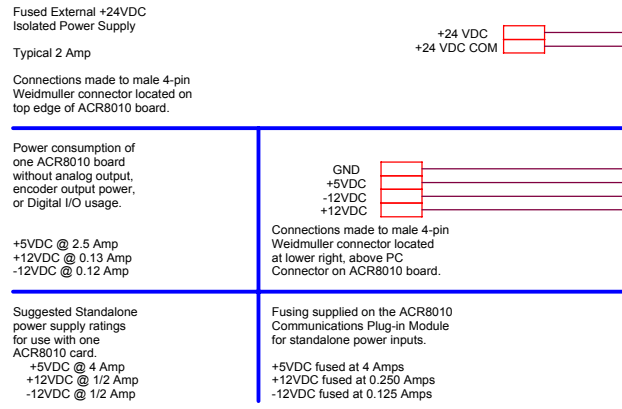
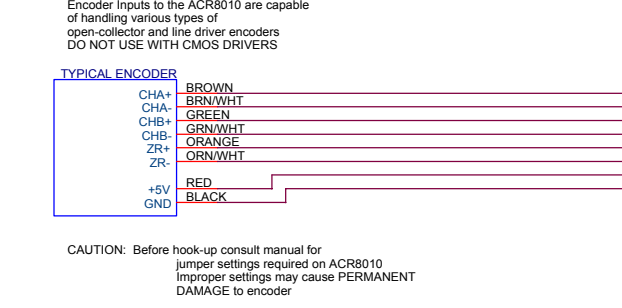


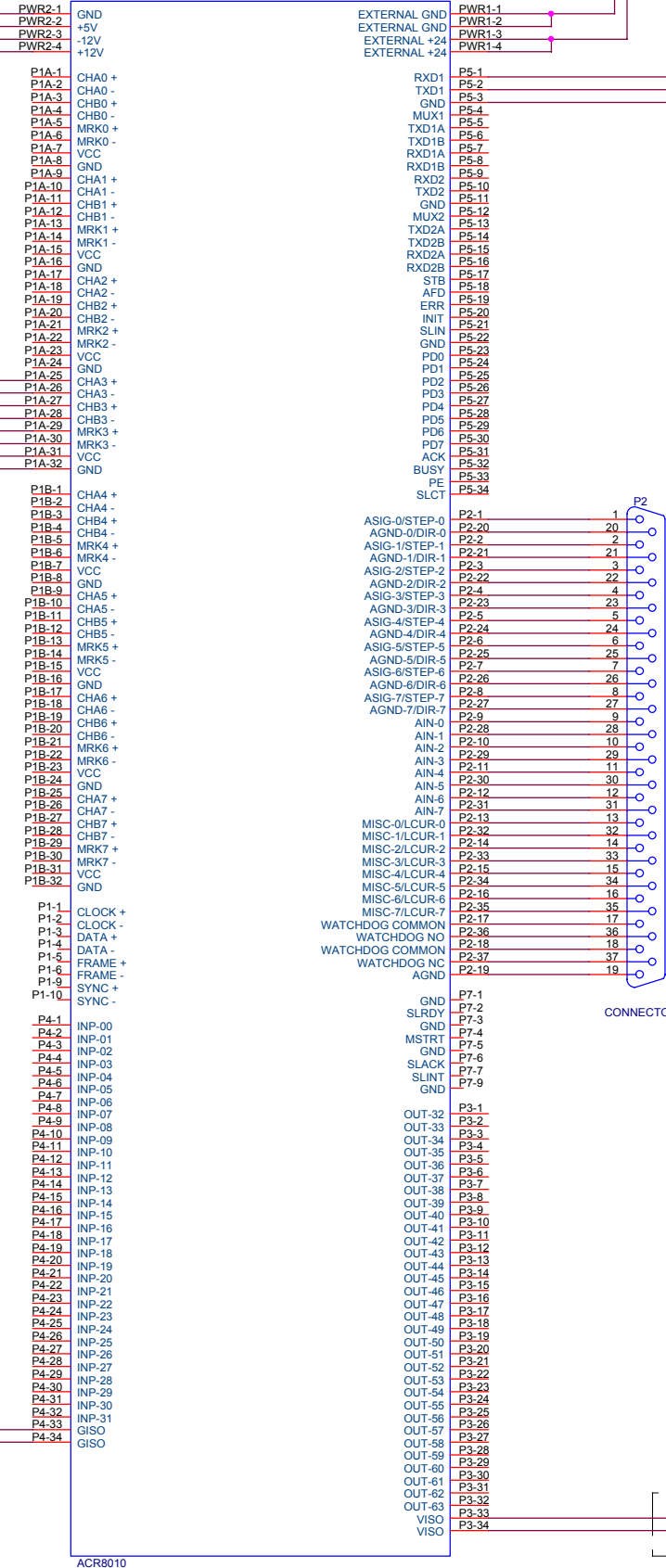
### Supplied by Customer



### ENCODER INPUT



NOTE: PWR2 Pin2 is used to supply the +5VDC voltage for STEPPER output pull-ups. See sheet 4 for STEPPER wiring examples.



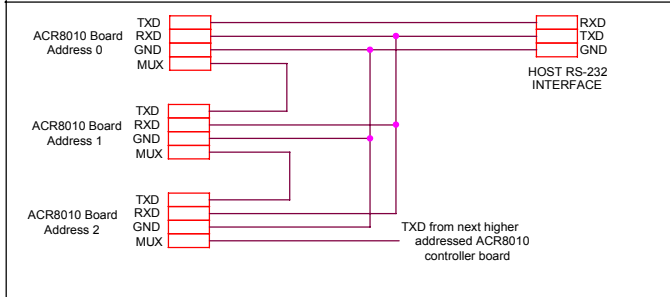
### SERIAL COMMUNICATION

RS-232 Serial Connection for COM1 and COM2

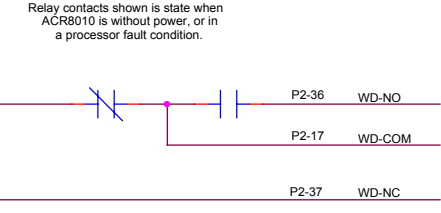
Autobaud detects the following formats

Parity	Data	Stop Bit
Even	8	1
Odd	7	1
No	8	1

Baud Rates from 300 to 38400  
XON/XOFF Control must be used



### WATCHDOG CIRCUIT



See sheet 2 for analog/stepper interface information.

See sheet 4 and 5 for P2 Analog Input connector wiring examples.

See sheet 3 for P2 DAC/Stepper connector wiring examples.

P4-33,34 for test purpose only. Not for customer use.

P3-33,34 for test purpose only. Not for customer use.

ACROLOOP MOTION CONTROL SYSTEMS, INC.  
3650 Chestnut Street, North  
Chaska, MN  
USA 55318

Title: ACR8010 WIRING EXAMPLE

Size: C Document Number: ACR81KID1.SCH Rev: A

Date: Saturday, December 08, 2001 Sheet: 1 of 6

# Digital I/O Wiring

**WARNING:**

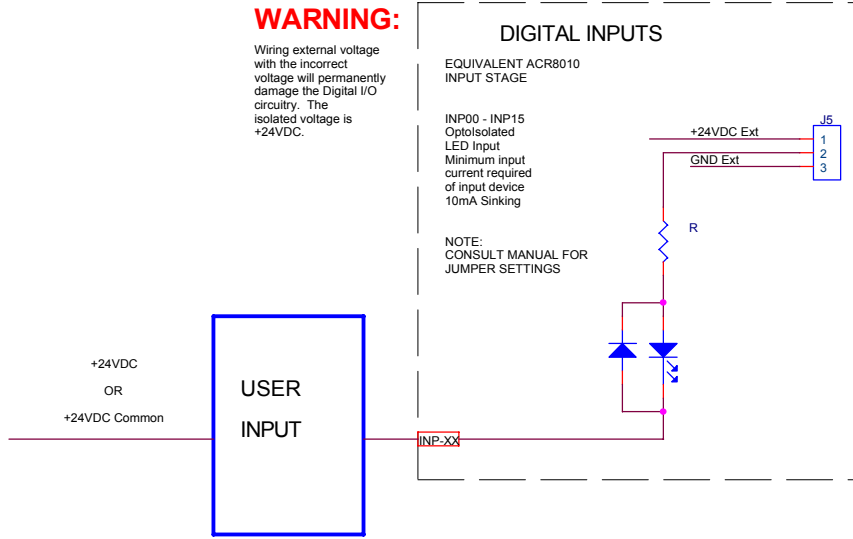
Wiring external voltage with the incorrect voltage will permanently damage the Digital I/O circuitry. The isolated voltage is +24VDC.

## DIGITAL INPUTS

EQUIVALENT ACR8010 INPUT STAGE

INP00 - INP15  
Optoisolated LED Input  
Minimum input current required of input device  
10mA Sinking

NOTE:  
CONSULT MANUAL FOR JUMPER SETTINGS



## DIGITAL OUTPUTS

EQUIVALENT ACR8010 SINKING OUTPUT STAGE  
(Part No. ULN2803)

NOTE:  
CONSULT MANUAL FOR JUMPER SETTINGS

Ext. Gnd

OUT32 - OUT47  
Optoisolated Open Collector

Maximum current 125mA per output if total number of outputs used does not exceed 7.

Maximum current 50mA per output if all outputs are used.

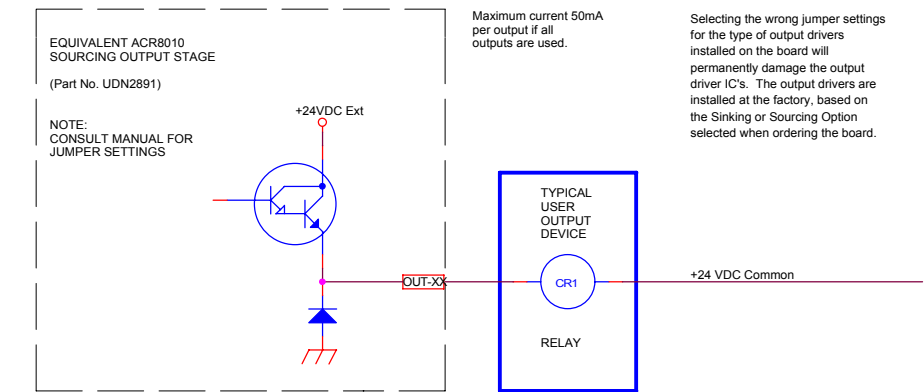
**WARNING:**

Wiring VEXT with the incorrect voltage will permanently damage the Digital I/O circuitry. The isolated voltage (VEXT) is +24VDC.

Selecting the wrong jumper settings for the type of output drivers installed on the board will permanently damage the output driver IC's. The output drivers are installed at the factory, based on the Sinking or Sourcing Option selected when ordering the board.

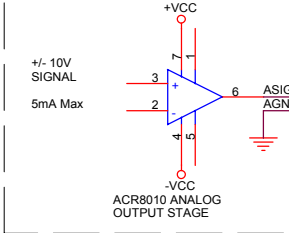
EQUIVALENT ACR8010 SOURCING OUTPUT STAGE  
(Part No. UDN2891)

NOTE:  
CONSULT MANUAL FOR JUMPER SETTINGS

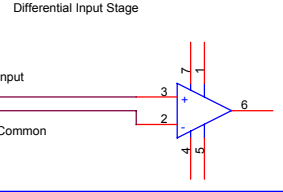


# Analog/Stepper Wiring

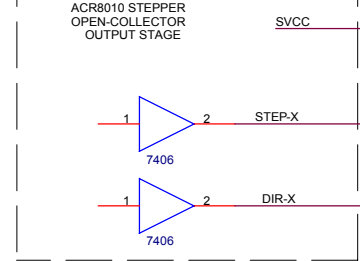
## ANALOG OUTPUTS



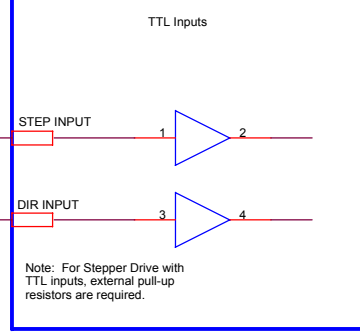
## SERVO AMPLIFIER



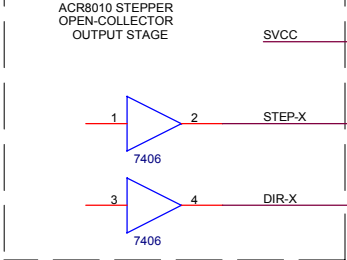
## STEPPER OUTPUTS



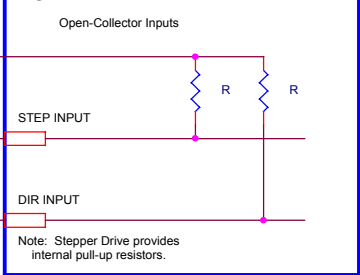
## STEPPER DRIVE



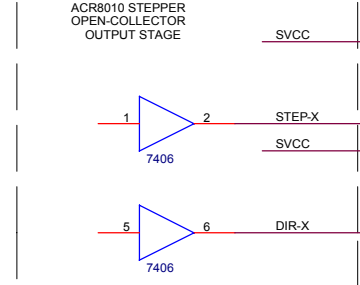
## STEPPER OUTPUTS



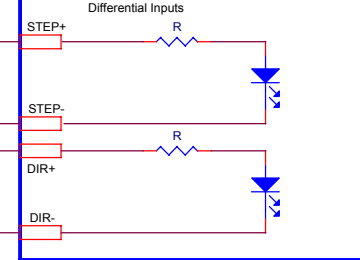
## STEPPER DRIVE



## STEPPER OUTPUTS

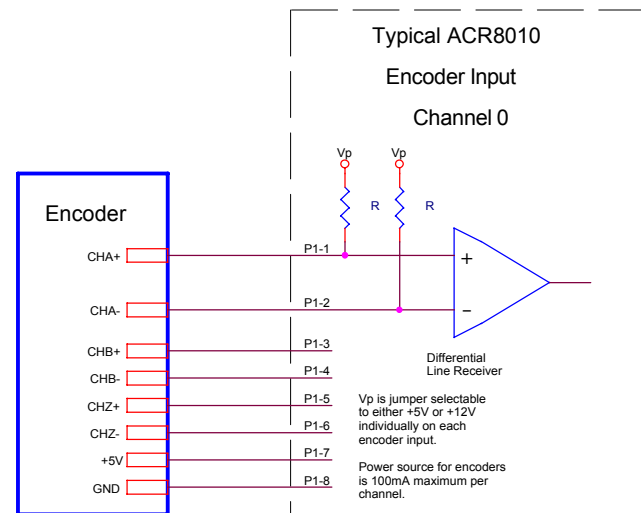


## STEPPER DRIVE

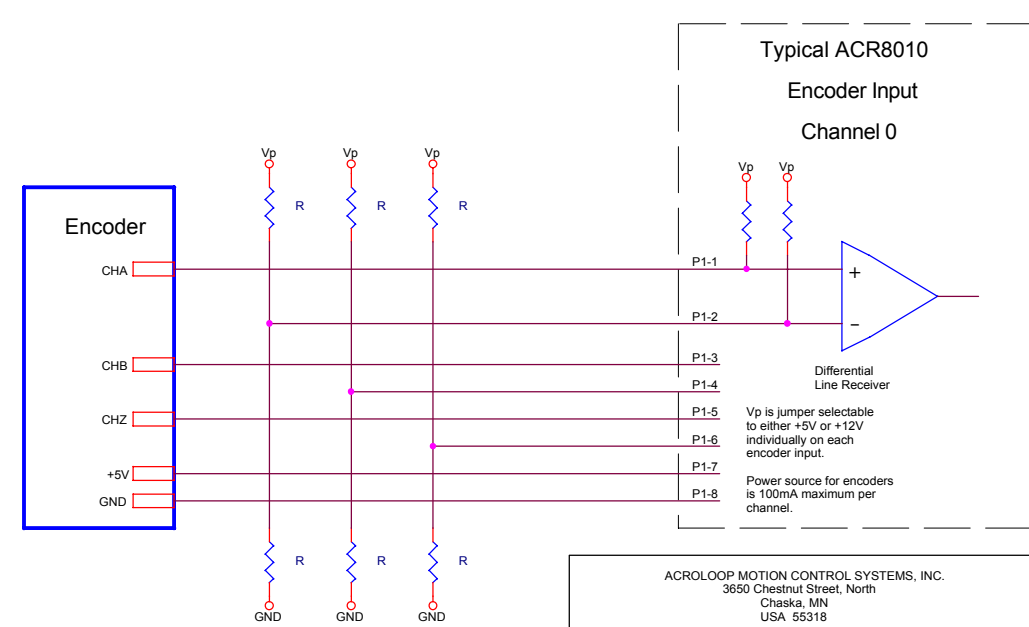


# Encoder Wiring

## Differential Input



## Single-Ended Input

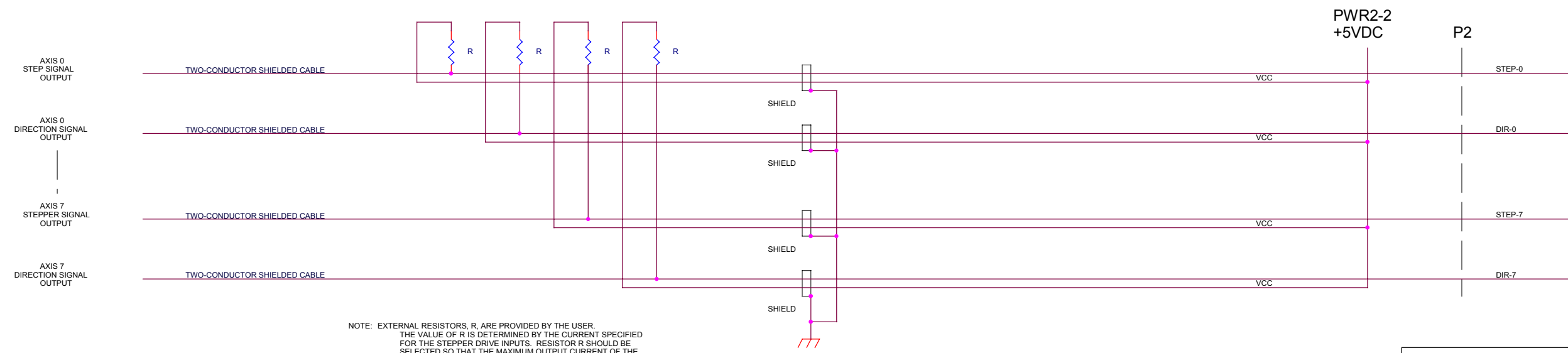


NOTE: External resistor (R) value is:  
Vp @ 5V, R = 1K ohm  
Vp @ 12V, R = 2K ohm

STEPPER P2 CONNECTOR DIFFERENTIAL OUTPUT WIRING EXAMPLE (OPEN-COLLECTOR OUTPUTS PULLED-UP THRU STEPPER DRIVE INPUTS)



STEPPER P2 CONNECTOR SINGLE-ENDED OUTPUT WIRING EXAMPLE (OPEN-COLLECTOR OUTPUTS PULLED-UP TO +5V THRU EXTERNAL RESISTORS)



NOTE: EXTERNAL RESISTORS, R, ARE PROVIDED BY THE USER.  
 THE VALUE OF R IS DETERMINED BY THE CURRENT SPECIFIED  
 FOR THE STEPPER DRIVE INPUTS. RESISTOR R SHOULD BE  
 SELECTED SO THAT THE MAXIMUM OUTPUT CURRENT OF THE  
 STEPPER BOARD DOES NOT EXCEED 30mA PER OUTPUT.

ACROLOOP MOTION CONTROL SYSTEMS INC. 3650 Chestnut Street, North Chaska, MN USA 55318		
Title ACR8010 STEPPER WIRING EXAMPLE		
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Date: Saturday, December 08, 2001	Sheet 4	of 6

ANALOG P2 CONNECTOR OUTPUT WIRING EXAMPLE



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Title ACR8010 ANALOG OUTPUT WIRING EXAMPLE			
Size C	Document Number ACR81KID3.SCH	Rev A	
Date: Sunday, July 11, 1999	Sheet 3	of 6	

ANALOG P2 CONNECTOR INPUT WIRING

DIFFERENTIAL WIRING EXAMPLE

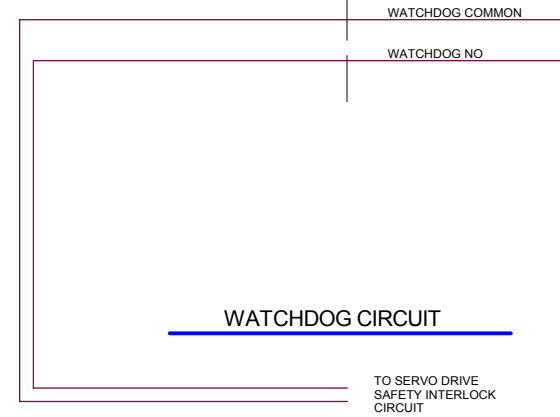
ANALOG TO DIGITAL INPUTS (ADC)

ANALOG TO DIGITAL INPUTS (AIN0 - AIN7) CAN BE USED AS DIFFERENTIAL OR SINGLE-ENDED INPUTS. ANY COMBINATION MAY BE USED.

IF USED AS DIFFERENTIAL INPUTS, TWO INPUTS ARE USED AS SHOWN USING AIN0-AIN1 & AIN2-AIN3. FOUR DIFFERENTIAL INPUT SIGNALS MAY BE USED WITH AN ACR8010.

IF USED AS SINGLE-ENDED INPUTS, ONE INPUT IS USED IN CONJUNCTION WITH AIN-COM. EIGHT SINGLE-ENDED INPUT SIGNALS MAY BE USED WITH AN ACR8010. SEE SHEET 4 FOR SINGLE ENDED WIRING EXAMPLE.

DIFFERENTIAL INPUT PAIRS	+	-
	AIN0	- AIN1
	AIN2	- AIN3
	AIN4	- AIN5
	AIN6	- AIN7

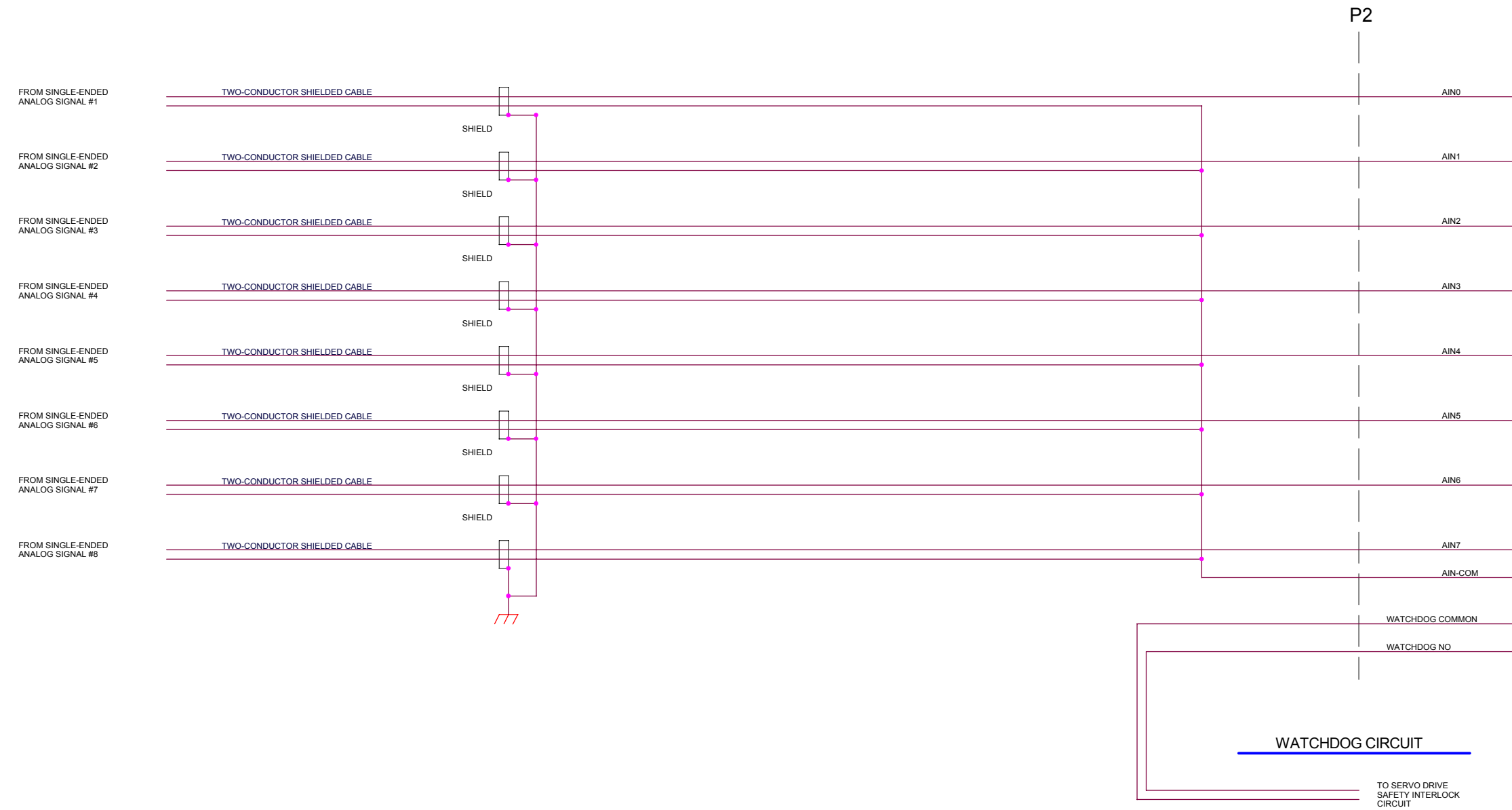


WATCHDOG CONTACTS USED TO DISABLE SERVO DRIVE UNTIL ACR8010 CONTROLLER HAS FULL CONTROL OF ALL DIGITAL AND ANALOG SIGNALS TO PREVENT POSSIBLE MOTOR SURGE ON INITIAL START-UP

ACROLOOP MOTION CONTROL SYSTEMS INC. 3650 Chestnut Street, North Chaska, MN USA 55318			
Title ACR8010 WIRING EXAMPLE			
Size C	Document Number ACR81KID5.SCH	Rev A	
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# ANALOG P2 CONNECTOR INPUT WIRING

## SINGLE-ENDED WIRING EXAMPLE



WATCHDOG CONTACTS USED TO DISABLE SERVO DRIVE UNTIL ACR8010 CONTROLLER HAS FULL CONTROL OF ALL DIGITAL AND ANALOG SIGNALS TO PREVENT POSSIBLE MOTOR SURGE ON INITIAL START-UP

ACROLOOP MOTION CONTROL SYSTEMS INC. 3650 Chestnut Street, North Chaska, MN USA 55318		
Title ACR8010 WIRING EXAMPLE		
Size C	Document Number ACR81KID6.SCH	Rev A
Date: Sunday, July 11, 1999	Sheet 6	of 6