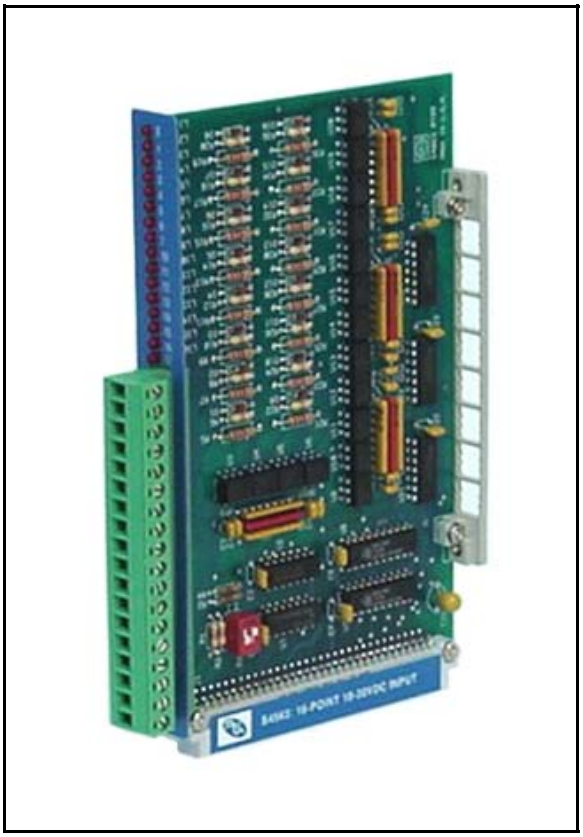
SYSTEMS ELECTRONICS GROUP

# SYSTEMS M4500 INDUSTRIAL CONTROLLER

**S4563: DIGITAL DC INPUT BOARD**
**16-POINT 10-30VDC SOURCING**



- **16 Digital Input Points**
- **16 Individual Status LED's (One Led Per Input Point)**
- **Removable Field Wiring Connector**
- **Optical Isolation**
- **Standard M4500 I/O Form Factor**

## General Description

The S4563 10-30VDC Input Board, for use with the M4500 series of modules, contains 16 identical solid state input circuits which accept the on/off status of user devices such as push-buttons, limit switches, and proximity sensors. The inputs sense the voltage levels of digital DC input signals, with the devices driving the inputs being defined as sourcing (positive current into the input). When the voltage at the input is high (above the input "on" threshold), the input is read as a "1". When the input is low (approximately zero), the input is read as a "0".

The on/off status of each input is indicated with individual LED's located on the front of the board. The LED's provide the status of the actual input points (field side) rather than the internal logic status. Input and user power wiring is implemented with a removable 18-pin field wiring connector which allows easy board replacement.

The 16 input points are read in the two least significant bytes of the slot that the board is addressed as. Inputs 0 through 7 are mapped in bits 0 through 7 of byte 0 of the slot, while inputs 10 through 17 are mapped in bits 0 through 7 of byte 1 of the slot.

## Installation

Prior to installing the S4563, the I/O slot addressing dip switch on the board must be set for the slot the board will be addressed as.

**Note:** Geographical addressing is not used in the M4500. The slot the S4563 is addressed as is solely defined by the dip switch settings on the S4563 itself not by the slot in the M4500 chassis that the board is placed in. Two poles on the dip switch of the board set the binary slot address of the board as follows:

**S4563 SW1 Dip Switch Slot Addressing**

| 2 | 1 | Slot Address |
|---|---|---|
| off | off | 0 |
| off | on | 1 |
| on | off | 2 |
| on | on | 3 |

The SW1 Slot address dip switch is located in the lower left hand corner of the component side of the S4563. The respective switch pole is "on" when in either the "on" or "close" position and "off" when either in the "off" or "open" position depending on the type of dip switch used.

To install the S4563 in the M4500 chassis, turn power to the M4500 "off" and remove the cover plate of the M4500 by loosening the captive screws that retain it. Install the S4563 in the respective slot of the M4500, making sure the DIN connector on the S4563 fully mates with the DIN connector in the M4500 motherboard and that the top of the S4563 is seated correctly in the card guides at the top of the M4500. Install the M4500 cover back onto the M4500 making sure the LED's and Field connector protrude through the respective openings in the cover. The M4500 cover will retain the S4563 both from the top and the front, holding the S4563 in place during normal operation. Tighten the captive screws that retain the cover on the M4500. Install the female field wiring connector to the corresponding male connector on the S4563. The S4563 is now installed and ready to run. To remove the S4563, simply perform the previous steps in reverse.

## Specifications

| | |
|---|---|
| **Board Size:** | |
| Length: | 6.50" |
| Height: | 4.25" |
| Width: | 0.80" |
| **Number of Inputs:** | 16 |
| **Input Voltage:** | |
| Vin(on-min): | 10.0 volts |
| Vin(on-max): | 30.0 volts |
| Vin(off-min): | 5.0 volts |
| **Input Current (max):** | 15 milliamps at Vin=30volts |
| **Input Filter Delay:** | |
| typ delay: | 0.50 milliseconds |
| min delay: | 0.35 milliseconds |
| max delay: | 0.80 milliseconds |
| **Optical Isolation:** | 1500 Vrms |
| **Power Requirements:** | |
| Icc (typ - M4500 BUS): | 50 milliamps |
| **Temperature Ranges:** | |
| Storage: | 0 to 85 degrees C |
| Operating: | 0 to 60 degrees C |
| **Relative Humidity:** | 5 to 95% non-condensing |

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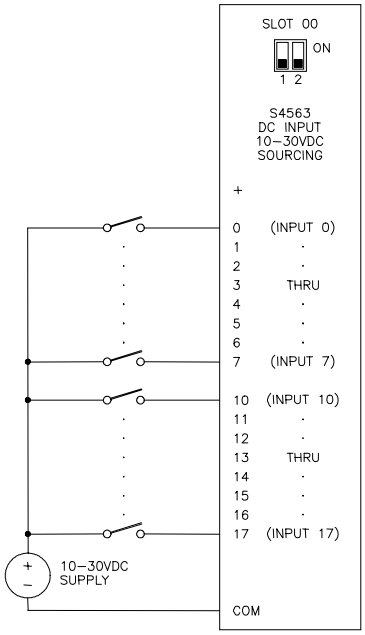


Figure 1
Typical User Wiring

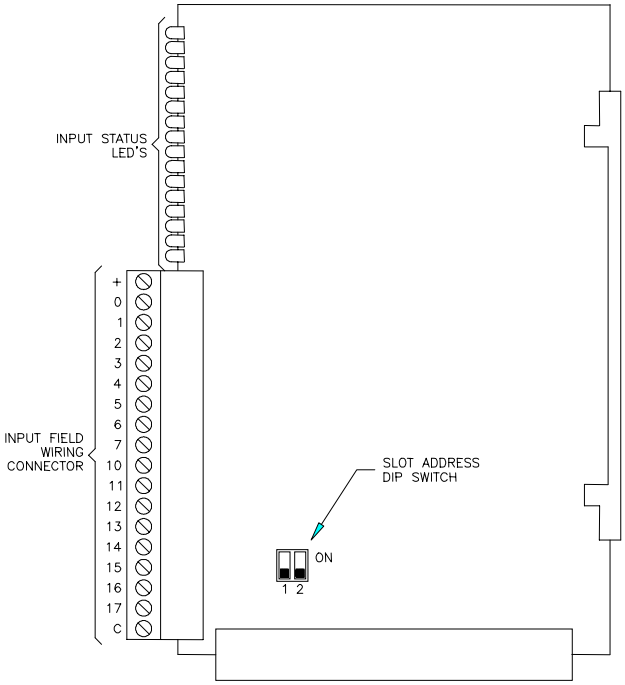


Figure 2
Board Outline

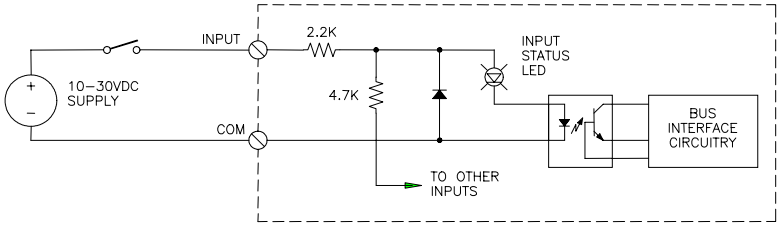


Figure 3
Typical Input Circuit