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Find the *Parker / Compumotor ACR8020* at our website: ***Click HERE***

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Supplied by Customer

Fused External +24VDC
Isolated Power Supply

Typical 2 Amp

Connections made to male 4-pin
Weidmuller connector located on
top edge of ACR8020 board.

Power consumption of
one ACR8020 board
without analog output,
encoder output power,
or Digital I/O usage.

+3.3VDC @ 2 Amp
+5VDC @ 2 Amp
+12VDC @ 0.13 Amp
-12VDC @ 0.12 Amp

THE ACR8020 BOARD REQUIRES THAT THE PC HAS BOTH 3.3VDC AND 5VDC AVAILABLE ON THE BACKPLANE. ATX STYLE POWER SUPPLIES AND BACKPLANES ARE RECOMMENDED FOR USE. POWERING UP WITHOUT BOTH 3.3VDC AND 5VDC AVAILABLE ON THE BACKPLANE WILL PERMANENTLY DAMAGE THE ACR8020 BOARD.

+24 VDC
+24 VDC COM

ENCODER INPUT

Encoder Inputs to the ACR8020 are capable
of handling various types of
open-collector and line driver encoders
DO NOT USE WITH CMOS DRIVERS

TYPICAL ENCODER

CHA+	BROWN
CHA-	BRN/WHT
CHB+	GREEN
CHB-	GRN/WHT
ZR+	ORANGE
ZR-	ORN/WHT
+5V	RED
GND	BLACK

CAUTION: Before hook-up consult manual for
jumper settings required on ACR8020
Improper settings may cause PERMANENT
DAMAGE to encoder

See sheet 2 for Digital I/O
wiring examples

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

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

TXD
RXD
GND

ACR8020 Board Address 0: TXD, RXD, GND, MUX
ACR8020 Board Address 1: TXD, RXD, GND, MUX
ACR8020 Board Address 2: TXD, RXD, GND, MUX

HOST RS-232 INTERFACE

TXD from next higher addressed ACR8020 controller board

Multiple Board RS-232 Wiring Example

WATCHDOG CIRCUIT

Relay contacts shown is state when
ACR8020 is without power, or in
a processor fault condition.

P2-36 WD-NO
P2-17 WD-COM
P2-37 WD-NC

Watchdog Relay contact rating

1.0 Amp @ 30 VDC

ACR8020 connector pins:
CHA0 +, CHA0 -, CHB0 +, CHB0 -, MRK0 +, MRK0 -, VCC, GND, CHA1 +, CHA1 -, CHB1 +, CHB1 -, MRK1 +, MRK1 -, VCC, GND, CHA2 +, CHA2 -, CHB2 +, CHB2 -, MRK2 +, MRK2 -, VCC, GND, CHA3 +, CHA3 -, CHB3 +, CHB3 -, MRK3 +, MRK3 -, VCC, GND, CHA4 +, CHA4 -, CHB4 +, CHB4 -, MRK4 +, MRK4 -, VCC, GND, CHA5 +, CHA5 -, CHB5 +, CHB5 -, MRK5 +, MRK5 -, VCC, GND, CHA6 +, CHA6 -, CHB6 +, CHB6 -, MRK6 +, MRK6 -, VCC, GND, CHA7 +, CHA7 -, CHB7 +, CHB7 -, MRK7 +, MRK7 -, VCC, GND

CLOCK +, CLOCK -, DATA +, DATA -, FRAME +, FRAME -, SYNC +, SYNC -

INP-00 … INP-31

GISO, GISO

EXTERNAL GND, EXTERNAL GND, EXTERNAL +24, EXTERNAL +24

RXD1, TXD1, GND, MUX1, TXD1A, TXD1B, RXD1A, RXD1B, RXD2, TXD2, GND, MUX2, TXD2A, TXD2B, RXD2A, RXD2B, STB, AFD, ERR, INIT, SLIN, GND, PD0, PD1, PD2, PD3, PD4, PD5, PD6, PD7, ACK, BUSY, PE, SLCT

P2

ASIG-0/STEP-0	1	20	AGND-0/DIR-0
ASIG-1/STEP-1	2	21	AGND-1/DIR-1
ASIG-2/STEP-2	3	22	AGND-2/DIR-2
ASIG-3/STEP-3	4	23	AGND-3/DIR-3
ASIG-4/STEP-4	5	24	AGND-4/DIR-4
ASIG-5/STEP-5	6	25	AGND-5/DIR-5
ASIG-6/STEP-6	7	26	AGND-6/DIR-6
ASIG-7/STEP-7	8	27	AGND-7/DIR-7
AIN-0	9	28	AIN-1
AIN-2	10	29	AIN-3
AIN-4	11	30	AIN-5
AIN-6	12	31	AIN-7
MISC-0/LCUR-0	13	32	MISC-1/LCUR-1
MISC-2/LCUR-2	14	33	MISC-3/LCUR-3
MISC-4/LCUR-4	15	34	MISC-5/LCUR-5
MISC-6/LCUR-6	16	35	MISC-7/LCUR-7
WATCHDOG COMMON	17	36	WATCHDOG NO
WATCHDOG COMMON	18	37	WATCHDOG NC
AGND	19		

CONNECTOR DB37

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.

GND, SLRDY, GND, MSTRT, GND, SLACK, SLINT, GND

OUT-32 … OUT-63

VISO, VISO

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

ACR8020

ACROLOOP MOTION CONTROL SYSTEMS, INC.
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Chaska, MN
USA 55318

Title: ACR8020 WIRING EXAMPLE

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

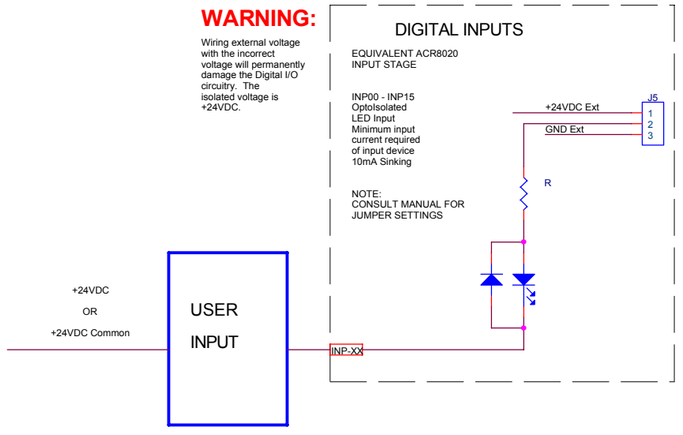
Date: Saturday, December 08, 2001 | Sheet 1 of 6

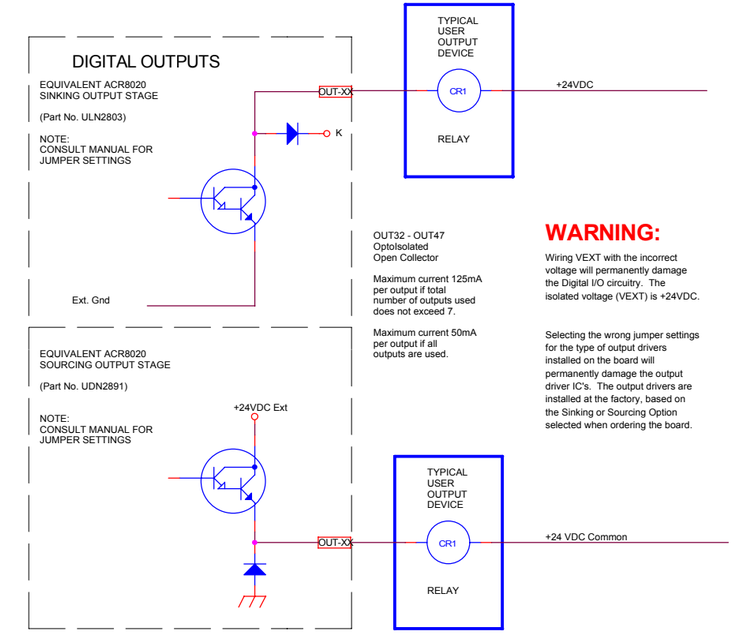
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Digital I/O Wiring

WARNING:

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



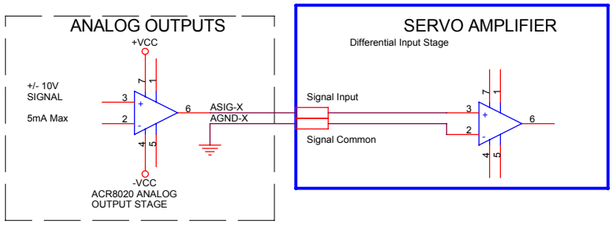


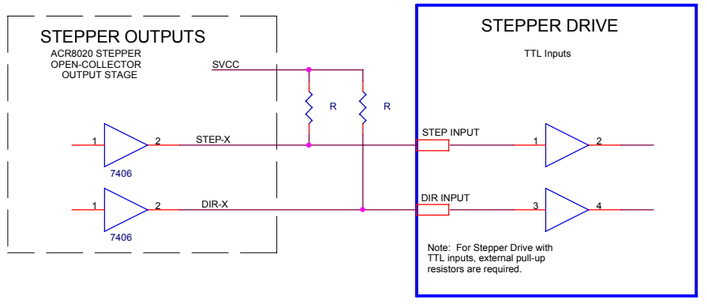
WARNING:

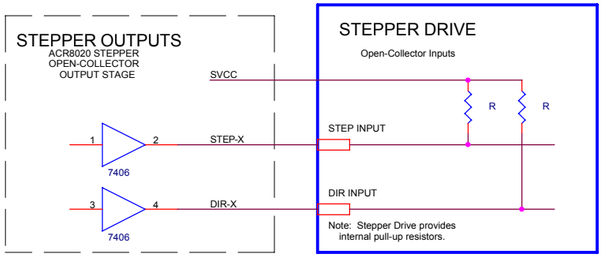
Wiring VEXT with the incorrect voltage will permanently damage the Digital I/O circuitry. The isolated voltage (VEXT) is +24VDC.

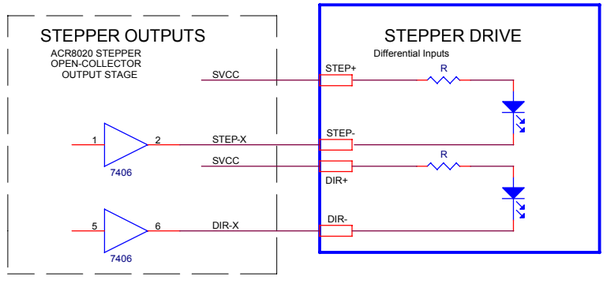
Selecting the wrong jumper settings for the type of output drivers installed on the board will permanently damage the output driver IC's. The output drivers are installed at the factory, based on the Sinking or Sourcing Option selected when ordering the board.

Analog/Stepper Wiring



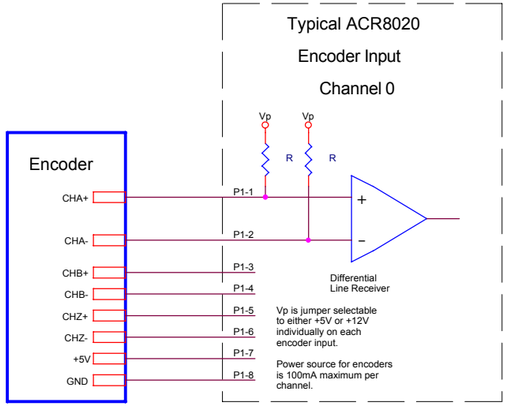




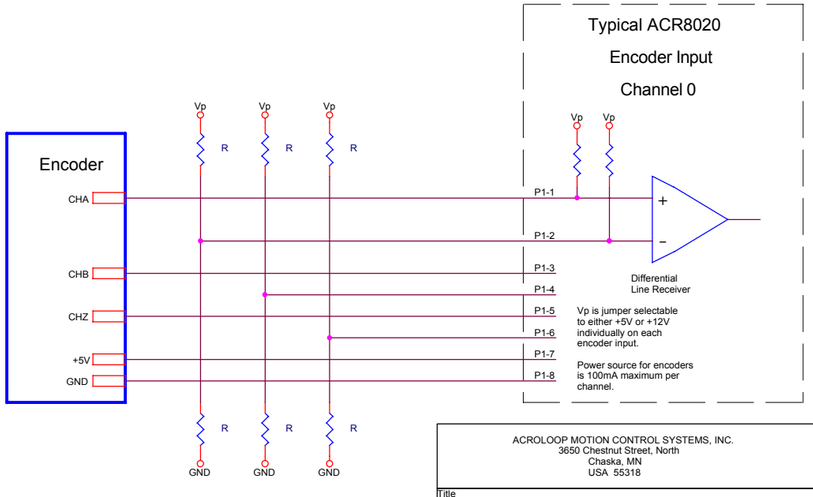


Encoder Wiring

Differential Input



Single-Ended Input



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

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ANALOG P2 CONNECTOR OUTPUT WIRING EXAMPLE



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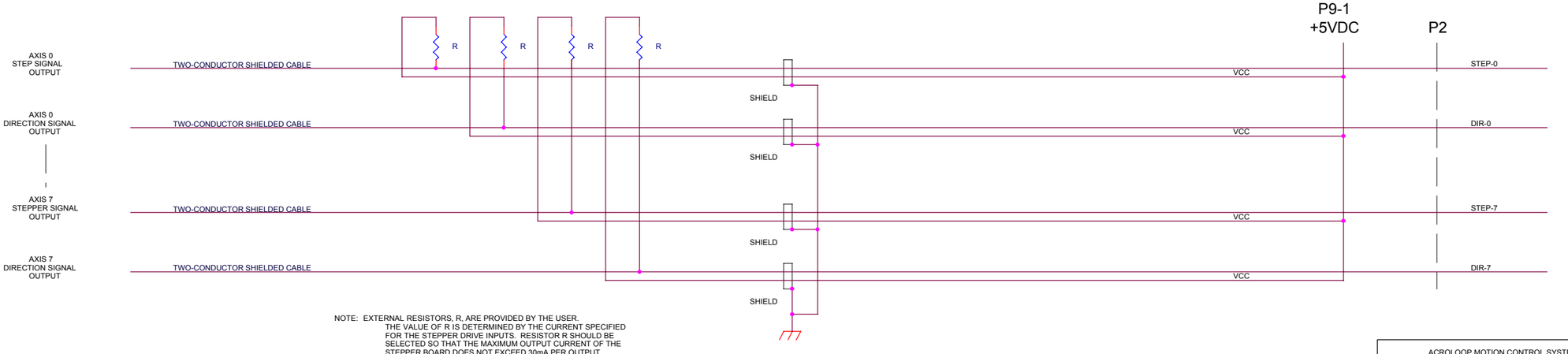
Title	ACR8020 ANALOG OUTPUT WIRING EXAMPLE	
Size C	Document Number ACR81KID3.SCH	Rev A
Date: Saturday, December 08, 2001	Sheet 3 of 6	

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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.

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Title: ACR8020 STEPPER WIRING EXAMPLE

Size	Document Number	Rev
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ANALOG P2 CONNECTOR INPUT WIRING

DIFFERENTIAL WIRING EXAMPLE

ANALOG TO DIGITAL INPUTS (ADC)

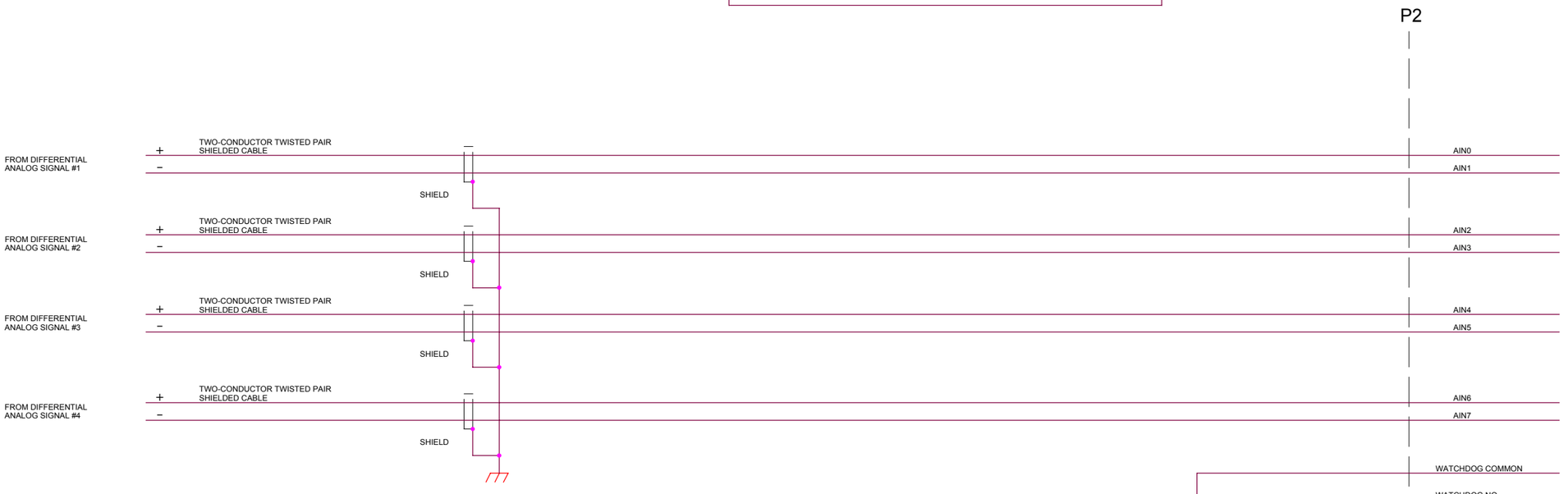
ANALOG TO DIGITAL INPUTS (AIN0 - AIN7) CAN BE USED AS DIFFERENTIAL OR SINGLE-ENDED INPUTS. ANY COMBINATION MAY BE USED.

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 ACR8020.

IF USED AS SINGLE-ENDED INPUTS, ONE INPUT IS USED IN CONJUCTION WITH AIN-COM. EIGHT SINGLE-ENDED INPUT SIGNALS MAY BE USED WITH AN ACR8020.
SEE SHEET 4 FOR SINGLE ENDED WIRING EXAMPLE.

DIFFERENTIAL INPUT PAIRS

+	-
AIN0	AIN1
AIN2	AIN3
AIN4	AIN5
AIN6	AIN7



WATCHDOG CIRCUIT

TO SERVO DRIVE SAFETY INTERLOCK CIRCUIT

WATCHDOG CONTACTS USED TO DISABLE SERVO DRIVE UNTIL ACR8020 CONTROLLER HAS FULL CONTROL OF ALL DIGITAL AND ANALOG SIGNALS TO PREVENT POSSIBLE MOTOR SURGE ON INITIAL START-UP

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Title: ACR8020 WIRING EXAMPLE

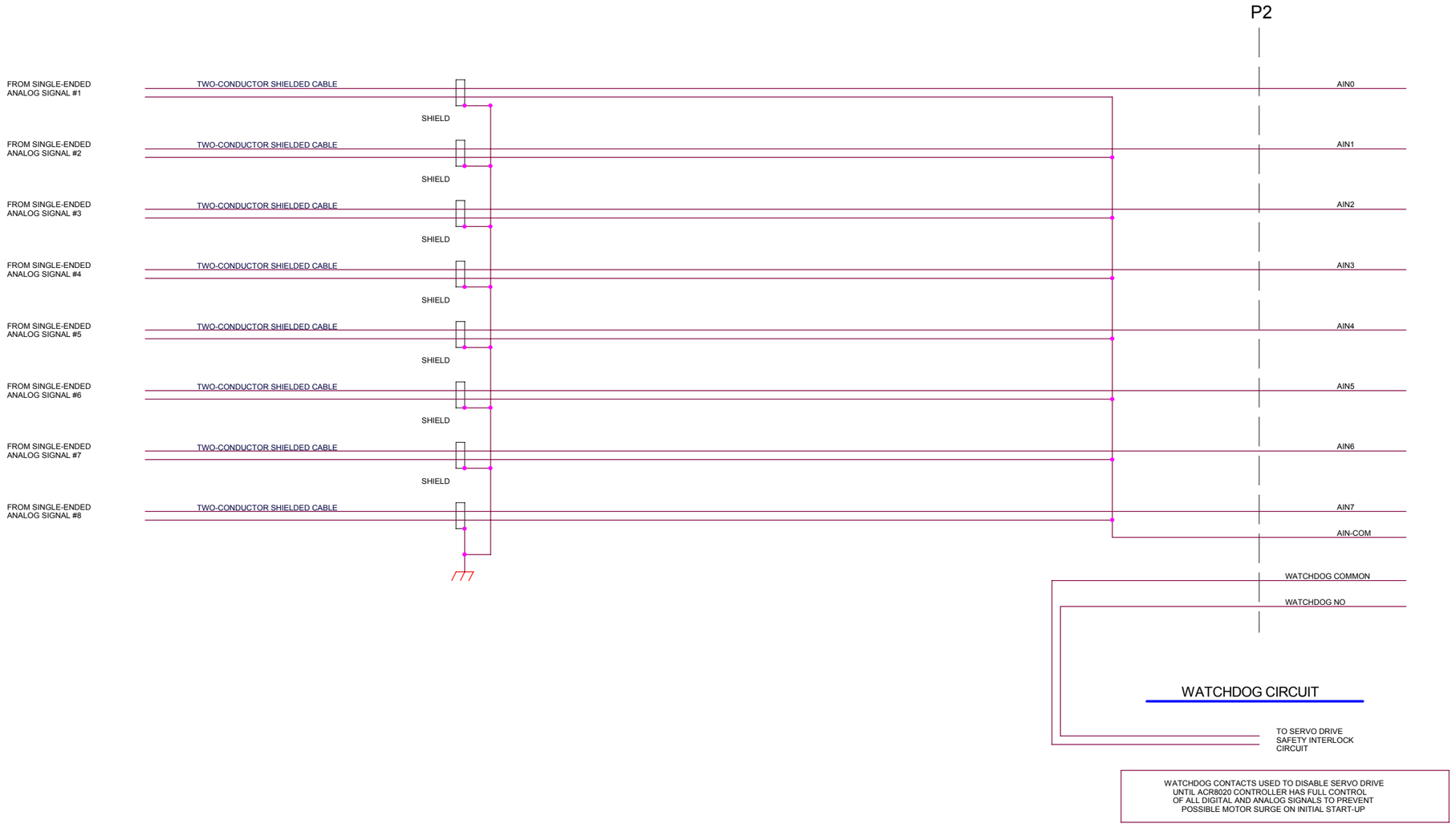
Size	Document Number	Rev
C	ACR81KID5.SCH	A

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ANALOG P2 CONNECTOR INPUT WIRING

SINGLE-ENDED WIRING EXAMPLE



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Title: ACR8020 WIRING EXAMPLE		
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