Remote Ethernet Communication Processor & I/O Controller RE2104-5-001-002-421

1. Brief Description

RE-2104 can be used as a standalone local server, RS485 to Ethernet communication converter, communication buffer, pulse counter for energy meters, digital I/O interface.

The real time operating system Nut/OS is ported on the board.
Nut/OS is an intentionally simple RTOS for the ATmega128, which provides a minimum of services to run Nut/Net, the TCP/IP stack. Its features include:

- Non-preemptive multithreading.
- Events.
- Periodic and one-shot timers.
- Dynamic heap memory allocation.
- Interrupt driven streaming I/O.

Supported equipment:

- TS2100
- PM-2104
- DLCC-2104
- ZVLC
- MEPCO
- OPLC
- HWHC
- KW2104
- KW2108
- KYZ
- Preferred
- Sensa-phone
- RS-232 serial port with on-board DB-9 connector
- LED indicators for power supply, programming mode and Ethernet activity
- Single power supply DC 9-15V / 1A

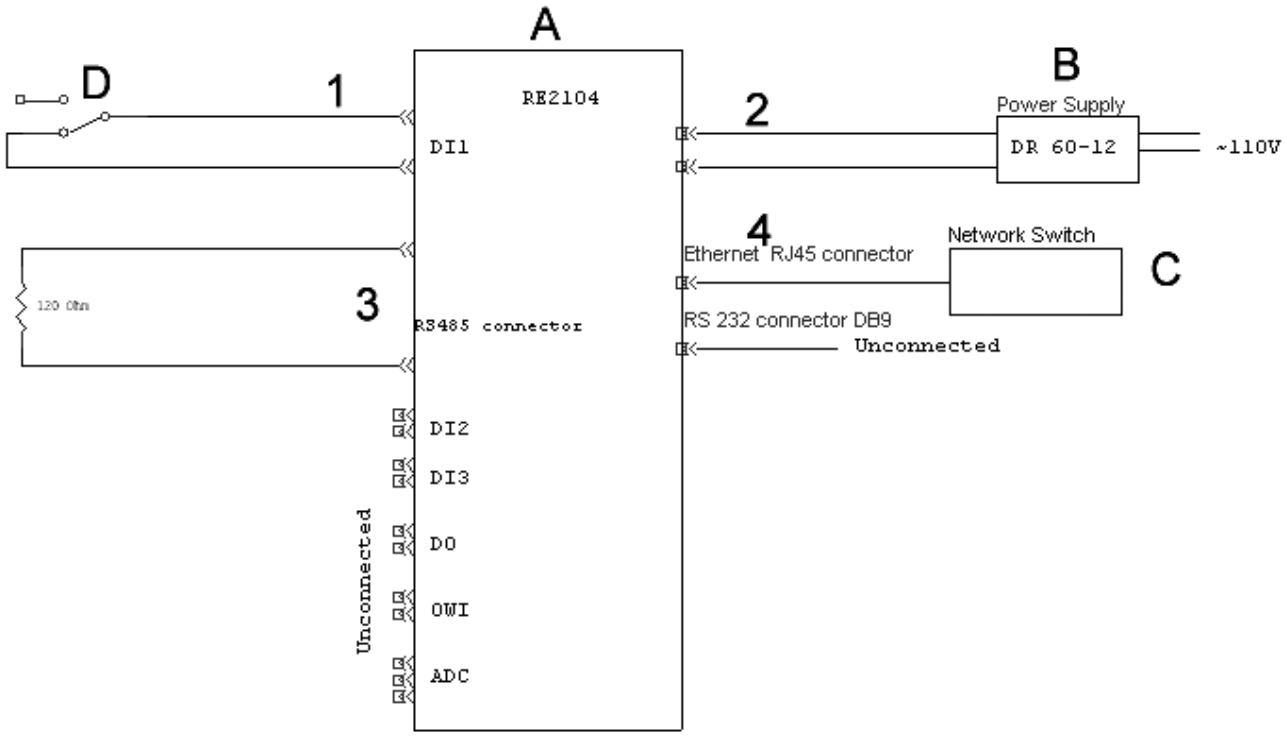
Peripherals:

- RS485 adapter;
- 3 opto-coupled digital inputs + 1 opto-coupled output.
- 1-wire interface for possible connection of temperature sensor
- 2 analog inputs.
- 32Kbytes EEPROM with I^2C interface

2. Specifications

Equipment Type	RE2104 Remote Ethernet Communication Processor & I/O Controller
Baseline Standards and Approvals	FCC Part 15 Class B; IC ICES-003 Issue4 Class B.
Data Retention	During a Power Outage the Current Settings are stored in the EEPROM, FRAM
Power Consumption	1W from 9VDC Power Supply
Control Outputs (DO)	Two normally closed dry contacts
Digital Inputs (DI)	3 x DI, Dry contact inputs
Analog Input (AI)	3 x AI, 4-20mA inputs with 120ohm load resistor
Size	5 x 7 x .75 inches
Weight	.5 lb
Environmental Conditions	• Indoor use. • Placement: Wall or Panel Mount • Temperature Range: 0°C to +60°C • Altitude up to 2000m • Maximum relative humidity 80% for temperatures up to 31°C decreasing linearly to 95% relative humidity at 40°C • POLLUTION DEGREE 2 in accordance with IEC664
Temperature Measurement	Range: -10°C to +85°C (13°F to 185°F). Accuracy: ±0.5°C

3. RE2104 Wiring



RE-2104 Cables

Ref. ID	Port name on	Cable Description or reason for no cable	Qty	Length as tested (m)	Max Length (m)	Shielded? (Y/N)	Termination Box ID & Port Name
1	Digital Input 1	Two-wire cable	1	1	1	No	DI1
2	DC Power Input	Two-wire cable	1	1	1	No	Power Socket
3	RS-485 Interface	Two-wire twisted pair cable with 120 Ohm Terminating Resistor	1	1	100	No	RS485
4	Ethernet Port	Ethernet CAT-5 patch cable	1	1	1	No	RJ45 Port

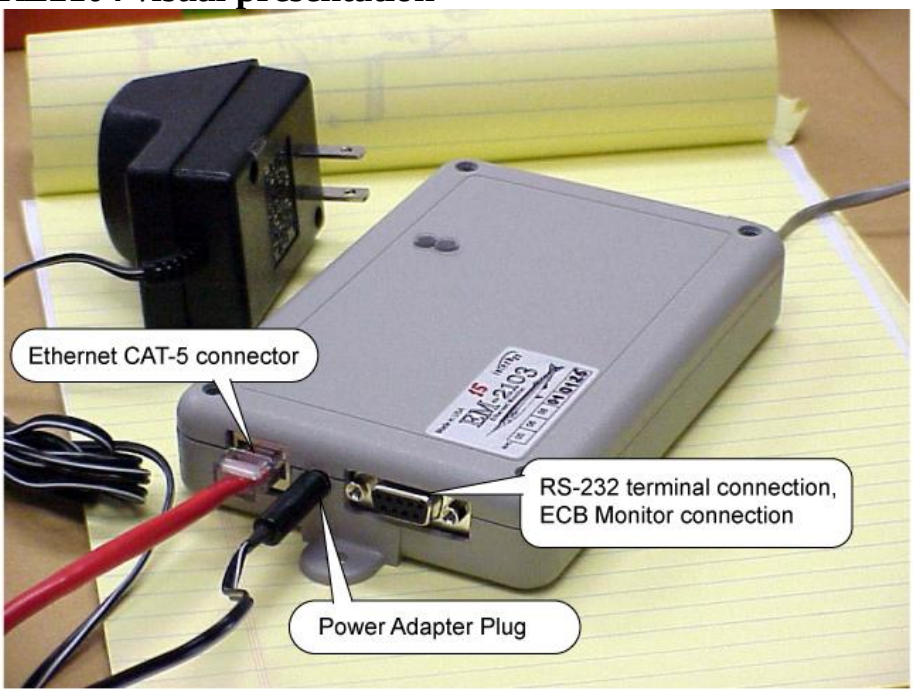
Operation during test.

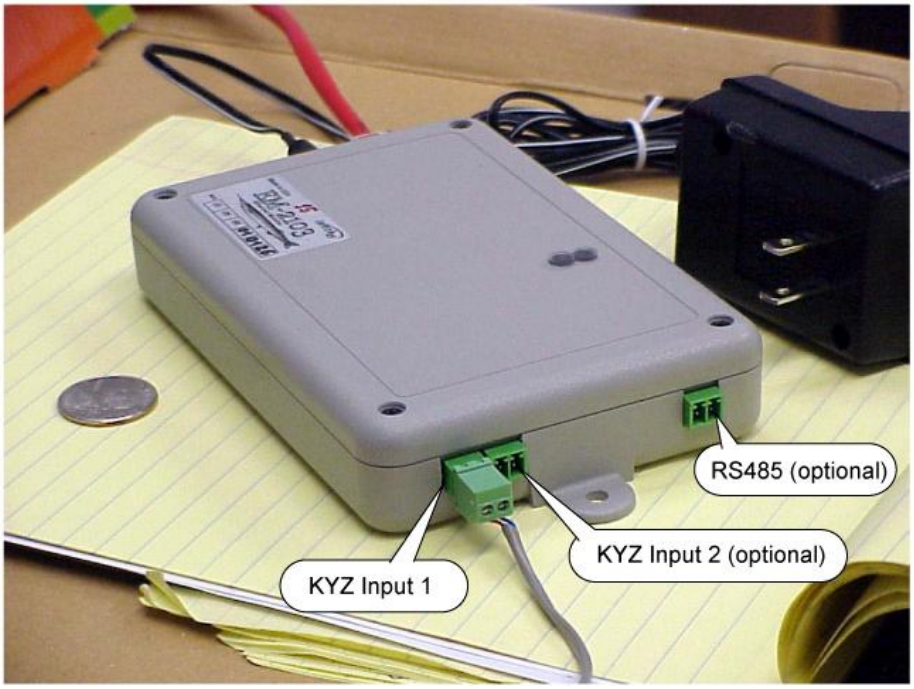
1. When the RE-2104 device is powered, the red Power LED turns ON. This indicates normal CPU functioning.

2. A Network Switch RJ45 LAN port has a Link LED, which should be ON, when it is connected to the RE-2104 Ethernet port. This indicates, that a normal link established between the Switch and the RE-2104.

3. The RE-2104 regularly sends data packets over the RS-485 cable, which must be properly terminated with the 120 Ohm resistor.

RE2104 visual presentation





Interconnections inside the metal electrical enclosure