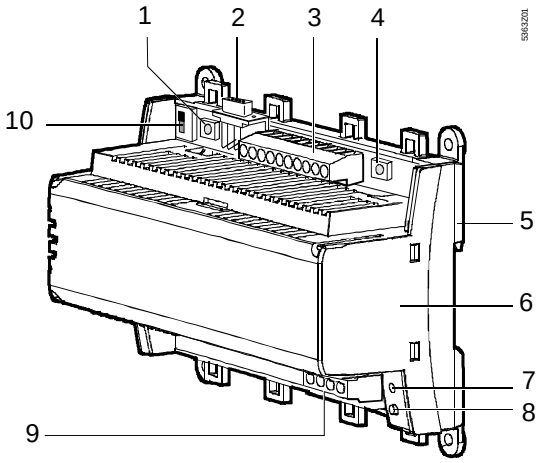
- Signals delivered to the digital inputs
- Failures of M-bus devices
- Fault messages delivered by M-bus devices
- Failures of the M-bus central unit

Fault status messages are delivered to a PC on which the ACS Alarm is installed. Rectification of a fault will not be signaled.

Mechanical design

Make up

The M-bus central unit consists of base, housing and printed circuit board with the connection terminals (top: M-bus and digital inputs, bottom: mains connection). The unit also has 2 LEDs, 2 buttons, one RS-232 selector and one RS-232 socket.



1	Modem reset button	6	Housing
2	RS-232 socket	7	LED for operation
3	Connection terminals (M-bus and digital inputs)	8	LED for alarms
4	M-bus button	9	Connection terminals (mains connection)
5	Base	10	RS-232 selector

Terminal covers

Terminal covers are available as an accessory item. They protect the terminals against physical contact and dirt. The terminal covers are mandatory when the unit is mounted outside the control panel or cabinet. In that case, the terminal cover on the mains voltage side must be secured with the 2 cable ties provided.
The 2 LEDs are visible also when the terminal cover is fitted.

Connection terminals

The connection terminals are ready mounted. To avoid false wiring, the terminals for the mains voltage connection (AC 230 V) are clearly separated from the other terminals. The terminals are arranged such that, in normal situations, all incoming and outgoing wires can be connected without crossing.

LED for operation

The green LED indicates the operational status of the M-bus central unit:

- LED lit: mains voltage present
- LED flashes: communication via M-bus and / or RS-232 port

LED for alarms

The red LED shows the alarm status of the M-bus central unit:
- LED dark: no fault and no alarm
- LED lit: fault of one or several M-bus devices present
- LED flashes: internal fault of M-bus central unit or signal at the digital inputs

RS-232 selector

This selector is used to select whether the M-bus central unit is connected to the RS-232 port via modem or directly to the PC.

M-bus button

The M-bus button is used for
- starting the search run, thus creating the device list
- showing the number of M-bus devices on the list

Modem reset button

The modem reset button is used for re-initializing the modem. Then, the M-bus central unit will establish a connection to the control centre and deliver a status report.

Engineering notes

For detailed planning instructions on the M-bus system, refer to the Basic Documentation P5361.
The local regulations for electrical installations must be complied with.
For additional notes on electrical installations, refer to data sheet N2034.

Mounting notes

The M-bus central unit can be fitted in any position, either on a wall mounting rail or directly on the wall.
Please observe:

- If there is no protection against electric shock hazard (e.g. in heating rooms, false ceilings or false floors), the use of terminal covers is **mandatory**.
  The terminal cover on the mains voltage side must be secured with cable ties
- If protection against electric shock hazard is ensured (e.g. in control panels or cabinets), the unit can be mounted **without** terminal covers
- The heat generated by the unit during operation must be allowed to escape. Adequate circulation of air must therefore be ensured
- Good accessibility for service staff must be ensured
- The local regulations for installations must be complied with

Mounting Instructions are printed on the unit's packaging.

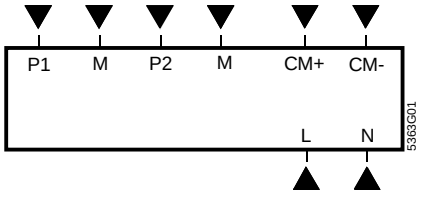
Commissioning notes

- The M-bus central unit must be commissioned by authorized staff
- The Installation Instructions supplied with the unit contain detailed information on commissioning
- To set the parameters of the M-bus central unit, the ACS7… plant operating software is to be used.
  The parameters can be set either beforehand or on site.

Technical data

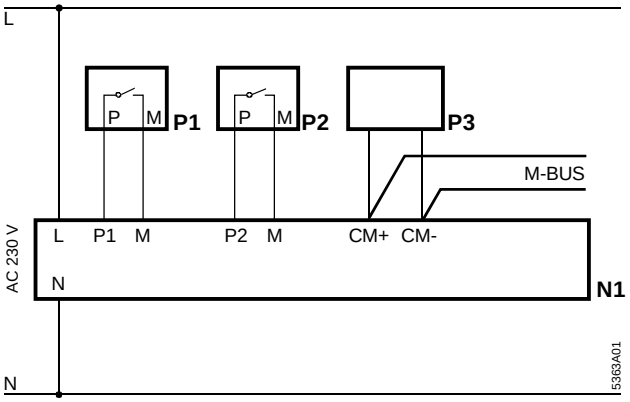
General unit data	Operating voltage	AC 230 V ±10 %
	Nominal frequency	50 / 60 Hz
	Power consumption	5 VA
	Digital inputs (P1, P2)	for potential-free contacts
	Perm. ambient temperature	
	Transport and storage	–25…+70 °C
	Operation	0…50 °C
	Perm. ambient humidity	class F to IEC 721
	Weight	0.32 kg
	Reserve of clock	12 h
Norms and standards	CE conformity to	
	EMC directive	2004/108/EC
	Low voltage directive	2006/95/EC
	Electromagnetic compatibility	
	Immunity	EN 61000-6-2
	Emissions	EN 61000-6-3
	Product standard	EN 60950-1
Degrees of protection	Without terminal covers	IP 20 to EN 60529
	With terminal covers	IP 30 to EN 60529
	Safety class	II to EN 60950-1
M-bus master interface	Norm	EN 13757
	Baud rates	300 / 2400 Baud
	Number of devices that can be connected	max. 5
	Cable length (copper, 0.6 mm dia.)	max. 100 m
RS-232 port	Norm	V.24 / EIA 232D
	Baud rate	max. 9600 Baud
	Cable length	max. 15 m
	Connector	9-pin Sub-D, male

Connection terminals



CM+	M-bus connection +
CM–	M-bus connection –
L, N	Rated voltage AC 230 V
M	Ground for P1, P2
P1, P2	Digital inputs

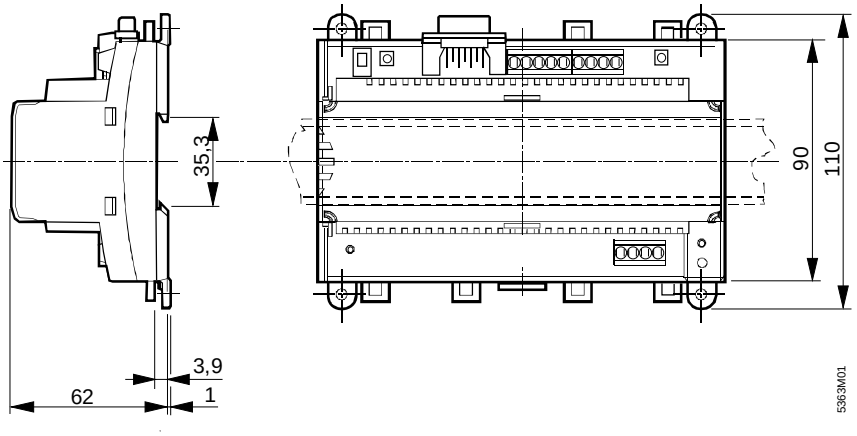
Connection diagram



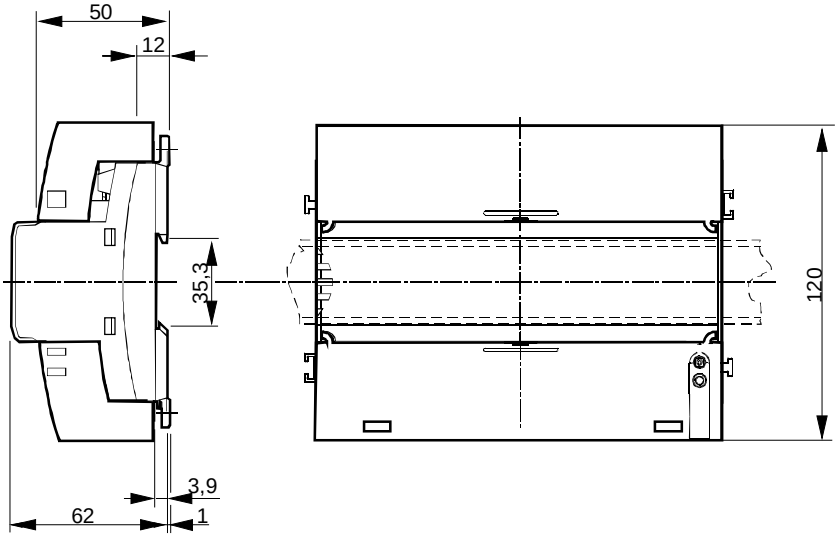
N1 M-bus central unit OZW111
P1, P2 Devices with a potential-free contact output for delivering alarms
P3 M-bus device (max. 5)

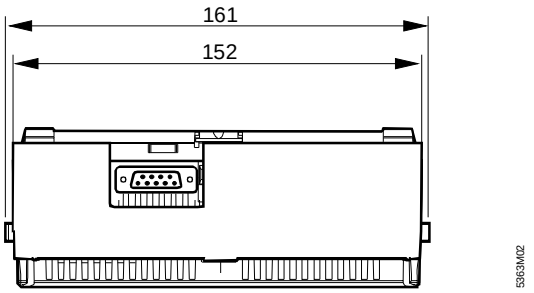
Dimensions

Without terminal covers

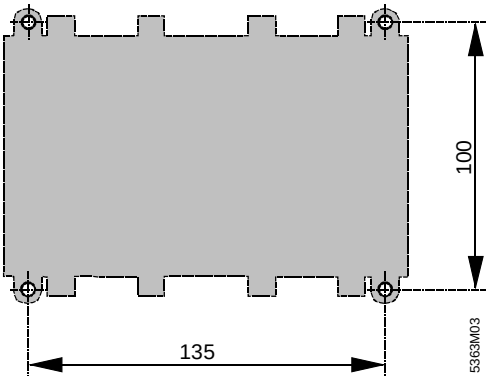


With terminal covers





Drilling template



Dimensions in mm