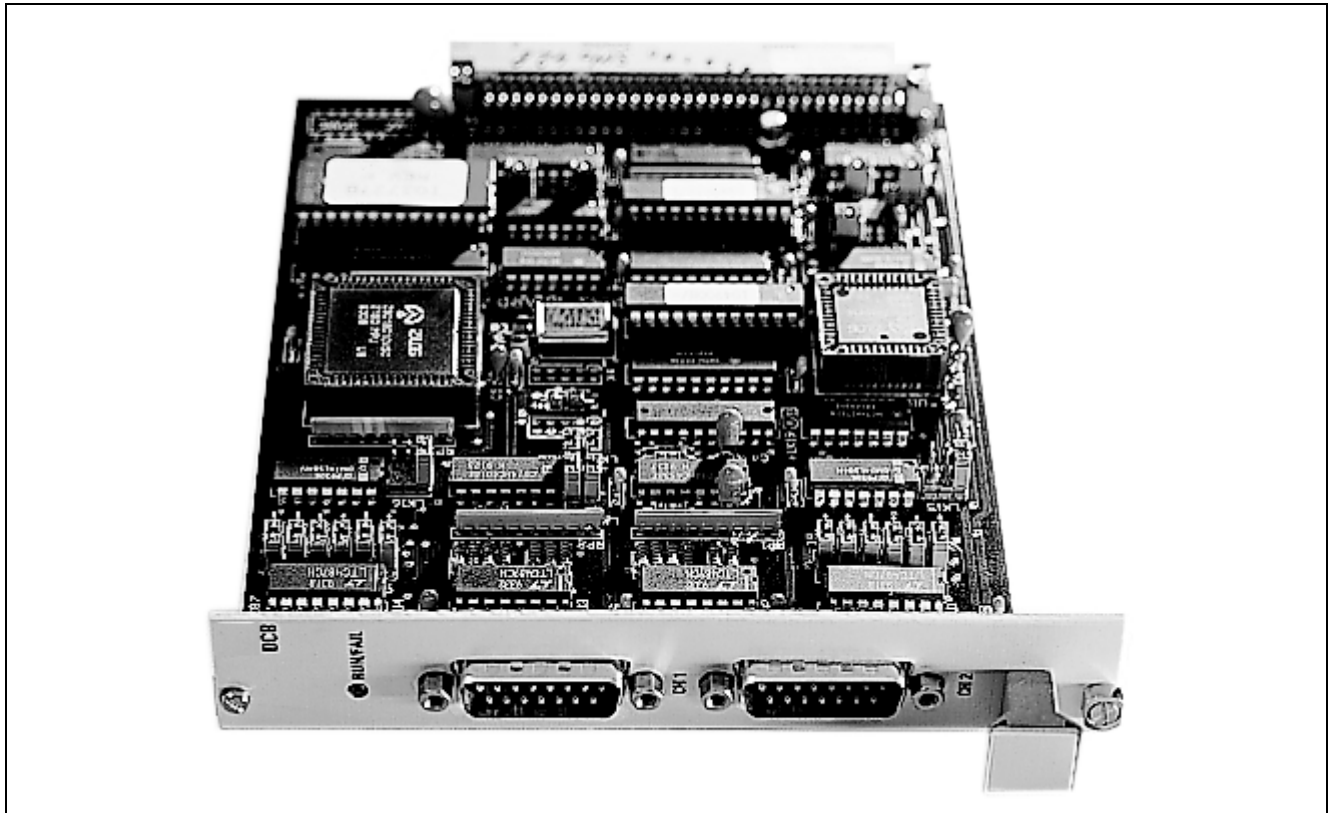


I/A Series® Remote Terminal Unit (RTU) C50 CCITT V.11 Dual Communications Module



The C50 CCITT V.11 Dual Communications Module (see Figure 1) provides two high speed digital RS-485 compatible communications channels, which can be employed either with one as the backup for the other, or as independent communications channels to separate C50 Master Stations.

The communications subsystem of the C50 is based on intelligent communications modules. Each is responsible for sending and receiving data, error detection and control over the communications protocol.

The C50 CCITT V.11 Communications Module has an onboard microprocessor, controlling two high speed direct digital interfaces that conform to the CCITT V.11 specifications.

FEATURES

- Data rates up to 64 Kbaud
- Two independent, user configurable channels
- V.11 (RS485) drivers/receivers
- Two pass control operations
- Error checking
- Dynamic Sequence of Event (SOE) scan lists
- Onboard microprocessor to process signals and ease the load on the Master Processor Module
- Support of LN57 protocol

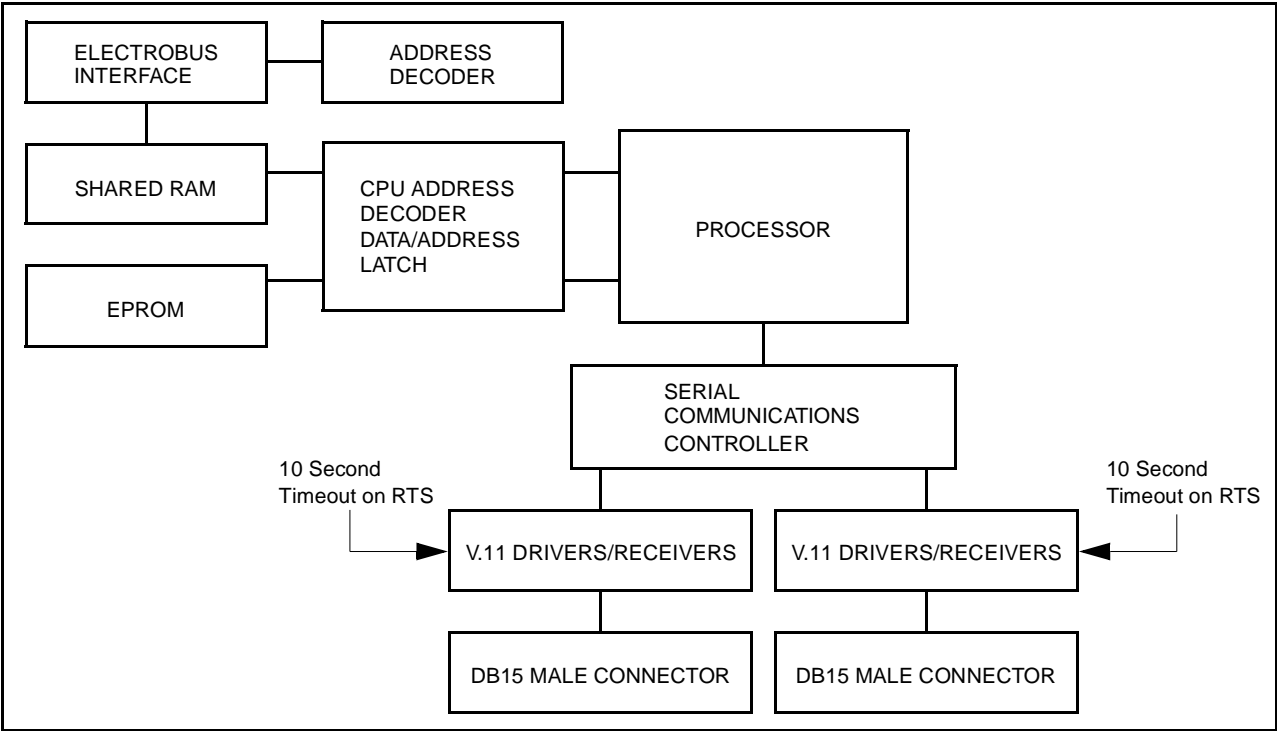


Figure 1. C50 CCITT V.11 Dual Communications Block Diagram

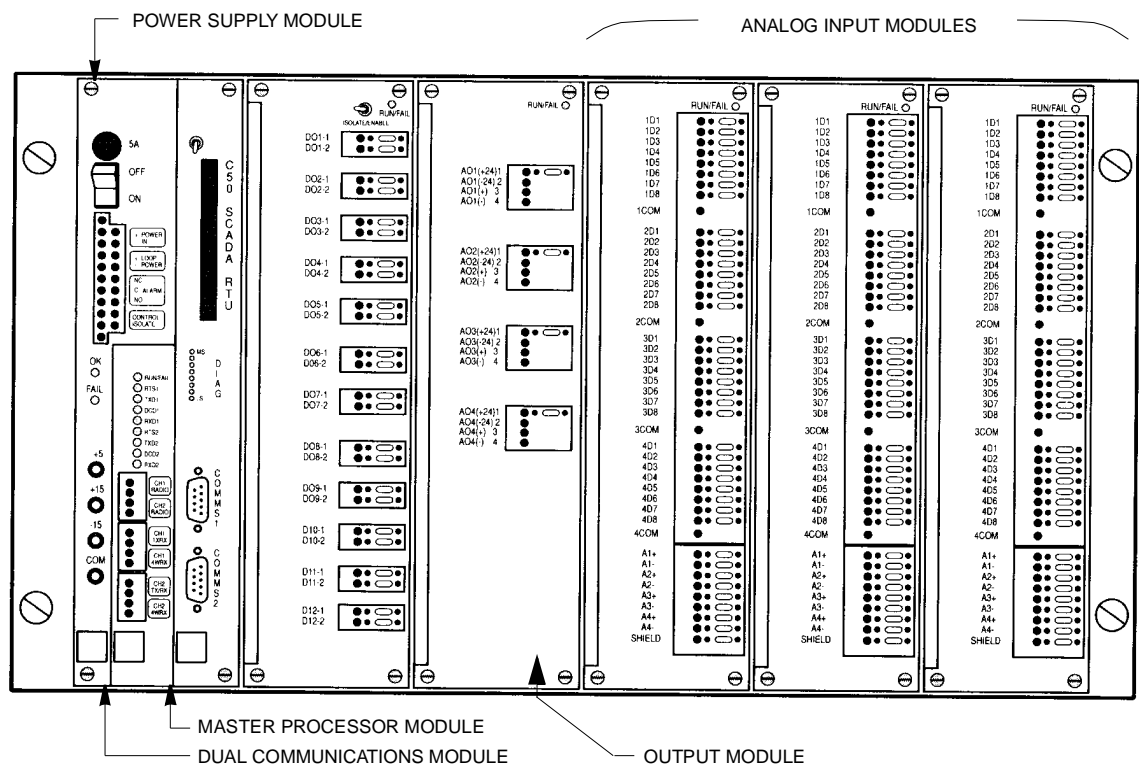


Figure 2. C50 System, Example Implementation

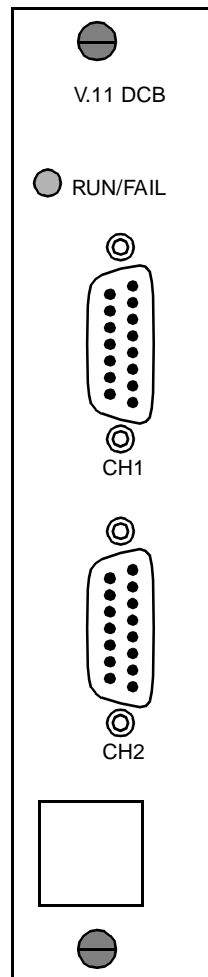


Figure 3. Front Panel

Communications Subsystem

Messages are passed to and from the C50 Master Processor Module (see Figure 2) through shared memory located on the C50 V.11 Dual Communications Module Board. The onboard processor is responsible for sending and receiving messages, error detection, and control over the communications protocol (see Figure 3).

A serial communications controller is used to implement the two independent channels. The controller is user configurable and is setup when the RTU is configured.

Scan Groups

LN57 is the SCADA protocol currently implemented for communication between the C50 Master Station and the RTU. It is compliant with the IEC 870-5-FT3 specification and designed specifically for the demands of a SCADA system. LN57 supports a number of data types that may be returned to the C50 Master Station from the RTU. These types include analog values, status inputs, 16- or 24-bit accumulators, Momentary Change Detect (MCD), and Sequence of Events (SOE).

Control Groups

LN57 currently supports four different control commands:

- Setpoint commands A or B are used for analog outputs and digital setpoint outputs.
- Trip/Close controls either a single latched relay or a Trip/Close device.
- Raise/Lower sends a variable pulse width output to the appropriate relay.
- Execute is always required to complete a control sequence for verification of the control command.

PHYSICAL SPECIFICATIONS

Physical Size

160 mm x 125 mm

Terminations

15 PIN "D" MALE CONNECTOR
ISO4903 XD.27/V.11

ENVIRONMENTAL SPECIFICATIONS

Ambient Temperature

0°C to 60°C (optional -20°C to 60°C)

Humidity

10% to 95% RH (non-condensing)

FUNCTIONAL SPECIFICATIONS**Processor Type**

Z80180

Interface Type

DTE

Communications Controller

Z85230

Continuous Transmit Protection

Time out on long RTS (10 seconds)

Power Requirements

5 V @ 540 mA

Communications Interface

CITT V.11

Number of Channels

Two

Operating Modes

Asynchronous/Synchronous

Data Rate

Up to 64 Kb/second

Supported Protocols

LN57

Transient Protection

IEC 255-22-4

IEC 801-4

Isolation

Direct connection

Line Termination

V.11 drivers/receivers (RS-422/RS-485)

Connector Pin Assignments**PIN DESCRIPTION**

1. Shield
2. Transmit Data (A)
3. Control RTS (A)
4. Receive Data (A)
5. Indication DCD (A)
6. Signal element timing RXCLK (A)
7. TXCLK (A)
8. Signal ground or common return
9. Transmit Data (B)
10. Control RTS (B)
11. Receive Data (B)
12. Indication DCD (B)
13. Signal element timing RXCLK (B)
14. TXCLK (B)
15. Reserved for future international use

ORDERING INFORMATION

Part Number	Description
0303320	V.11 Dual Communications Controller
1050023	LN57 Protocol Firmware

NOTE

LN57 Protocol Firmware must be separately ordered and installed.

The Foxboro Company

33 Commercial Street

Foxboro, Massachusetts 02035-2099

United States of America

<http://www.foxboro.com>

Inside U.S.: 1-508-543-8750 or 1-888-FOXBORO (1-888-369-2676)

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