



MODBUS TCP/IP Communications Card

3000/02-004

PRODUCT HIGHLIGHTS

- Two ModBus 100Base-TX Ports
- Two I/O Network 100Base-TX Ports
- MODBUS TCP Protocol
- 650 MHz Intel Celeron CPU
- Output Validation
- LED Status Indicators
- Hot Swappable

PRODUCT OVERVIEW

The 3000/02-004 MODBUS Communications Card provides two 100 MHz Ethernet links for communications with MODBUS-compatible controllers and two 100 MHz Ethernet links for communication with the redundant RTP I/O network. It supports integration of an RTP control system with equipment using the MODBUS/TCP protocol. The 3000/02-004 card can be installed in any 3000 chassis.

The MODBUS Communications Card manages all aspects of the protocol and data exchange including message translating and formatting, message checking and CRC generation and checking, responding to MODBUS controllers with proper acknowledgments and error or success codes, and protocol data byte ordering. This built-in intelligence unburdens the RTP controller's processor from the responsibility of managing the MODBUS protocol.

During each output transfer the MODBUS Card performs an output validation test on the data received from the node processor(s) across the redundant I/O communication network. This test insures the integrity of the communication channels.

The 3000/02-004 card can be configured to operate either as a MODBUS master device that requests read and write data transfers to MODBUS slave devices, or as a MODBUS slave device that responds to requests from a MODBUS master. It supports multiple MODBUS servers, asynchronous read and write functions, a multiple outstanding read and write request queue, and coil and discrete I/O formats.



3000/02-004 MODBUS TCP/IP Communications Card

Convenient connections to the Ethernet ports are provided by four front-panel mounted RJ-45 connectors that accept standard Ethernet cables.

The two MODBUS communication ports can be configured as either separate MODBUS TCP communications ports to two MODBUS TCP networks, or as a pair of redundant MODBUS TCP communications ports to a single MODBUS TCP network.

RTP is the Best Technology for Your Investment,

Here's Why:

The 3000 is a multi-processor architecture that delivers exceptional Performance and Comprehensive Diagnostics. The results speak for themselves: A Reaction Time of 12 msec, true 1 msec SOE (Analog and Digital), an MTBF of greater than 50000 years, an MTTFS of greater than 60000 years, and a PFDavg of 5×10^{-5} . **Compare these numbers to any other system.**

Built-in Proof Test Diagnostics means it will never be necessary to shut down at the proof test interval. Unlimited online downloads of logic and configuration changes do not require a periodic shut down like other systems. **Compare this functionality to any other system.**

Net Suite Software: One-time price includes unlimited use of Logic Development, Alarm Manager, Data Archive and Historian, and HMI without hardware or software keys. **Compare this functionality and price to all other systems.**

Finally, a Safety Instrumented System (SIS) should always take the process it protects to a safe state when it is required to do so, and it should never interfere with the operation of the process at any time. **The 3000 TAS does this better than any other system.**

SPECIFICATIONS

Power Requirements: +5V DC @ 2.3A

Environmental

Operating Temperature Range: -20°C to +60°C
Storage Temperature Range: -25°C to +85°C
Relative Humidity Range: 10% to 95%, non-condensing

User Connectors

Number: 4
Type: RJ-45
Cables: STP Category 5 (EIA 568B, Cat 5) shielded Ethernet cables with 4 twisted-pair wires and RJ-45 tips

Electrical Specifications

Processor: Intel Mobile Celeron processor with integrated PCI and SDRAM controller, watchdog timer, 2 general purpose timers and 4 DMA channels

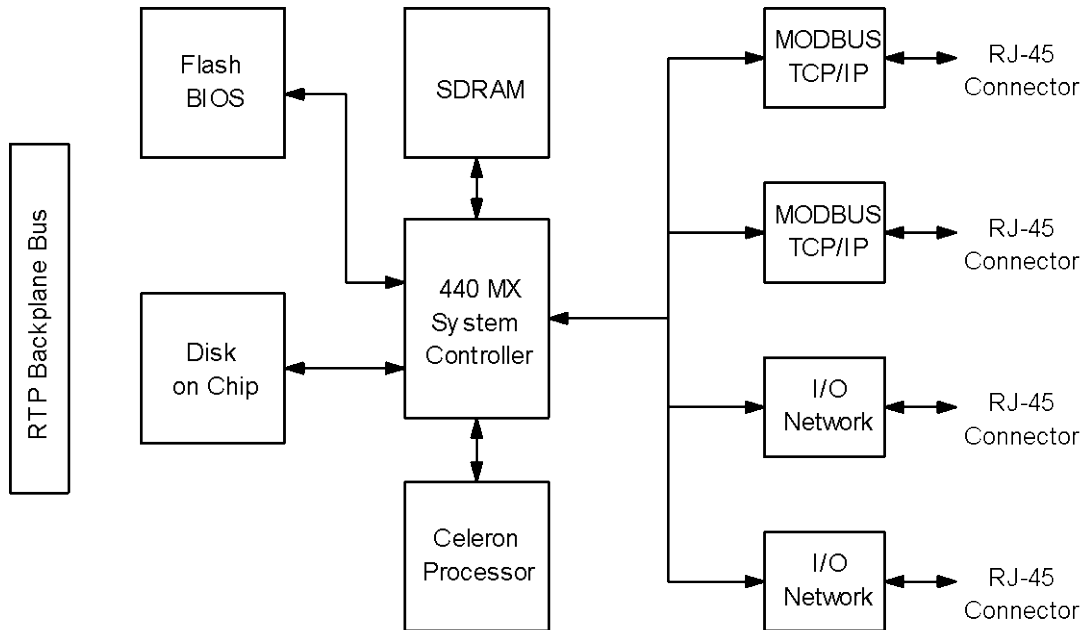
Clock Speeds:

CPU 650 MHz
 System Bus 100 MHz
 PCI Bus 33 MHz

Ethernet Interface: 4 PCI 100 MHz Ethernet controllers with status indicators

Supported MODBUS Functions

Code	Function	Supported Port	
		Master	Slave
01	Read Coils	✓	✓
02	Read Discrete Inputs	✓	✓
03	Read Holding Registers	✓	✓
04	Read Input Registers	✓	✓
05	Write Single Coil		✓
06	Write Single Register		✓
15	Force Multiple Coils	✓	✓
16	Preset Multiple Registers	✓	✓



3000/02-004 MODBUS TCP/IP Communications Card

Trademark acknowledgments: RTP is a registered trademark of RTP Corp. All other product or service names mentioned herein are trademarks of their respective owners. Specifications and information are subject to change without notice. Contact RTP's corporate office for the latest specifications.

All information, data graphics and statements in this documents are proprietary intellectual property of RTP Corp. unless otherwise indicated and are to be considered RTP Corp. confidential. This intellectual property is made available solely for the direct use of the potential or licensed RTP corp. customers in their application of RTP Corp. produces, and any other use or distribution is expressly prohibited. If you have received this publication in error, immediately delete, discard or return to RTP Corp.