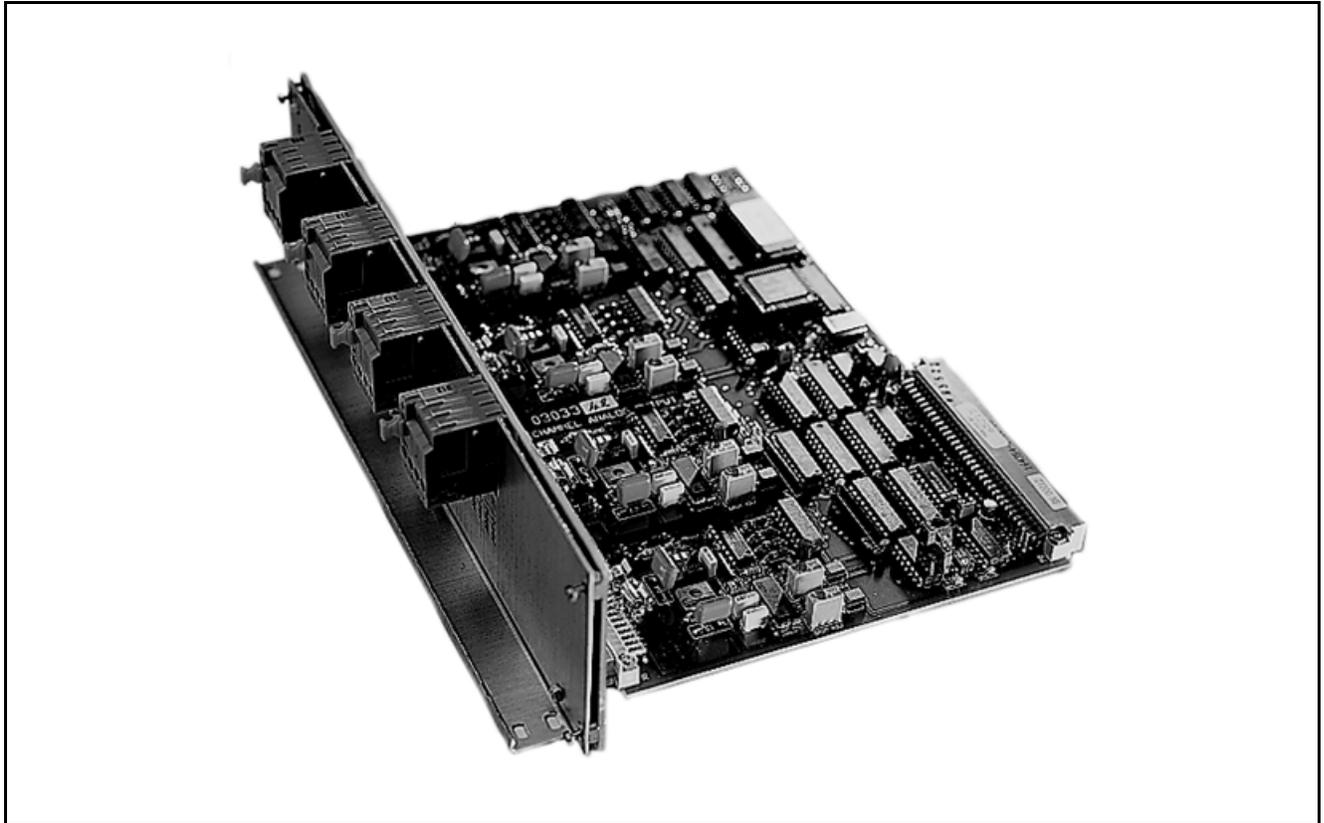


# I/A Series<sup>®</sup> Remote Terminal Unit (RTU) C50 2/4 Channel Analog Output Module



The Analog Output Module provides two or four isolated current outputs. Outputs of 4 to 20, 0 to 10 and 0 to 16 mA are independently configurable. Two pass operation with built-in hardware checking ensures that reliable control of equipment is maintained.

The Analog Output subsystem provides security and control for all analog outputs. The Analog Output Module consists of an onboard microprocessor, controlling up to four channels. Each analog output can be scaled independently for the selected output current range as part of the RTU database configuration.

## FEATURES

- Two or four channel analog output versions available
- 12-bit resolution
- 4 to 20, 0 to 10, and 0 to 16 mA ranges
- Optical isolation of output circuits
- Internal monitoring of external voltage fail and open circuit alarms
- Removable plug-connected termination board which allows removal of the logic card without disconnecting the field wiring
- Disconnect links for each output with test points on each side

### Optical Isolation

The Digital/Analog Converters (DAC) are serially linked via optical isolators to the rest of the module. Power is supplied from an external source, which results in an electrically isolated interface to the external devices. This design also sustains outputs, even in the event of the RTU or module failing. See Figure 1.

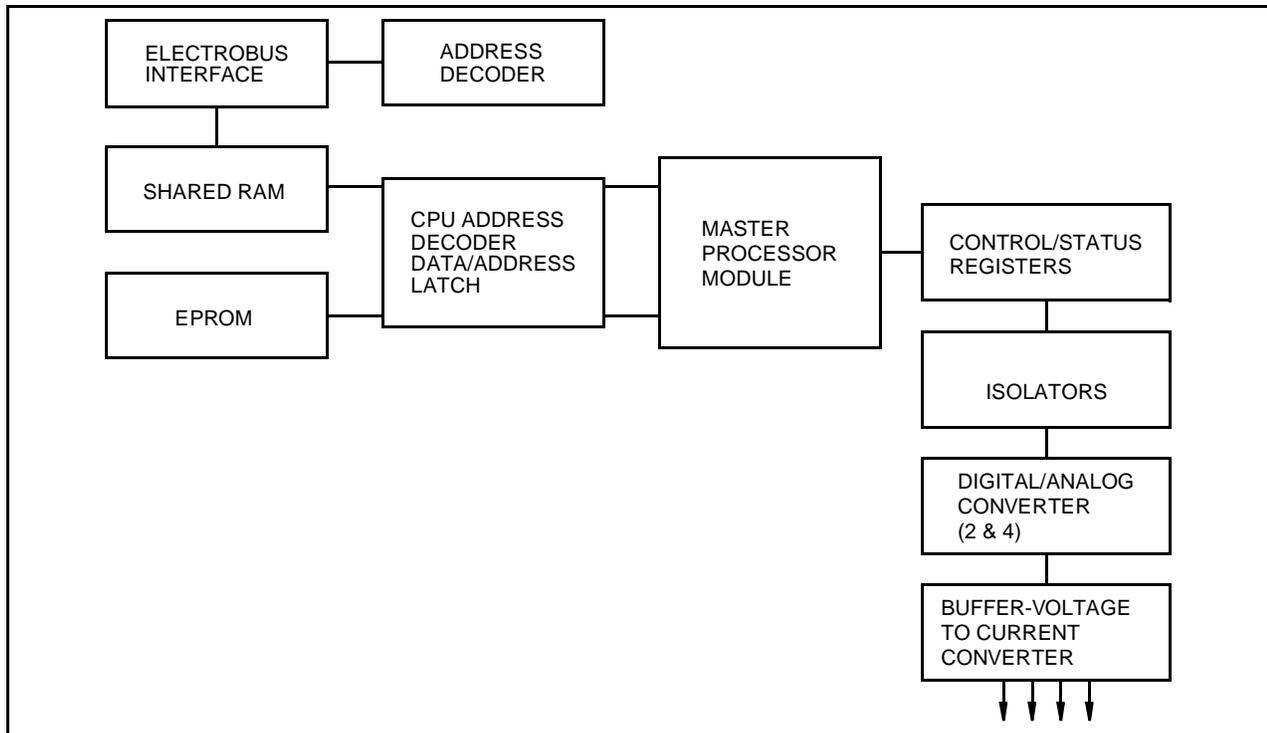


Figure 1. 2/4 Channel Analog Output Module Functional Block Diagram

### Internal Monitoring

Each channel has two internal alarm points associated with it (see Figure 2). If the external voltage source fails, or the current loop is open circuit to the output, the onboard processor is notified via optically isolated digital inputs. These inputs are then passed to the C50 Master Processor Module, to be made available for scanning if required by the SCADA Master Station.

An operator can be notified if an analog device has been disconnected from the RTU, or if the external voltage source has failed, enabling problems in the field to be located remotely.

Each output is configurable as 4 to 20, 0 to 10, or 0 to 16 mA. Using 12-bit resolution, it is possible to get up to 4000 steps within the output range

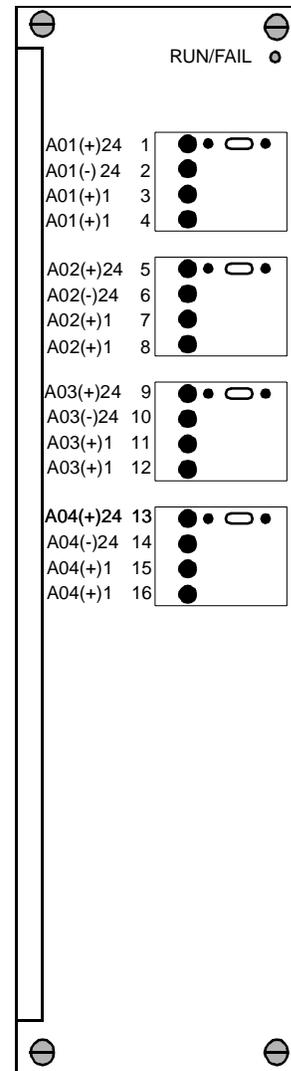


Figure 2. Front Panel

### PHYSICAL SPECIFICATIONS

#### Physical Size

233.4 mm x 160 mm

### 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 Requirement

5 V @ 330 mA  
External loop power - 25 mA per channel

#### External Loop Power

24 V dc (minimum 19 V, maximum 36 V)

#### Processor Type

Z80 interfaces to Electrobus via shared RAM

#### Loop Load Resistance

0 ohms minimum, 600 ohms maximum

#### Bus Interface

Electrobus

#### Transient Protection

Meets IEC 255-4 Class 3; 5 KVolts impulse,  
2.5 KVolts high frequency disturbance  
ANSI/IEEE C37.90.1 - 1974; IEC 255-22-4;  
IEC 801-4

#### Number of Outputs

Two or four; each output is configurable

#### Channel Isolation

500 V dc (1 minute) channel to channel  
250 V dc (1 minute) channel to frame

#### Accuracy

4 to 20 mA; 0 to 16 mA; 0 to 10 mA

#### Channel Alarms

Open circuit  
Power fail

<b>CONFIGURABLE OUTPUTS</b>		
<b>Range</b>	<b>Counts</b>	<b>Output Steps</b>
4 to 20 mA	0-4000	4000
4 to 20 mA	800-4000	3200
0 to 10 mA	0-4000	2560*
0 to 16 mA	0-4000	4000
4 to 20 mA	0-2000	2000
4 to 20 mA	400-2000	1600
0 to 10 mA	0-2000	1280*
0 to 16 mA	0-2000	2000

**NOTE**

\* Implies some counts will not effect a step change.

<b>ORDERING INFORMATION</b>	
<b>Part Number</b>	<b>Description</b>
0303334	2 Channel Analog Output Logic Board
0303342	4 Channel Analog Output Logic Board
0303338	2/4 Channel Analog Output Termination Board
1050043	2/4 Channel Firmware

**NOTE**

Firmware must be separately ordered and installed.





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