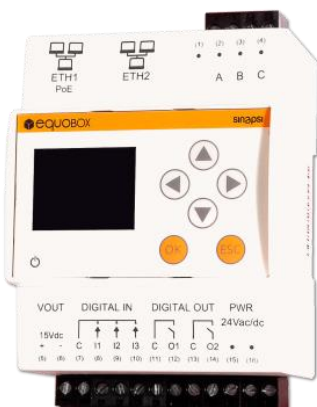# SIN**∂**PSI
i n v e n t   t o d a y

DATALOGGER FOR METERS WITH M-BUS PROTOCOL

EQUOBOX RTU M-BUS (SIN.EQRTU1) is a system of acquisition, processing and recording of data from devices that use M-Bus protocol standard such as meters.

For the connection to the M-Bus network requires the use of one or more SIN.EQLC1 devices.

The system is capable of handling up to 250 M-Bus devices and ensuring the storage of daily readings for up to 10 years.

It allows meter readings, report generation, querying of historical readings, setup of the M-Bus network and local I/O managing, through a web interface.

The system also features a graphic display for setup and reading consultation and I/O status without PC.

It even offers three digital inputs and two relays which can be defined logical AND/OR and sending emails.

EASE OF USE

The graphic display allows the user to set up the metering system in just a few simple steps, all of which are prompted by a convenient setup wizard.

All the settings linked to the system's functionality are performed locally on the display or via WEB interface.

Thanks to the presence of two Ethernet ports with switch functionality, the system allows multiple devices to be connected in cascade, with no need for additional network equipment, in addition, it is possible to power the device via Power over Ethernet (PoE).

ALWAYS UPDATED

When connected to the internet, the device's web interface automatically checks for updates and allows the user to proceed with a simple click in web interface.

CONNECTION EXAMPLE
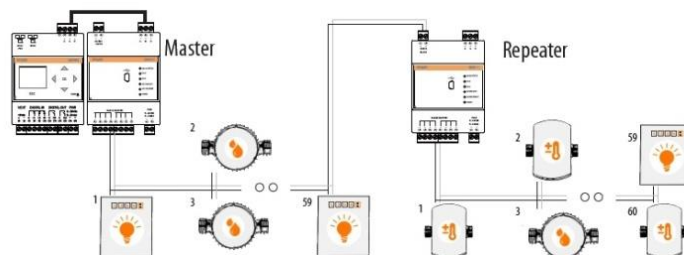
SMART

The user can scan the M-Bus to allow the acquisition of all meters connected via a single button.

Automatic recognition of detected devices allows immediately to start data acquisition and automatic creation of reports with predefined data sets, user-changeable, including units, type size and description (language), without further activities by the user.

SIN.EQRTU1_DS_4.7_en

ELECTRICAL CHARACTERISTICS

Power Supply	24Vdc +/- 10%, 24 Vac (min 20Vac, max 40 Vac) or PoE (IEEE 802.3)
Installation category	Class II
Maximum consumption	3W
Ethernet	N°2 (1 MAC): ETH1: Ethernet 1(PoE), ETH2: Ethernet 2
Digital Inputs	N°3 - OFF=Vin<12Vdc, ON=Vin>12Vdc, max Vin=24vdc
Digital Outputs	N°2 Relay, Loads relays:
	5A@30Vdc (Resistive Load)
	2A@30Vdc (Inductive Load cosfi=0.4; L/R=7ms)
Auxiliary voltage for digital inputs	15Vdc max 10mA

MECHANICAL CHARACTERISTICS

Temperature range	Operating: -20°C to +55°C / Storage: -25°C to +65°C
Dimensions	90x71x62 mm (HxLxD) – DIN
Installation typology	35mm DIN bar (EN60715)
Degree of protection	IP20 (EN60529)

M-BUS COMMUNICATION

Reference standard	EN13757-3 (Application Layer)
Connection to M-Bus net	Through SIN.EQLC1
Baudrate	Min. 300bps – Max. 9600bps
Max. number of supported MBus meters	M-BUS: 250
Reading frequency	15 min. / 60 min. / 6 hours / 12 hours / 1 day / 1 month
Collision detection	Yes
Meter acquisition	Via Primary and Secondary Address

DATALOGGING

Data storage	1 year for the intra-day data from wired meters
	10 years for each daily reading
Reports	XLS or CSV format
Download Report	(SMTP), FTP (Client), Webserver (Report generation and downloading)
Report scheduling	Daily / Monthly / Every two months / Every three months / Every four months / Every six months / Annually

USER INTERFACE

Display	Graphic, bright, 16 grayscale, multilinguage
Keyboard	6 tactile membrane keys
Power Led	Operating status
HTTP	Multilinguage webserver for data consulting and configuration

LOGIC / ALARM/MANAGEMENT

Alarm notification to M-Bus network	Anomalies/alarms meters, anomaly communication, threshold violations
On board I/O	Email notification of digital Inputs' status
Logics	AND / OR based on local I / O
	Thresholds violation (max value, min, range, maximum consumption)
Planned actions	Local relay activation, sending reports of the readings