INSTALLATION INSTRUCTIONS

MicroComm DXI

100 and 300 Series DIO Modules

1. Intent & Scope

This document describes the installation procedure for the 100 series and 300 series of Discrete I/O modules, including card cage, wall mount, and rack mount versions.

The 200 series of Discrete I/O modules are used only with 200 series intercom stations. Installation instructions for those modules are contained in a separate document.

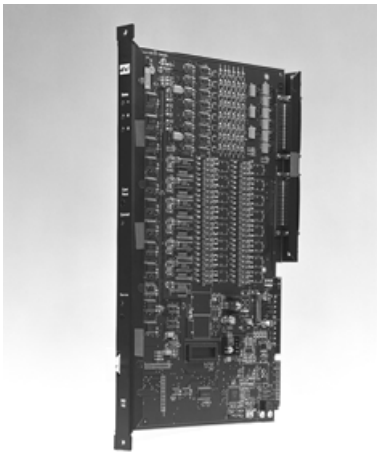
2. Description

Discrete I/O modules are used to monitor contact inputs and to control outputs. Each input may be used to monitor one unsupervised contact closure or up to two supervised contact closures. Electronic current sinking type switches may also be used as input actuators.

Output control options for Discrete I/O modules include current sinking, voltage source, LED driver and relay contacts. Relay outputs are form C contact type (i.e. common, normally open, and normally closed poles for each output). All outputs on a Discrete I/O module must be the same type.

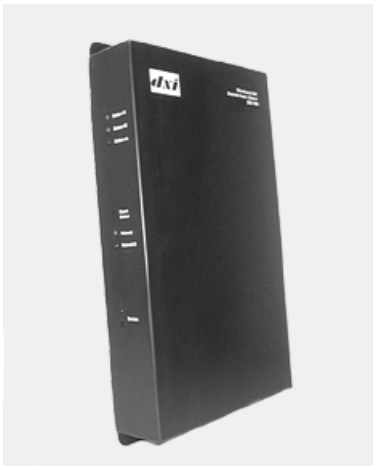
2.1 100 Series Discrete I/O Modules

100 Series Discrete I/O modules are available in three physical configurations - card cage board, rack mount, and wall mount. Each is available with 48 input points and 48 solid-state outputs. When the relay output option is selected, only 16 relays are available on the 100 Series Discrete I/O modules.



DIO-100

DIO-110



DIO-120

2.2 300 Series Discrete I/O Modules

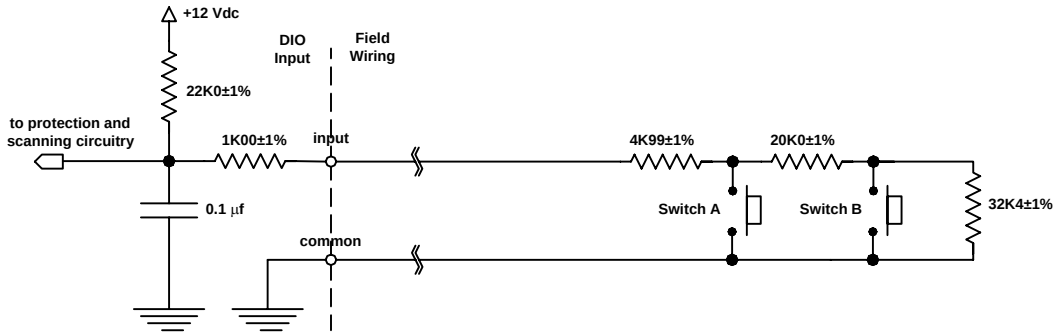
Discrete I/O modules are only available in a wall mount (DIO-320) configuration. The DIO-320 includes 48 contact closure monitor points and 48 from C relay outputs.

3. Discrete Inputs

The DIO module provides 48 discrete input channels. These inputs monitor the state of switches, relays, or other devices, such as open collector outputs of other equipment. The input may have termination resistors at the switch to allow the DIO to monitor the input wiring and generate alarms for open circuit and closed circuit faults. Each input channel can monitor up to two input contacts with suitable termination, or a single unterminated contact. Possible switch terminations are shown below.

Supervised 2 Switch Input

The following wiring at the switch allows the system to detect which one of the two switches is closed, as well as monitor for open or short faults.



Supervised 2 Switch Input

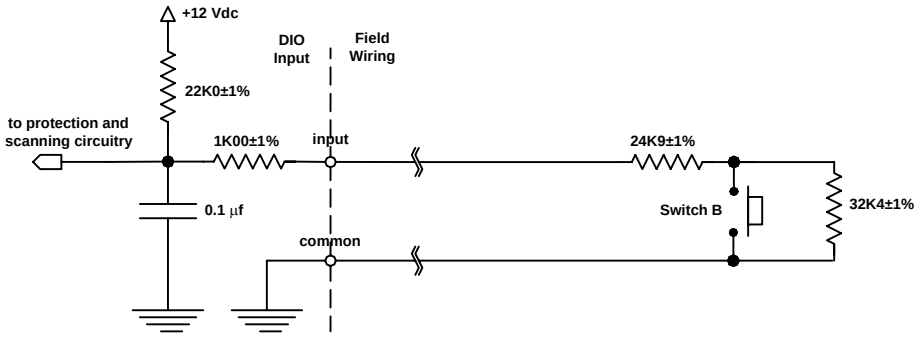
Each input can be in one of five states. The voltage at the DIO input terminal determines the states. The actual voltage measured will be slightly different than those given in the table due to component tolerances and the resistance of the wiring to the switch.

Input State	Wiring	Switch B	Switch A	Voltage
Open Fault	Open Circuit	NA	NA	12
Idle	Normal	Not Pushed	Not Pushed	8.6
Switch B Pressed	Normal	Pushed	Not Pushed	6.3
Switch A Pressed	Normal	NA	Pushed	2.1
Short Fault	Short Circuit	NA	NA	0

Terminal Voltages for Supervised 2 Switch Input

Supervised 1 Switch Input

A single switch, with a terminating resistor network can be used to detect switch closure, as well as monitor open and short faults. Either Switch A or Switch B can be used as the single switch.

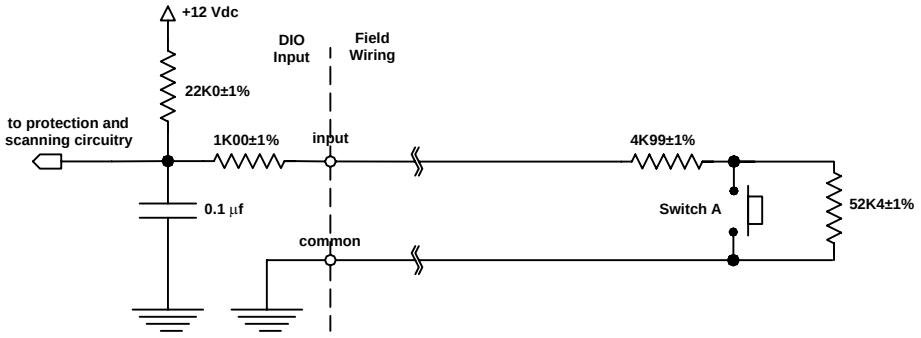


Supervised 1 Switch (Switch B) Input

The above schematic shows the terminating resistors when Switch B is used. Each input can be in one of four states. The states are determined by the voltage at the DIO input terminal. The actual voltage measured will be slightly different than those given in the table due to component tolerances and the resistance of the wiring to the switch.

Input State	Wiring	Switch B	Voltage
Open Fault	Open Circuit	NA	12
Idle	Normal	Not Pushed	8.6
Switch B Pressed	Normal	Pushed	6.3
Short Fault	Short Circuit	NA	0

Terminal Voltages for Supervised 1 Switch Input



Supervised 1 Switch (Switch A) Input

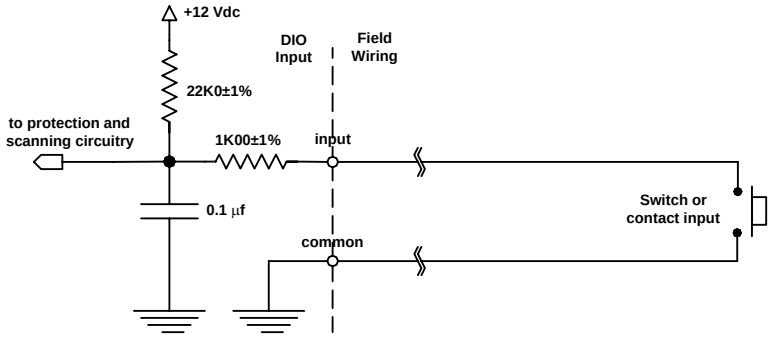
The above schematic shows the terminating resistors when Switch A is used. Again each input can be in one of four states. The voltage at the DIO input terminal determines the states. The actual voltage measured will be slightly different than those given in the table due to component tolerances and the resistance of the wiring to the switch.

Input State	Wiring	Switch A	Voltage
Open Fault	Open Circuit	NA	12
Idle	Normal	Not Pushed	8.6
Switch A Pressed	Normal	Pushed	2.1
Short Fault	Short Circuit	NA	0

Terminal Voltages for Supervised 1 Switch Input

Non-Supervised 1 Switch Input

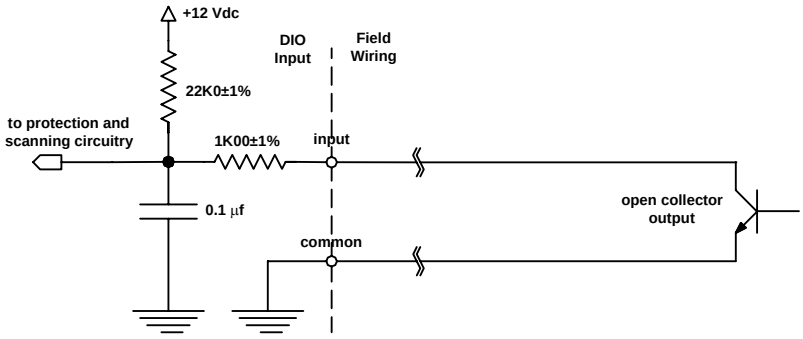
The following switch configuration allows the system to detect a switch contact closure.



Non-Supervised 1 Switch Input

Solid State Switch Input

The following schematic shows the input connected to an open collector source. The open collector must be capable of sinking 0.6 mA. Note that supervision resistors can be used to put 1 or 2 inputs on a single line (i.e. by replacing the switches in the Supervised 2 Switch Input schematic with open collector transistors switches).



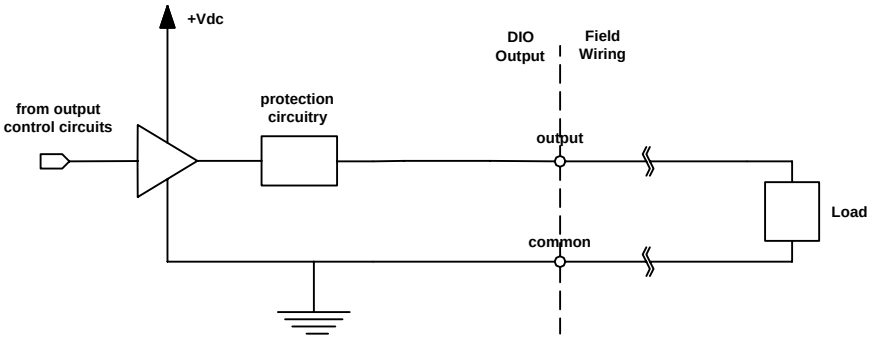
Solid State Switch Input

4. Discrete Outputs

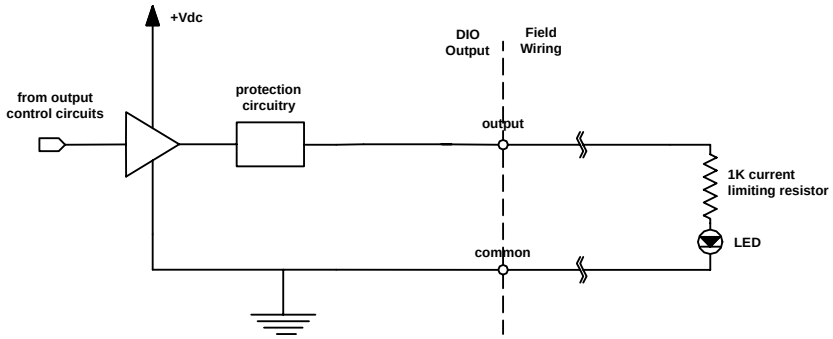
The DIO board provides up to 48 discrete outputs. Four output types are available from the factory – source outputs, LED outputs, sink outputs and relay outputs.

4.1 Source Outputs

Source outputs are high side voltage driver outputs that provide 12 Vdc @ 30 mA of current capacity per output. They may be used to drive LEDs and 12 V relays. If a source output is used to drive an LED, a current-limit resistor must be provided.



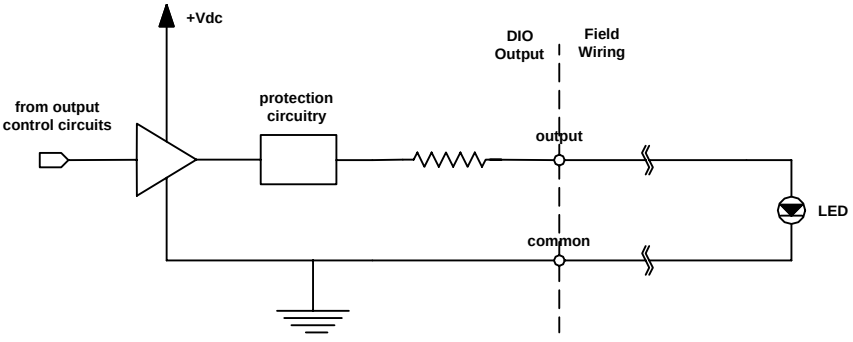
Source Output



Source Output with External Current Limiting

4.2 LED Outputs

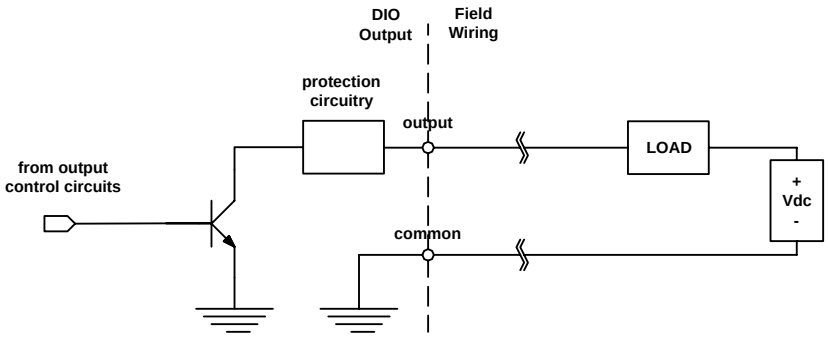
LED outputs are a special version of the source outputs that supply a 10 mA current-limited signal. The current-limit resistor is supplied as an integral part of the LED output.



LED Driver Output

4.3 Sink Outputs

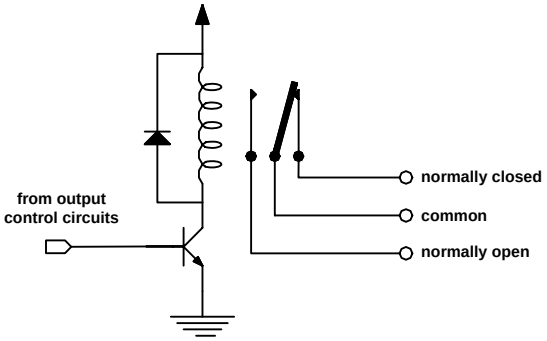
Sink outputs are open collector outputs that provide 30 mA of current sinking capacity per output. They may be used to drive LEDs, relays, or connect to other equipment. If a sink output is used to drive an LED, a current-limit resistor must be provided. The maximum voltage that may be connected to a sink input is 30 Vdc.



Sink Output

4.4 Relay Outputs

Relay outputs are floating contact outputs that provide a common and both a normally closed and a normally open contact from a relay. The output is capable of handling 400 mA @ 30 Vdc maximum.



Relay Output

5. Field Wiring

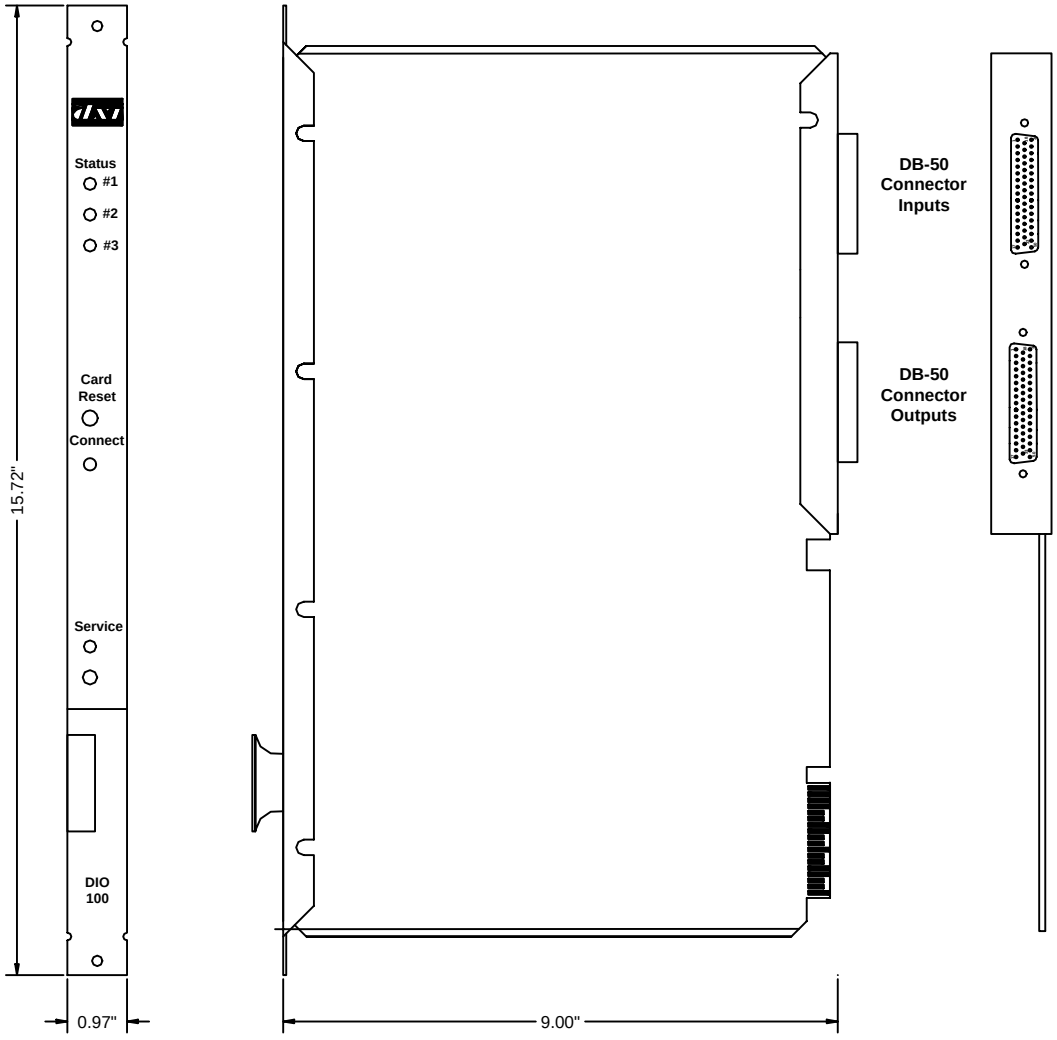
With card cage mounted modules (DIO-100) power and network connections are made through the card cage back plane. When ordering card cage mounted DIO modules, they must be of the same network type (i.e. direct connect or free topology) as the card cage in which they are mounted. Input/output field wiring is made via quick release connectors located at the back of the card.

Panel mount and wall mound modules (DIO-110, DIO-120, DIO-310 and DIO-320) require separate power and free topology network connections as well as the field wiring to the input/output connectors. The power input is made to terminals labeled PWR A+ and PWR A-. A redundant (standby) power supply can be connected to the terminals labeled PWR B+ and PWR B-. The free topology network (Echelon LonWorks network) connections are made to the terminals labeled NET A. A redundant free topology connection can be made to the terminals labeled NET B.

Each source, sink or LED output channel requires a single pin on the output connector (with two pins on the connector providing the ground connection). Relay output channels however require three connections - normally open (NO), normally closed (NC), and common (COM).

5.1 DIO-110 Card Cage DIO

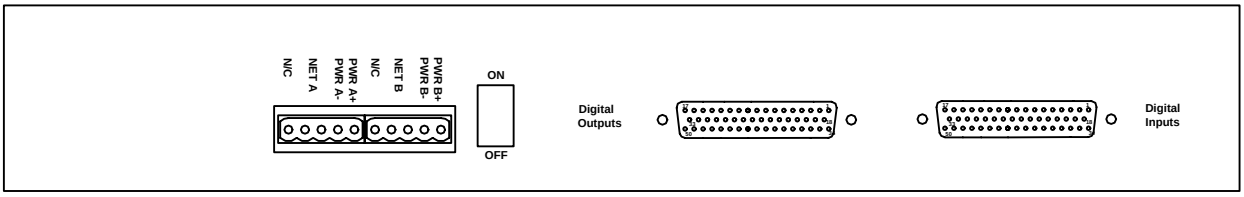
The card cage mounted DIO-100 has two DB-50 field interface wiring connectors; one for input points and one for output points. The position of the DB-50 connectors is shown on the following figure, with the inputs connected to the top DB-50 connector and the outputs taken from the lower DB-50 connector.



DIO-100 Showing Location of Input and Output DB-50 Connectors

5.2 DIO-110 Rack Mount DIO

The following diagram shows the rear view of the rack mount DIO-110. The location of the input and output DB-50 connectors is shown, as well as the power supply and free topology terminals.

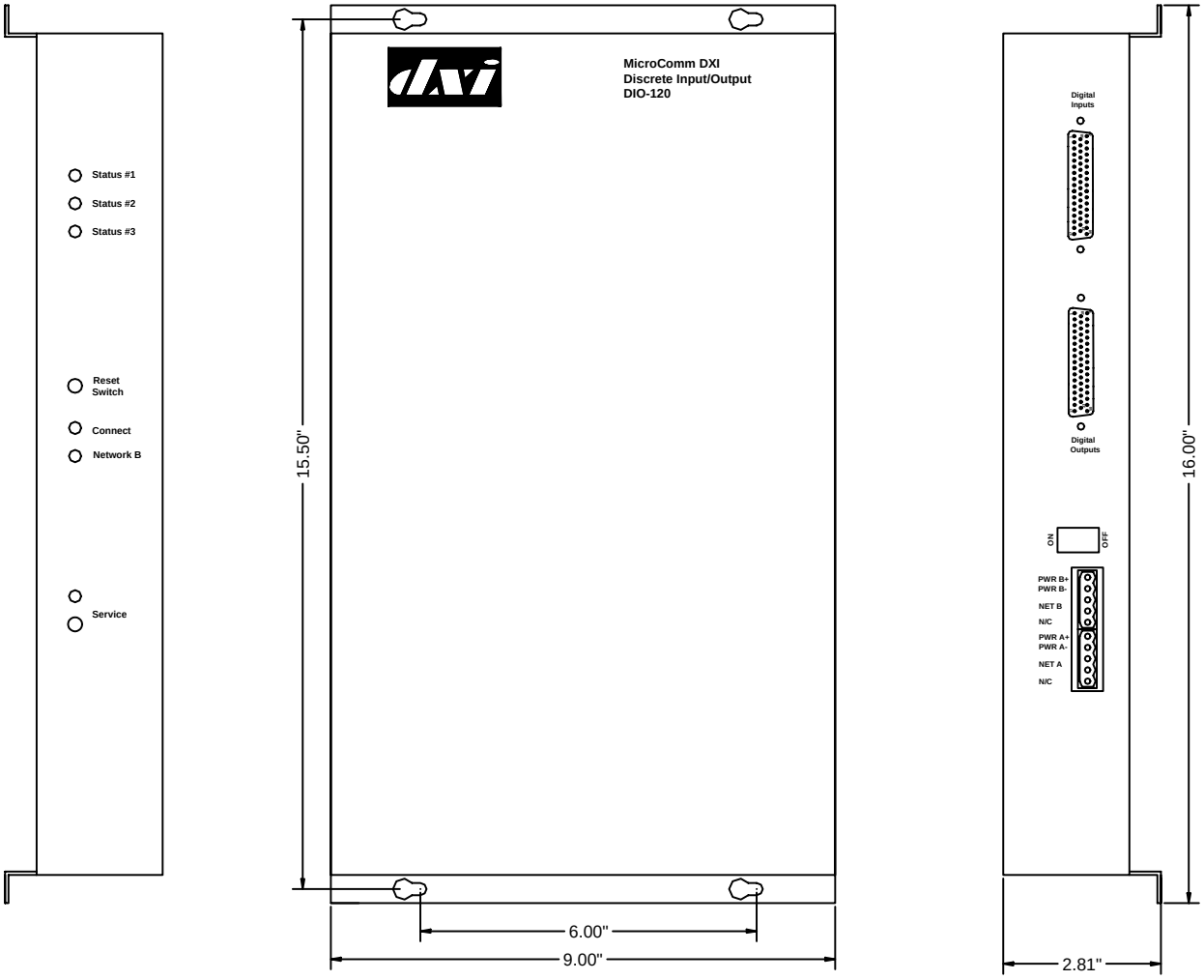


DIO-110 Rear Panel

5.3 DIO-120 Wall Mount DIO

The following figure shows the location of the connectors and terminals for the wall mount DIO-120

Indicated on the figure are the locations for mounting screws to wall mount the unit. Either #8 or #10 round head screws can be used to mount the DIO-120.

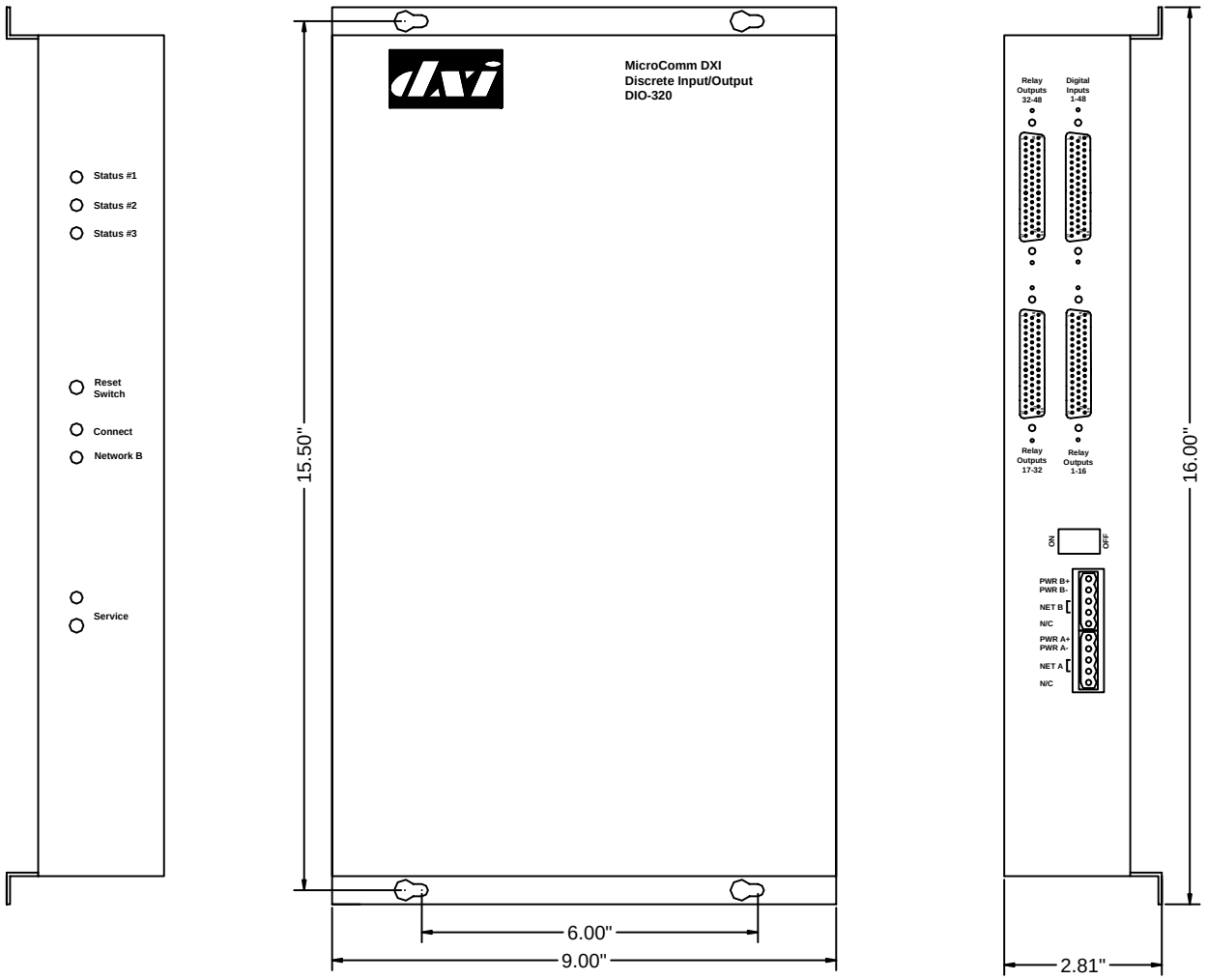


DIO-120 Showing Connectors and Mounting Hole Detail

5.4 DIO-320 Wall Mount DIO with Relay Outputs

The DIO-310 has four DB-50 connectors for input/output. The locations of these connectors as well as the terminal locations for power and network connections are shown in the following figure.

The positions for mounting screws are also shown on the figure.



DIO-320 Connectors and Mounting Hole Details

5.5 Field Interface Wiring

Regardless of input or output type, DIO module field interface connections are made using model CBL-140 field interface cables. They consist of a 50-conductor cable terminated with a quick release DB-50 connector. The connector on the DIO module is a female type, and the mating connector on the CBL-140 is a male type. The pin configuration of each connector is shown in the following diagram.

5.5.1 DIO Input Wiring

The following table gives the pin numbers, wire colors, and TERMINAL block position for the DIO input signals when CBL-140 field wiring interface cables are used. The cables should be terminated on the terminal block in the fashion shown below.

DB-50 Pin Number	Signal Name	Wire Color*	Terminal Block Pin Number
1	Input 1	White-Blue	1
18	Input 2	Blue-White	2
34	Input 3	White-Orange	3
2	Input 4	Orange-White	4
19	Input 5	White-Green	5
35	Input 6	Green-White	6
3	Input 7	White-Brown	7
20	Input 8	Brown-White	8
36	Input 9	White-Slate	9
4	Input 10	Slate-White	10
21	Input 11	Red-Blue	11
37	Input 12	Blue-Red	12
5	Input 13	Red-Orange	13
22	Input 14	Orange-Red	14
38	Input 15	Red-Green	15
6	Input 16	Green-Red	16
23	Input 17	Red-Brown	17
39	Input 18	Brown-Red	18
7	Input 19	Red-Slate	19
24	Input 20	Slate-Red	20
40	Input 21	Black-Blue	21
8	Input 22	Blue-Black	22
25	Input 23	Black-Orange	23
41	Input 24	Orange-Black	24
9	Input 25	Black-Green	25
26	Input 26	Green-Black	26
42	Input 27	Black-Brown	27
10	Input 28	Brown-Black	28
27	Input 29	Black-Slate	29
43	Input 30	Slate-Black	30
11	Input 31	Yellow-Blue	31
28	Input 32	Blue-Yellow	32
44	Input 33	Yellow-Orange	33
12	Input 34	Orange-Yellow	34
29	Input 35	Yellow-Green	35
45	Input 36	Green-Yellow	36
13	Input 37	Yellow-Brown	37
30	Input 38	Brown-Yellow	38
46	Input 39	Yellow-Slate	39
14	Input 40	Slate-Yellow	40
31	Input 41	Violet-Blue	41
47	Input 42	Blue-Violet	42
15	Input 43	Violet-Orange	43
32	Input 44	Orange-Violet	44
48	Input 45	Violet-Green	45
16	Input 46	Green-Violet	46
33	Input 47	Violet-Brown	47
49	Input 48	Brown-Violet	48
17	Gnd	Violet-Slate	49
50	Gnd	Slate-Violet	50

* Note: The cable pairs may or may not have a stripe, i.e. instead of the first pair being White/Blue Stripe and Blue/White Stripe it may be a White Blue pair.

5.5.2 DIO Solid State Output Wiring

The following table gives the pin numbers, wire colors, and terminal block position for the solid state DIO output signals (source, sink, and LED driver) when CBL-140 field wiring interface cables are used. The cables should be terminated on the terminal block in the fashion shown below

DB-50 Pin Number	Signal Name	Wire Color*	Terminal Block Pin Number
1	Output 1	White-Blue	1
18	Output 2	Blue-White	2
34	Output 3	White-Orange	3
2	Output 4	Orange-White	4
19	Output 5	White-Green	5
35	Output 6	Green-White	6
3	Output 7	White-Brown	7
20	Output 8	Brown-White	8
36	Output 9	White-Slate	9
4	Output 10	Slate-White	10
21	Output 11	Red-Blue	11
37	Output 12	Blue-Red	12
5	Output 13	Red-Orange	13
22	Output 14	Orange-Red	14
38	Output 15	Red-Green	15
6	Output 16	Green-Red	16
23	Output 17	Red-Brown	17
39	Output 18	Brown-Red	18
7	Output 19	Red-Slate	19
24	Output 20	Slate-Red	20
40	Output 21	Black-Blue	21
8	Output 22	Blue-Black	22
25	Output 23	Black-Orange	23
41	Output 24	Orange-Black	24
9	Output 25	Black-Green	25
26	Output 26	Green-Black	26
42	Output 27	Black-Brown	27
10	Output 28	Brown-Black	28
27	Output 29	Black-Slate	29
43	Output 30	Slate-Black	30
11	Output 31	Yellow-Blue	31
28	Output 32	Blue-Yellow	32
44	Output 33	Yellow-Orange	33
12	Output 34	Orange-Yellow	34
29	Output 35	Yellow-Green	35
45	Output 36	Green-Yellow	36
13	Output 37	Yellow-Brown	37
30	Output 38	Brown-Yellow	38
46	Output 39	Yellow-Slate	39
14	Output 40	Slate-Yellow	40
31	Output 41	Violet-Blue	41
47	Output 42	Blue-Violet	42
15	Output 43	Violet-Orange	43
32	Output 44	Orange-Violet	44
48	Output 45	Violet-Green	45
16	Output 46	Green-Violet	46
33	Output 47	Violet-Brown	47
49	Output 48	Brown-Violet	48
17	Gnd	Violet-Slate	49
50	Gnd	Slate-Violet	50

* Note: The cable pairs may or may not have a stripe, i.e. instead of the first pair being White/Blue Stripe and Blue/White Stripe it may be a White Blue pair.

5.5.3 DIO Relay Output Wiring

The following table gives the pin numbers, wire colors, and terminal block position for the DIO relay output connections when CBL-140 field wiring interface cables are used. Note that each group of 16 relays (1-16, 17-32, 33-48) are connected via separate cables to separate connectors. The cables should be terminated on the terminal block in the fashion shown below.

DB-50 Pin Number	Signal Name	Wire Color*	Terminal Block Pin Number
1	NO 1-17-33	White-Blue	1
18	COM 1-17-33	Blue-White	2
34	NC 1-17-33	White-Orange	3
2	NO 2-18-34	Orange-White	4
19	COM 2-18-34	White-Green	5
35	NC 2-18-34	Green-White	6
3	NO 3-19-35	White-Brown	7
20	COM 3-19-35	Brown-White	8
36	NC 3-19-35	White-Slate	9
4	NO 4-20-36	Slate-White	10
21	COM 4-20-36	Red-Blue	11
37	NC-4-20-36	Blue-Red	12
5	NO 5-21-37	Red-Orange	13
22	COM 5-21-37	Orange-Red	14
38	NC 5-21-37	Red-Green	15
6	NO 6-22-38	Green-Red	16
23	COM 6-22-38	Red-Brown	17
39	NC 6-22-38	Brown-Red	18
7	NO 7-23-39	Red-Slate	19
24	COM 7-23-39	Slate-Red	20
40	NC 7-23-39	Black-Blue	21
8	NO 8-24-40	Blue-Black	22
25	COM 8-24-40	Black-Orange	23
41	NC 8-24-40	Orange-Black	24
9	NO 9-25-41	Black-Green	25
26	COM 9-25-41	Green-Black	26
42	NC 9-25-41	Black-Brown	27
10	NO 10-26-42	Brown-Black	28
27	COM 10-26-42	Black-Slate	29
43	NC 10-26-42	Slate-Black	30
11	NO 11-27-43	Yellow-Blue	31
28	COM 11-27-43	Blue-Yellow	32
44	NC 11-27-43	Yellow-Orange	33
12	NO 12-28-44	Orange-Yellow	34
29	COM 12-28-44	Yellow-Green	35
45	NC 12-28-44	Green-Yellow	36
13	NO 13-29-45	Yellow-Brown	37
30	COM 13-29-45	Brown-Yellow	38
46	NC 13-29-45	Yellow-Slate	39
14	NO 14-30-46	Slate-Yellow	40
31	COM 14-30-46	Violet-Blue	41
47	NC 14-30-46	Blue-Violet	42
15	NO 15-31-47	Violet-Orange	43
32	COM 15-31-47	Orange-Violet	44
48	NC 15-31-47	Violet-Green	45
16	NO 16-32-48	Green-Violet	46
33	COM 16-32-48	Violet-Brown	47
49	NC 16-32-48	Brown-Violet	48
17	Gnd	Violet-Slate	49
50	Gnd	Slate-Violet	50

* Note: The cable pairs may or may not have a stripe, i.e. instead of the first pair being White/Blue Stripe and Blue/White Stripe it may be a White Blue pair.

6. System Planning Worksheets

The following pages contain blank system planning worksheets for the DIO modules. They contain a cross reference that includes the I/O board's mating connector, pin signal identification, field wiring cable conductor color, terminal block terminal point, and space to identify the field connection.

Card Cage/Location: _____ Card Slot/ID: _____

DB-50 Pin Number	Signal Name	Wire Color*	Terminal Block Pin Number	Field Device
1	Input 1	White-Blue	1	
18	Input 2	Blue-White	2	
34	Input 3	White-Orange	3	
2	Input 4	Orange-White	4	
19	Input 5	White-Green	5	
35	Input 6	Green-White	6	
3	Input 7	White-Brown	7	
20	Input 8	Brown-White	8	
36	Input 9	White-Slate	9	
4	Input 10	Slate-White	10	
21	Input 11	Red-Blue	11	
37	Input 12	Blue-Red	12	
5	Input 13	Red-Orange	13	
22	Input 14	Orange-Red	14	
38	Input 15	Red-Green	15	
6	Input 16	Green-Red	16	
23	Input 17	Red-Brown	17	
39	Input 18	Brown-Red	18	
7	Input 19	Red-Slate	19	
24	Input 20	Slate-Red	20	
40	Input 21	Black-Blue	21	
8	Input 22	Blue-Black	22	
25	Input 23	Black-Orange	23	
41	Input 24	Orange-Black	24	
9	Input 25	Black-Green	25	
26	Input 26	Green-Black	26	
42	Input 27	Black-Brown	27	
10	Input 28	Brown-Black	28	
27	Input 29	Black-Slate	29	
43	Input 30	Slate-Black	30	
11	Input 31	Yellow-Blue	31	
28	Input 32	Blue-Yellow	32	
44	Input 33	Yellow-Orange	33	
12	Input 34	Orange-Yellow	34	
29	Input 35	Yellow-Green	35	
45	Input 36	Green-Yellow	36	
13	Input 37	Yellow-Brown	37	
30	Input 38	Brown-Yellow	38	
46	Input 39	Yellow-Slate	39	
14	Input 40	Slate-Yellow	40	
31	Input 41	Violet-Blue	41	
47	Input 42	Blue-Violet	42	
15	Input 43	Violet-Orange	43	
32	Input 44	Orange-Violet	44	
48	Input 45	Violet-Green	45	
16	Input 46	Green-Violet	46	
33	Input 47	Violet-Brown	47	
49	Input 48	Brown-Violet	48	
17	Gnd	Violet-Slate	49	
50	Gnd	Slate-Violet	50	

* Note: The cable pairs may or may not have a stripe, i.e. instead of the first pair being White/Blue Stripe and Blue/White Stripe it may be a White Blue pair.

Card Cage/Location: _____ Card Slot/ID: _____

DB-50 Pin Number	Signal Name	Wire Color*	Terminal Block Pin Number	Field Device
1	Output 1	White-Blue	1	
18	Output 2	Blue-White	2	
34	Output 3	White-Orange	3	
2	Output 4	Orange-White	4	
19	Output 5	White-Green	5	
35	Output 6	Green-White	6	
3	Output 7	White-Brown	7	
20	Output 8	Brown-White	8	
36	Output 9	White-Slate	9	
4	Output 10	Slate-White	10	
21	Output 11	Red-Blue	11	
37	Output 12	Blue-Red	12	
5	Output 13	Red-Orange	13	
22	Output 14	Orange-Red	14	
38	Output 15	Red-Green	15	
6	Output 16	Green-Red	16	
23	Output 17	Red-Brown	17	
39	Output 18	Brown-Red	18	
7	Output 19	Red-Slate	19	
24	Output 20	Slate-Red	20	
40	Output 21	Black-Blue	21	
8	Output 22	Blue-Black	22	
25	Output 23	Black-Orange	23	
41	Output 24	Orange-Black	24	
9	Output 25	Black-Green	25	
26	Output 26	Green-Black	26	
42	Output 27	Black-Brown	27	
10	Output 28	Brown-Black	28	
27	Output 29	Black-Slate	29	
43	Output 30	Slate-Black	30	
11	Output 31	Yellow-Blue	31	
28	Output 32	Blue-Yellow	32	
44	Output 33	Yellow-Orange	33	
12	Output 34	Orange-Yellow	34	
29	Output 35	Yellow-Green	35	
45	Output 36	Green-Yellow	36	
13	Output 37	Yellow-Brown	37	
30	Output 38	Brown-Yellow	38	
46	Output 39	Yellow-Slate	39	
14	Output 40	Slate-Yellow	40	
31	Output 41	Violet-Blue	41	
47	Output 42	Blue-Violet	42	
15	Output 43	Violet-Orange	43	
32	Output 44	Orange-Violet	44	
48	Output 45	Violet-Green	45	
16	Output 46	Green-Violet	46	
33	Output 47	Violet-Brown	47	
49	Output 48	Brown-Violet	48	
17	Gnd	Violet-Slate	49	
50	Gnd	Slate-Violet	50	

Card Cage/Location: _____ Card Slot/ID: _____

DB-50 Pin Number	Signal Name	Wire Color*	Terminal Block Pin Number	Field Device
1	Relay 1 NO	White-Blue	1	
18	Relay 1 COM	Blue-White	2	
34	Relay 1 NC	White-Orange	3	
2	Relay 2 NO	Orange-White	4	
19	Relay 2 COM	White-Green	5	
35	Relay 2 NC	Green-White	6	
3	Relay 3 NO	White-Brown	7	
20	Relay 3 COM	Brown-White	8	
36	Relay 3 NC	White-Slate	9	
4	Relay 4 NO	Slate-White	10	
21	Relay 4 COM	Red-Blue	11	
37	Relay 4 NC	Blue-Red	12	
5	Relay 5 NO	Red-Orange	13	
22	Relay 5 COM	Orange-Red	14	
38	Relay 5 NC	Red-Green	15	
6	Relay 6 NO	Green-Red	16	
23	Relay 6 COM	Red-Brown	17	
39	Relay 6 NC	Brown-Red	18	
7	Relay 7 NO	Red-Slate	19	
24	Relay 7 COM	Slate-Red	20	
40	Relay 7 NC	Black-Blue	21	
8	Relay 8 NO	Blue-Black	22	
25	Relay 8 COM	Black-Orange	23	
41	Relay 8 NC	Orange-Black	24	
9	Relay 9 NO	Black-Green	25	
26	Relay 9 COM	Green-Black	26	
42	Relay 9 NC	Black-Brown	27	
10	Relay 10 NO	Brown-Black	28	
27	Relay 10 COM	Black-Slate	29	
43	Relay 10 NC	Slate-Black	30	
11	Relay 11 NO	Yellow-Blue	31	
28	Relay 11 COM	Blue-Yellow	32	
44	Relay 11 NC	Yellow-Orange	33	
12	Relay 12 NO	Orange-Yellow	34	
29	Relay 12 COM	Yellow-Green	35	
45	Relay 12 NC	Green-Yellow	36	
13	Relay 13 NO	Yellow-Brown	37	
30	Relay 13 COM	Brown-Yellow	38	
46	Relay 13 NC	Yellow-Slate	39	
14	Relay 14 NO	Slate-Yellow	40	
31	Relay 14 COM	Violet-Blue	41	
47	Relay 14 NC	Blue-Violet	42	
15	Relay 15 NO	Violet-Orange	43	
32	Relay 15 COM	Orange-Violet	44	
48	Relay 15 NC	Violet-Green	45	
16	Relay 16 NO	Green-Violet	46	
33	Relay 16 COM	Violet-Brown	47	
49	Relay 16 NC	Brown-Violet	48	
17	Gnd	Violet-Slate	49	
50	Gnd	Slate-Violet	50	

* Note: The cable pairs may or may not have a stripe, i.e. instead of the first pair being White/Blue Stripe and Blue/White Stripe it may be a White Blue pair.

Card Cage/Location: _____ Card Slot/ID: _____

DB-50 Pin Number	Signal Name	Wire Color*	Terminal Block Pin Number	Field Device
1	Relay 17 NO	White-Blue	1	
18	Relay 17 COM	Blue-White	2	
34	Relay 17 NC	White-Orange	3	
2	Relay 18 NO	Orange-White	4	
19	Relay 18 COM	White-Green	5	
35	Relay 18 NC	Green-White	6	
3	Relay 19 NO	White-Brown	7	
20	Relay 19 COM	Brown-White	8	
36	Relay 19 NC	White-Slate	9	
4	Relay 20 NO	Slate-White	10	
21	Relay 20 COM	Red-Blue	11	
37	Relay 20 NC	Blue-Red	12	
5	Relay 21 NO	Red-Orange	13	
22	Relay 21 COM	Orange-Red	14	
38	Relay 21 NC	Red-Green	15	
6	Relay 22 NO	Green-Red	16	
23	Relay 22 COM	Red-Brown	17	
39	Relay 22 NC	Brown-Red	18	
7	Relay 23 NO	Red-Slate	19	
24	Relay 23 COM	Slate-Red	20	
40	Relay 23 NC	Black-Blue	21	
8	Relay 24 NO	Blue-Black	22	
25	Relay 24 COM	Black-Orange	23	
41	Relay 24 NC	Orange-Black	24	
9	Relay 25 NO	Black-Green	25	
26	Relay 25 COM	Green-Black	26	
42	Relay 25 NC	Black-Brown	27	
10	Relay 26 NO	Brown-Black	28	
27	Relay 26 COM	Black-Slate	29	
43	Relay 26 NC	Slate-Black	30	
11	Relay 27 NO	Yellow-Blue	31	
28	Relay 27 COM	Blue-Yellow	32	
44	Relay 27 NC	Yellow-Orange	33	
12	Relay 28 NO	Orange-Yellow	34	
29	Relay 28 COM	Yellow-Green	35	
45	Relay 28 NC	Green-Yellow	36	
13	Relay 29 NO	Yellow-Brown	37	
30	Relay 29 COM	Brown-Yellow	38	
46	Relay 29 NC	Yellow-Slate	39	
14	Relay 30 NO	Slate-Yellow	40	
31	Relay 30 COM	Violet-Blue	41	
47	Relay 30 NC	Blue-Violet	42	
15	Relay 31 NO	Violet-Orange	43	
32	Relay 31 COM	Orange-Violet	44	
48	Relay 31 NC	Violet-Green	45	
16	Relay 32 NO	Green-Violet	46	
33	Relay 32 COM	Violet-Brown	47	
49	Relay 32 NC	Brown-Violet	48	
17	Gnd	Violet-Slate	49	
50	Gnd	Slate-Violet	50	

* Note: The cable pairs may or may not have a stripe, i.e. instead of the first pair being White/Blue Stripe and Blue/White Stripe it may be a White Blue pair.

Card Cage/Location: _____ Card Slot/ID: _____

DB-50 Pin Number	Signal Name	Wire Color*	Terminal Block Pin Number	Field Device
1	Relay 33 NO	White-Blue	1	
18	Relay 33 COM	Blue-White	2	
34	Relay 33 NC	White-Orange	3	
2	Relay 34 NO	Orange-White	4	
19	Relay 34 COM	White-Green	5	
35	Relay 34 NC	Green-White	6	
3	Relay 35 NO	White-Brown	7	
20	Relay 35 COM	Brown-White	8	
36	Relay 35 NC	White-Slate	9	
4	Relay 36 NO	Slate-White	10	
21	Relay 36 COM	Red-Blue	11	
37	Relay 36 NC	Blue-Red	12	
5	Relay 37 NO	Red-Orange	13	
22	Relay 37 COM	Orange-Red	14	
38	Relay 37 NC	Red-Green	15	
6	Relay 38 NO	Green-Red	16	
23	Relay 38 COM	Red-Brown	17	
39	Relay 38 NC	Brown-Red	18	
7	Relay 39 NO	Red-Slate	19	
24	Relay 39 COM	Slate-Red	20	
40	Relay 39 NC	Black-Blue	21	
8	Relay 40 NO	Blue-Black	22	
25	Relay 40 COM	Black-Orange	23	
41	Relay 40 NC	Orange-Black	24	
9	Relay 41 NO	Black-Green	25	
26	Relay 41 COM	Green-Black	26	
42	Relay 41 NC	Black-Brown	27	
10	Relay 42 NO	Brown-Black	28	
27	Relay 42 COM	Black-Slate	29	
43	Relay 42 NC	Slate-Black	30	
11	Relay 43 NO	Yellow-Blue	31	
28	Relay 43 COM	Blue-Yellow	32	
44	Relay 43 NC	Yellow-Orange	33	
12	Relay 44 NO	Orange-Yellow	34	
29	Relay 44 COM	Yellow-Green	35	
45	Relay 44 NC	Green-Yellow	36	
13	Relay 45 NO	Yellow-Brown	37	
30	Relay 45 COM	Brown-Yellow	38	
46	Relay 45 NC	Yellow-Slate	39	
14	Relay 46 NO	Slate-Yellow	40	
31	Relay 46 COM	Violet-Blue	41	
47	Relay 46 NC	Blue-Violet	42	
15	Relay 47 NO	Violet-Orange	43	
32	Relay 47 COM	Orange-Violet	44	
48	Relay 47 NC	Violet-Green	45	
16	Relay 48 NO	Green-Violet	46	
33	Relay 48 COM	Violet-Brown	47	
49	Relay 48 NC	Brown-Violet	48	
17	Gnd	Violet-Slate	49	
50	Gnd	Slate-Violet	50	

* Note: The cable pairs may or may not have a stripe, i.e. instead of the first pair being White/Blue Stripe and Blue/White Stripe it may be a White Blue pair.