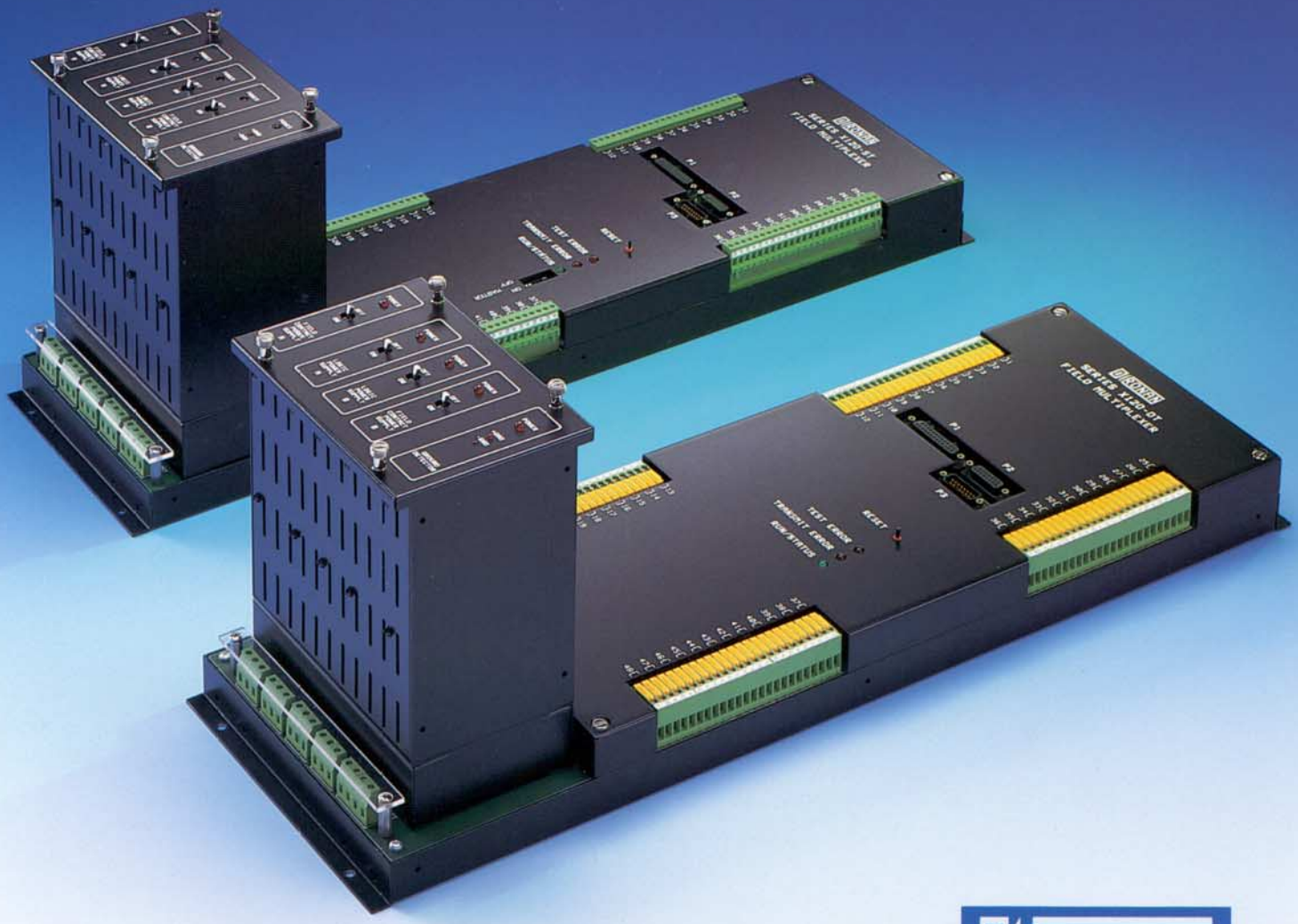
Multiplexers/ Termination Units

MODEL X120



RONAN

M O D E L X 1 2 0

The Ronan Model X120 Multiplexer is designed to continuously monitor up to 48 dry field contacts, voltage transition (live contacts), or solid state switching devices (SCR's, Transistors, etc.). The unit transfers the status of all inputs, open or closed, alarmed or normal, via serial communication to a receiver such as a Digital Control System (DCS), Plant Computer, or Serial Input Device like the Ronan Model X110 Visual Annunciator Controller. The X120 features two types of termination facilities: the standard compression type or the quick disconnect compression type. The quick disconnect type allows simple disconnect of an input for ground fault isolation or to disable a point.

MULTIPLEXERS

TERMINATION UNITS

The 48 inputs are optoisolated to provide isolation between inputs as well as field contact and logic voltage. The inputs are continuously scanned and their state transferred to the receiver via the Ronan proprietary protocol. For applications with more than 48 inputs, up to 32 Model X120 units can be daisy-chain connected to monitor the status of up to 1536 dry or live contacts or solid state switching devices.

The input state changes are digitally filtered for 16 milliseconds before being transmitted over serial communication line at speeds of up to 9600 baud.

Each unit may be equipped with single or redundant power supplies for logic and field contact voltage. The power supplies are available for 115 Vac, 220 Vac, 50/60 Hz and 24 Vdc, 48 Vdc, or 125 Vdc source. The field contact wetting voltage is 24 Vdc or 125 Vdc. Total isolation between logic and field contact voltage is provided. The X120 optionally features ground fault detection for every 24 inputs with LED indication and relay contact output.

Self-test status, commmunication error, and loss of power is displayed by LED indicators. Test failure and communication errors activate the horn relay and are indicated on an LED. The loss of power supply voltage will de-energize the self-test relay. A manual input test for all 48 inputs may be initiated by depressing the reset pushbutton. Should an input channel fail, its ID number is transmitted to the host.

FEATURES

- 48 Inputs per Unit
- Optoisolated
- Digital Filters
- Meets IEEE 472 Surge Withstand Test
- Up to 32 Units in Series Connection (Up to 1536 Inputs)
- Interfaces with Ronan X110 Serial Input Annunciator, PLC, DCS, Plant Computer, etc.
- Significant Savings in Cable Cost by Use of Serial Transmission
- Self-Test, Watchdog Timer and Loss of Power Relays
- Intergral Ground Fault Detector
- Single or Redundant Power Supplies
- Power Source 115/220 Vac, 50/60 Hz, 24 Vdc, 48 Vdc, and 125 Vdc

COMMUNICATION PROTOCOL

The data transfer between the Ronan X120 Multiplexer and the X110 Serial Input Annunciator Controller, or any other host, is based on a Ronan proprietary protocol in standard ASCII format as shown below. The status of all digital inputs connected to the X120(s) is transmitted to the receiver with the expectation of receiving an ACK (Control F) from the host within 250 mS. If no ACK is received within this time, the same status information is retransmitted for a total of three times. A transmission error is indicated by a lit LED and the activation of the horn relay. A failed input channel ID number will be transmitted to the receiver for display or storage in the host.

Status Format

Z	X	X	Y	Y	Cr

Status: C=Closed; O=Open
Multiplexer, Number of 10s
Multiplexer, Number of Units
Carriage Return
Channel, Number of Units
Channel, Number of 10s

Clear Receiver (Annunciator Window)

8DH	1BH	B4H	8DH	1BH	B4H	8DH

Carriage Return
Esc
4 (ASCII)
Carriage Return
Carriage Return
4 (ASCII)
Esc

Bad Channel ID

B	X	X	Y	Y	Cr

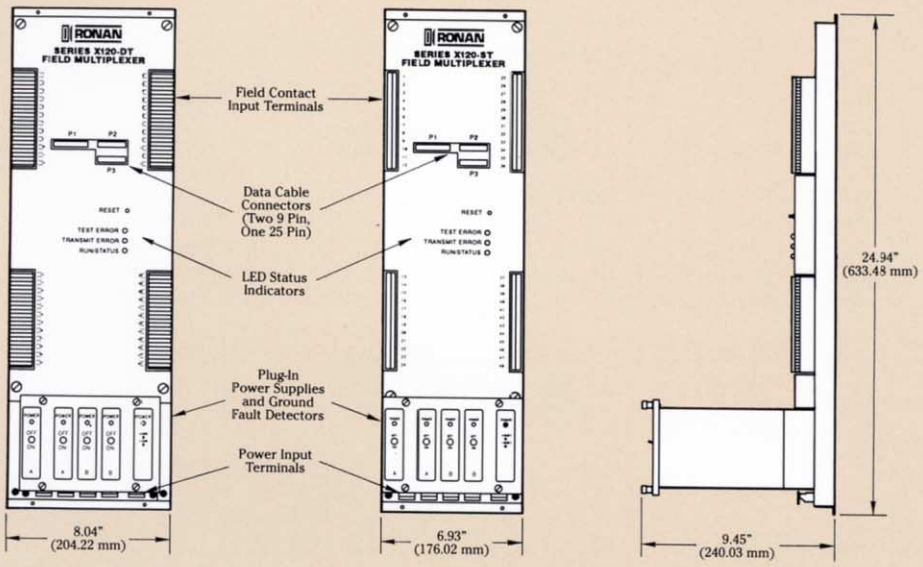
Representing Bad Channel
Multiplexer, Number of 10s
Multiplexer, Number of Units
Carriage Return
Channel, Number of Units
Channel, Number of 10s

End of Alarm Summary

C5H	8D

E (ASCII), Representing End of Alarm Summary
Carriage Return

DIMENSIONS



Model X120-DT **Model X120-ST**

M O D E L X 1 2 0

SPECIFICATIONS

Input Power: 115 Vac, 220 Vac, 24 Vdc, 48 Vdc, 125 Vdc

Power Requirements: *Logic:* 2.5 Amp. at 5 Vdc, 12 Watts
Field Contact: 25 Amp. at 24 Vdc 6 Watts,.25 Amp. at 125 Vdc, 30 Watts

Input Capacity: .48 Points

Operating Temperature: 0° to 60°C (32° to 140°F)

Storage Temperature: -40° to 85°C (-40° to 185°F)

Data Transmission: *RS422/485:* 4000 ft.; 1200-9600 Baud
RS232: 50 ft.; 1200-9600 Baud

Data Format: *Start of Data:* # Symbol, *X120 Assy. ID:* 2 Digits *Point ID:* 2 Digits, *Open = O, Closed = C:* 1 Character, *False Alarm = F:* (ignore message), *End of String = ODH Character:* 1 Character

Protocol: Ronan proprietary; Status transmission of all 48 inputs; 250 mS waiting period for ACK from host; Three re-trials

Indicators: *LED:* Power supply available; Input test error; Transmit error; Run/status indicator; Ground fault condition

Relay Output (SPDT 2A at 24 Vdc): *Monitors:* Internal logic; Power supplies; Ground fault

Sustain Data: *Transfer Rate:* 100 events per second (9600 baud using Ronan proprietary protocol); Events per second (block transfer protocols)

Specifications subject to change without notice.

ORDERING INFORMATION

Multiplexers/Termination Units

X120 - (__)

DT: Quick Disconnect Terminals; ST: Standard Compression Terminals

Logic Power Supplies

X120 - LPS - (__)

24 Vac, 48 Vdc, 125 Vdc, 220 Vac

Field Contact Power Supplies - Plug-In Type

X120 - FCPS - (__) - (__)

Input: 24 Vdc, 48 Vdc, 125 Vdc, 115 Vac, 220 Vac
Output: 24 Vdc, 125 Vdc

Ground Detector Module - Plug-In Type

X120 - GD - (__)

24 Vdc or 125 Vdc Field Contact Voltage

Cables

X120 - (__) - (__)

Length in Feet (Standard 10 Feet)
100: Interconnect X120 to X120; 101: Interconnect X120 to X110

WARRANTY

Ronan warrants equipment of its own manufacture to be free from defects in material and workmanship, under normal conditions of use and service, and will replace any component found to be defective, on its return, transportation charges prepaid, within one year of its original purchase. This warranty carries no liability, either expressed or implied, beyond our obligations to replace the unit which carries the warranty.

RONAN

RONAN ENGINEERING COMPANY
P.O. Box 1275
21200 Oxnard Street
Woodland Hills,
California 91367 U.S.A.
(818) 883-5211 · (800) 327-6626
FAX (818) 992-6435

RONAN ENGINEERING LTD. U.K.
1 Tilley Road
Crowther Industrial Estate
Washington, Tyne and Wear
United Kingdom, NE38-OEA
(191) 416-1689
FAX (191) 416-5856

RONAN ENGINEERING LIMITED
32 Bermondsey Road
Toronto, Ontario
Canada M4B1Z5
(416) 752-0310
FAX (416) 752-8072

RONAN ENGINEERING (AUST.) PTY. LTD.
Unit 10, 8 Leighton Place
Hornsby, N.S.W. 2077
Australia
(02) 477-7344
FAX (02) 477-6151

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