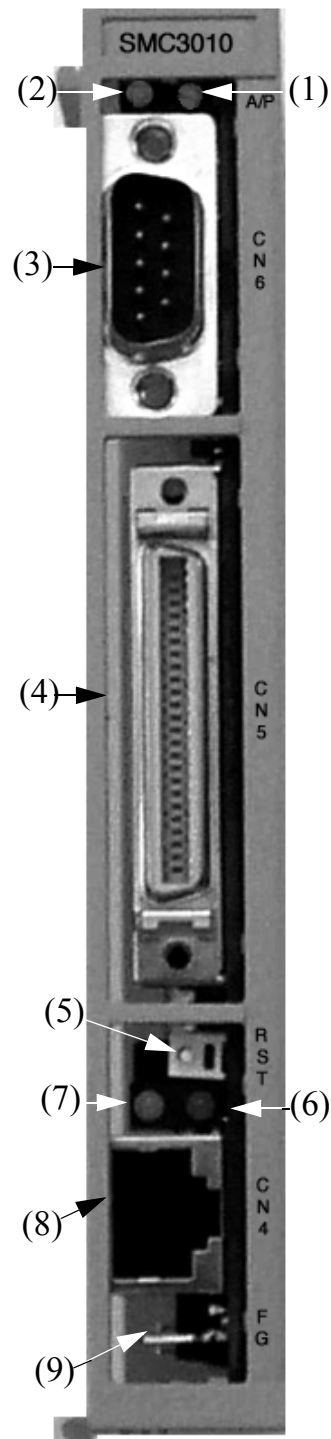
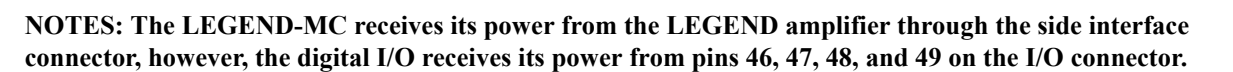


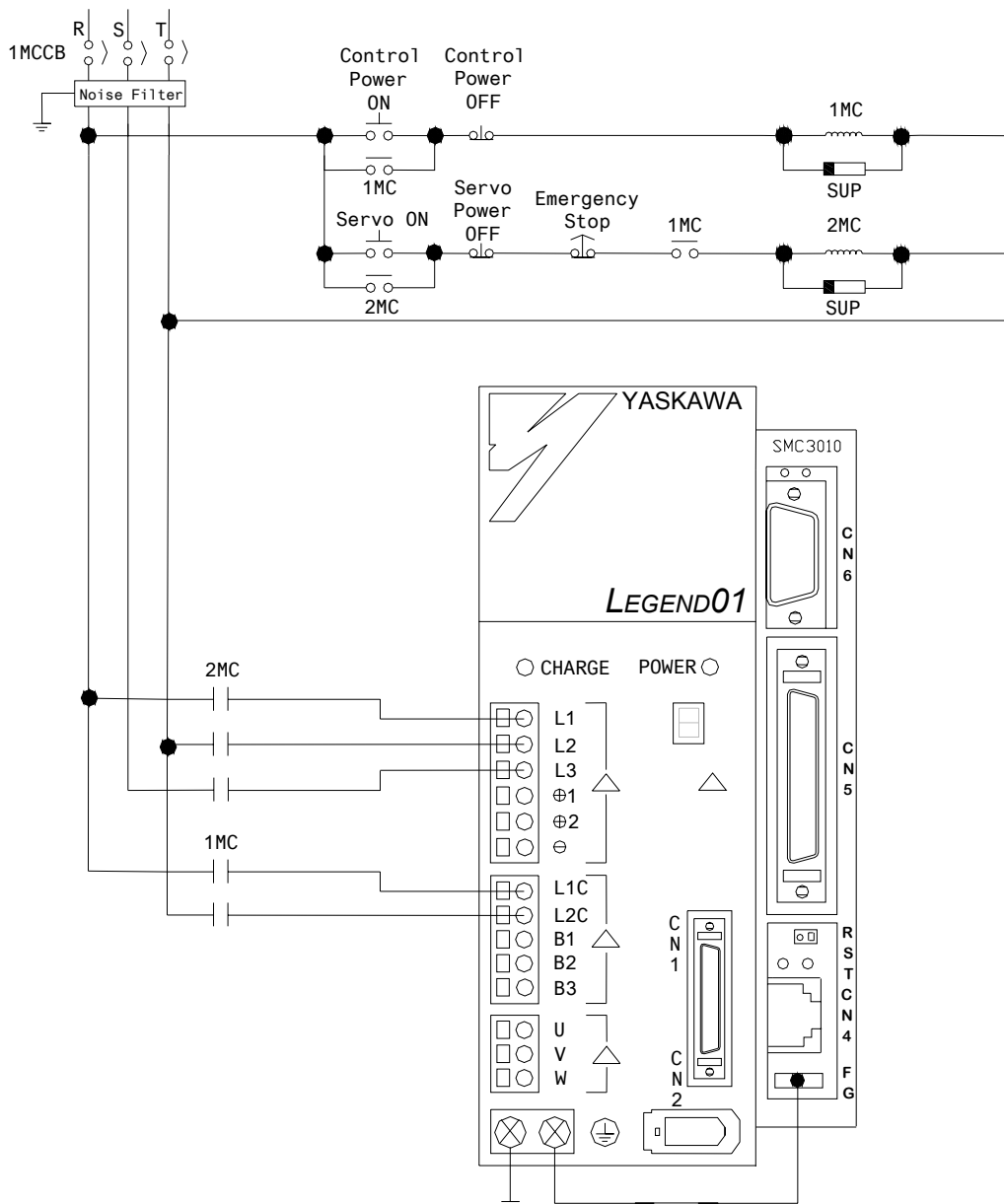
# Front Panel Description

No.	Name	Description
(1)	Power ON	A green LED that indicates +5 VDC power is applied properly from the LEGEND-MC amplifier to the controller.
(2)	Alarm/Error	A red LED that will flash on initially at power up and stay lit for approximately 1-8 seconds. After power up, the LED will illuminate for the following reasons: <ul style="list-style-type: none"> <li>•The axis has a position error greater than the error limit. The error limit is set by using the command ER.</li> <li>•The reset line on the controller is held low or is being affected by noise.</li> <li>•There is a failure in the controller and the processor is resetting itself.</li> <li>•There is a failure in the output IC which drives the error signal.</li> </ul>
(3)	CN6	9 pin male D-Sub serial port connector
(4)	CN5	3M 50 pin high density I/O connector
(5)	RST	Reset switch. Causes the controller to reboot, and load the application program and parameters from flash. If the program contains an #AUTO label, it will automatically execute.
(6)	Ethernet status	A green LED that is lit when there is an Ethernet connection to the controller. This LED tests only for the physical connection, not for an active or enabled link.
(7)	Ethernet status	The yellow LED indicates traffic across the Ethernet connection. This LED will show both transmit and receive activity across the connection. If there is no Ethernet connection or IP address assigned, the LED will flash at regular intervals to show that the BOOTP packets are being broadcast.
(8)	CN4	10 BaseT Ethernet RJ485 Connector
(9)	FG	Frame ground spade terminal. Connect to ground terminal on LEGEND Amplifier





# Power/Connections Wiring - Three Phase

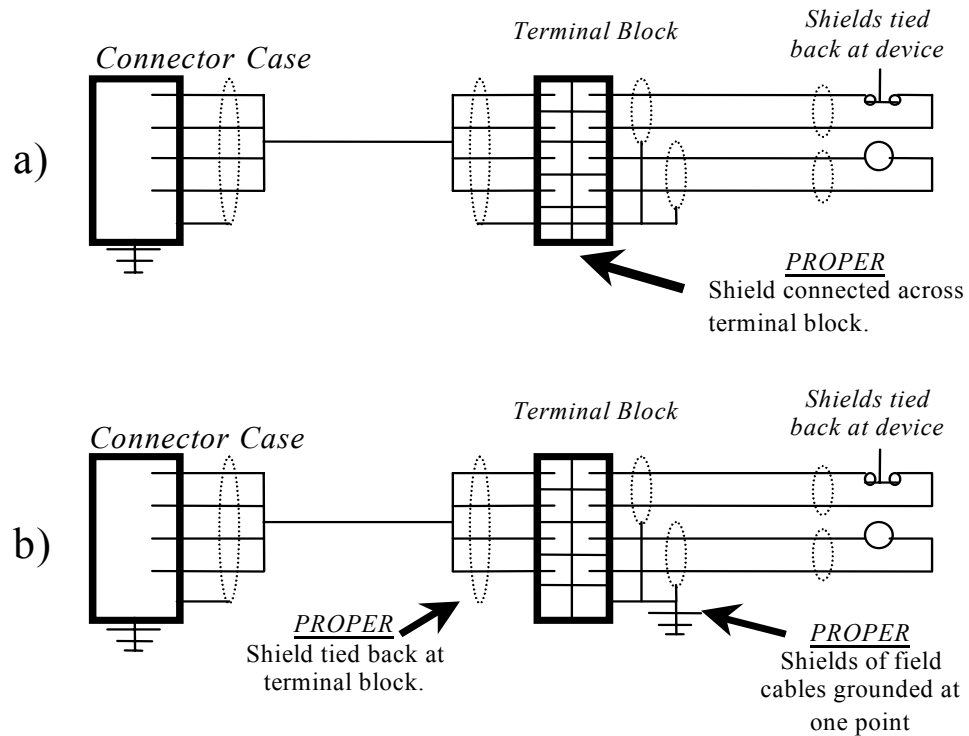


**NOTES:** The LEGEND-MC receives its power from the LEGEND amplifier through the side interface connector, however, the digital I/O receives its power from pins 46, 47, 48, and 49 on the I/O connector.

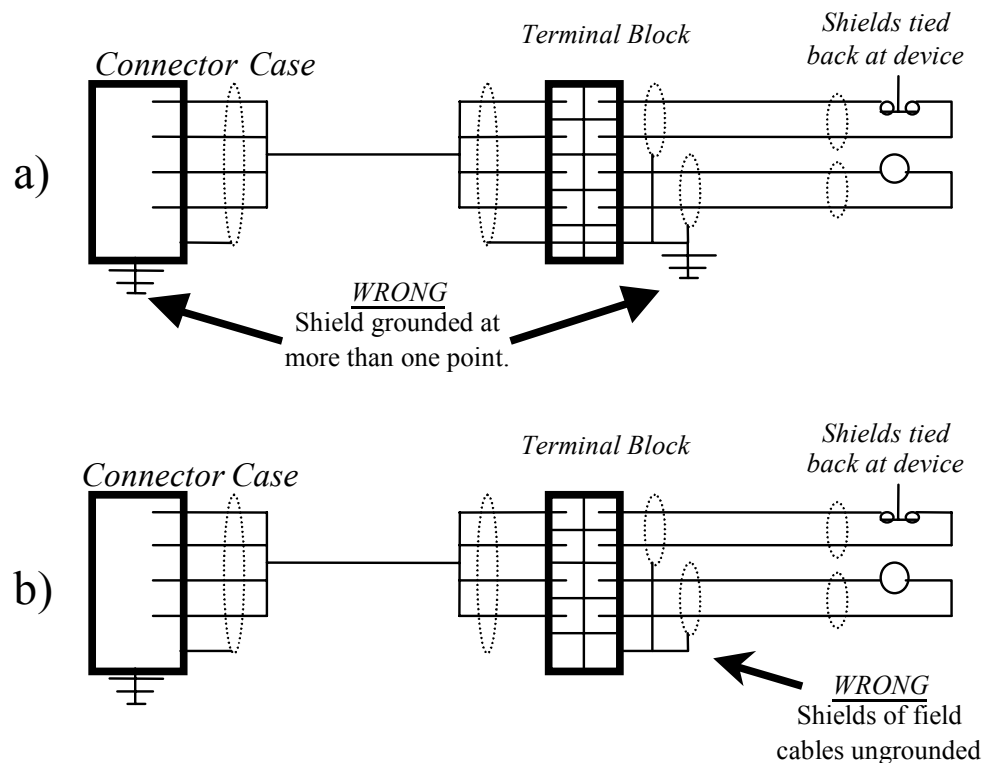
For maximum noise immunity, connect the FG to a ground terminal on the sub panel or to the ground terminal on the LEGEND.

# Cable Shielding, Segregation and Noise Immunity

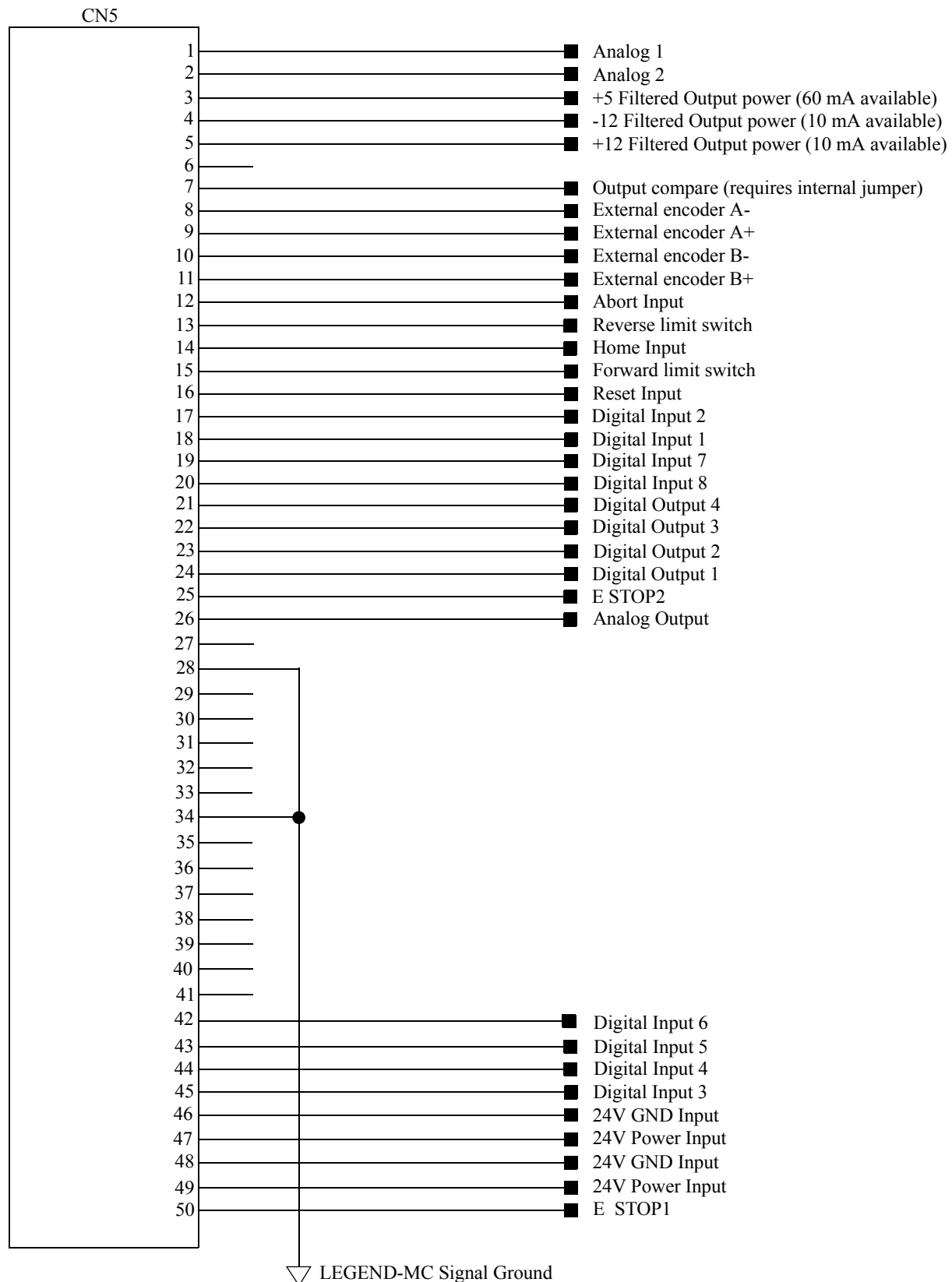
Proper



Wrong



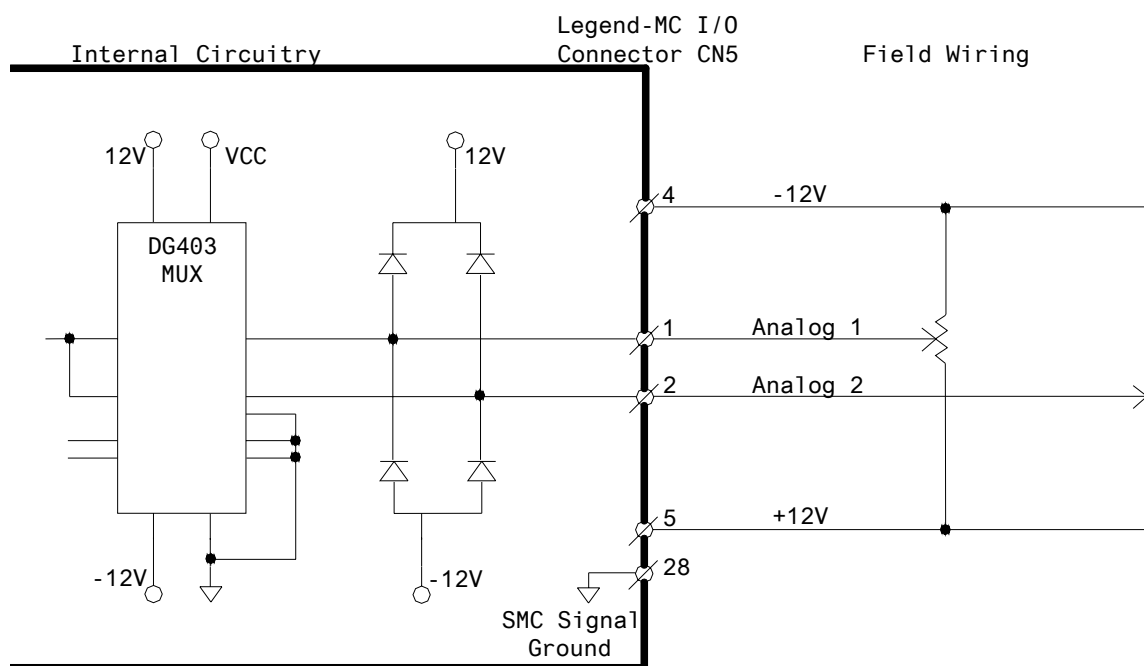
## I/O Connections (50-pin CN5)



# Analog I/O

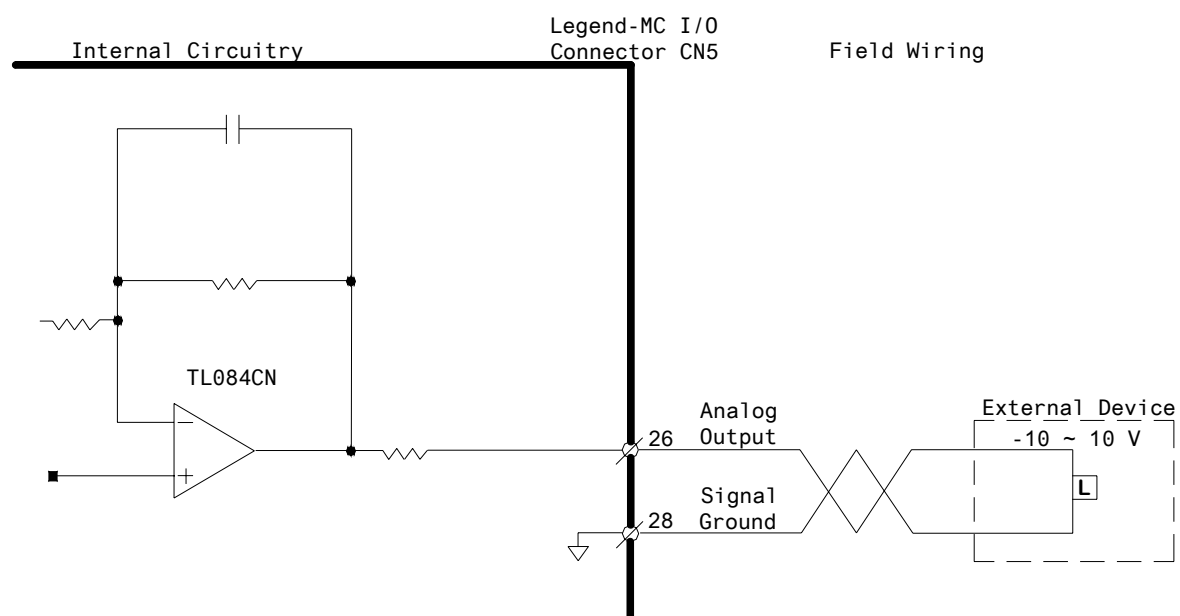
## Analog Input

Item	Specifications
Input Voltage	$\pm 10\text{ V}$
Input Impedance	Approximately $10\text{ k}\Omega$
Resolution	12 bits over a $\pm 10\text{ V}$ range or $4.88\text{ mV}$ per bit



## Analog Output

Item	Specifications
D/A Output Resolution	16 bit over a $\pm 10$ V range or 328 $\mu\text{V/bit}$
Output short circuit duration	Infinite
Maximum output current	60 mA

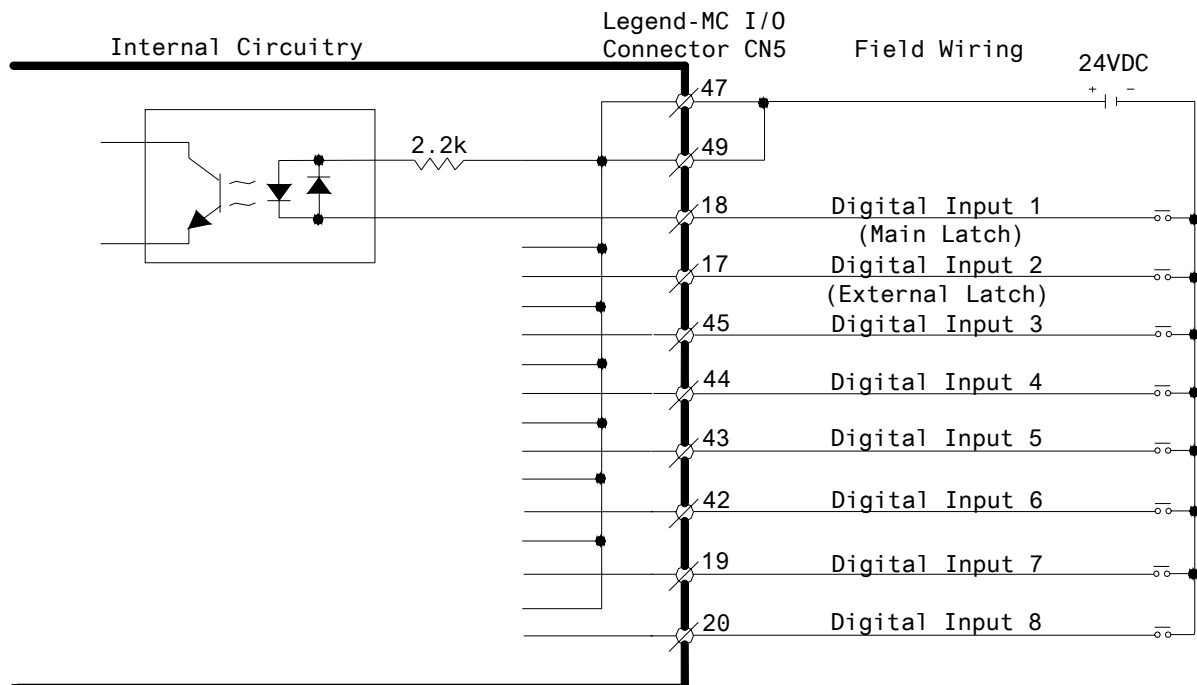


# Digital I/O

## Digital Input

Item	Specifications
Number of Input Points	8
Input Format	Sinking
Isolation	Optical
Voltage	24 VDC $\pm$ 20%
Current Rating (ON)	5.3 mA to activate
Input Impedance	2.2k $\Omega$
Operation Voltage	Logic 0 <5V Logic 1 >15V
OFF Current	0.9 mA or less
Response Time	OFF to ON: <0.5 ms ON to OFF: <1.5 ms
Latch response time	Less than 25 $\mu$ sec
Minimum latch width	9 $\mu$ sec

NOTE: Inputs float high unless the input is held low.

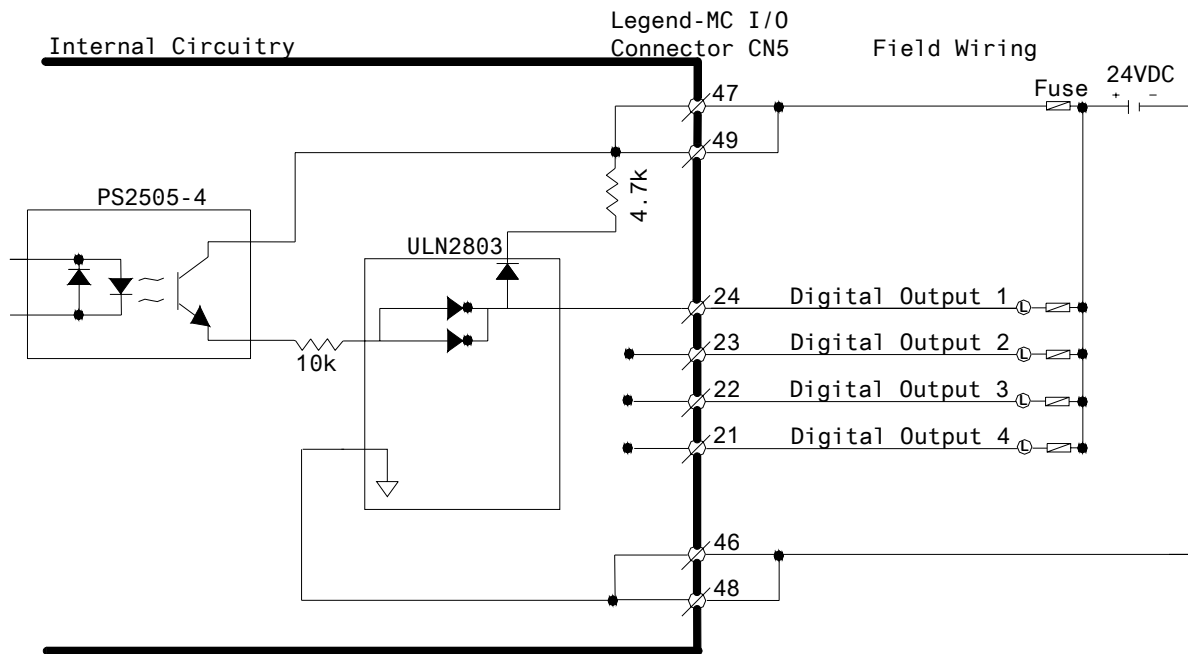




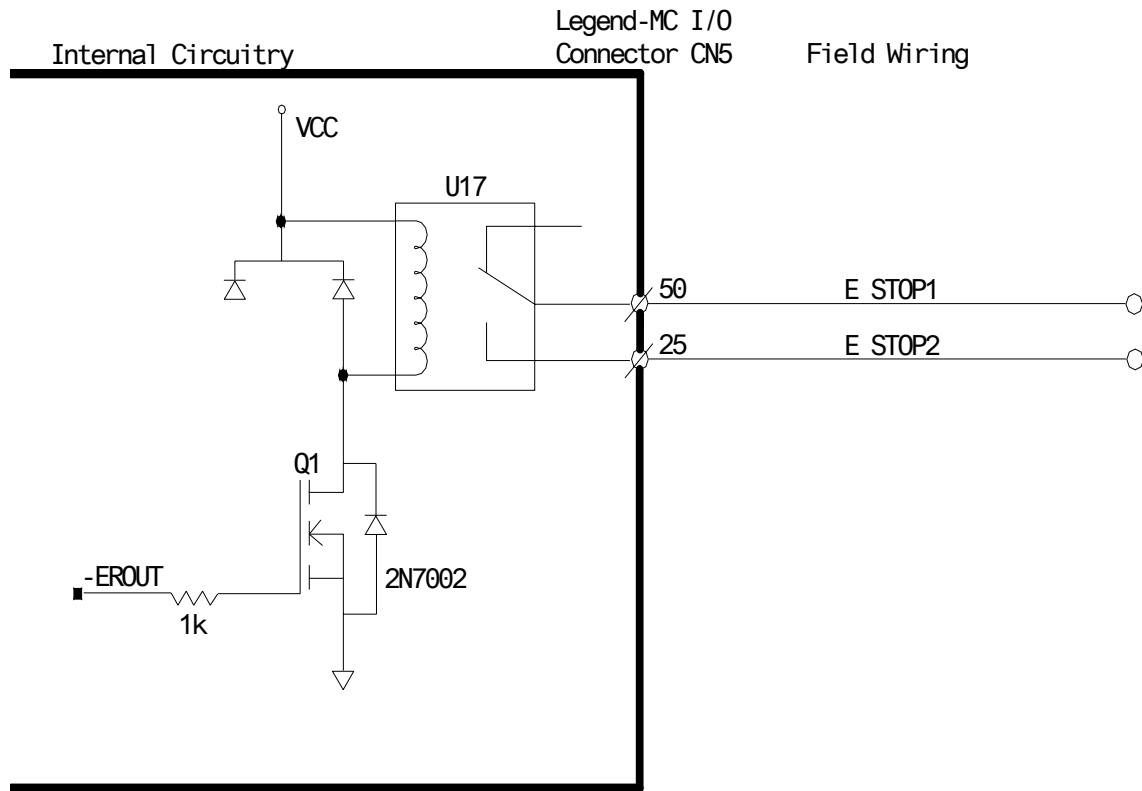
## Digital Output

Item	Specifications
Number of Output Points	4
Output Format	Sinking
Output Classification	Transistor Output
Isolation	Optical
Load Voltage	24 VDC $\pm$ 20%
Load Current	200 mA/Output (600 mA if activated individually)
Response Time	OFF to ON <0.25 ms ON to OFF <0.5 ms
External Common Power	24 VDC $\pm$ 20% 15 mA
Common User Fuse Rating	1A
Individual User Fuse Rating	200 mA recommended

**NOTE:** The ULN 2803 output chip is capable of 600 mA at a single output, or 800mA for the four outputs simultaneously.



## Emergency Stop Chain



The LEGEND-MC closes the relay contact under normal operating conditions.

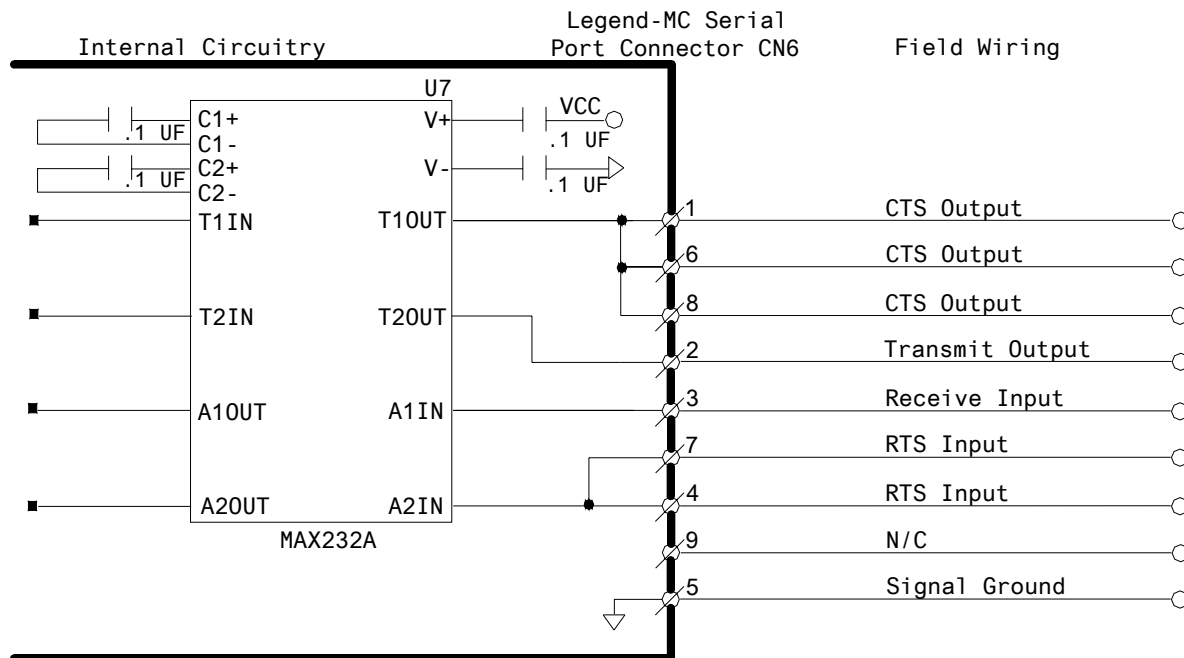
Ratings:

1.0A @ 24 VDC  
0.5A @ 125 VAC

Maximum switching power: 62.5VA, 30W

# Serial Communication

Item	Specifications
Baud Rate	9600 or 19200 settable by jumper JP1, default is 19200
Data Bits	8
Parity	None
Stop Bits	1

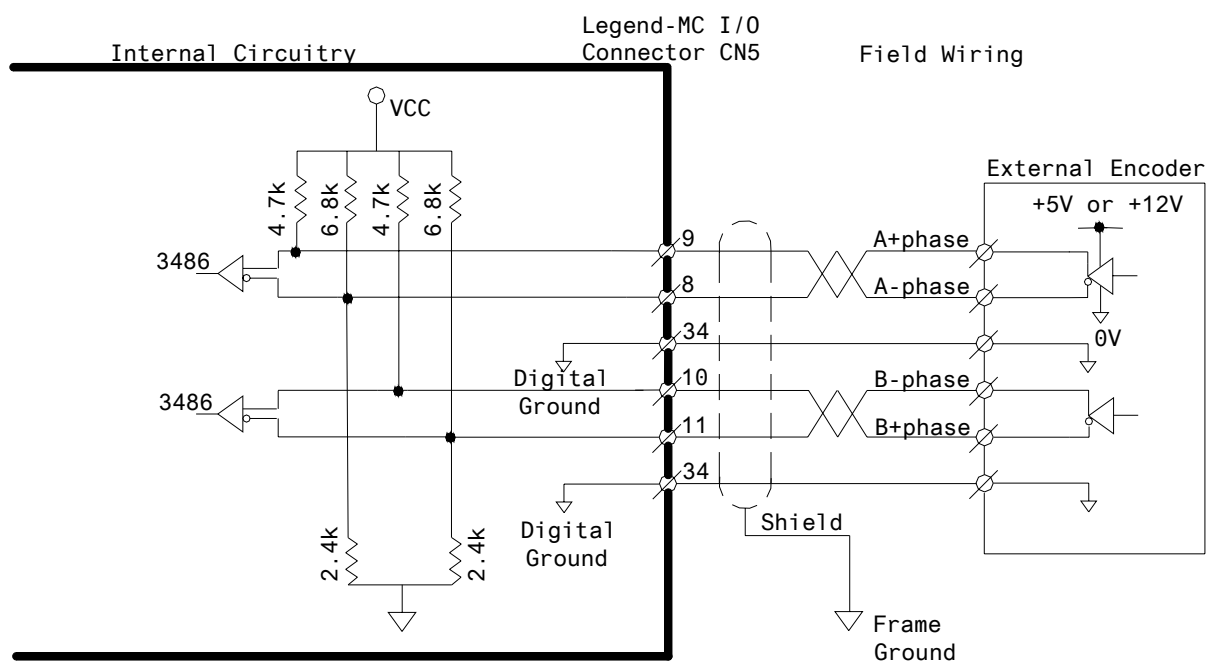


**NOTE:** Hardware handshaking must be used with the LEGEND-MC. If it is impossible to implement hardware handshaking, use a jumper between pins 1 and 4 in the connector.

**NOTE:** Do not connect pin 5 to a 24V ground.

## External Encoder Specifications

Item	Specifications
Input Format	Quadrature Pulse and Direction
Maximum Frequency	12 MHz
Current Draw	940 $\mu$ Amp



Standard voltage levels are TTL (0V to 5V), however, voltage levels up to 12V are acceptable. If using differential 12V signals, no modification is required. Single ended 12V signals require a bias voltage applied to the complementary input, i.e.; use two 10k resistors, one connected to +12V and the other connected to the LEGEND signal ground to hold the /A phase and /B phase at 6VDC. Do not use a 24VDC encoder.

## Dedicated Inputs

Item	Specifications
Number of Input Points	Forward limit, Reverse limit, Home, Abort, Reset
Input Format	Sinking
Isolation	Optical
Voltage	24 VDC $\pm$ 20%
Current Rating (ON)	5.3 mA to activate
Input Impedance	2.2k $\Omega$
Operation Voltage	Logic 0 <5V Logic 1 >15V
OFF Current	0.9 mA or less
Limit Switch Response Time	OFF to ON: <0.5 ms ON to OFF: <1.5 ms

