Supplied by Customer

Fused External +24VDC
Isolated Power Supply
Typical 2 Amp

+24 VDC
+24 VDC COM

Connections made to male 4-pin
Weidmuller connector located on
top edge of ACR2000 board.

Power consumption of
one ACR2000 board
without analog output,
encoder output power,
or Digital I/O usage.

+5VDC @ 1.5 Amp
+12VDC @ 0.15 Amp
-12VDC @ 0.15 Amp

Suggested Standalone
power supply ratings
for use with one
ACR2000 card.
+5VDC @ 4 Amp
+12VDC @ 1/2 Amp
-12VDC @ 1/2 Amp

GND
+5VDC
-12VDC
+12VDC

Connections made to male 4-pin
Weidmuller connector located
on right edge of ACR2000
Communications Plug-in Module.

Fusing supplied on the ACR2000
Communications Plug-in Module
for standalone power inputs.

+5VDC fused at 4 Amps
+12VDC fused at 0.250 Amps
-12VDC fused at 0.250 Amps

NOTE: PWR2 IS PART OF
ACRCOMM PLUG-IN
OPTION MODULE

NOTE: P5 IS PART OF
ACRCOMM PLUG-IN
OPTION MODULE

ENCODER INPUT

Encoder Inputs to the ACR2000 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 ACR2000
Improper settings may cause PERMANENT
DAMAGE to encoder

See sheet 2 for Digital I/O
wiring examples

ACR2000

PWR2-1	GND	EXT GND	PWR1-1
PWR2-2	+5V	EXT GND	PWR1-2
PWR2-3	-12V	EXT +5 OR +24V	PWR1-3
PWR2-4	+12V	EXT +5 OR +24V	PWR1-4
P1A-1	CHA0 +	P5-1	RXD1
P1A-2	CHA0 -	P5-2	TXD1
P1A-3	CHB0 +	P5-3	GND
P1A-4	CHB0 -	P5-4	MUX1
P1A-5	MRK0 +	P5-5	TXD1A
P1A-6	MRK0 -	P5-6	TXD1B
P1A-7	VCC	P5-7	RXD1A
P1A-8	GND	P5-8	RXD1B
P1A-9	CHA1 +	P5-9	RXD2
P1A-10	CHA1 -	P5-10	TXD2
P1A-11	CHB1 +	P5-11	GND
P1A-12	CHB1 -	P5-12	MUX2
P1A-13	MRK1 +	P5-13	TXD2A
P1A-14	MRK1 -	P5-14	TXD2B
P1A-15	VCC	P5-15	RXD2A
P1A-16	GND	P5-16	RXD2B
P1A-17	CHA2 +	P5-17	STB
P1A-18	CHA2 -	P5-18	AFD
P1A-19	CHB2 +	P5-19	ERR
P1A-20	CHB2 -	P5-20	INIT
P1A-21	MRK2 +	P5-21	SLIN
P1A-22	MRK2 -	P5-22	GND
P1A-23	VCC	P5-23	PD0
P1A-24	GND	P5-24	PD1
P1A-25	CHA3 +	P5-25	PD2
P1A-26	CHA3 -	P5-26	PD3
P1A-27	CHB3 +	P5-27	PD4
P1A-28	CHB3 -	P5-28	PD5
P1A-29	MRK3 +	P5-29	PD6
P1A-30	MRK3 -	P5-30	PD7
P1A-31	VCC	P5-31	ACK
P1A-32	GND	P5-32	BUSY
		P5-33	PE
		P5-34	SLCT
P3-1	INP-00	P2-1	WATCHDOG-NO
P3-2	INP-01	P2-2	SVCC
P3-3	INP-02	P2-3	ASIG-0/STEP-0
P3-4	INP-03	P2-4	ASIG-1/STEP-1
P3-5	INP-04	P2-5	SVCC
P3-6	INP-05	P2-6	ASIG-2/STEP-2
P3-7	INP-06	P2-7	ASIG-3/STEP-3
P3-8	INP-07	P2-8	NC
P3-9	INP-08	P2-9	NC
P3-10	INP-09	P2-10	NC
P3-11	INP-10	P2-11	AIN-0
P3-12	INP-11	P2-12	AIN-1
P3-13	INP-12	P2-13	AIN-2
P3-14	INP-13	P2-14	AIN-3
P3-15	INP-14	P2-15	NC
P3-16	INP-15	P2-16	WATCHDOG-COM
P3-17	NC	P2-17	SVCC
P3-18	OUT-32	P2-18	AGND-0/DIR-0
P3-19	OUT-33	P2-19	AGND-1/DIR-1
P3-20	OUT-34	P2-20	SVCC
P3-21	OUT-35	P2-21	AGND-2/DIR-2
P3-22	OUT-36	P2-22	AGND-3/DIR-3
P3-23	OUT-37	P2-23	NC
P3-24	OUT-38	P2-24	NC
P3-25	OUT-39	P2-25	NC
P3-26	OUT-40	P2-26	AIN-COM
P3-27	OUT-41	P2-27	AIN-COM
P3-28	OUT-42	P2-28	AIN-COM
P3-29	OUT-43	P2-29	AIN-COM
P3-30	OUT-44	P2-30	NC
P3-31	OUT-45	P2-31	WATCHDOG-NC
P3-32	OUT-46	P2-32	SVCC
P3-33	OUT-47	P2-33	MISC0/LCUR-0
P3-34	NC	P2-34	MISC1/LCUR-1
		P2-35	SVCC
		P2-36	MISC2/LCUR-2
		P2-37	MISC3/LCUR-3
		P2-38	NC
		P2-39	NC
		P2-40	NC
		P2-41	AIN-4
		P2-42	AIN-5
		P2-43	AIN-6
		P2-44	AIN-7

P2
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44
CON44

ACR2000

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.

Connections made to high density
male 44-pin D-plug supplied.

SERIAL COMMUNICATIONS

(ACRCOMM Module Option)

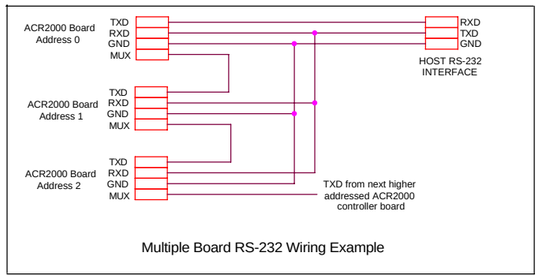
RS-232 Serial Connection
for COM1 and COM2
Autobaud detects the
following formats

Parity	Data	Stop Bit
ODD	7	1
NO	8	1
EVEN	7	1

Baud Rates from 300 to 38400

XON/XOFF Control must be used

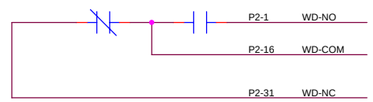
TXD
RXD
GND



Multiple Board RS-232 Wiring Example

WATCHDOG CIRCUIT

Relay contacts shown is state when
ACR2000 is without power, or in
a processor fault condition.



Watchdog Relay contact rating

1.0 Amp @ 30 VDC

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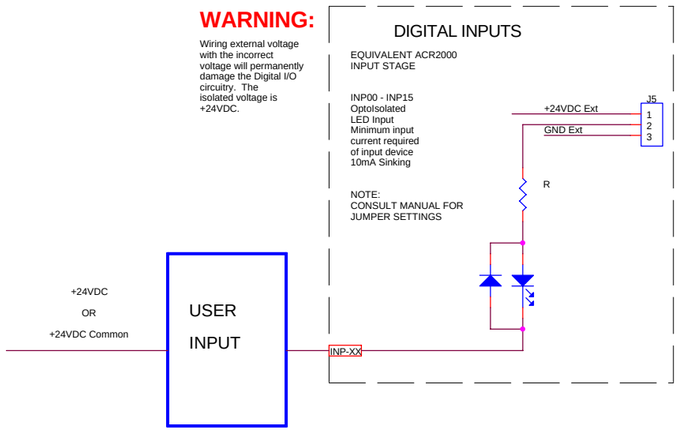
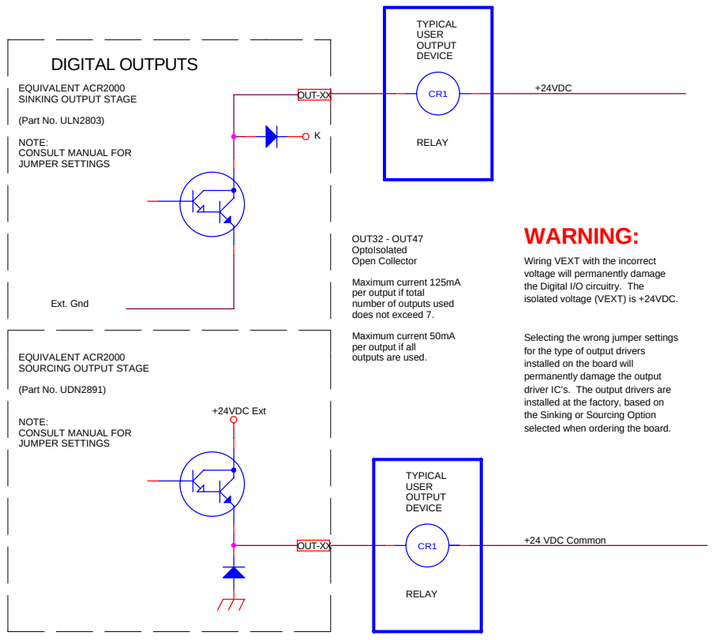
Digital I/O Wiring

WARNING:

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



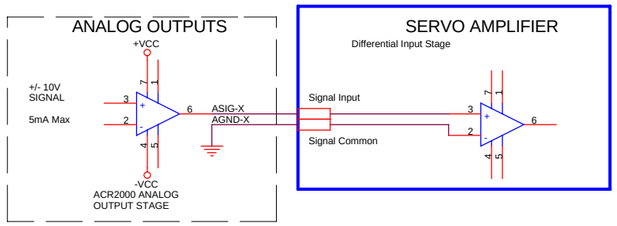


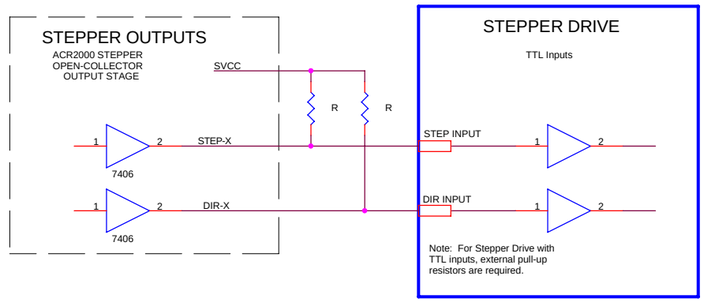
WARNING:

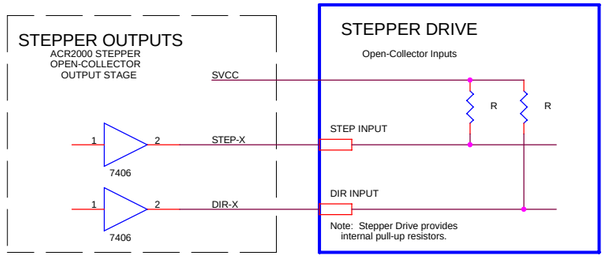
Wiring VEXT with the incorrect voltage will permanently damage the Digital I/O circuitry. The isolated voltage (VEXT) is +24VDC.

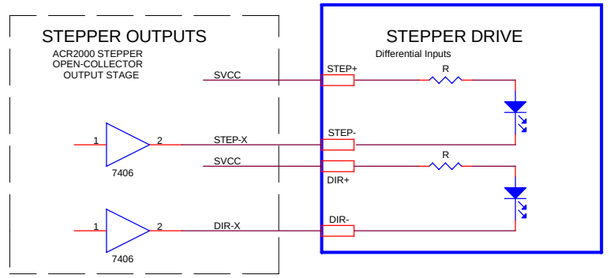
Selecting the wrong jumper settings for the type of output drivers installed on the board will permanently damage the output driver IC's. The output drivers are installed at the factory, based on the Sinking or Sourcing Option selected when ordering the board.

Analog/Stepper Wiring



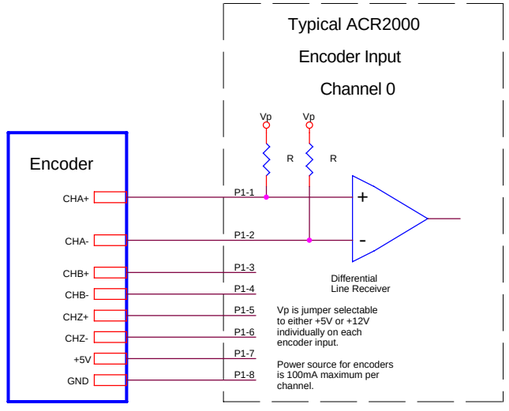




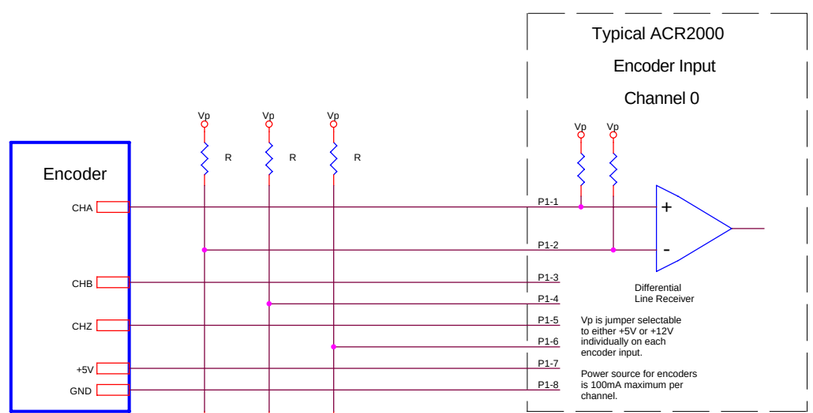


Encoder Wiring

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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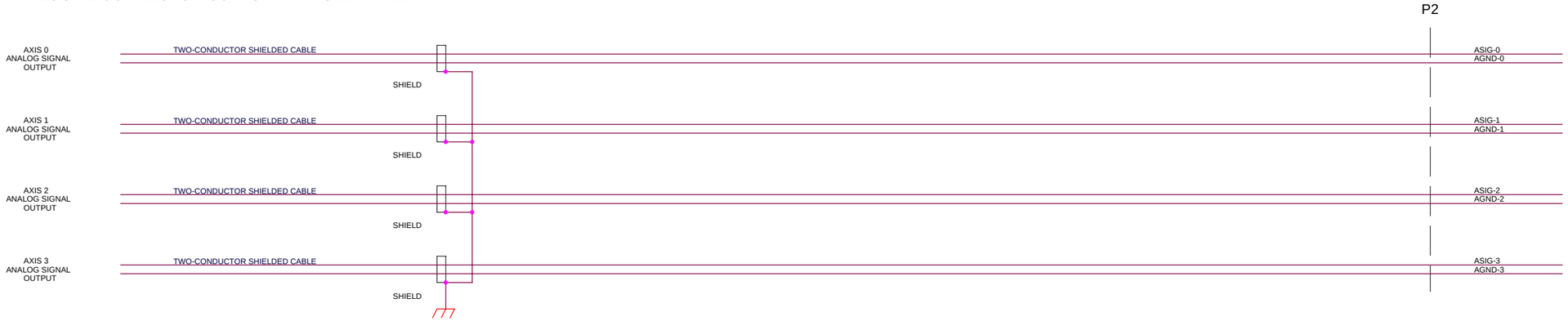
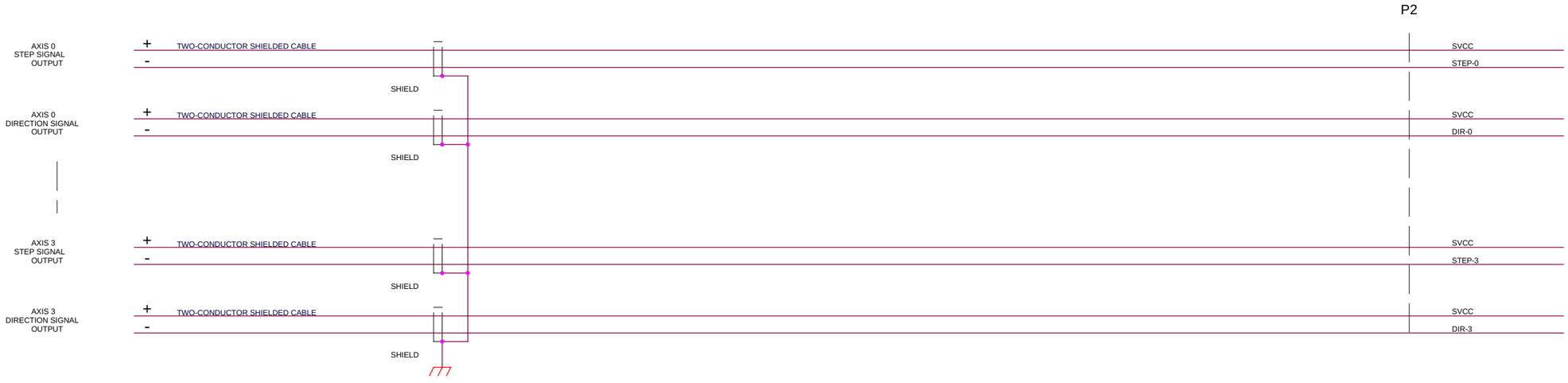
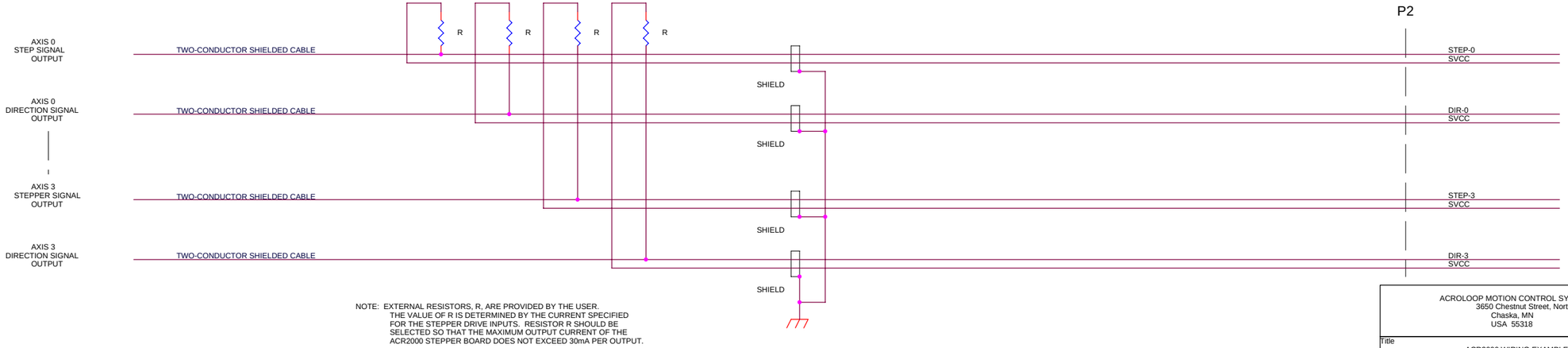
ANALOG P2 CONNECTOR OUTPUT WIRING EXAMPLE



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 ACR2000 STEPPER BOARD DOES NOT EXCEED 30mA PER OUTPUT.

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ANALOG P2 CONNECTOR INPUT WIRING

DIFFERENTIAL WIRING EXAMPLE

ANALOG TO DIGITAL INPUTS (ADC)

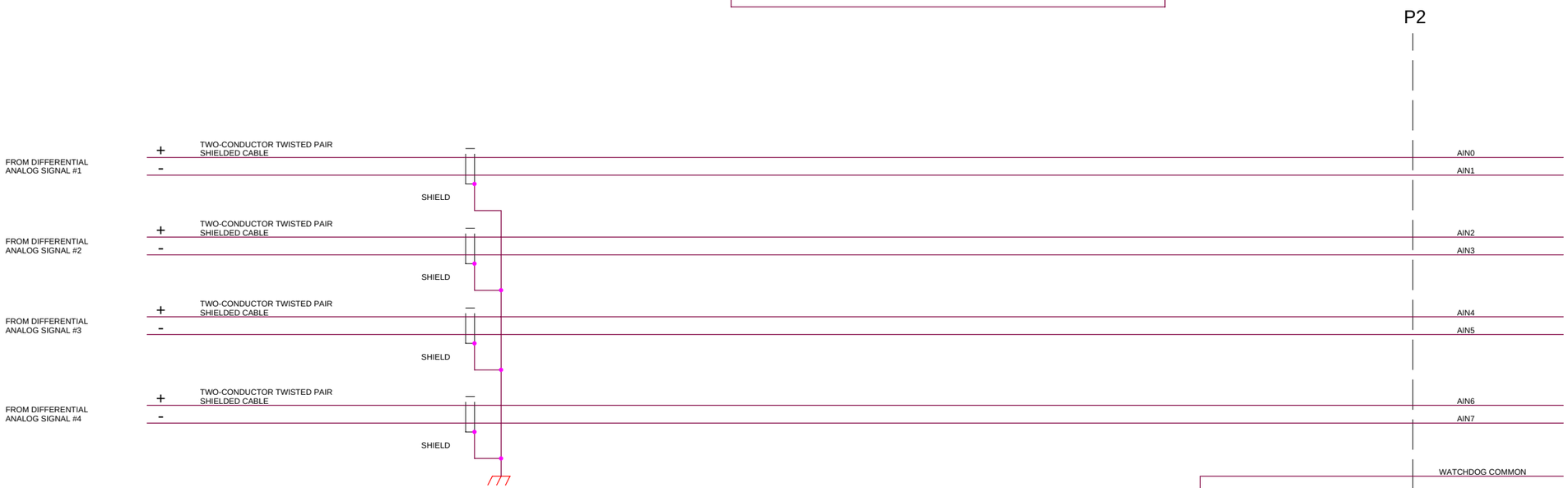
ANALOG TO DIGITAL INPUTS (AIN0 - AIN7) CAN BE USED AS DIFFERENTIAL OR SINGLE-ENDED INPUTS. ANY COMBINATION MAY BE USED.

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 ACR2000.

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 ACR2000.
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 ACR2000 CONTROLLER HAS FULL CONTROL OF ALL DIGITAL AND ANALOG SIGNALS TO PREVENT POSSIBLE MOTOR SURGE ON INITIAL START-UP

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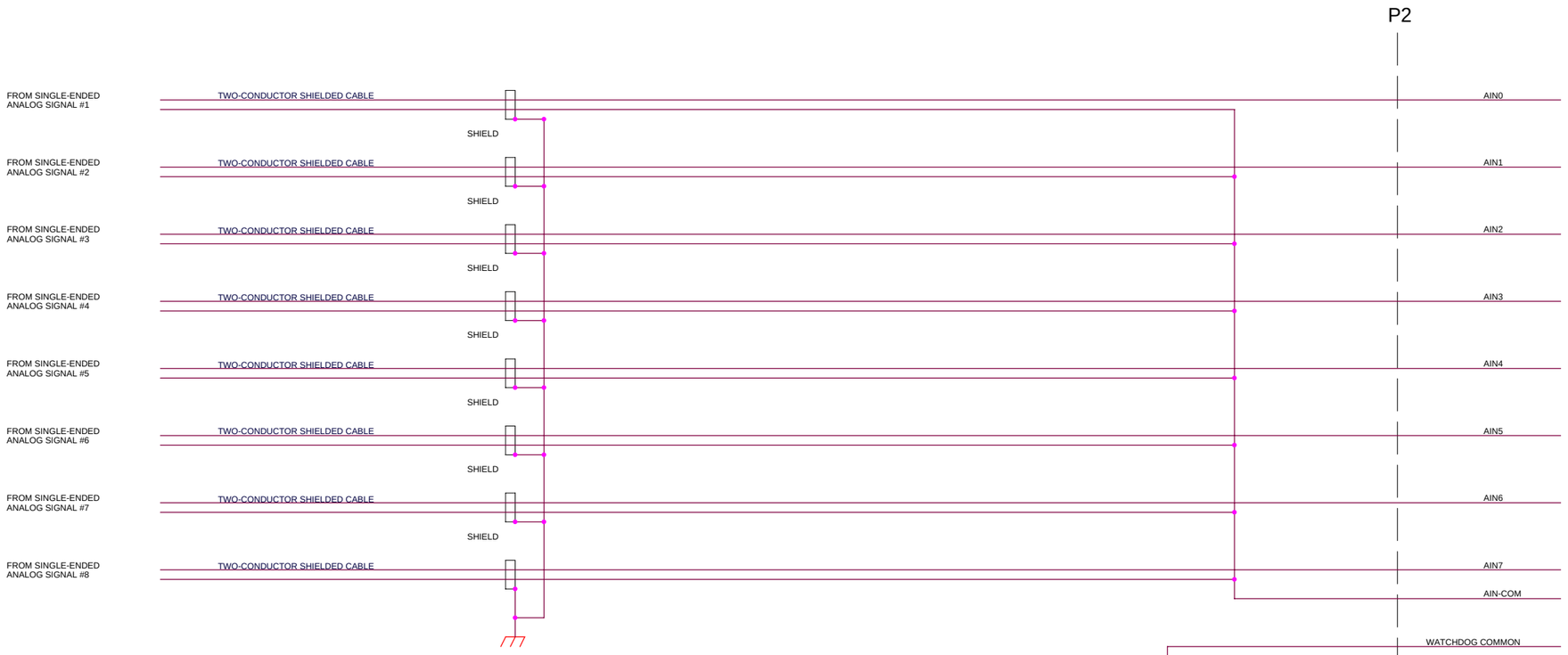
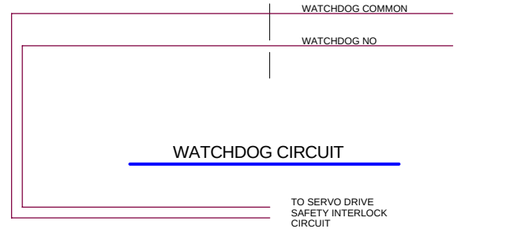
ANALOG P2 CONNECTOR INPUT WIRING

SINGLE-ENDED WIRING EXAMPLE



WATCHDOG CIRCUIT



WATCHDOG CONTACTS USED TO DISABLE SERVO DRIVE
UNTIL ACR2000 CONTROLLER HAS FULL CONTROL
OF ALL DIGITAL AND ANALOG SIGNALS TO PREVENT
POSSIBLE MOTOR SURGE ON INITIAL START-UP

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