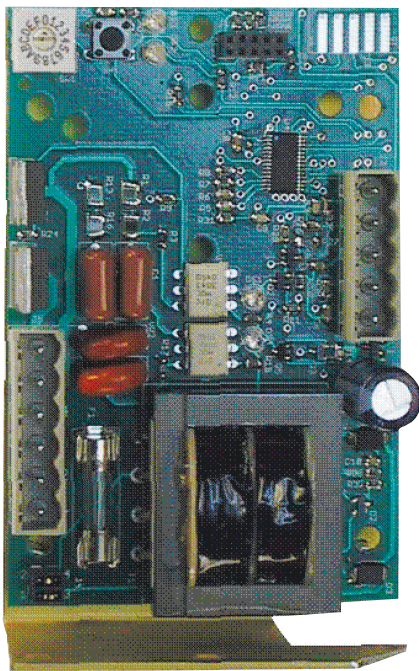


## Modbus<sup>®</sup> Control Logic Card



### Models

**mAC165**  
**115 Volt A.C. Actuators**

### Features

- High resolution position input for up to 0.1% accuracy.
- 4-120/240VAC inputs for open and closed limit switches and 2 general purpose inputs.
- Simple 4-wire Modbus<sup>®</sup>-485 communication network includes supervisory power.
- Robust communication, up to 500m cable length.
- Pluggable terminal strips for easy field installation.
- Direct mounting within the actuator.
- Low power consumption; does not require ventilation.
- Electronic overload protection with built-in current monitoring optional.
- High power outputs can directly drive small motors.
- LED indicators on inputs, outputs and communication channel.
- Automatic calibration using local push button or remote command.
- Multi-vendor PLC support through the standard Modbus<sup>®</sup> communication module.

## Specifications

### Actuator

Voltage	120/240VAC 1Ø
Current	4A (2 minute 25% duty-cycle)
Fuse	GMA 4 replaceable

### Supervisory

Voltage	10 to 25VDC
Current	30mA @ 24VDC

### Auxiliary Inputs

Voltage	120/240VAC
Current	min 10mA / max 20mA

### Communication

Standard	Modbus®-RS485 differential
Distance	500m (1,640ft.)
Input Load	12K ohm, standard
Termination	120Ω balanced line

### Position

Resolution	12 bit (1 part in 4096)
Accuracy	0.1% full scale
Potentiometer	1000 Ω typical (500 to 10k Ω)
Quadrature Optical Encoder	1000 to 4096 pulses

### Environment

Temperature	-40°C to +70°C (-40°F to +158°F)
Relative Humidity	0 to 95% non-condensing

### Dimensions

Length	96mm (3.75 in)
Width	70mm (2.75 in)
Height	36mm (1.40 in)

## Typical Applications

- Blending of bulk materials.
- Petroleum products and other liquids flow control.
- Level control for maintaining process supply.

## Accessories

### mBA085 Bus Arbiter:

Connects a maximum of 100 mAC165's, on up to 8 drops, to a RS232 Modbus® Master RS232 process controller. Includes redundant power supply input and drop fault alarms.

## Commands, Process Values and Configurable Parameters

### Commands:

Seek To Position  
Full Open  
Full Close  
Stop  
Calibrate  
Remote Reset  
Initiate Re-close  
Default Parameter Reload  
Parameter Protect On  
Parameter Protect Off

### Process Values:

Current Position  
Average Load  
Peak Load (optional)  
Idle Load (optional)  
Raw Position  
Raw Load (optional)  
Last Seek Value  
Current Jog On Time  
Software Revision Code

### Configurable Parameters:

Zero Offset  
Span  
Open Setback  
Close Setback  
Seek Tolerance  
Open Limit Tolerance  
Close Limit Tolerance

Calibrate To  
Max Load  
Idle Load  
Com Fault Position  
Jog Move Tolerance  
Load Zero Offset (optional)  
Load Span (optional)  
Update Time  
Turn Around Time  
Command Fault Time  
Com Fault Timeout  
Jog Wait Time  
Jog Open Time  
Run Load Fault Time (optional)  
Idle Load Fault Time (optional)  
Run Past Close Time  
Re-close at Time  
Serial Port Speed  
Minimum Jog On Time  
Maximum Jog On Time  
Input 1 Setup  
Input 2 Setup  
Input 3 Setup  
Input 4 Setup  
Encoder Options  
Pseudo Limit Options  
Force Options  
Seek Options

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