MAXIFLEX Redundant I/O Ethernet Link Module

Model M1594A Redundant I/O Ethernet Link Module

DATASHEET

FEATURES

- **Implement Dual Redundant Control Systems**

- **Designed for High Availability Applications**

- **Support up to seven Remote I/O Bases**

- **Expand I/O to Maxiflex Systems to 4000 I/O**

- **Connect Remote I/O to Maxiflex CPU's using Ethernet**

The M1594A Redundant I/O Ethernet Link (RIOe) Module is designed specifically for redundant I/O and control applications, where high availability is required in hot standby configurations.

A high availability system is constructed by combining two additional identical specialised redundant P3e-R CPUs, each with their own Power Supply and Base and this M1594A Redundant I/O (RIOe) Module, to create independent Primary and Secondary Master Controllers. These two Master Controllers are connected to up to seven common Remote I/O Bases through this RIOe module and a Maxiflex M1262F Remote I/O Processor on each I/O Base using Ethernet and to the SCADA system to create a hot standby controller configuration with common I/O.

The Primary and Secondary Controllers in a hot standby system are synchronised every program scan, so that should the primary Controller fail, the secondary Controller can automatically continue program operation from the last Primary Controller scan.

All local data is accessible from a SCADA system through up to 65,500 Data Interchange Registers in a single "Data Interchange Table (DIT)" for ease of communications.

All system configuration data and dynamic data can be read and written through this convenient table interface.

This M1594A RIOe module fits in Slot 1 of both the Maxiflex Master and Secondary Controllers' Master Bases. Each Remote I/O Processor can scan up to 15 I/O modules.

This RIOe module scans the I/O from the remote bases and transfers the I/O data into the P3e-R CPU's Data Interchange Table for program or SCADA access.

APPLICATIONS

- **High Availability Solutions for PLC and analogue control applications (including auto-tuning PID) where unexpected system failures can be costly.**

- **I/O Expansion into existing DCS installations through the network gateways.**

- **Distributed Event Handling Systems with Time-stamping to 1 ms at source using 32SOE Input Module (M176X)**

- **Create redundant Maxiflex Systems larger than 15 I/O modules using remote I/O Processors. Up to seven additional Maxiflex Bases can be integrated as Remote I/O into a Master Maxiflex System allowing systems up to 4000 I/O to be created.**

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Specifications

Ethernet Port

Type	10/100 BaseT (UTP via RJ45)
Network Protocol Support	TCP/IP, UDP
Protocols	Modbus/TCP Class 0 Master & Slave Conet/e. Peer to Peer Protocol for Remote Programming, Network Routeing and Data Telemetry

Memory

Data Interchange Table	1585 16 bit Registers

Front Panel Indicators

OK (Green)	On = Healthy Flashing or Off = Module faulty
RUN (Green)	On = Application Program Running Off = No application program or application program not running
Link (Green)	On = Ethernet network link is good Flashing = Data is being transmitted/received on Ethernet port.
100 (Amber)	On = 100 Mbps connection

Environmental

Operating Temperature	-25°C to +50°C (-13°F to +140°F)
Storage Temperature	-40°C to +70°C (-40°F to +158°F)
Humidity	95% max. at 40°C (104°F) non-condensing.
Protection	Electronics conformal coated

Logic Power Consumption

From Logic Power Supply	250mA from 5Vdc max.

Mass

Excluding Packaging	390g (13.8oz)
Including Packaging	480g (16.9oz)

Ordering Information

Description	Order Code
Maxiflex RIOe Redundant I/O Ethernet Link Module.	M1594A

Typical Redundant System Configuration

SCADA

Ethernet SCADA Network

Primary Controller

Secondary Controller

Controller Link (Sync Cable)

Ethernet Remote I/O Links

Remote I/O Master Base
Rack 1

Remote I/O Master Base
Rack 2

Remote I/O Master Base
Rack 3 (up to 7)