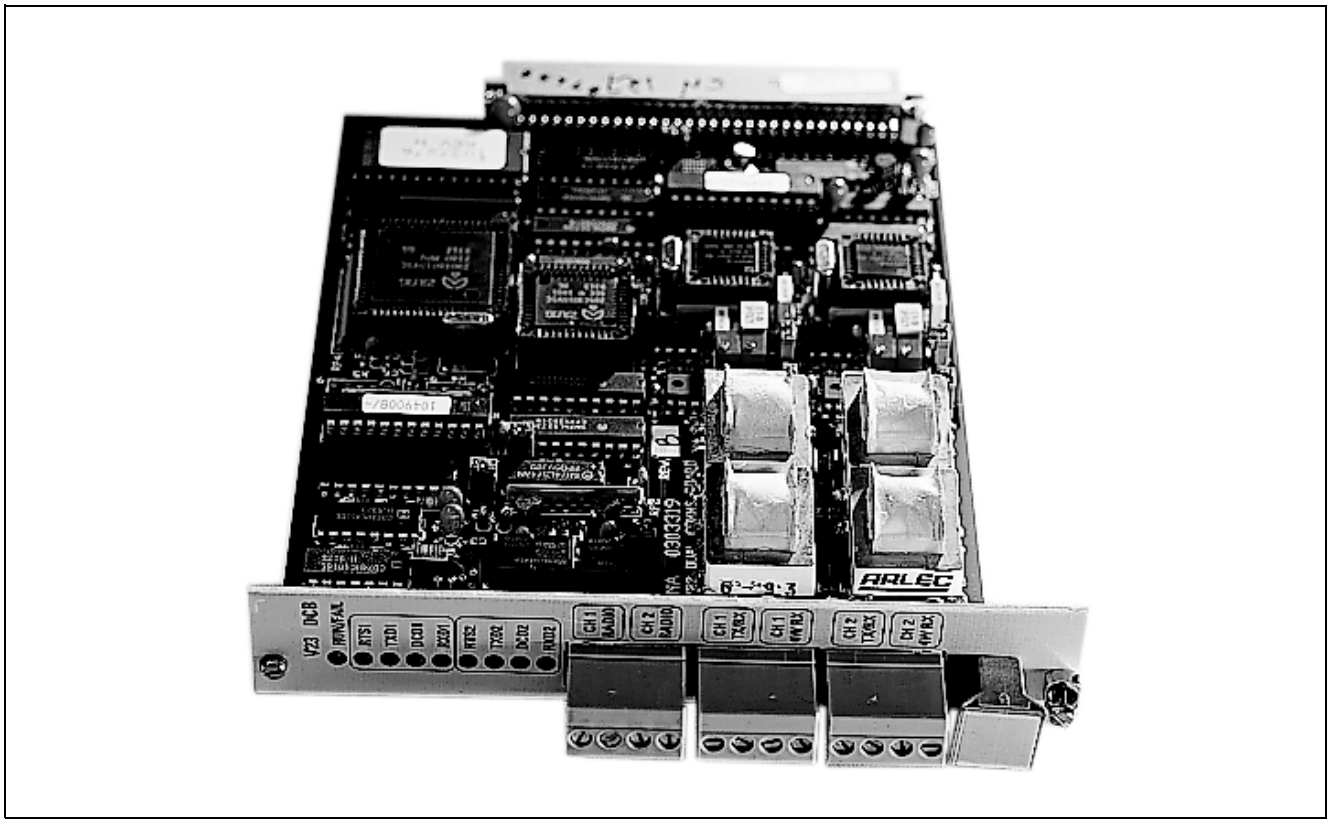
FOXBORO®

PSS 21H-8B4 B4

I/A Series® Remote Terminal Unit (RTU)
C50 V.23/Bell 202 Dual Communications Module



The C50 V.23 Dual Communications Module provides two independent V.23/Bell 202 communication channels (2 wire or 4 wire). These can be employed as two separate SCADA communication channels to two C50 Master Stations, or the second channel can be used as a backup.

FEATURES

- Built-in modem supporting CCITT V.23/Bell 202
- Data rates of 150 to 1200 baud
- Two independent, user configurable channels
- Built-in microprocessor to process signals and ease the load on the Master Processor Module
- Imbedded modem
- User configurable radio interface for both channels (push-to-talk relay)
- Protocols supported:
  - Conitel C2025
  - Conitel C300
  - Conitel C3000
  - Baker
  - Harris
  - DNP 3.0
- Removable plug connected terminator block, which allows the communications module to be removed without disconnecting the field wiring

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Product Specifications

Module Description

The C50 V.23/Bell 202 Communications Module (see Figure 1) provides 2 KVolt isolation on each of the two independent communications channels.

The module is controlled by an onboard microprocessor that is responsible for sending and receiving messages, error detection, and control of the communications protocol.

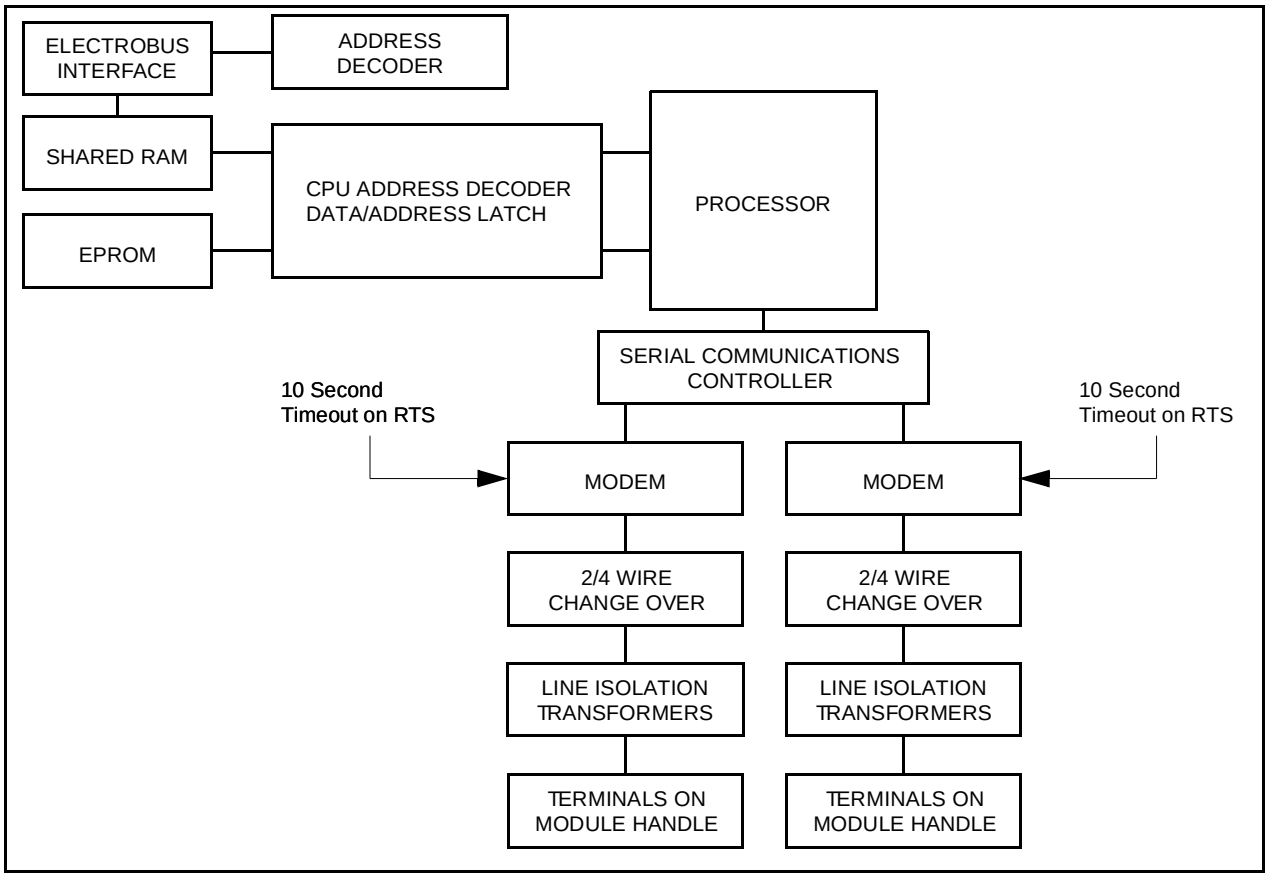

Figure 1. C50 V.23 DCB Module Functional Block Diagram

Communications Subsystem

The communications subsystem of the C50 RTU is based on intelligent communication modules with a high speed direct digital interface (see Figure 2).

The cards contain a microprocessor, with associated ROM and RAM. Communication with the Master Processor Module is made possible by shared memory located on the DCB. The onboard processor is responsible for sending and receiving messages, and for control over the communications protocol.

A serial communications controller and two modems are used to implement the two independent channels (see Figure 3). The setup of the communications controller is user configurable, and is performed when the RTU is configured.

Communication integrity is monitored by error detection algorithms appropriate to each supported communication protocol. Corrupted messages are rejected, guaranteeing a high level of data integrity.

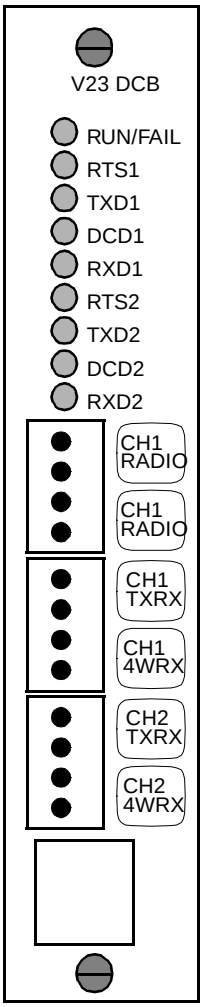

Figure 2. Front Panel

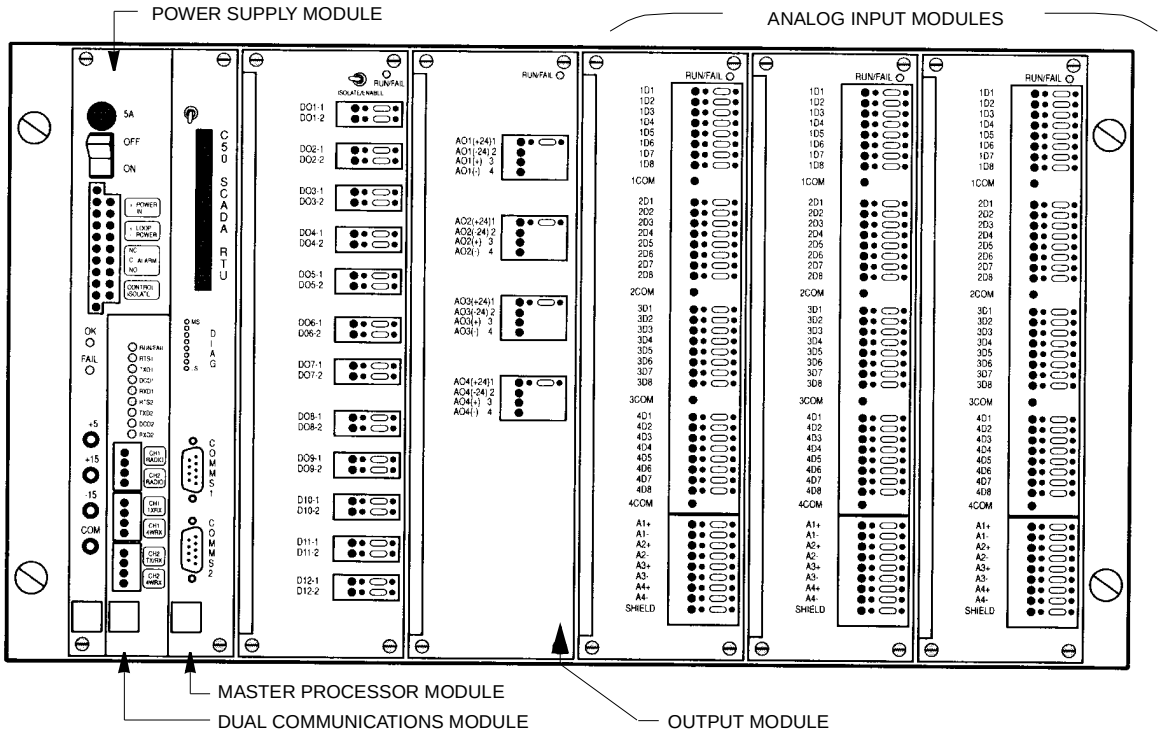

Figure 3. C50 System, Example Implementation

PHYSICAL SPECIFICATIONS

Physical Size
160 mm x 125 mm

Terminations
Phoenix MSTB plugged screw terminals

Modem
7911

ENVIRONMENTAL SPECIFICATIONS

Ambient Temperature
0°C to 60°C (optional -20° to 60°C)

Humidity
10% to 95% RH (non-condensing)

FUNCTIONAL SPECIFICATIONS

Power Requirements
540 mAmps @ 5 V
33 mAmps @ -15 V

Processor Type
Z80 interfaced to Electrobus via shared RAM

Communications Controller
Z85C30

Number of Channels
Two

Operating Modes
Asynchronous

Data Rate
150 to 1200 baud

Mark Frequency
1300 Hz (V.23)
1200 Hz (Bell 202)

Static Frequency
2100 Hz (V.23)
2200 Hz (Bell 202)

Supported Protocols
Conitel C300, C3000, C2025; Baker; Harris; DNP 3.0

Line Termination
600 ohms (2 or 4 wire) or 500 Kohm high impedance

Isolation
3.5 KVolts rms Tx/Rx to chassis
2.0 KVolts rms Tx to Rx

Loop Back Modes
Analog, digital and software loopback

Interface Type
CCITT V.23/Bell 202 (half duplex)

Output Signal Level
-39 dBm to +0 dBm

Input Signal Range
-43 dBm to +0 dBm

Radio Interface
Push-to-talk relay form A contact 100 mA, 28 V
Phoenix MSTB plugged screw terminals
Extended pre-transmission mark time configured via software

Transient Protection
IEC 255-4 Class 3; ANSI/IEEE C37.90.1-1974
IEC 255-22-4; IEC 801-4

Continuous Transmit Protection
Time out on long RTS (10 seconds)

ORDERING INFORMATION	
Part Number	**Description**
0303319	V.23/Bell 202 Dual Communications Controller
1050074	Harris 5000/5500 Firmware
1050065	C3000 Conitel Firmware
1050021	C2025 Conitel Firmware
1050021	Baker Firmware

NOTE
Be sure that appropriate firmware is ordered and installed.

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