San Telequip (P) Ltd.,
504 & 505 Deron Heights, Baner Road
Pune 411045, India
Phone : +91-20-27293455, 9764027070, 8390069393
email : info@santelequip.com

Datasheet for Remote I/O with Modbus TCP support, Model RIO MTCP

Sensors are used to continuously monitor and control various process parameters. These measurements help improving processes for adhering to product specifications & improve product quality. Monitoring and controlling Temperature, Pressure, Level, Flow etc are common occurrences for any process. IO Converters convert the Analog & Digital data from Sensors to Modbus to be taken to SCADA for further processing

RIO MTCP is used to monitor field inputs and control outputs through ModbusTCP. It acts as a ModbusTCP slave and updates status of Analog and Digital inputs in predefined Modbus registers. Digital outputs can be controlled through Modbus registers. It is designed to be used in Industrial panels and operates on 24V DC Power supply. 230V AC option is also available

General Specifications

- ✓ 6 slots for IO Boards. Can use any combination of 6 IO boards
- ✓ DI Board with 12 inputs, DO board with 12 Outputs, AI board with 8 Inputs, AO board with 8 outputs & RTD board with 4 Inputs
- ✓ PWM inputs also available on request
- ✓ ModbusTCP Slave interface for SCADA
- ✓ Configurable Modbus Interface settings via Web Page
- ✓ Robust design with Rack type mounting
- ✓ Industrial screw type Power terminal blocks
- ✓ Highly Modular
- ✓ File storage SD card upto 4GB
- ✓ USB for Device data transfer

Software Modules Support

Protocols support on Ethernet: HTTP, Telnet, UDP, MQTT, MODBUS
Protocols support on 485 : Modbus Slave (Optional)
Protocols support on GSM : FTP, SMS, MQTT, HTTP

Hardware Specifications

CPU Module

- ✓ High-performance Arm® Cortex®-M4 32-bit RISC core operating at 168 MHz.
- ✓ 10/100 Ethernet
- ✓ RAM : 200 Kb
- ✓ 4GB SD Card
- ✓ USB
- ✓ Power 5 Watt @ 3.3V

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Analog Input Module
- ✓ Number of Channels : 8
- ✓ 4-20mA / 0 to 10V Input
- ✓ Card Level Isolation : 1.5KV
- ✓ Maximum sampling rate : 50ksps/channel
- ✓ 16 Bit ADC
- ✓ Status LED for Card to CPU communication
- ✓ Field signal indication for Current Inputs
- ✓ Single Ended Analog Input Channel
- ✓ Input Impedance: 120Ω (Current)
- ✓ Accuracy: 0.25%
- ✓ Sampling Rate: 10 sample/ Sec

Analog Output Module
- ✓ Number of Channels : 4
- ✓ 4-20mA / 0 to 5V Output
- ✓ Card Level Isolation : 1.5KV
- ✓ Maximum Output rate : 1000 Samples/channel
- ✓ 16 Bit DAC
- ✓ Status LED for Card to CPU communication
- ✓ Field signal indication for Current inputs

RTD Module
- ✓ No of Channels : 04
- ✓ 3 Wire RTD
- ✓ Accuracy : +/- 0.5°C
- ✓ Range : -50°C to +300°C
- ✓ 2 Step Calibration
- ✓ Card Level Isolation : 1.5KV
- ✓ Card Status indication with CPU

Digital Input Module
- ✓ Number of Channels : 12
- ✓ High Switching/ Gnd Switching Inputs
- ✓ Card Level Isolation : 1.5KV
- ✓ Inputs High : 5V
- ✓ Maximum inputs level : 24V
- ✓ Status LED for each Input
- ✓ Card Status indication with CPU

Digital Output Module
- ✓ Number of Channels : 12
- ✓ Sourcing/ Sinking Outputs
- ✓ Card Level Isolation : 1.5KV
- ✓ Output High maximum : 24V
- ✓ Status LED for each Output
- ✓ Card Status indication with CPU

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485 Communication (Optional)
- ✓ Isolated 485 Interface
- ✓ Baud rates from 2.4kbps to 115.2kbps

Power Supply
- ✓ 24V DC, Range 12 to 36V DC. 12 Watt full load
- ✓ Reverse Polarity Protection
- ✓ 230V AC Option is also available on request

Chassis
- ✓ Metal : HS30 Aluminium
- ✓ Dimensions : L(260)X W(105)X H(80)
- ✓ Card guide for each slot upto 6 slots
- ✓ Slot 4 is fixed for 4G

Operating Conditions

Operating Temp : 0-70°C
Storage Temperature : - 40 to 70°C
Humidity : 95% relative humidity, non-condensing

Applications

Industry 4.0
Building Automation
Process Control
Railways

Ordering Code Main Rack : RIO MTCP D/A

RIO MTCP : Base Code for Remote IO Rack with Modbus TCP support
D/A : D : 24V DC Input, A : 230V AC Input

Ordering Code Modules for the Rack : X

Code : X. Choose Code from below

I/O Modules	Code	Qty	Description
DI Modules	DI	X	Digital Inputs per board is 12
DO Modules	DO	X	Digital Outputs per board is 12
AI Modules	AI	X	Analog Inputs per board is 8
AO Modules	AO	X	Analog outputs per board is 8
RTD Modules	R	X	RTD Modules per board is 4
4G Modules	4G	1	

Accessory

DIN : DIN Rail (Optional)

Note : The Ordering Code will have 2 or 3 Line items depending on accessory.