RTU32M Data Sheet

Brodersen Modular RTU

Data Sheet

Doc: 40451 v1.09

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Online RTU Configurator

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INTRODUCTION

The RTU32M is a modular version of the Brodersen's control system platform RTU32 series, that is based on an embedded 32-bit industrial platform providing flexible RTU functionality for a wide range of remote monitoring and control applications in the utility and infrastructure markets.

Each RTU32M comprises of a CPU module (MP32A), power supply module and the desired mix of IO modules and system modules, as required.

The RTU32M supports a variety of standard and open protocols such as Modbus, IEC60870, IEC61850 and DNP3. It also includes the fast event-based Binding protocol - a fast and reliable way to distribute time stamped event data between any Brodersen RTU32M in the network.

The RTU32M CPU module (MP32A) has a web server configuration interface for setup of the RTU 'personality' e.g. IP address, IO range, slave address etc. Additional RTU functionality, including logic, messaging and logging are configured in the Brodersen WorkSuite.

The RTU32M CPU module (MP32A) supports up to 60 I/O modules.

FEATURE LIST

- Modular RTU with or without integrated I/O and communication device.
- Real Time Linux Operating System.
- KEMA Certified Communication Protocols include (>20 available):
    - Full Modbus Suite
    - IEC60870-5-101/103/104
    - IEC61850 Client / Server Protocol (GOOSE compliant)
    - DNP3 Master & Slave
    - OPC UA Client / Server Protocol
    - Binding - Global Distribution and Subscription of Event Based Time Stamped Variables.
- Communication Protocols can also be created as part of the logic application interface.
- Communication interfaces: 2 x Ethernet 10/100, 1x USB are featured on the CPU module.
- Full EN/IEC61131 PLC runtime – also used for special and flexible data manipulation.
- Includes power supply monitoring of the RTU32M supply voltage and temperature.
- Support for redundant power supplies and CPUs.
- Hot swappable I/O.
- Full remote management with configuration, programming and flexible distribution of all levels of software from and to RTUs on remote locations.

TYPE 1 CPU SPEED

The CPU module speed is managed via the RTU performance license options:

DL-200MHZ-RL (Default)	200MHz
DL-500MHZ-RL	500MHz
DL-900MHZ-RL	900MHz

TYPE 1 RAM SIZE

DL-128MB-RL (Default)	128MB
DL-256MB-RL	256MB

TYPE 2 CPU SPEED

The CPU module speed is managed via the RTU performance license options:

DL-1.8GHZ-RL	1.8GHz

TYPE 2 RAM SIZE

DL-1GB-RL	1GB

RUNTIME TYPE 1 & 2 CPU

Typical cycle time	1msec
Scan time LB2 I/O	0.5msec

I/O Detection and Configuration:
Self-discovering I/O

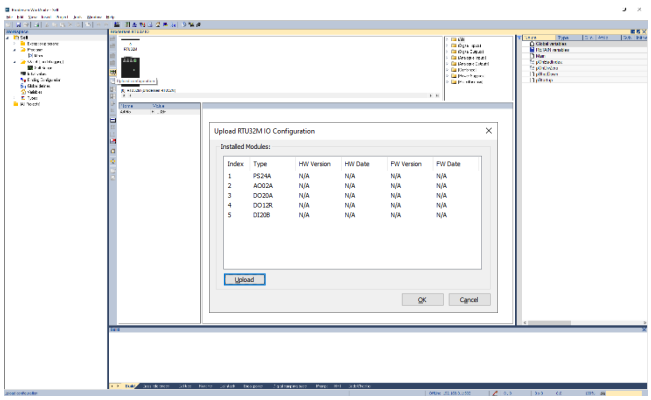

Figure 1: Self discovering I/O

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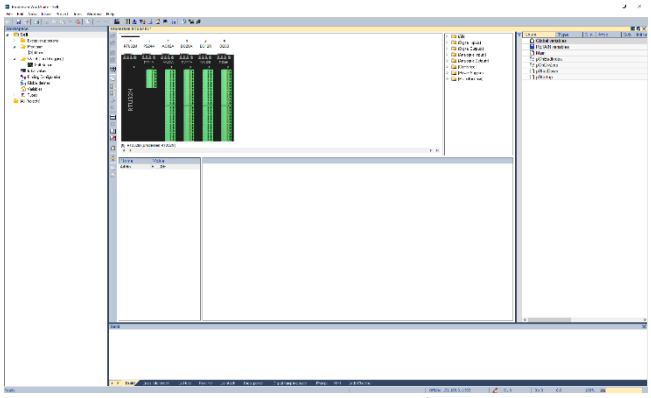


Figure 2: Discovered I/O

TYPE 1 CPU HARDWARE

CPU: ARM Cortex – A7
Freescale i.MX6, 200-900 MHz

Memory: RAM: 128-256MB SDRAM
NAND Flash: 128MB
NVRAM/FRAM: 128KB
Micro SD Card Flash disc – removable

RTC: Integrated and super capacitor backed real- time clock with 1 msec resolution 10 ppm

Interfaces: LAN: 2x 10/100Mbps RJ45
1 x USB 2.0 Host.

TYPE 2 CPU HARDWARE

CPU: ARM Cortex - A53
Freescale i.MX 8M Plus
Quad-Core, 1.8 GHz

Real-time Co-processor: 800MHz Cortex-M7

DMIPS: 16,560

Memory: RAM: 1GB SDRAM
NAND Flash: 8GB
NVRAM/FRAM: 128KB
Micro SD Card Flash disc – removable

RTC: Integrated and super capacitor backed real- time clock with 1 msec resolution 10 ppm

Interfaces: LAN: 2x 10/100/1000 Mbps RJ45
1 x USB 2.0 Host.

ELECTRICAL

Power consumption (from backplane bus):
- Current consumption: 200mA (typ.) @ 12V
- Power consumption: 2.4W (typ.)

Separated/Safe Extra Low Voltage (SELV) limits:
VAC (RMS) 30V
VAC (Peak) 42.4V
VDC 60V

Note: The SELV limits relies on input supply and all connected voltages.

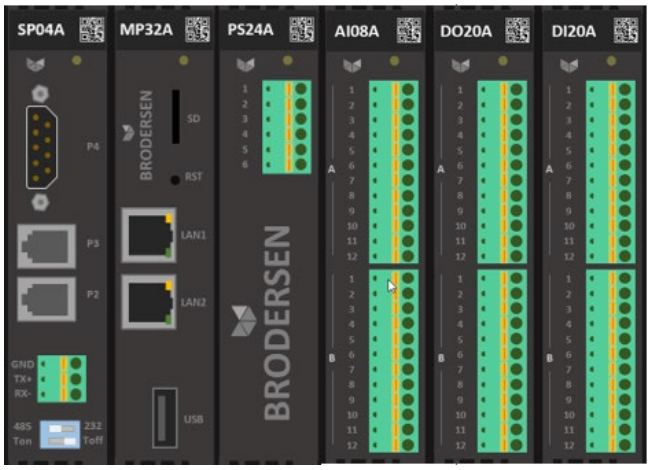
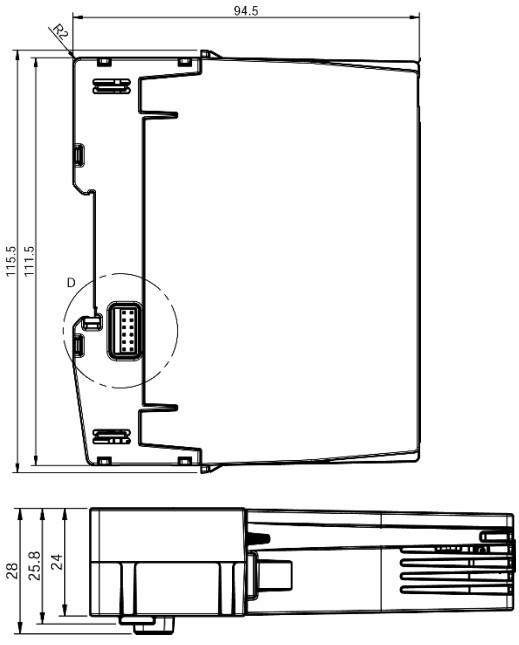


Figure 3: MP32A hardware interface with I/O

MECHNICAL



Mounting	DIN 35
Width	24 mm
Height	111.5 mm
Depth	94.5 mm
Weight	102 grams

ENVIRONMENTAL CONDITIONS

Ambient operating temperature range	-25°C to +75°C
Ambient storage temperature range	-40°C to +85°C
Marked degree of protection	IP20
Humidity	0...99.8%
Ventilation Restrictions	No
Pollution degree	2

STANDARDS

EMC:

- **IEC 61000-6-2**: EMC - Immunity standard for industrial environments
- **IEC 61000-6-4**: EMC - Emission standard for industrial environments
- **IEC 50121-4**: Railway applications - EMC - Emission and immunity of the signalling and telecommunications apparatus

Safety:

- **IEC 60950-1**: Safety requirements for Information technology equipment
- **IEC 61010-1**: Safety requirements for electrical equipment for measurement, control, and laboratory use

Environmental:

- **IEC 60068-2-1**: Environmental testing - Cold
- **IEC 60068-2-2**: Environmental testing - Dry heat
- **IEC 60068-2-30**: Environmental testing - Damp heat, cyclic (12 h + 12 h cycle)
- **IEC 60068-2-78**: Environmental testing - Damp heat, steady state
- **IEC 60068-2-6**: Environmental testing - Vibration (sinusoidal)
- **IEC 60068-2-27**: Environmental testing - Shock

SAFETY PRECAUTIONS

- Follow the national safety regulation (IEC 61010-1) ⚠
- Only skilled personnel are to install and operate the modules.
- Modules can only be mounted in an end-use enclosure which provides protection against fire, electrical and mechanical hazards.
- If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

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