MAXIFLEX R3c Programmable I/O Scanner

Model M1249A R3c Programmable I/O Scanner Module

DATASHEET

FEATURES

- **Designed specifically for Remote I/O Systems**
- **System sizes from 2 to 15 I/O modules per Processor**
- **No programming required but available for local control.**
- **Easy configuration using free software utility.**
- **CONET Network port for connection to Master Controller**
- **Automatic I/O module identification and scanning.**
- **Built in CONET inter-network routing for complex systems.**
- **RS232/485 Serial Port for Third Party Communications**

The MAXIFLEX R3c I/O Scanner is designed specifically for adding remote I/O to Maxiflex Systems.

The R3c I/O Scanner is placed in the CPU slot of the Remote I/O Base.

This I/O Scanner automatically scans all I/O on its Base, and communicates this data with the Maxiflex M1593A Remote I/O Link Controller in the Master Base, making the remote I/O data available in the Master CPU's Data Interchange Table.

Up to 3 Remote I/O Bases, each with its own M1249A I/O Scanner can be connected to a single Master CPU Base, making a total of 1000 I/O accessible from the Master CPU.

The R3c CPU automatically identifies the presence of I/O modules and performs I/O scanning of these modules, making this data available to the Remote I/O Link Controller in the Master Base without the need for any programming.

Conventional remote I/O systems can be implemented without the need for any programming, although the inclusion of programming capability in the R3c with the powerful EziForth programming language allows local control functions to be performed.

The data link to the Maxiflex Remote I/O Link Controller operates on the Conet data highway, providing an event-driven token-passing ruggedised industrial network capable of running up to 10km.

This allows remote I/O Bases equipped with the Maxiflex MA1249A I/O Scanner to be placed in the same panel as the Master Controller, or distributed across the site up to 10km away.

APPLICATIONS

- **Remote I/O for SCADA systems over distances up to 10km away.**
- **I/O expansion of existing Maxiflex Systems using the companion M1593A Remote I/O Link Controller.**
- **High Density Analogue Data Acquisition systems such as boiler skin temperature monitoring with direct sensor connections.**
- **Distributed Alarm Systems with Time-stamping to 10 milliseconds at source.**

Copyright Omniflex ♦ Subject to change without notice

http://www.omniflex.com

Solutions by Design

MAXIFLEX R3c Programmable I/O Scanner

Model M1249A R3c Programmable I/O Scanner Module

AutoScan

The R3c Scanner is equipped with “Autoscan”, a feature that automatically identifies and scans all the I/O Modules and connected I/O.

Using “Autoscan”, the Maxiflex M1593A Remote I/O Link Controller communicates with the M1249A I/O Scanners in the Remote Bases, and makes all I/O available in the Master CPU’s Data Interchange Table.

I/O Module Configuration Management

I/O Module Configuration Management is included in the R3c I/O Scanner. This function is responsible for continuously monitoring all slots of the MAXIFLEX I/O base. A copy of all intelligent I/O module setup data is kept in the I/O Link Controller. If any I/O modules is changed, the I/O Scanner will automatically update the new module with its configuration from the Remote I/O Link Controller. This allows I/O modules to be changed without the need to reconfigure them. (e.g. a TC module with different TC types and set points selected.)

I/O Manifest Feature

This function is responsible for continuously monitoring all slots of the MAXIFLEX I/O base, keeping track of the currently installed module types. This list is compared against the required list (the I/O manifest) configured by the user. Any change in module positions will be detected. This I/O status is displayed on the front of the CPU, and is passed back to the Remote I/O Link

CONET Remote I/O Link

The Maxiflex R3c I/O Scanner is equipped a Conet/c network link to the M1593A Remote I/O Controller in the Master Base.

Conet/c a true peer-to-peer industrial grade local area network designed to run over standard instrument cables. is used over copper bus systems including twisted pair and industrial instrumentation cabling. This is a full-function token-passing peer-to-peer network technology that runs on conventional twisted pairs.
The T2c CPU is equipped with a Conet/c por\

Specifications

Communications Port

CONET twisted pair network Port

Type	Token passing peer-to-peer industrial LAN.
Baud Rates	62.5 kBaud on Standard Baud Rate 7800 Baud on Slow Baud Rate.
Maximum cable length	10km
No of R3c scanners on one remote I/O Link	7 max per Master Controller

Programming Port

Type	Asynchronous RS232 serial port
Protocols	Supports Conet/s which allows remote programming and full system data access through the programming port.
Standard Baud Rate	Preset at 19,200 baud
Maximum cable length	5 meters
Connection	RJ11 jack. Use with Model M1831 2 metre long programming cable for connection to PC serial port (9 pin).

Serial Port

Type	Asynchronous RS232/485 serial port
Protocols	Supports Conet/s and Modbus ASCII and RTU as standard, but other protocols may be downloaded to the CPU.
Baud Rate	300 – 19,200 baud.
Maximum cable length	5 meters (50ft) in RS232 mode 1200m (4000ft) in RS485 mode
Connection	9 pin sub-miniature DB9 (male).

Front Panel Indicators

OK (Green)	On = Healthy Flashing or Off = CPU faulty
I/O OK (Green)	On = I/O OK Flashing = I/O does not match configuration. Off = I/O configuration not set.
Network Tx (Red)	Flashes for each CONET network data message received
Network Rx (Amber)	Flashes for each CONET network data message sent.
Network Token (Green)	Flashes at a rate proportional to the speed that the token is passed along the network.
Network Fault Indication	All three Network LED’s flash simultaneously if the Node Address is incorrectly set.
Serial Tx	Flashes when data transmitted over serial port.
Serial Rx	Flashes when data is received on serial port.

Environmental

Operating Temperature	-25°C to +60°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	450mA from 5Vdc max.

Mass

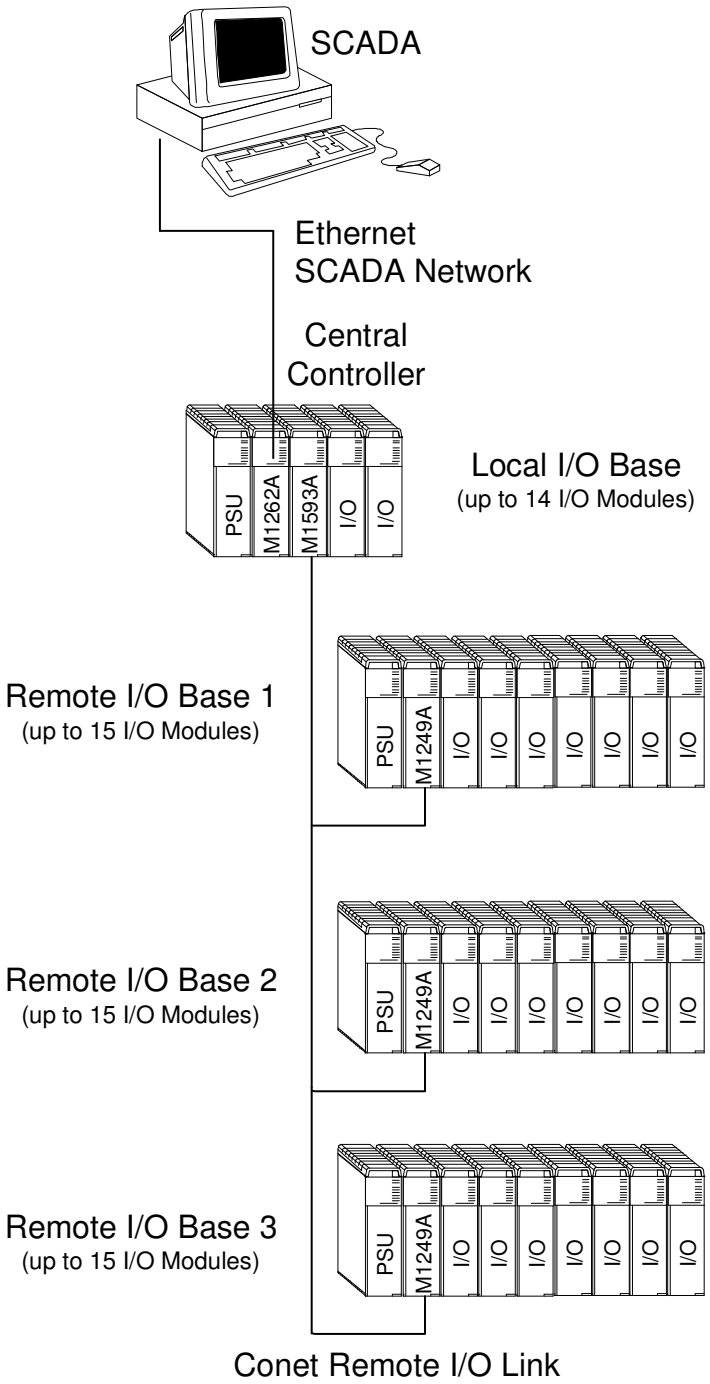
Excluding Packaging	390g (13.8oz)
Including Packaging	480g (16.9oz)

Ordering Information

Model	Order Code
Maxiflex R3c I/O Scanner	M1249A

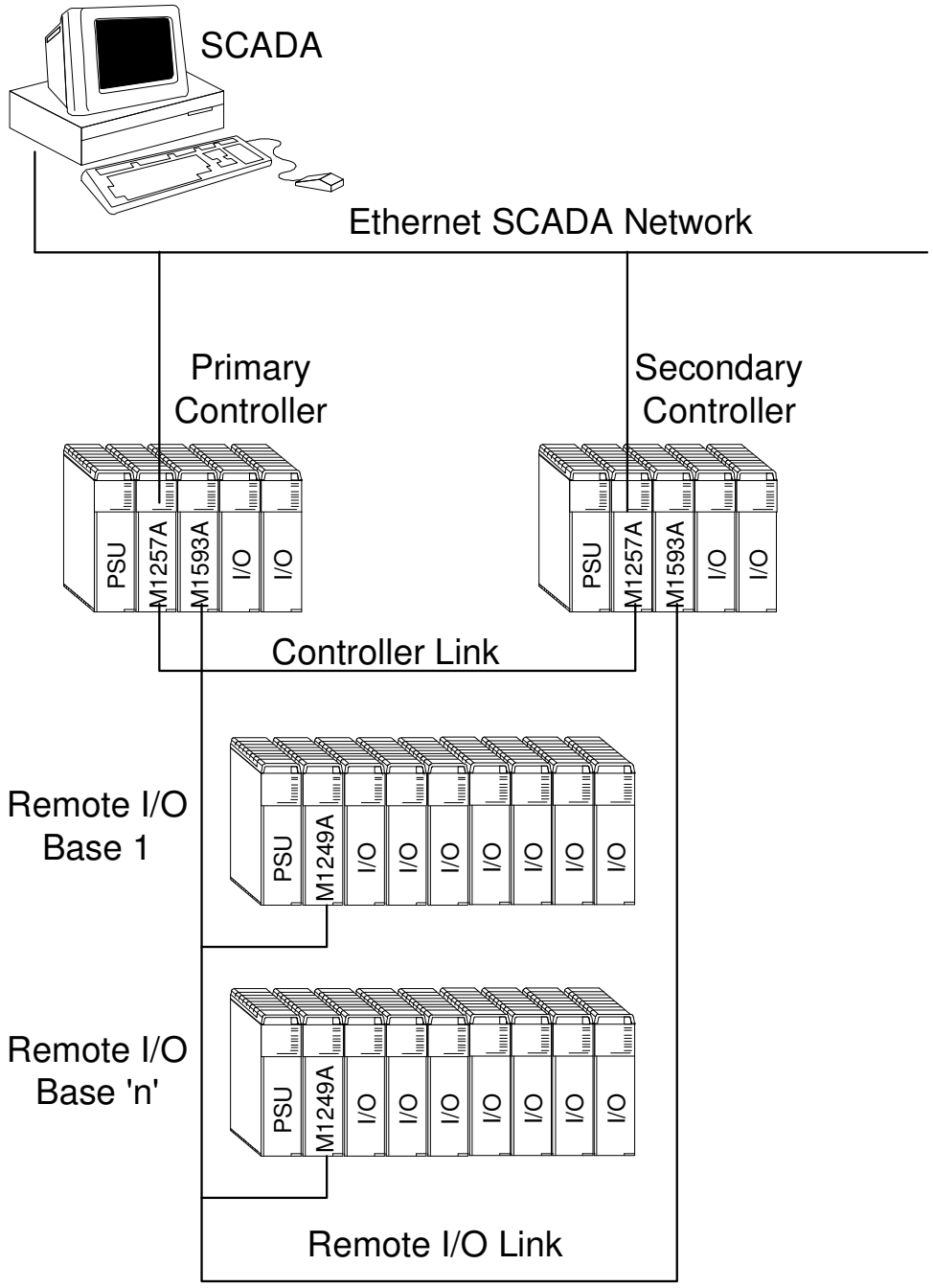
Copyright Omniflex ♦ Subject to change without notice

Typical Remote I/O Configuration



Copyright Omniflex ♦ Subject to change without notice

Typical Redundant System Configuration



Copyright Omniflex ♦ Subject to change without notice