



Mixed DC I/O Module

16 Input / 16 Output Channels

HE400DIQ811 / HE409DIQ811

12/24 Vdc In, Positive/Negative Logic

24Vdc Out, Negative Logic

HE409DIQ816

12/24 Vdc In, Positive Logic

24Vdc Out, Positive Logic

SmartStix

For electronic information including the Electronic Data Sheet (ESD), see www.SmartStix.com.
This product has a Programming Reference (SUP0552).

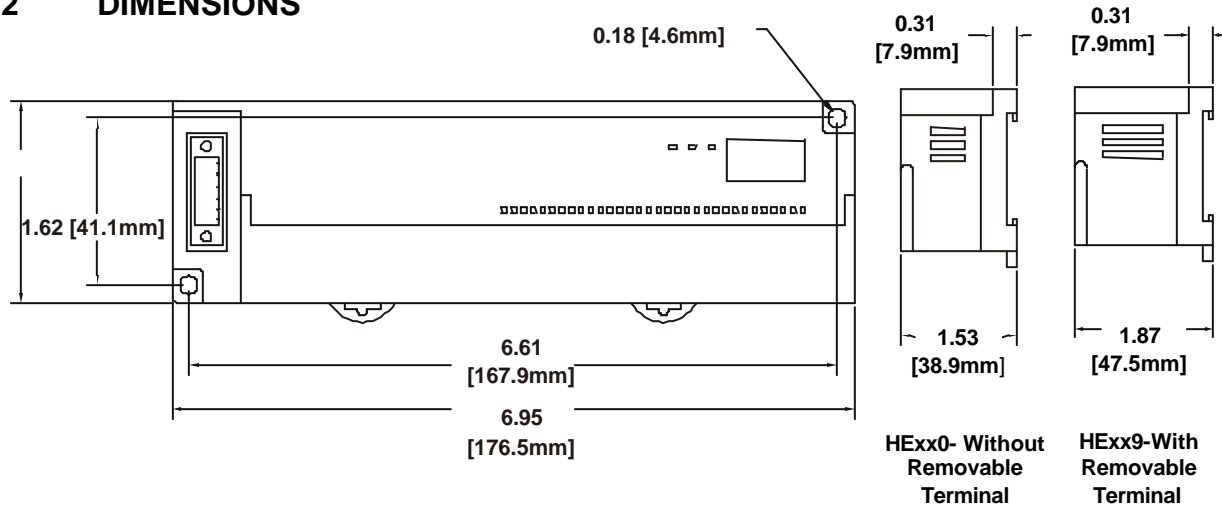
HE400 denotes a non-removable terminal strip; HE409 denotes a removable terminal strip.

1 SPECIFICATIONS

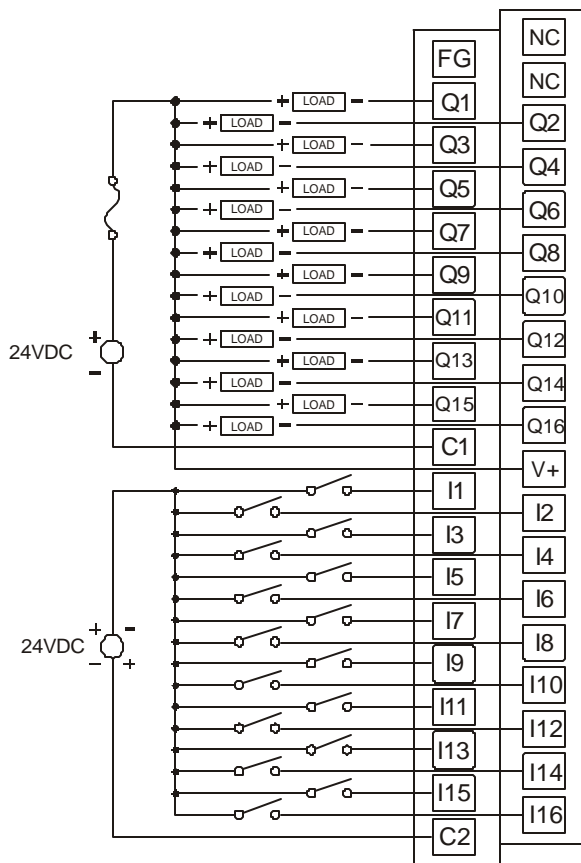
DIQ811 / 816 IN				
Number of input points	16	OFF to ON Response	0 - 3ms. or less	
Rated Input Current	7mA	ON to OFF Response	0 - 3ms. or less	
ON Voltage Level	19VDC or less	Common Terminal	16 points / COM	
OFF Voltage Level	6VDC or less	Operating Indicator	LED turns on during ON state of input	
Input Characteristics	Bidirectional	External Connections	Terminal block connector (M3 x 6 screws)	
Isolation Method	Photo Coupler			
DIQ811 / 816 OUT				
Number of output points	16	External Power Supply	Voltage	24VDC \pm 10%(ripple voltage: 4Vp-p or less)
Commons per Module	1		Current	30mA (TYP, All points ON)
Operating Voltage	24VDC	OFF to ON Response	2ms.	
Rated Load Voltage	24VDC	ON to OFF Response	2ms.	
Max. Load Current per channel	DIQ 811	0.1A Max. per output 2A per common	Output Type	DIQ811 Sinking
				DIQ816 Sourcing
	DIQ 816	0.5A Max. per output 3A per common	Max. Inrush Current per channel	DIQ811 0.4A, 10ms.
				DIQ816 1A, 10ms
OFF Leakage Current	0.1mA or less	Common Method	16 points / COM	
Internal power Consumption (mA)	350	Weight	DIQ811	8.40 oz. (238 g)
			DIQ816	10.16 oz. (288 g)

GENERAL					
Storage Temperature	-25° to 70° C		Altitude for use	Up to 2,000m	
Operating Temperature	0° to 55° C		Pollution degree	2 or lower	
Atmosphere	Free from corrosive gases and excessive dust		Internal power Consumption (mA)	350	
Cooling method	Self-cooling		Weight	DIQ811	8.40 oz. (238 g)
Operating and Storage Humidity	5 to 95% Non-condensing			DIQ816	10.16 oz. (288 g)
Vibration					
Occasional Vibration					
Frequency	Acceleration	Amplitude		Sweep Count	
10 ≤ f < 57 Hz	-	0.075 mm		10 times in each direction for X,Y,Z	
57 ≤ f ≤ 150 Hz	9.8 m/s ² {1G}	-			
Continuous Vibration					
Frequency	Acceleration	Amplitude		Sweep Count	
10 ≤ f < 57 Hz	-	0.035 mm		10 times in each direction for X,Y,Z	
57 ≤ f ≤ 150 Hz	4.9 m/s ² {0.5G}	-			
Shocks					
Maximum shock acceleration	147 m/s ² {15G}				
Duration Time	11 ms.				
Pulse Wave	Half sine wave pulse (3 times in each of X, Y, Z directions)				
Noise Immunity					
Square wave impulse noise	AC: ± 1,500VDC DC: ± 900VDC				
Electrostatic Discharge	Voltage: 4kV (contact discharge)				
Radiated electromagnetic field	27 – 500MHz, 10V/m				
Fast Transient Burst Noise	Severity level	All power modules	Digital I/Os (Ue ≥ 24V)	Digital I/Os (Ue < 24 V) Analog I/Os Communication I/Os	
	Voltage	2 kV	1 kV	0.25 kV	

2 DIMENSIONS



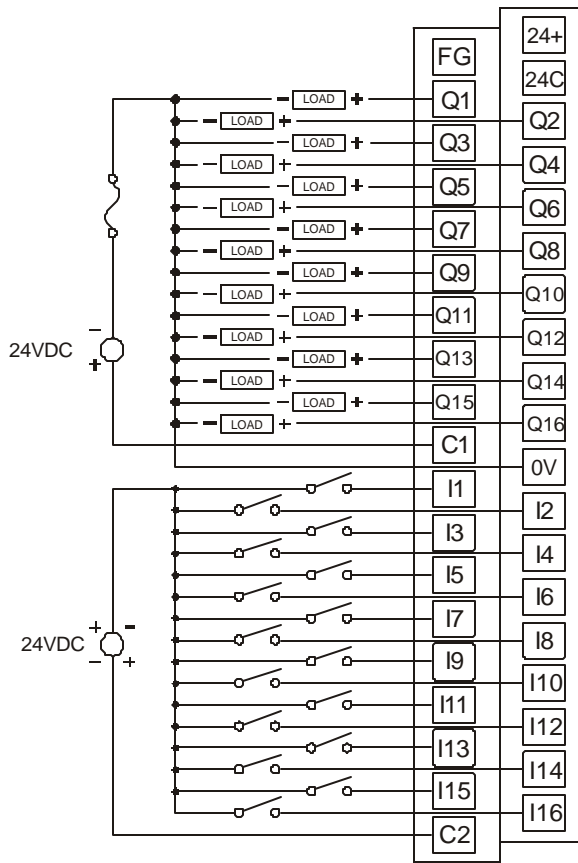
3 WIRING



DIQ811	
FG	Frame Ground
Q1	Output 1
Q3	Output 3
Q5	Output 5
Q7	Output 7
Q9	Output 9
Q11	Output 11
Q13	Output 13
Q15	Output 15
C1	Isolated Common
I1	Input 1
I3	Input 3
I5	Input 5
I7	Input 7
I9	Input 9
I11	Input 11
I13	Input 13
I15	Input 15
C2	Isolated Common

DIQ811	
NC*	No Connection (*Do not Connect)
NC*	No Connection (*Do not connect)
Q2	Output 2
Q4	Output 4
Q6	Output 6
Q8	Output 8
Q10	Output 10
Q12	Output 12
Q14	Output 14
Q16	Output 16
V+	Isolator Power
I2	Input 2
I4	Input 4
I6	Input 6
I8	Input 8
I10	Input 10
I12	Input 12
I14	Input 14
I16	Input 16

006DIQ003



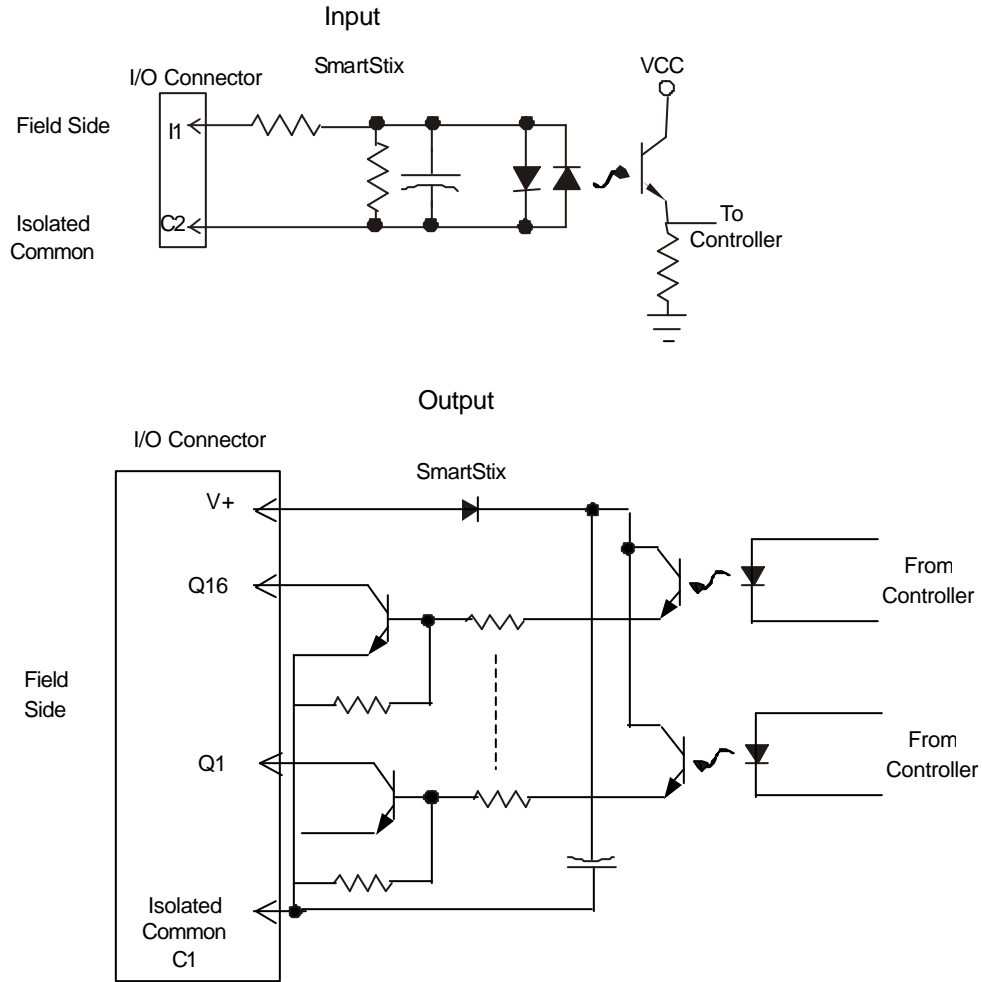
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DIQ816	
FG	Frame Ground
Q1	Output 1
Q3	Output 3
Q5	Output 5
Q7	Output 7
Q9	Output 9
Q11	Output 11
Q13	Output 13
Q15	Output 15
C1	Isolated Common Power
I1	Input 1
I3	Input 3
I5	Input 5
I7	Input 7
I9	Input 9
I11	Input 11
I13	Input 13
I15	Input 15
C2	Isolated Common

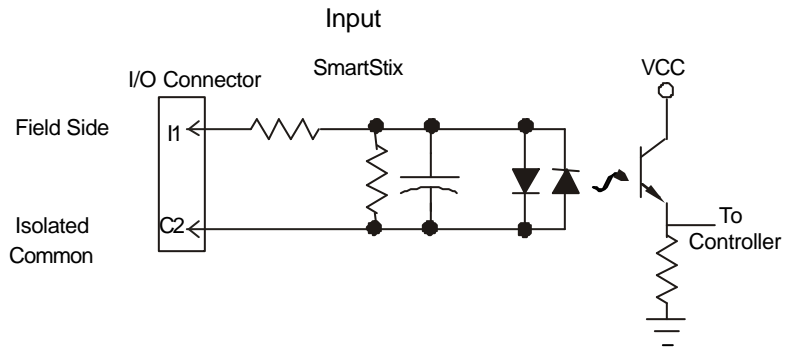
DIQ816	
24V+	24V+ Power
24C	24V+ Common
Q2	Output 2
Q4	Output 4
Q6	Output 6
Q8	Output 8
Q10	Output 10
Q12	Output 12
Q14	Output 14
Q16	Output 16
0V	Isolated Ground
I2	Input 2
I4	Input 4
I6	Input 6
I8	Input 8
I10	Input 10
I12	Input 12
I14	Input 14
I16	Input 16

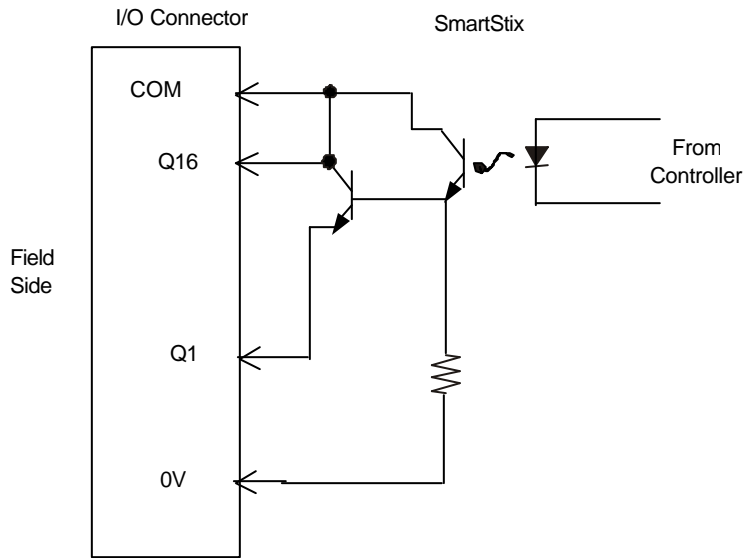
4 INTERNAL WIRING

a. DIQ811



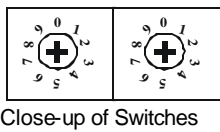
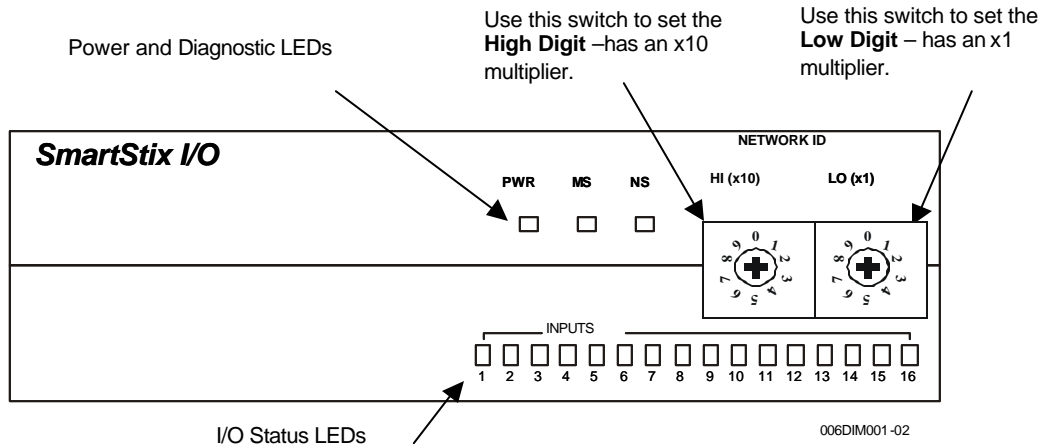
b. DIQ816





5 SETTING ID SWITCHES

DeviceNet MAC IDs are set using the decimal number system from 0 to 63. Set a unique ID by inserting a small Phillips screwdriver into the two *identical* switches.



Decimal (Dec) to Hexadecimal (Hex) Conversion					
Dec	Hex		Dec	Hex	
	HI	LO		HI	LO
0	0	0	33	2	1
1	0	1	34	2	2
2	0	2	35	2	3
3	0	3	36	2	4
4	0	4	37	2	5
5	0	5	38	2	6
6	0	6	39	2	7
7	0	7	40	2	8
8	0	8	41	2	9
9	0	9	42	2	A
10	0	A	43	2	B
11	0	B	44	2	C
12	0	C	45	2	D
13	0	D	46	2	E
14	0	E	47	2	F
15	0	F	48	3	0
16	1	0	49	3	1
17	1	1	50	3	2
18	1	2	51	3	3
19	1	3	52	3	4
20	1	4	53	3	5
21	1	5	54	3	6
22	1	6	55	3	7
23	1	7	56	3	8
24	1	8	57	3	9
25	1	9	58	3	A
26	1	A	59	3	B
27	1	B	60	3	C
28	1	C	61	3	D
29	1	D	62	3	E
30	1	E	63	3	F
31	1	F			
32	2	0			

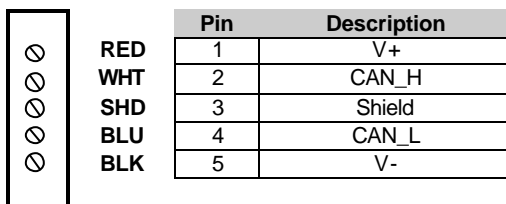
6 LEDS

The Communication LEDs display the status of the communication module.

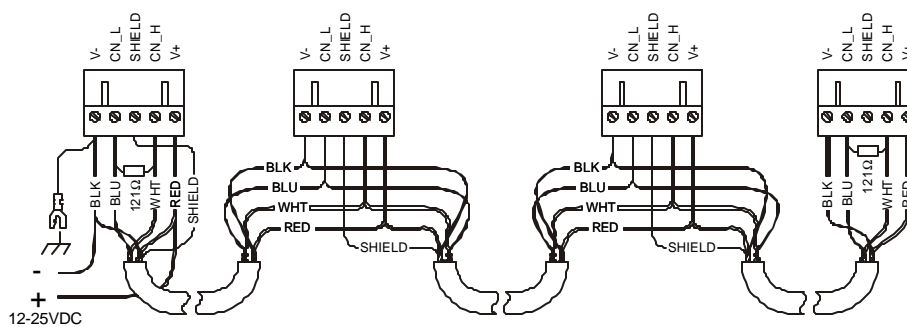
Communication LED	Meaning
PWR	Displays status of power
MS	Displays the status of interface between communication module and CPU module
NS	Displays the status of the network of communication module

7 NETWORK CABLE

For detailed network information, refer to www.odva.org.



Recommended Cable	
Thick: (Max Distance = 500m)	Belden 3082A
Thin: (Max Distance = 100m)	Belden 3084A



CAN Wiring

Note: 12 - 24VDC must be supplied to the network.

8 INSTALLATION / SAFETY

- All applicable codes and standards need to be followed in the installation of this product.
- For I/O wiring (discrete), use the following wire type or equivalent: Belden 9918, 18 AWG or larger.
- For detailed installation information, refer to www.odva.org.



Warning: Consult user documentation.



Warning: Electrical Shock Hazard.

9 TECHNICAL ASSISTANCE

For assistance, contact Technical Support at the following locations:

North America:
 (317) 916-4274
www.heapg.com

Europe:
 (+) 353-21-4321-266
www.horner-apg.com