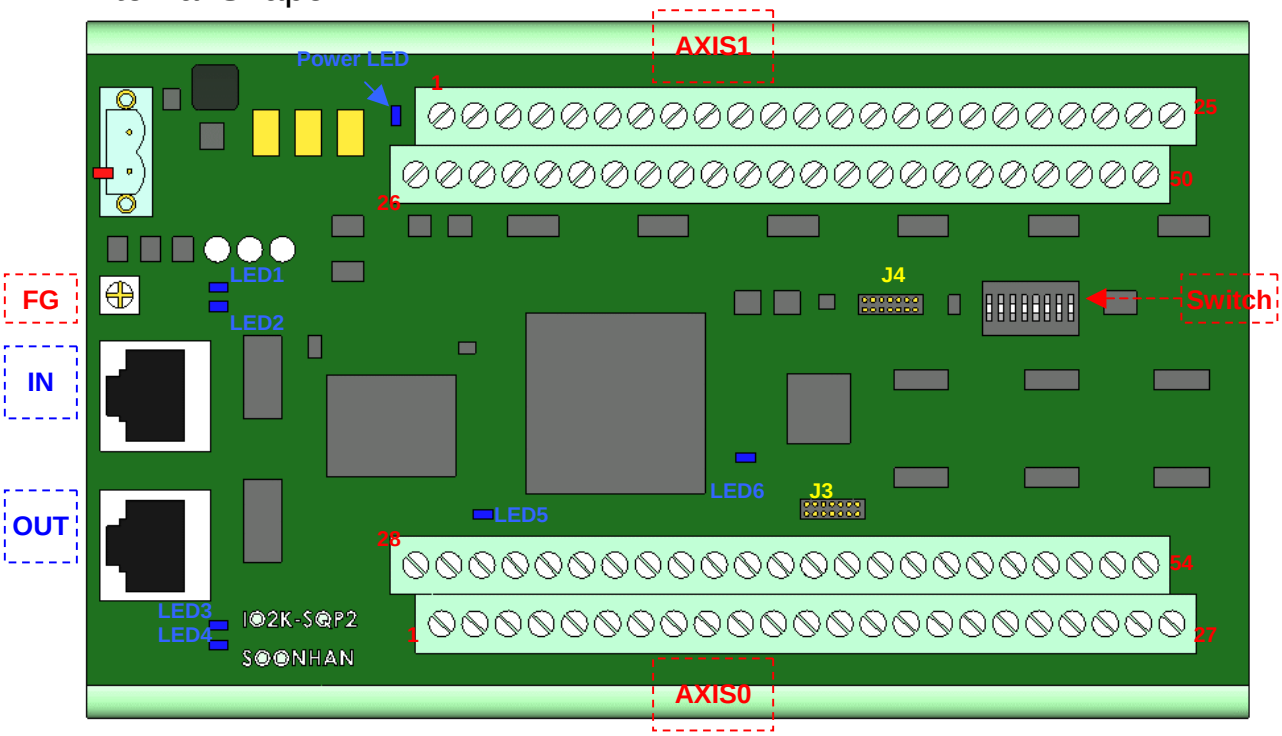
SOONHAN IO2K-SQA2 H/W Manual

2004.7.1

Rev.1.1

SOONHAN Engineering Corp.

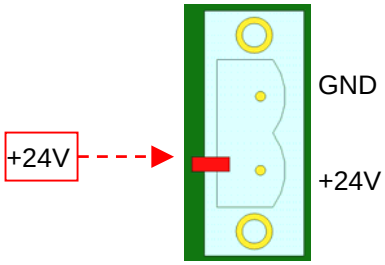
1. External Shape



2. Connecting Power

< Power Connector >

Modular : Sauro CIM020V5



Mating : Sauro CVF020D5

< SynqNet >

Modular Jack : AMP 1116202-1 Category 5 High

< I/O >

Sauro PSB020D5

FG : Frame GND

Power LED : display power

LED 1 : SynqNet IN Link

LED 2 : SynqNet IN State

LED 3 : SynqNet OUT Link

LED 4 : SynqNet OUT Rptr

3. Pin Assignment

Connector for AXIS0

Pin	Signal	Signal	Pin	*Description*	P.
1	Enc0_A+	Enc0_A-	28	*Encoder Phase A*	8
2	Enc0_B+	Enc0_B-	29	*Encoder Phase B*	
3	Enc0_I+	Enc0_I-	30	*Encoder Phase I*	
4	Home0_IN	5V_OUT	31	*Home Sensor*	13
5	Pos_Lim0_IN	GND	32	*Pos. Limit Sensor*	
6	Neg_Lim0_IN	HomeLim0_Rtn	33	*Neg. Limit Sensor & Sensor Rtn*	
7	Cmd_Dac_OUT_0+	Cmd_Dac_OUT_0-	34	*Analog Output*	19
8	N/A	N/A	35	*Auxiliary Analog Output*	
9	N/A	N/A	36	*Analog Input*	
10	N/A	N/A	37	*Analog Input*	
11	Amp_Flt0_IN	Amp_Flt0_Rtn	38	*Amp Fault*	11
12	Amp_En0_Collector	Amp_En0_Emitter	39	*Amp Enable*	9
13	Amp_Rst0_Collector	Amp_Rst0_Emitter	40	*Amp Reset (Alarm Clear)*	12
14	Brk_Appd0_Collector	Brk_Appd0_Emitter	41	*Brake Append*	
15	Tx0_0+	Tx0_0-	42	*Transceiver A (CW/CCW, Pulse/Dir)*	7
16	Tx0_1+	Tx0_1-	43	*Transceiver B (CW/CCW, Pulse/Dir)*	
17	GND	GP_Opto_IN0_0	44	*Opto-Isolated In*	16, 17
18	GP_Opto_IN0_1	GP_Opto_IN0_2	45	*Opto-Isolated In*	
19	GP_Opto_IN0_3	GP_Opto_IN0_4	46	*Opto-Isolated In*	
20	GP_Opto_IN0_5	GP_Opto_IN0_6	47	*Opto-Isolated In*	
21	GP_Opto_IN0_7	GP_Opto_IN0_8	48	*Opto-Isolated In*	
22	GP_Opto_IN0_Rtn0	GP_Opto_IN0_Rtn1	49	*Opto-Isolated In Rtn*	
23	24V_IN	GP_Opto_OUT0_0	50	*Opto-Isolated Out*	18
24	GP_Opto_OUT0_1	GP_Opto_OUT0_2	51	*Opto-Isolated Out*	
25	GP_Opto_OUT0_3	GP_Opto_OUT0_Rtn	52	*Opto-Isolated Out Rtn*	
26	Node_Alarm_Collector	Node_Alarm_Emitter	53	*Node Alarm Out*	14
27	Node_Disable_IN	Node_Disable_Rtn	54	*Node Disable In (E-Stop In)*	15

Connector for AXIS1

Pin	Signal	Signal	Pin	*Description*	P.
1	Enc1_A+	Enc1_A-	26	*Encoder Phase A*	8
2	Enc1_B+	Enc1_B-	27	*Encoder Phase B*	
3	Enc1_I+	Enc1_I-	28	*Encoder Phase I*	
4	Home1_IN	5V_OUT	29	*Home Sensor*	13
5	Pos_Lim1_IN	GND	30	*Pos. Limit Sensor*	
6	Neg_Lim1_IN	HomeLim1_Rtn	31	*Neg. Limit Sensor & Sensor Rtn*	
7	Cmd_Dac_OUT_1+	Cmd_Dac_OUT_1-	32	*Analog Output*	19
8	N/A	N/A	33	*Auxiliary Analog Output*	
9	N/A	N/A	34	*Analog Input*	
10	N/A	N/A	35	*Analog Input*	
11	Amp_Flt1_IN	Amp_Flt1_Rtn	36	*Amp Fault*	11
12	Amp_En1_Collector	Amp_En1_Emitter	37	*Amp Enable*	9
13	Amp_Rst1_Collector	Amp_Rst1_Emitter	38	*Amp Reset (Alarm Clear)*	12
14	Brk_Appd1_Collector	Brk_Appd1_Emitter	39	*Brake Append*	
15	Tx1_0+	Tx1_0-	40	*Transceiver A (CW/CCW, Pulse/Dir)*	7
16	Tx1_1+	Tx1_1-	41	*Transceiver B (CW/CCW, Pulse/Dir)*	
17	GND	GP_Opto_IN1_0	42	*Opto-Isolated In*	16, 17
18	GP_Opto_IN1_1	GP_Opto_IN1_2	43	*Opto-Isolated In*	
19	GP_Opto_IN1_3	GP_Opto_IN1_4	44	*Opto-Isolated In*	
20	GP_Opto_IN1_5	GP_Opto_IN1_6	45	*Opto-Isolated In*	
21	GP_Opto_IN1_7	GP_Opto_IN1_8	46	*Opto-Isolated In*	
22	GP_Opto_IN1_Rtn0	GP_Opto_IN1_Rtn1	47	*Opto-Isolated In Rtn*	
23	24V_IN	GP_Opto_OUT1_0	48	*Opto-Isolated Out*	18
24	GP_Opto_OUT1_1	GP_Opto_OUT1_2	49	*Opto-Isolated Out*	
25	GP_Opto_OUT1_3	GP_Opto_OUT1_Rtn	50	*Opto-Isolated Out Rtn*	

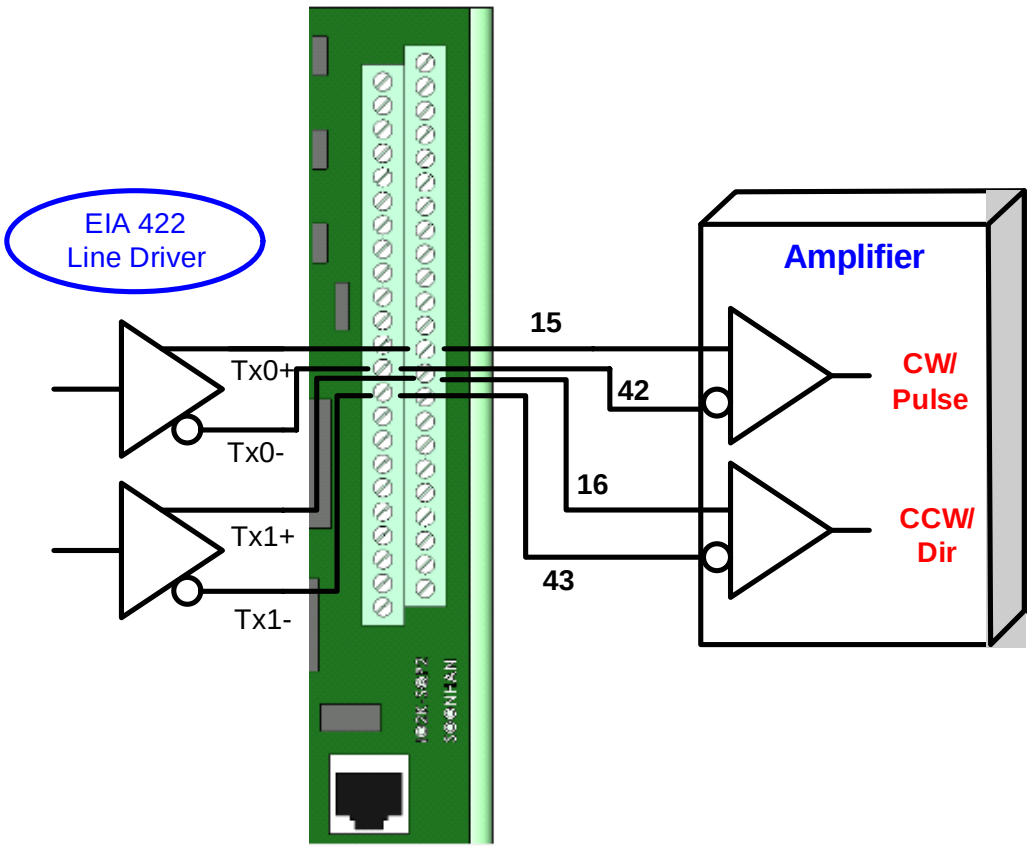
4. Comparison with STC-136

IO2K-SQA2S' Interfacing with stepper and servo pack is almost same as STC-136.

Signal	STC-136		IO2K-SQA2	
	Pin Number		Pin Number	
	AXIS 0	AXIS 1	AXIS 0	AXIS 1
Analog_IN0+, Analog_IN0-	1, 35		N/A	N/A
Analog_IN1+, Analog_IN1-	2, 36		N/A	N/A
Analog_IN2+, Analog_IN2-			N/A	N/A
Analog_IN3+, Analog_IN3-			N/A	N/A
Enc_A+, Enc_A-	4, 38	18, 52	1, 28	1, 26
Enc_B+, Enc_B-	5, 39	19, 53	2, 29	2, 27
Enc_I+, Enc_I-	6, 40	20, 54	3, 30	3, 28
Home, Pos, Neg, Rtn	7, 8, 9, 43	21, 22, 23, 57	4, 5, 6, 33	4, 5, 6, 31
5V_OUT, Gnd	41, 42	55, 56	31, 32	29, 30
Dac_OUT+, Dac_OUT-	10, 44	24, 58	7, 34	7, 32
Aux_Dac_OUT+, Aux_Dac_OUT-	11, 45	25, 59	N/A	N/A
Amp_Flt_In, Rtn	12, 46	26, 60	11, 38	11, 36
Amp_En_Collector, Emitter	13, 47	27, 61	12, 39	12, 37
XcvrA+, XcvrA-	15, 49	29, 63	15, 42	15, 40
XcvrB+, XcvrB-	16, 50	30, 64	16, 43	16, 41
UserIO, Rtn	14, 48	32, 66	17 ~	17 ~

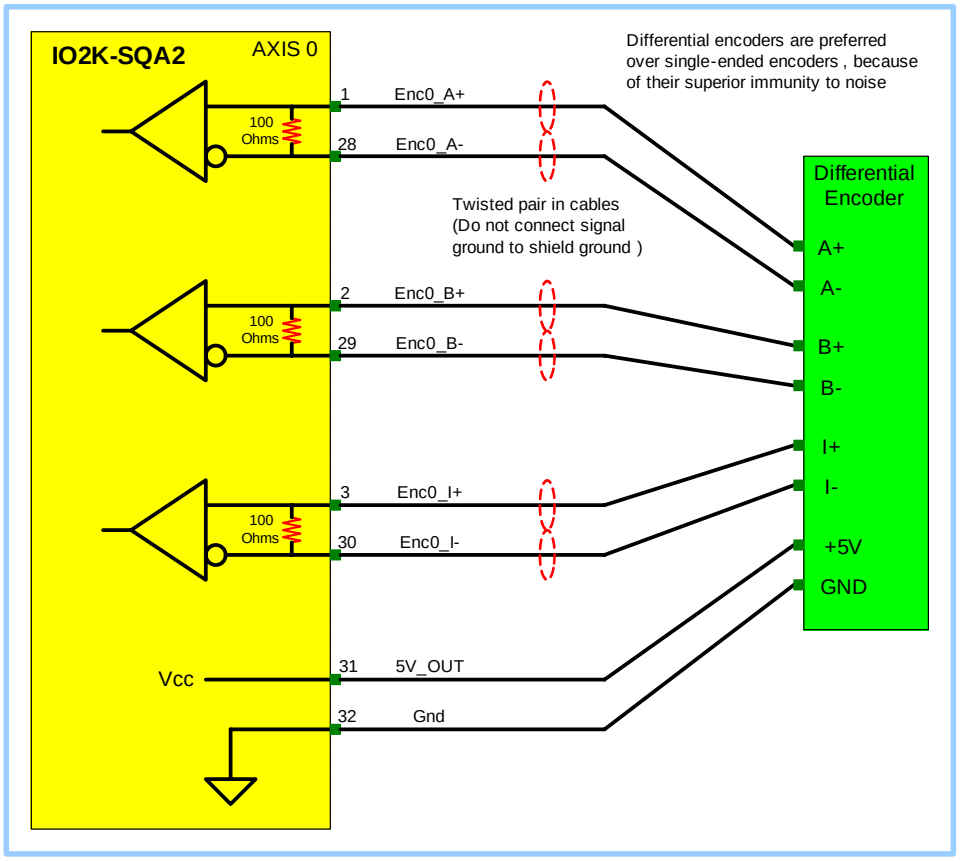
5. Wiring

5.1 Transceiver I/O

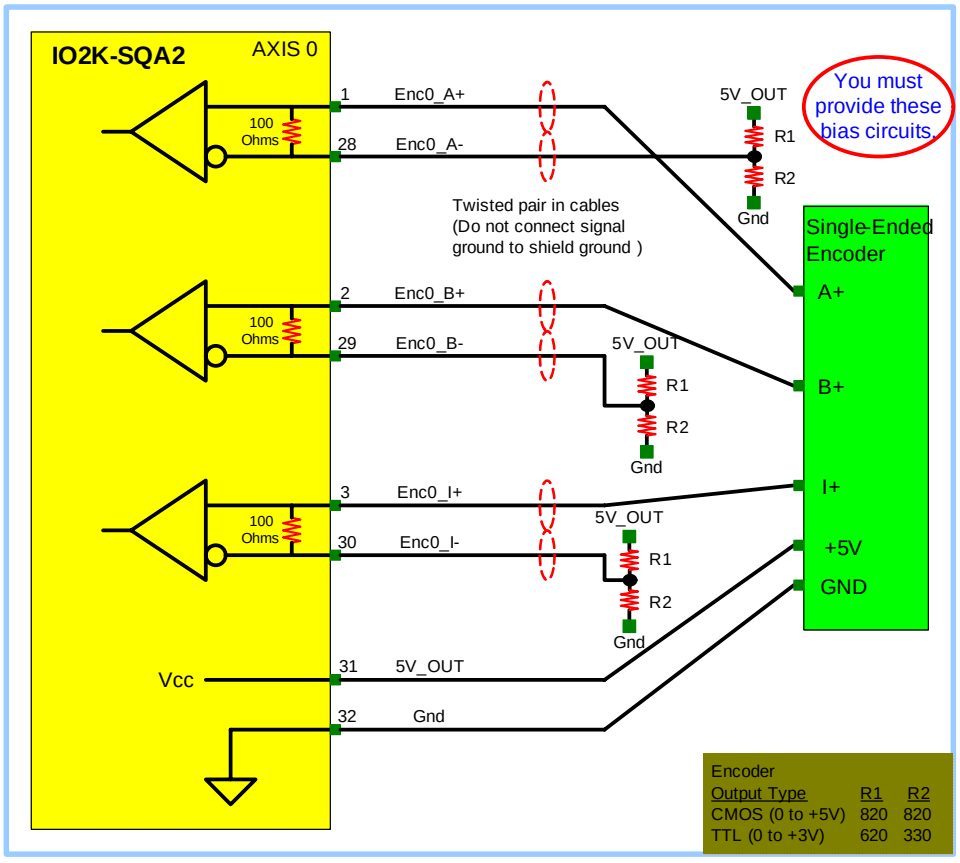


5.2 Connect to Digital Quadrature Encoder

- Connect to differential encoders (digital)

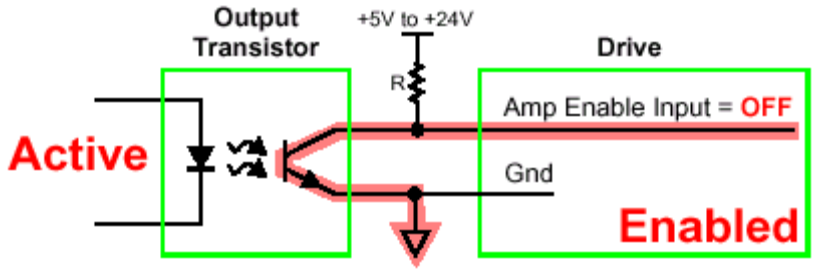


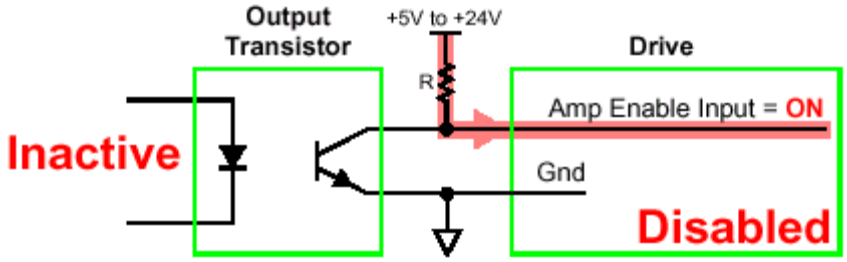
- Connect to single-ended encoders (digital)



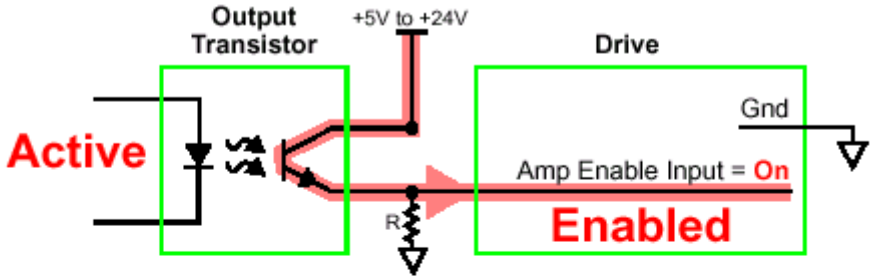
5.3 Amp Enable Wiring

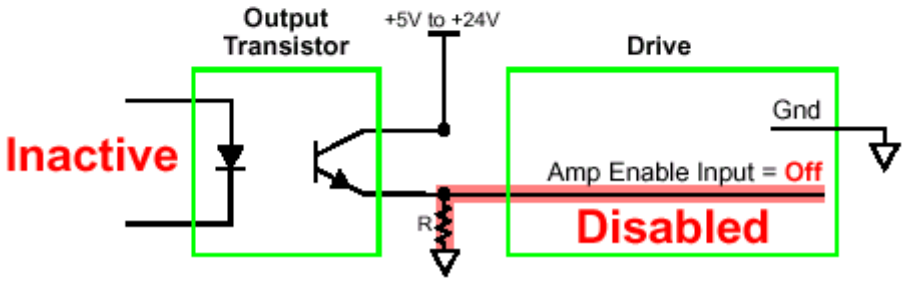
< Active High >



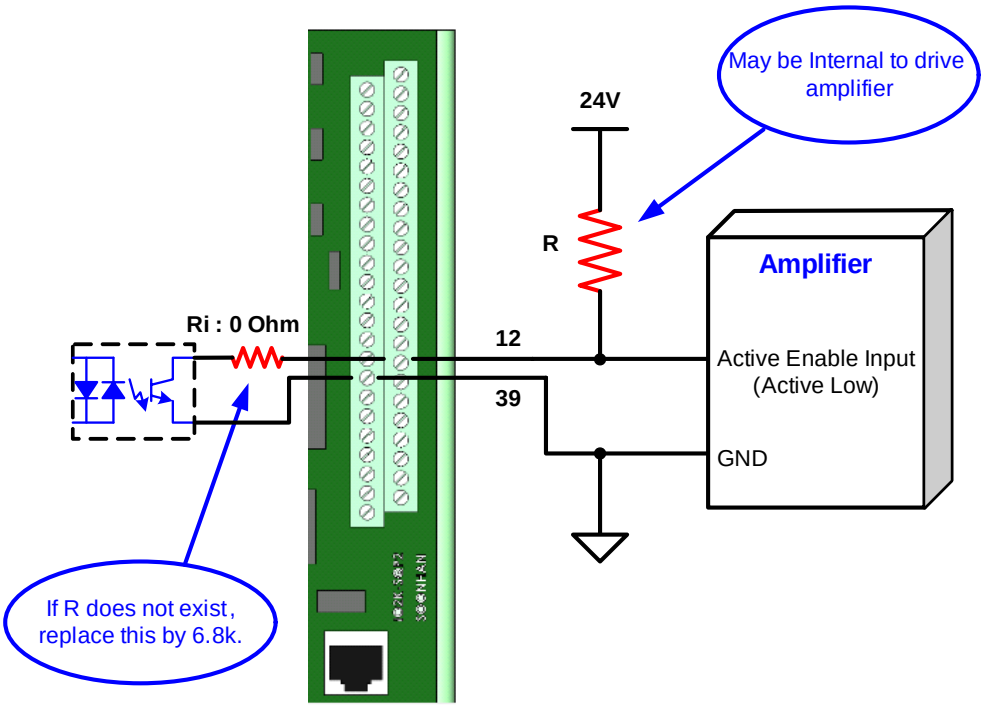


< Active Low >

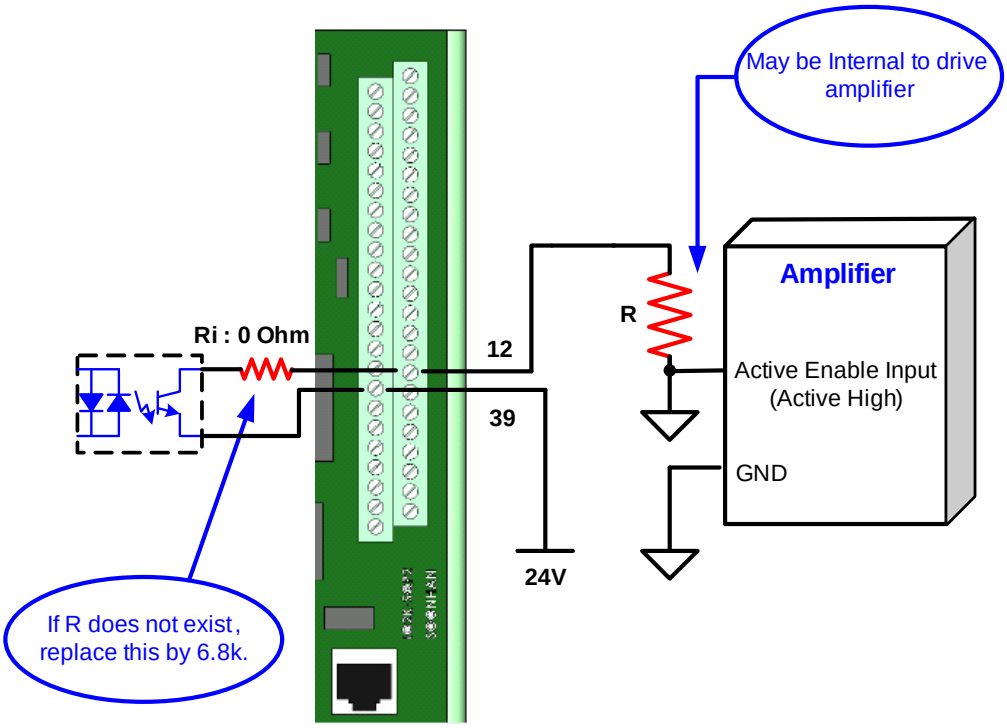




< Active Low Wiring (AXIS0) >



< Active High Wiring (AXIS0) >

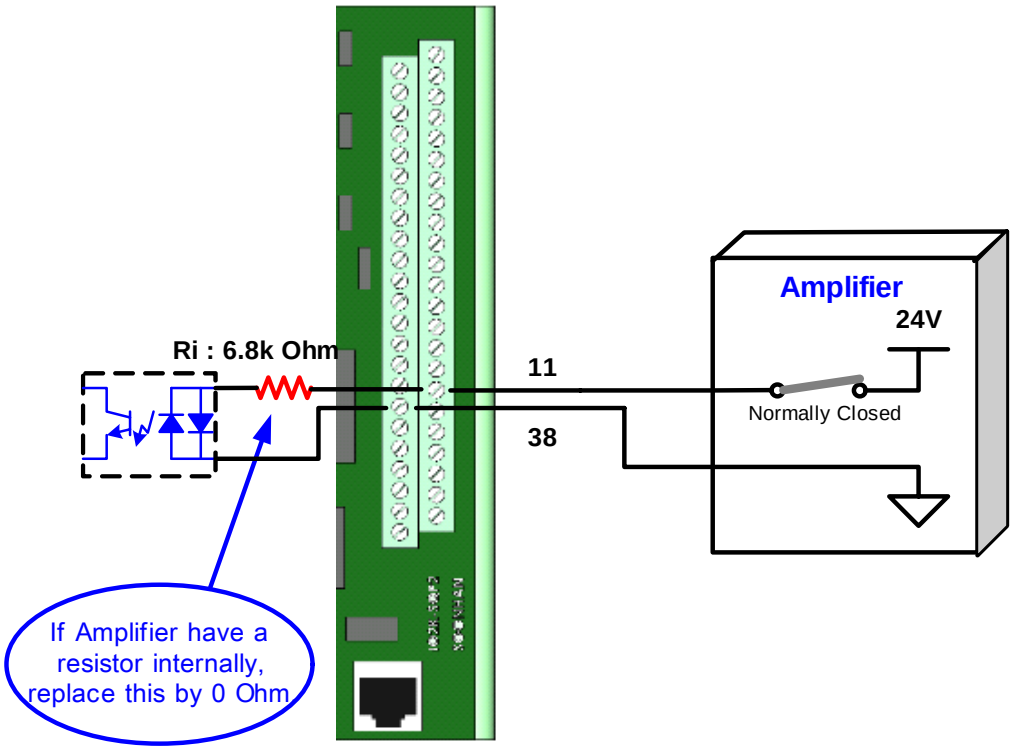


Ri

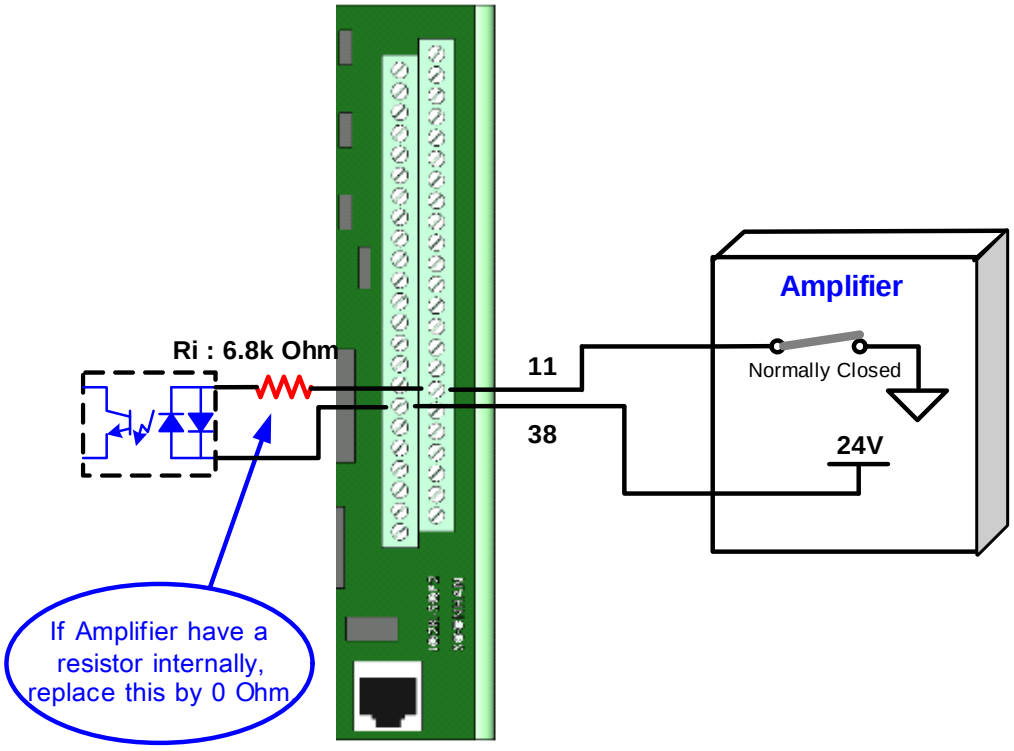
AXIS	AXIS0	AXIS1	
Resistor Number	R107	R118	

5.4 Amp Fault

< Pull Up Logic >



< Pull Down Logic >

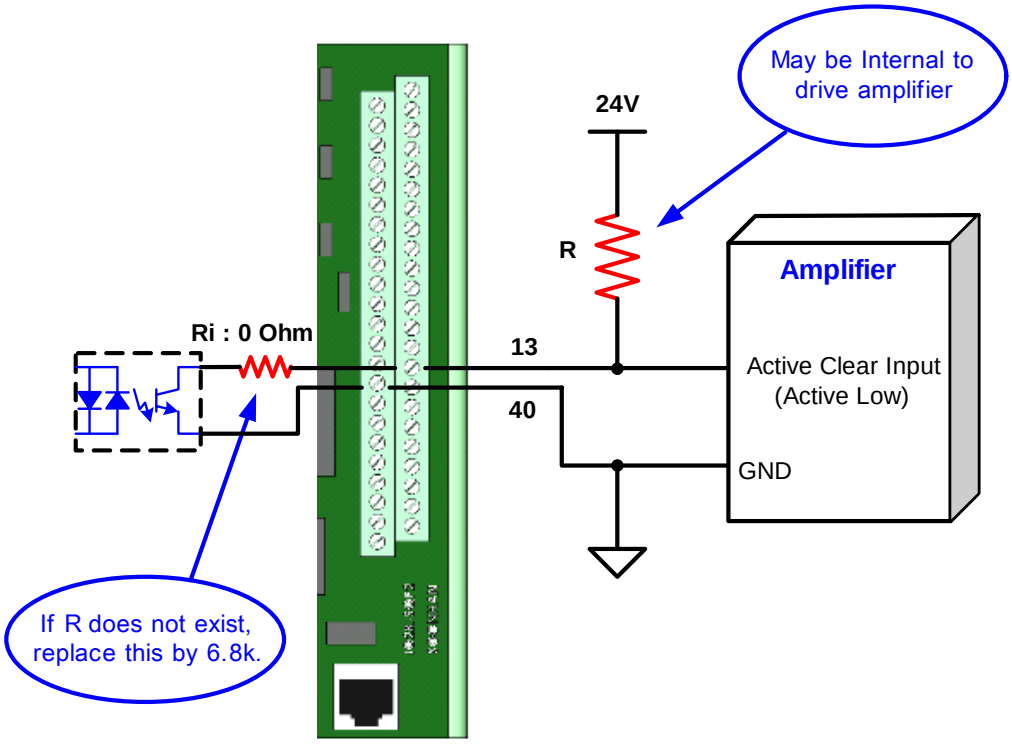


Ri

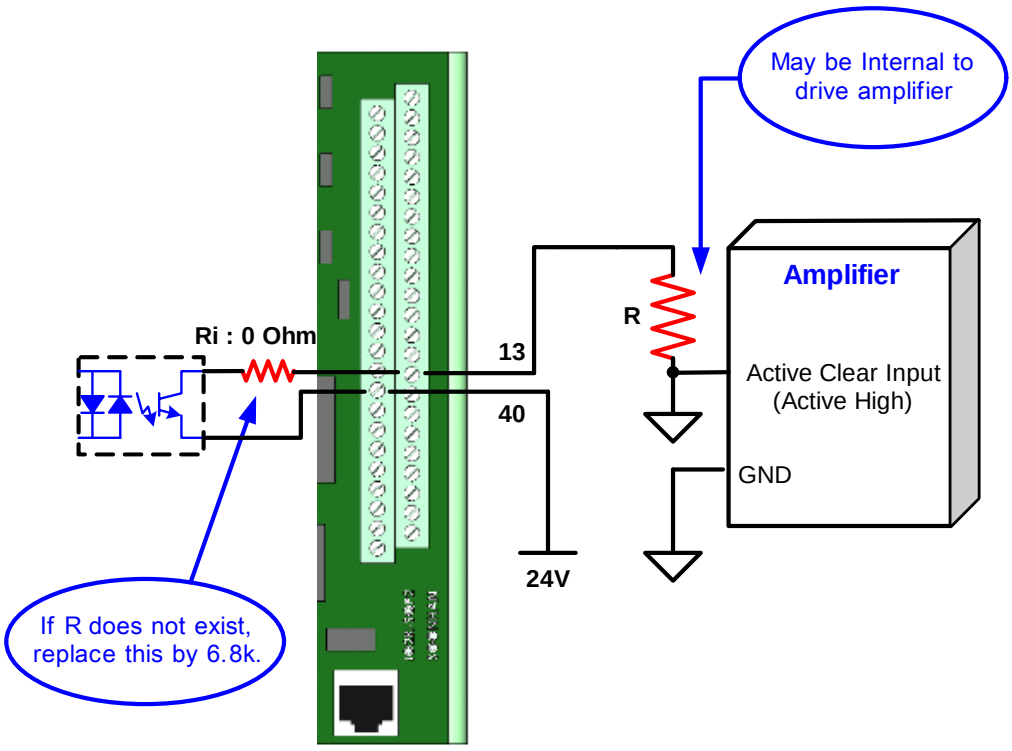
AXIS	AXIS0	AXIS1	
Resistor Number	R110	R121	

5.5 Alarm Clear (Amp Reset)

< Active Low Wiring (AXIS0) >



< Active High Wiring (AXIS0) >



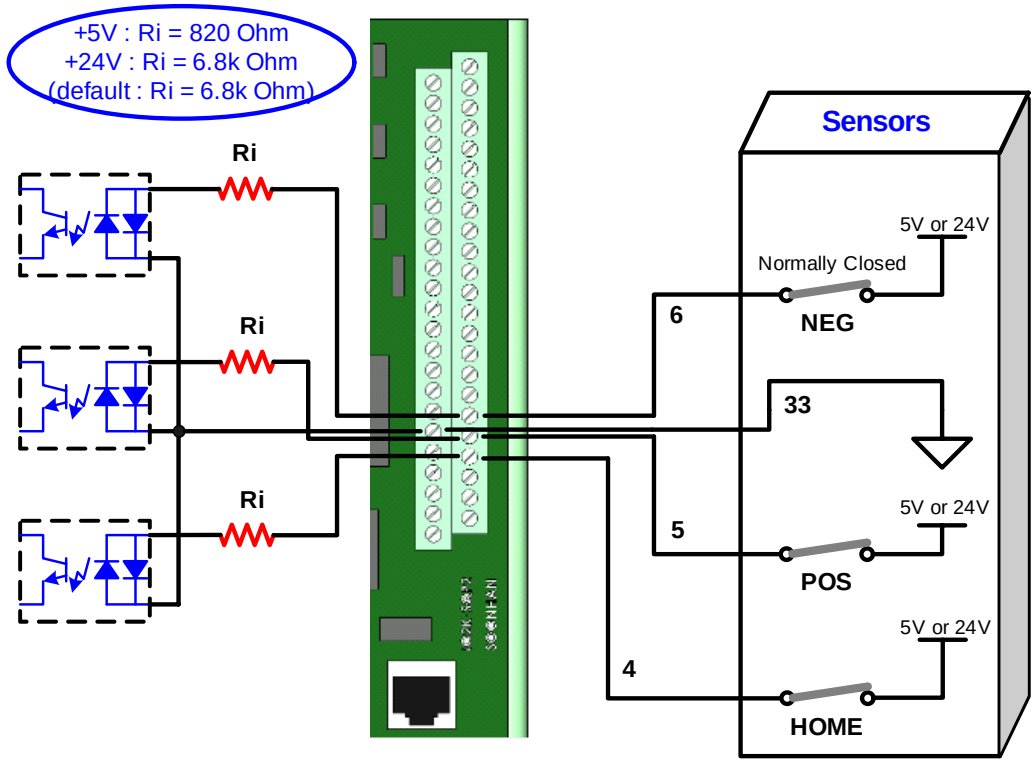
Ri

AXIS	AXIS0	AXIS1	

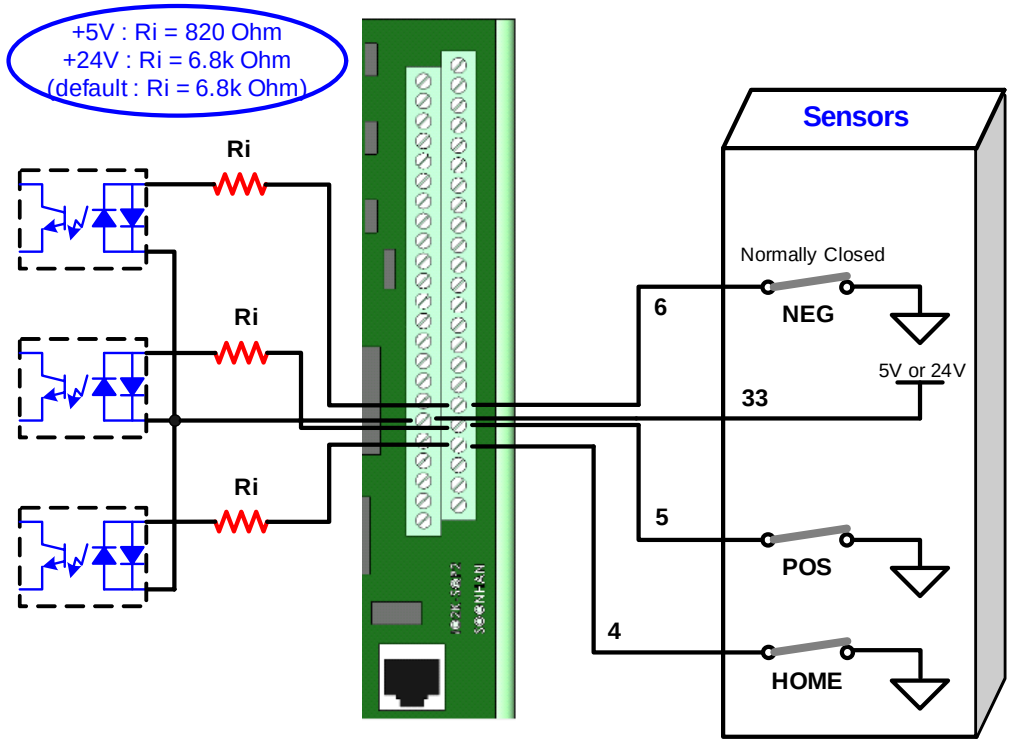
Resistor Number	R142	R167	

5.6 Sensor

< Common GND Logic >



< Common VCC Logic >



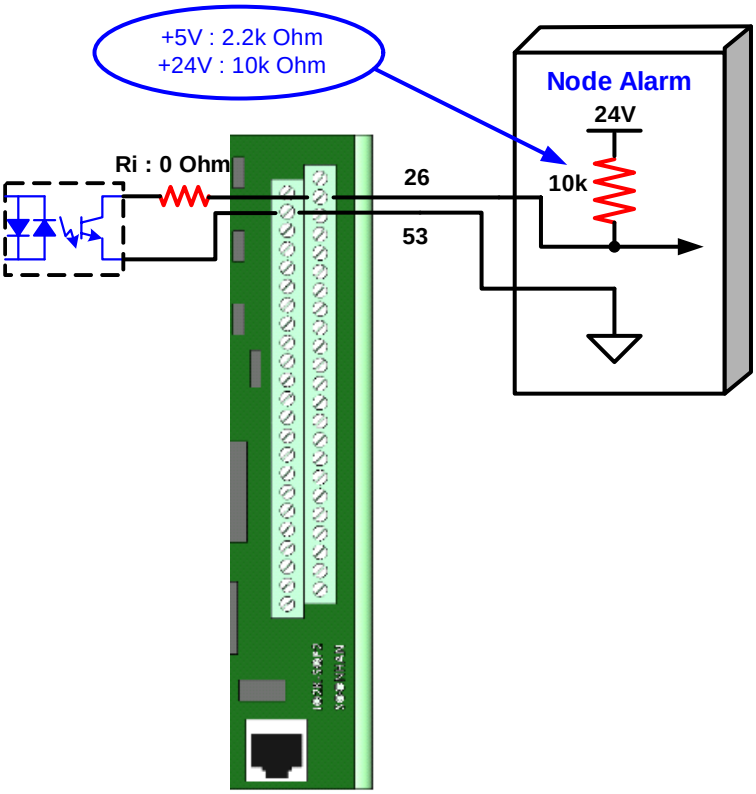
Ri

AXIS	AXIS0	AXIS1	
Resistor Number	R111, R112, R115	R122, R123, R124	Neg, Pos, Home

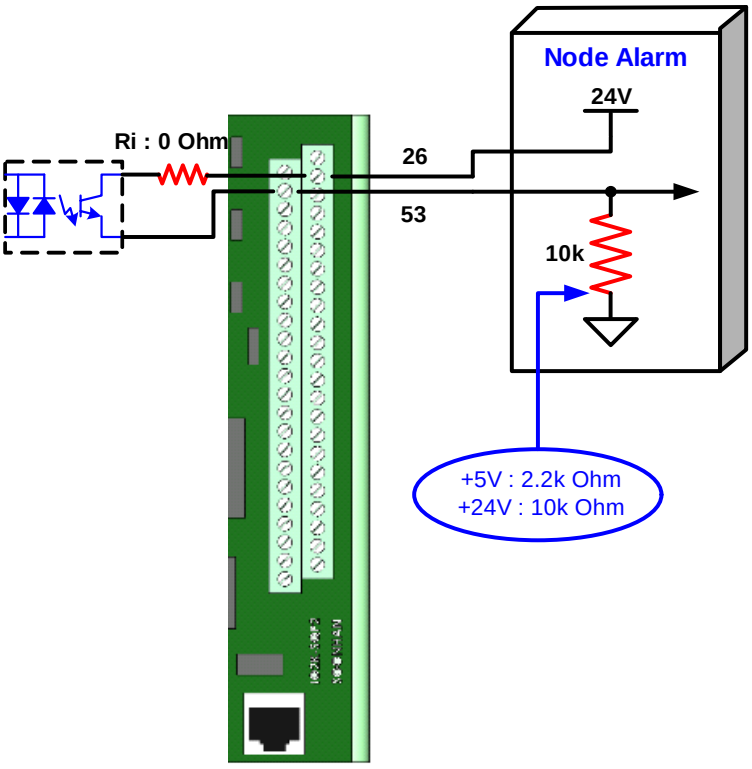
5.7 Node I/O

- Node Alarm

< Pull Up Logic >



< Pull Down Logic >

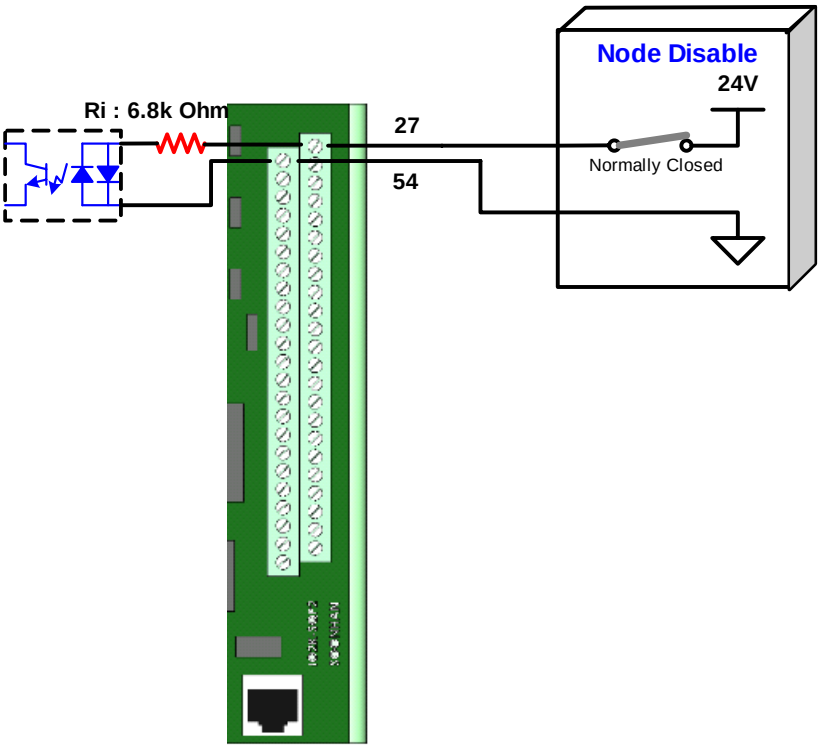


Ri

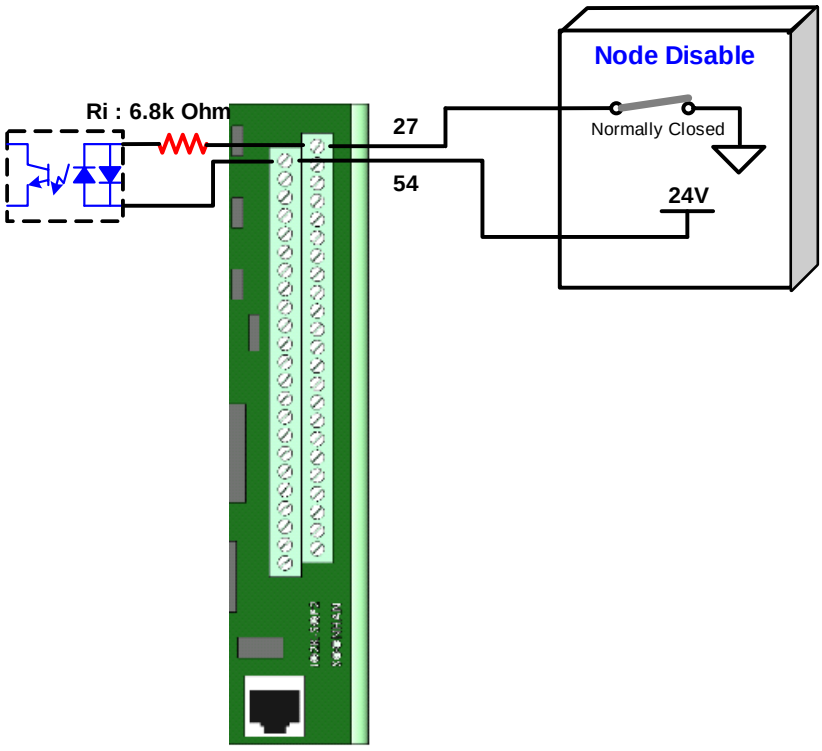
AXIS	AXIS0		
Resistor Number	R114		

- Node Disable (E-Stop In)

< Pull Up Logic >



< Pull Down Logic >

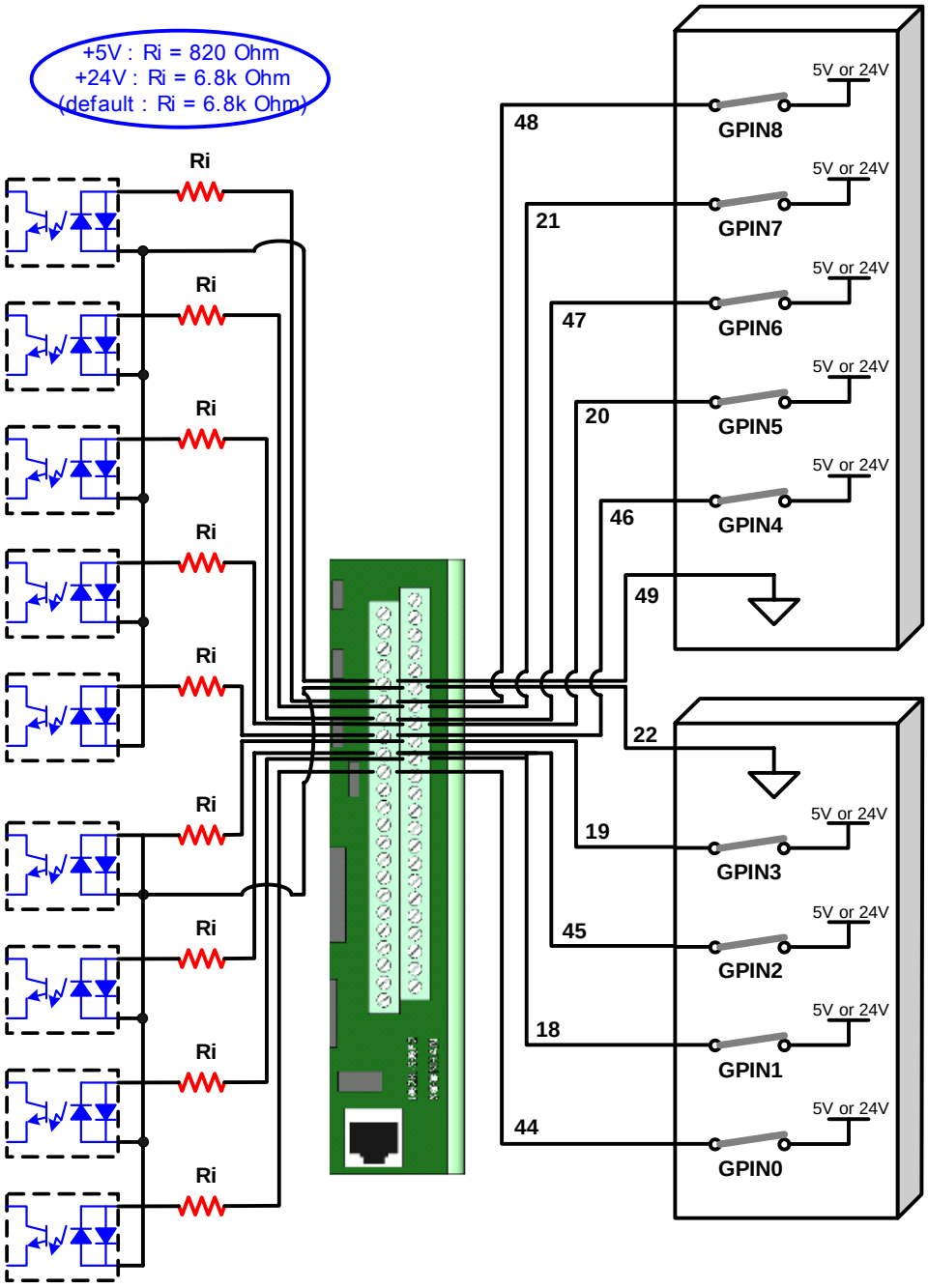


Ri

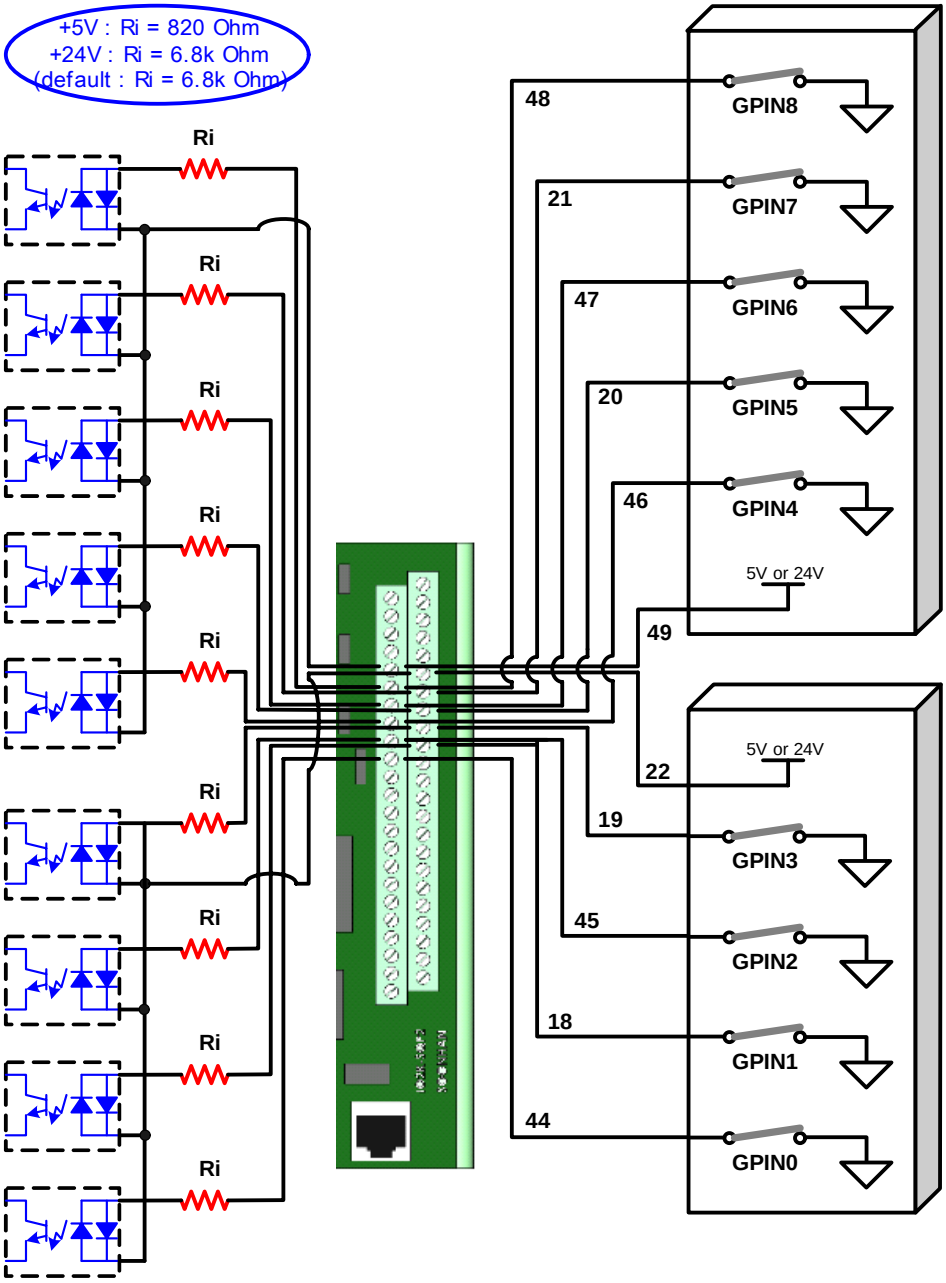
AXIS	AXIS0		
Resistor Number	R116		

5.8 User Input

< Common GND Logic >



< Common VCC Logic >

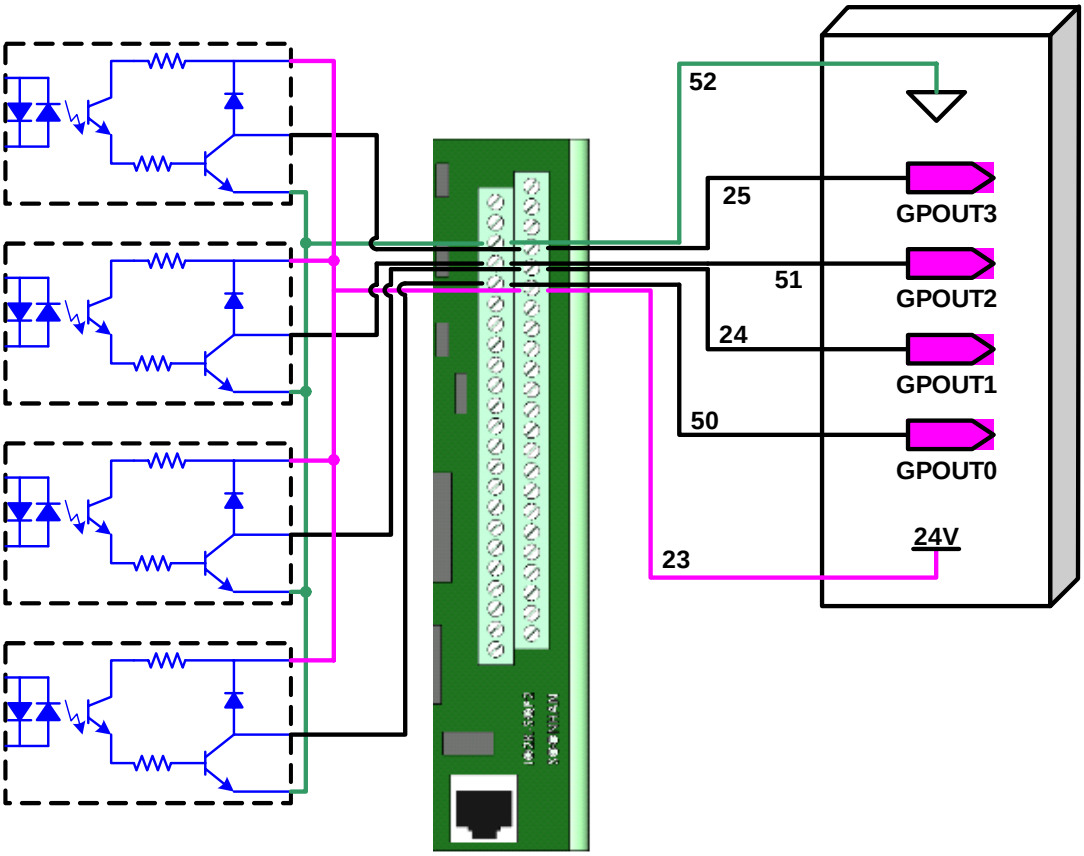


Ri

AXIS	AXIS0	AXIS1	
Resistor Number	R125	R150	GPIN0
	R129	R154	GPIN1
	R133	R158	GPIN2
	R139	R164	GPIN3
	R144	R169	GPIN4
	R146	R171	GPIN5
	R148	R173	GPIN6
	R149	R174	GPIN7
	R147	R172	GPIN8

5.9 User Output

< Common GND Logic >



5.10 Analog Output