THECNICAL MANUAL

eterm Master

QMASTERET01 - QMASTERET02

ModBus – eterm interface

QMBET01 - QMBET02

eterm MASTER – Rev.2 2015/03

CE

We thank you for the choice you've made and for the trust you've shown use.

The products in this manual are elements of a system generally composed of the thermal control unit, the distribution system (radiators, radiating panel system, fan coil units, etc.) and adjustment devices (thermostats, probes, etc.).

We recommend to scrupulously observe the instructions in this manual and the instructions of the other components.

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1 FEATURES

eterm MASTER

Descrizione	Codice
Master eterm with modem GSM/GPRS	QMASTERET01
Master eterm with LAN Ethernet RJ45	QMASTERET02
24 Vcc Adapter for eterm Master	ALQMASTER

Interface for eterm devices and Nereix units:

By means of a Bus system (proprietary protocol) it is possible to connect
- Nereix Clima and Nereix Metering units
- Meter Bus Centralizers
- Boiler management control panels
- System management control panels

With eterm Bus it is possible to manage from PC all devices either in local or remote mode:
- RS232
- USB
- Modem GSM/GPRS (code QMASTERET01)
- LAN ethernet RJ45 (code QMASTERET02)

Data can be managed through:
- etermPCmanager, software to be installed on a connectable PC:
  - Via USB or RS232
  - Via Modem (optional for PC)
  - Via internet
- etermEASYmanager, WEB programma available on **www.eterm.it** for a synoptic view of the plant

Master eterm is equipe with:
4 plugs, for meterswith puse output that might be in the boiler room:
- Gas
- Hot water
- Cold water
- Power

NTC plug for external probe information will be available to all slave devices in the system

Digital out (switched on if one unit is active)

ModBus master function
After appropriate configuration Master eterm can control ModBus slave devices.
(Connection RS485)

ModBus slave function
After appropriate configuration Master eterm can be used as a slave of a ModBus device and transfer data (both in read and write mode).
Parameters can be set with etermPCmanager.
(Connection RS485)

Power 24 VCC
(Adapter Code ALQMASTER)

eterm Master is a centralization unit for manage NEREIX modules, that are used for consumption reading, DHW production and heating managing.

Interfaccia ModBus eterm

Description	Code
ModBus - eterm interface with modem GSM/GPRS	QMBET01
ModBus - eterm interface with LAN Ethernet RJ45	QMBET02
24 Vcc Adapter for ModBus – eterm interface	ALQMASTER

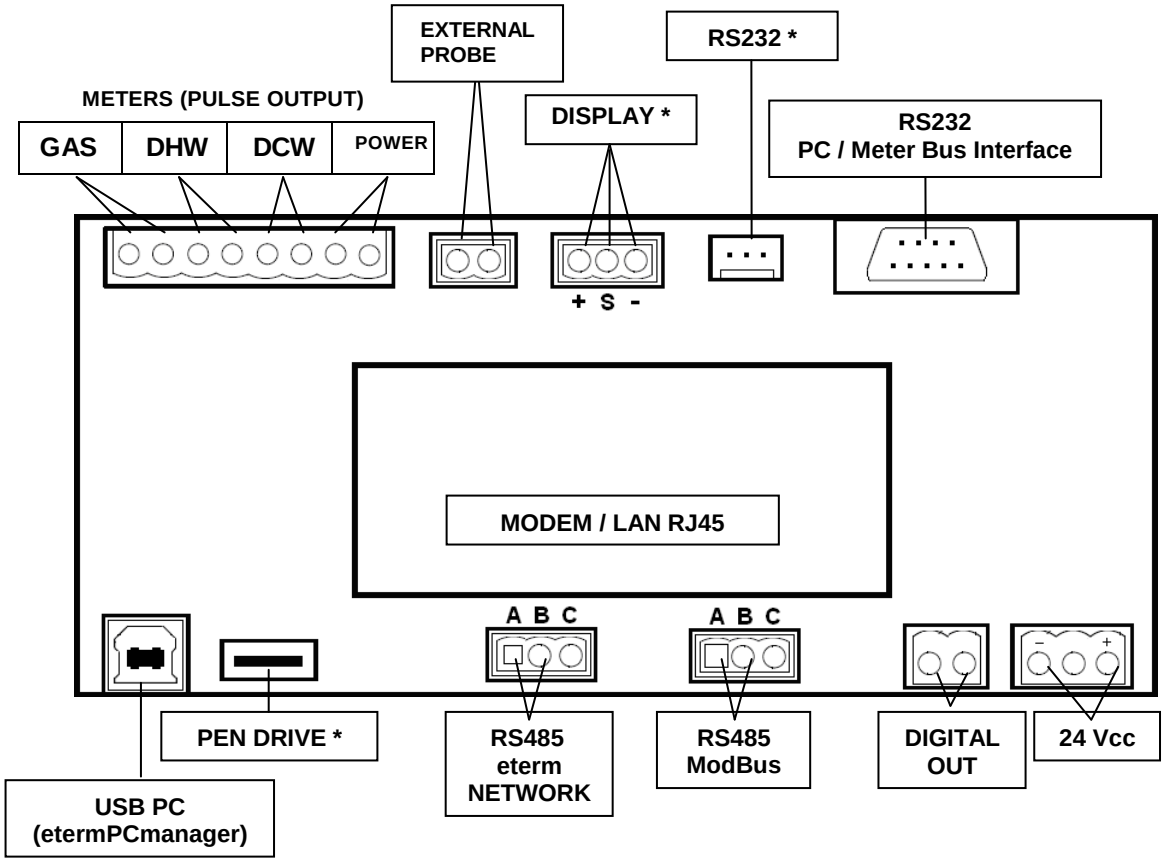
Interface for eterm devices:
The some features of eterm Master but it is not possible manage NEREIX modules

For devices configuration please see specifics PC software.

THECNICAL DATA

Power supply:	24 Vcc +/- 10% - 120 mA
Operating Temperature:	0 ÷ 50 °C Storage
Operating relative umidity	90% (not condensig
Storage Temperature	-20 ÷ 60 °C

2 WIRING



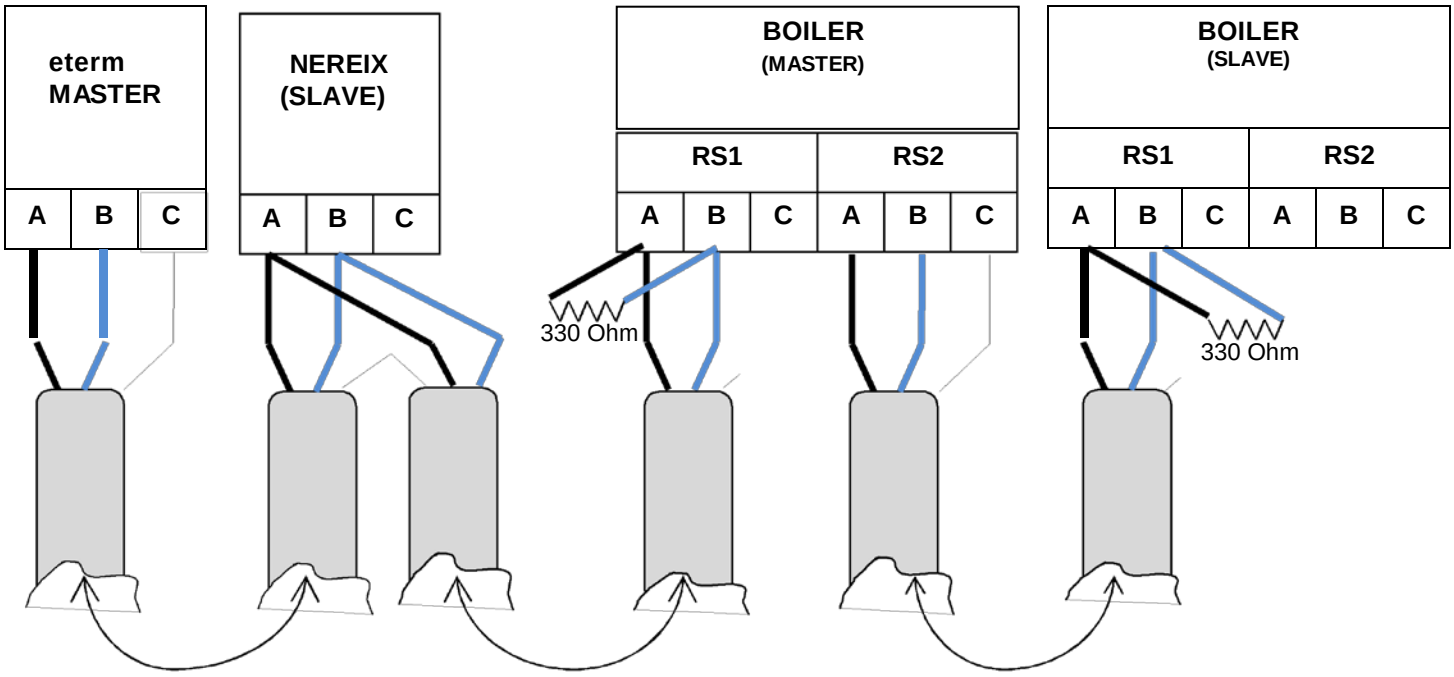
*** not currently available**

3 BUS NETWORK

BUS WIRING

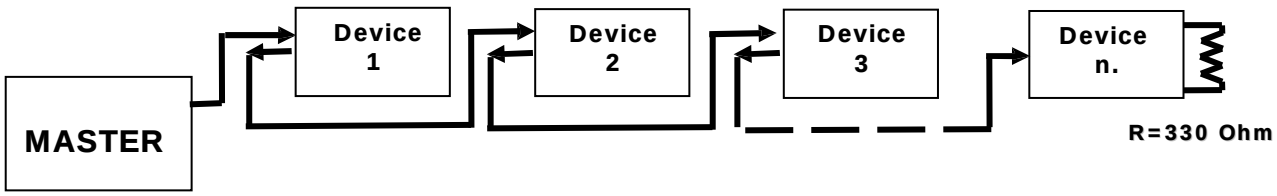
- Used cable 2 x 0,35 mm^2 (o more) shielded ad twisted
- Observe the polarity A e B
- Observe the “TYPICAL SCHEMES OF BUS WIRING”.
- Wire the shield only to the master (terminal block C) - **not to the slave devices.**
- The shield must be continuous.
- Never install the bus cables along with the high voltage..
- Connect the metal parts to the earth conductor.

BUS NETWORK – NEREIX AND BOILER CONTROL PANEL (PRIMARY AND SECONDARY BUS)



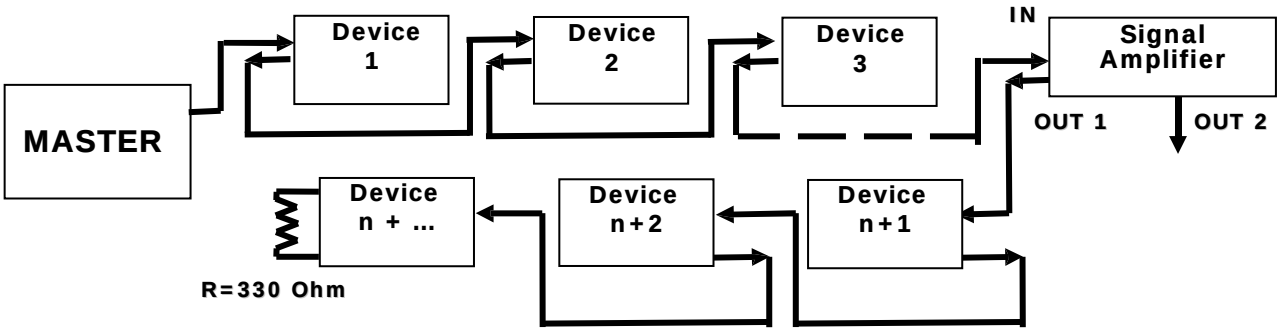
4 TYPICAL SCHEMES OF BUS WIRING

SINGLE LINE WIRING WITHOUT AMPLIFIERS



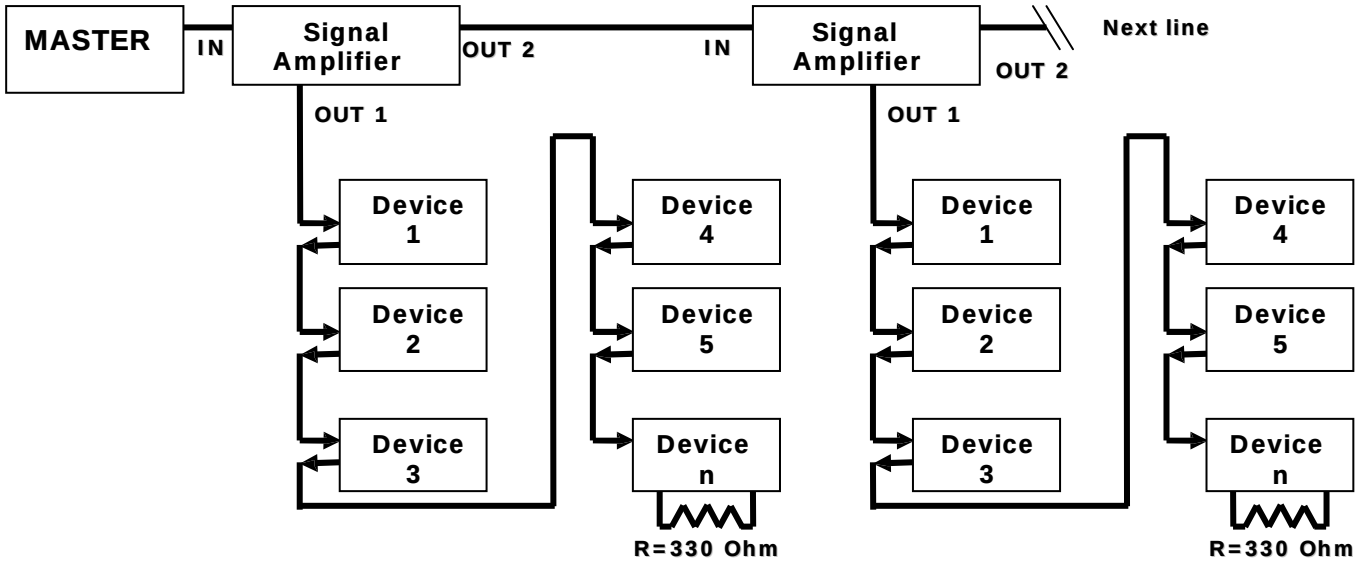
Maximum total cable length 800 meters
Put the resistance only in the last device in terminal block A-B.

SINGLE LINE WIRING WITH AMPLIFIERS



When the length of bus cable is more than 800 meters, install a signal amplifier.
Put the resistance only in the last device in terminal block A-B.

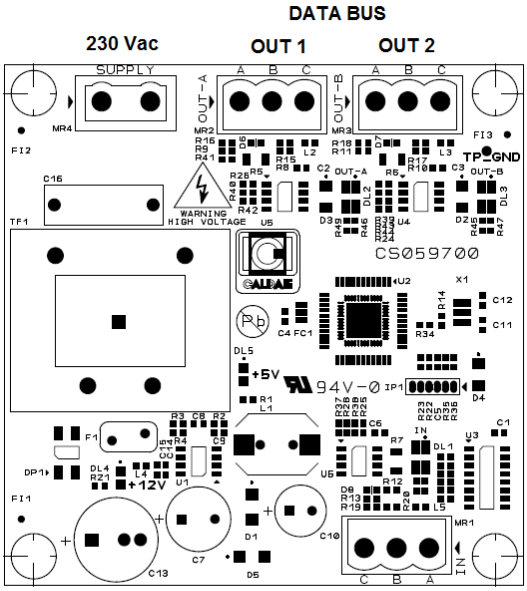
MULTI LINE WIRING WITH AMPLIFIERS



Put the resistance in the last device of each line, in terminal block A-B.

5 AMPLIFIER WIRING

Wire the amplifier depending on typical scheme.



THECNICAL DATA

Power supply:	24 Vcc +/- 10% - 120 mA
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IMPORTANT:
Never wire the shield to the slave devices, use only terminal blocks A-B.
The shield must be continuous..
The shield must be connected to the master and to the amplifiers outputs (terminal block C)

6 MODEM (ONLY QMASTERET01)

Cut power from the Master when connecting the modem and when inserting the SIM card.
The SIM card must be enabled to the data traffic (not the voice!!).
The SIM must be pushed to the end run: a “click” means it is inserted.
Before inserting the SIM, deactivate the PIN using a cellular phone.

Main features:
- GSM - GPRS Quad-Band MODEM
- LED for logging status to GSM network
- Buzzer for acoustic signalling
- TTL interface
- Compatible with NEREIX Master board

RADIO FEATURES
- Quad-band EGSM 850/900/1800/1900 MHz
- Emission output:
  - class 4 (2W) @ 850/900 MHz
  - class 1 (1W) @ 1800/1900 MHz
- Sensitivity:
  - 107 dBm (typ.) @ 850/900 MHz
  - 106 dBm (typ.) @ 1800/1900 MHz

GPRS FEATURES
- GPRS class 10
- Class B mobile station
- Coding layouts: from 1 to 4
- PBCCH support

7 VERIFICATIONS ON BUS

If there is no communication between the Master and slave board, voltage verifications can be carried out to see if there is a short circuit on the bus line or if a slave board does not work.

If the values indicated below are found, communication is not certain. However cable interruptions or that the cable is not well connected to the terminals can be excluded.

1)	Normal bus voltage on branch	A – B:	0.0086 Vdc	and every 10”:	0.0270 Vdc
2)	Normal bus voltage on branch	A – GND:	2.47 Vdc	and every 10”:	2.45 Vdc
3)	Normal bus voltage on branch	B – GND:	2.46 Vdc	and every 10”:	2.48 Vdc
5)	No-load voltage on slave board between	A – GND:	3.19 Vdc		
6)	No-load voltage on slave board between	B – GND:	1.71 Vdc	and every 10”:	2.45 Vdc
7)	No-load voltage o Master board between	A – GND:	2.47 Vdc	and every 10”:	2.48 Vdc

A minimum voltage threshold beneath which communication does not work cannot be set because the communication depends on the “steepness” of the front of the square wave ascent and this can only be seen with an oscilloscope.

8 WARRANTY

The warranty has value if good practice has been strictly observed for installation and use.

Our company is not liable for equipment breakdown and damage to persons and objects caused by:

- Transportation;
- Installation in which the Standards in force and good practice were not complied with;
- Improper use of the device, abnormal use conditions, tampering by unauthorised personnel or inadequate maintenance;
- lack of electrical energy;
- anomalies in the electrical system;
- freezing or fortuitous causes;

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