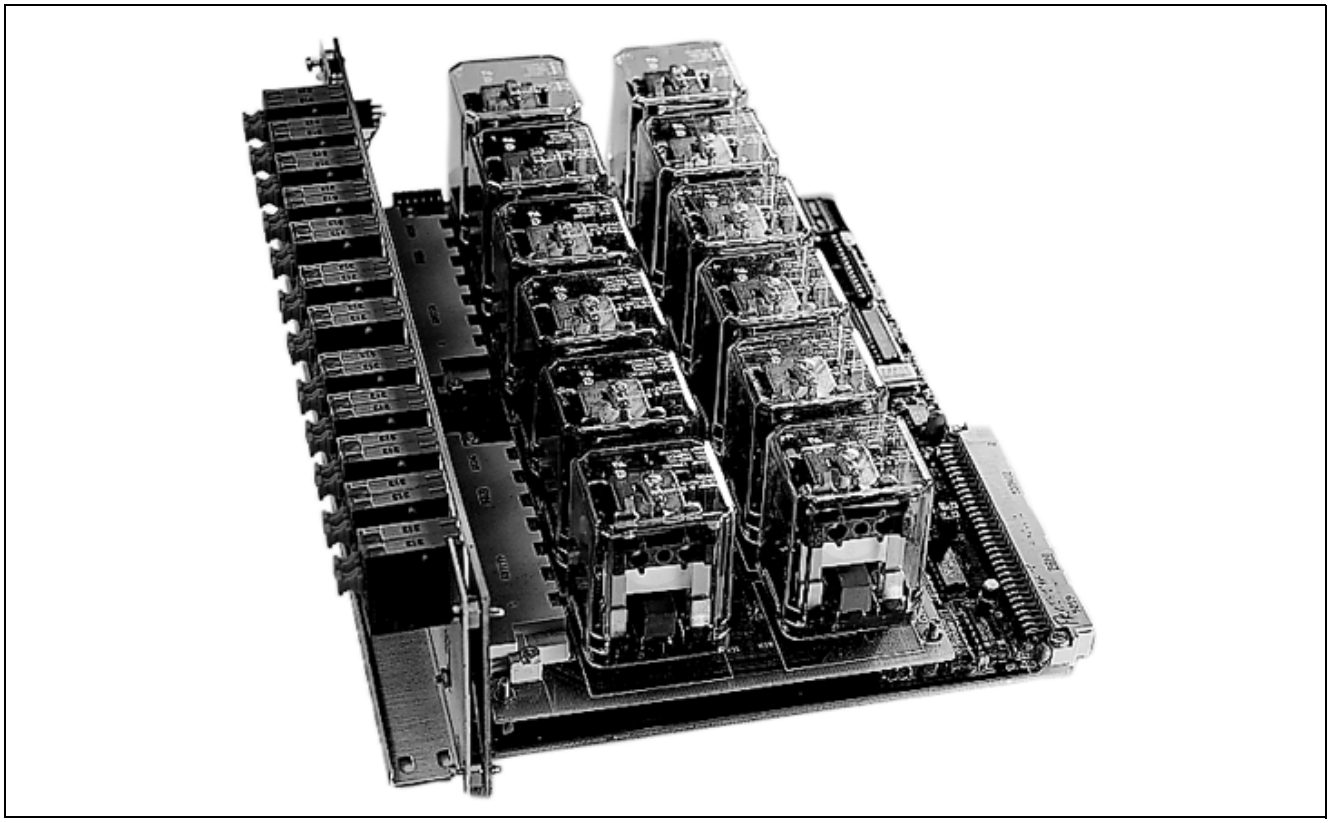
FOXBORO®

PSS 21H-8B3 B4

I/A Series® Remote Terminal Unit (RTU)
C50 Twelve Relay Digital Output Module



The C50 Twelve Relay Digital Output (TDO) Module offers numerous configuration possibilities. Relay outputs can be configured as individual relays, pairs, or multiples in setpoint combinations. Two pass operation with built-in hardware checking ensures reliable control over equipment.

FEATURES

- 12 independent relays
- **RUN/FAIL** LED indicator
- Relays configurable as **On/Off** (individual), **Trip/Close** or **Raise/Lower** (pairs), **Digital Setpoint** (multiples) or **Pulse** (individual)
- Intelligent high security control output logic boards
- Built-in hardware and software monitoring of all control operations
- Control **ISOLATE/ENABLE** switch per output module
- Removable plug-connected termination board, which allows the input card to be changed without disconnecting the field wiring
- Disconnect link with test points on either side for each output
- Security control: Check before operating
- Control output duration is individually configurable

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Product Specifications

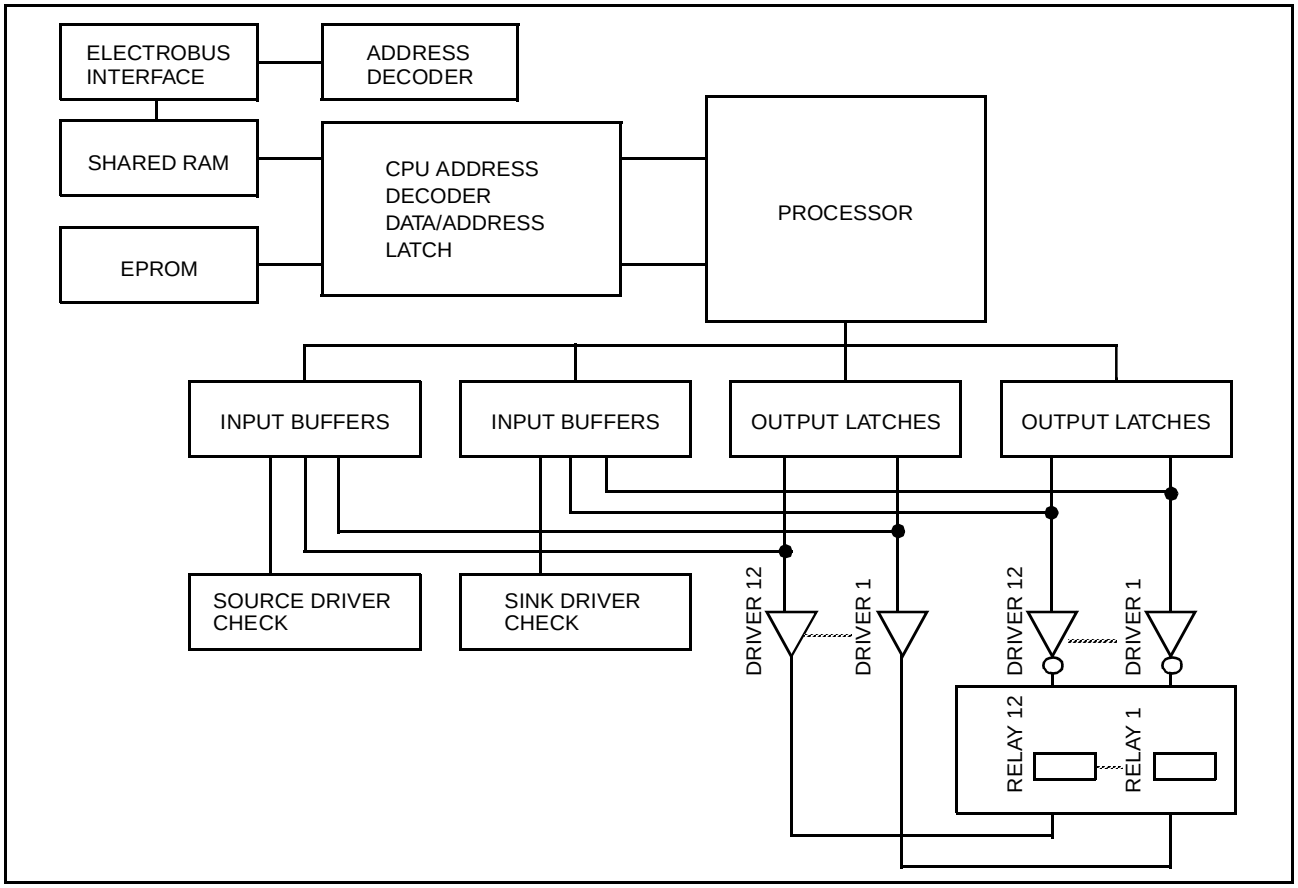

Figure 1. C50 Twelve Relay Digital Output Module Functional Block Diagram

Module Description

The Twelve Relay Digital Output subsystem (see Figure 1) provides security and control for all digital outputs. The TDO module consists of an onboard microprocessor and security circuits mounted on a logic board with a plug and terminal assembly. The relay outputs are determined by a customer's selection of relay daughter boards. Among the available options is a choice between pilot relays or high current (10 Amp) relays.

A control **ISOLATE/ENABLE** switch on the front panel allows servicing of the controlled equipment without risking remote operation. An external switch can also be wired from the power supply to simultaneously disable all digital output boards.

Digital Output Subsystem

The digital output subsystem is based on an intelligent output logic board containing relay drivers, an associated relay platform board and a termination board. The TDO module contains source and sink drivers for 12 relays which may be driven as fixed length pulse outputs or variable length pulse outputs.

The TDO logic board contains an onboard microprocessor with associated RAM and ROM. Configuration data from the Master Processor Module determines the treatment of each output port by the onboard processor.

Two Pass Operation

During Pass 1, the onboard microprocessor accepts command data from the Master Processor Module through shared memory. The validity of the command is confirmed and then the hardware is checked on the output driver circuits. If all tests succeed, feedback of the command is sent to the Master Processor Module.

During Pass 2, the Master Processor Module sends the execute command and the TDO Module drives the required relays. The TDO Module automatically times the duration of pulse outputs and turns the necessary relay off.

Fault Diagnosis

All cables are terminated on the front panel of the unit, which provides quick access for diagnosis and repair. Test points are provided on each side of the isolation links and a **RUN/FAIL** LED is provided on the front panel (see Figure 2) of each module to simplify troubleshooting. The operating condition of the module is reported to the Master Processor Module for remote/local diagnosis via system database alarm points.

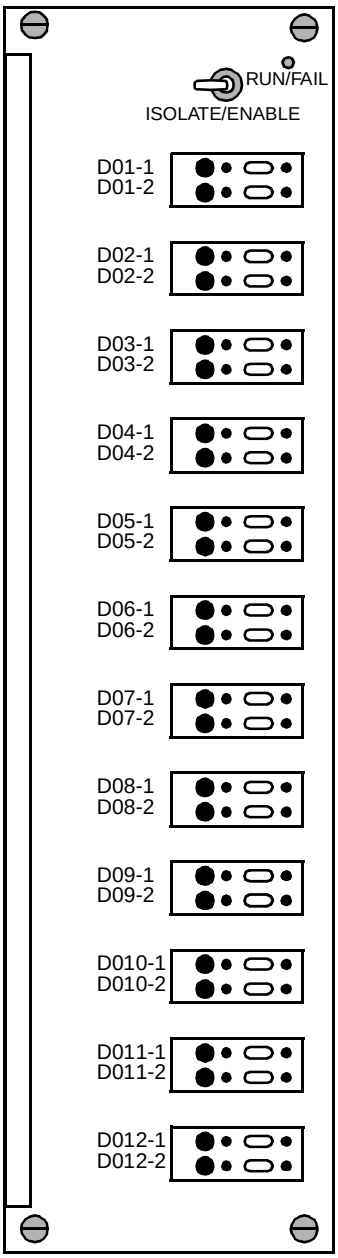

Figure 2. Front Panel

PHYSICAL SPECIFICATIONS

Physical Size
233.4 mm x 160 mm

Terminals
Two terminals/relay with test points and isolation link

Mounting Arrangement
Relays are mounted on a removable mother board

ENVIRONMENTAL SPECIFICATIONS

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

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

FUNCTIONAL SPECIFICATIONS

Power Requirements
450 mAmps @ 5 V dc

Number of Relays
12

Output Types
Digital Setpoint (electrically-latching)
Trip/Close (in pairs, configurable pulse width)
Raise/Lower (in pairs, variable pulse width)
Pulse (single, configurable pulse width)

Processor Type
Z80180 interfaces to Electrobus via shared RAM

Control ISOLATE/ENABLE
Switch mounted on front assembly; may also be isolated by a remote switch connected to Power Supply Module

Isolation
2 KVolts rms for 1 minute, output to frame
1 KVolts rms for 1 minute, across open contacts
2 KVolts rms for 1 minute, between outputs

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

10 Amp Relay Platform Board
CONTACT RATING
10 Amp @ 150 V dc resistive
10 Amp @ 150 V dc
L/R 7 msec 30,000 operations
CONTACT ARRANGEMENT
Single-pole outputs using N/O relays with contacts connected in series to boost dc rating (output is single-pole)
RELAY COIL CURRENT
110 mA

Pilot Relay/Magnetically Latched Relay Platform Board
CONTACT RATING
5 Amps 30 V dc or 240 V ac resistive
1 Amp 40 V dc inductive
100 mA 110 V dc inductive
CONTACT ARRANGEMENT
Two-pole using N/O relays with contacts connected in series to boost dc rating (output is single-pole)
RELAY COIL CURRENT
90 mA

ORDERING INFORMATION

Required for Pilot Relay Version	Required for 10 Amp Relay Version	Required for Magnetically Latched Version	Part Number	Description
X	X	X	0303383	Control Output Logic Board
X			0303385	Pilot Relay Platform Board
		X	0303386	Magnetically Latched Relay Platform Board
	X		0303360	10 A Relay Platform Board
X	X	X	0303355	Termination Board
X	X	X	1050024	Control Output Firmware

NOTE
Firmware must be separately ordered and installed.

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