Mixed DC I/O Module

HE450DIQ811

(16 Input Channels)
12/24 Vdc In, Positive/Negative Logic
(16 Output Channels)
24Vdc Out, Negative Logic

SmartStix

For electronic information including the GSD File, see www.SmartStix.com.
This product has a Programming Reference (SUP0552).

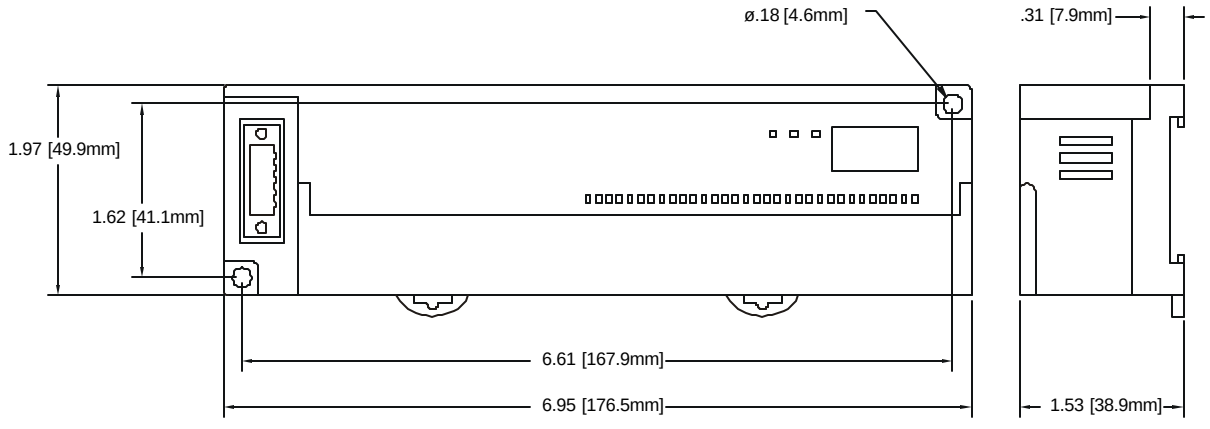
1 SPECIFICATIONS

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 more	**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			
OUT				
Number of output points	16	**External Power Supply**	**Voltage**	24VDC ± 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.
Maximum Load Current per channel	0.1A Max. per output 2A per common	**Output Type**		Sinking
OFF Leakage Current	0.1mA or less	**Common Method**		16 points / COM
Maximum Inrush Current per channel	0.4A, 10ms.	**Operating Indicator**		LED turns on during ON state of output
		External connections		Terminal block connector (M3 x 6 screws)
Maximum Voltage Drop during ON circuit	1.5VDC(0.5A)	**Isolation methods**		Photo Coupler
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**		8.4 oz. (238g)
Operating and Storage Humidity	5 to 95% Non-condensing			

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



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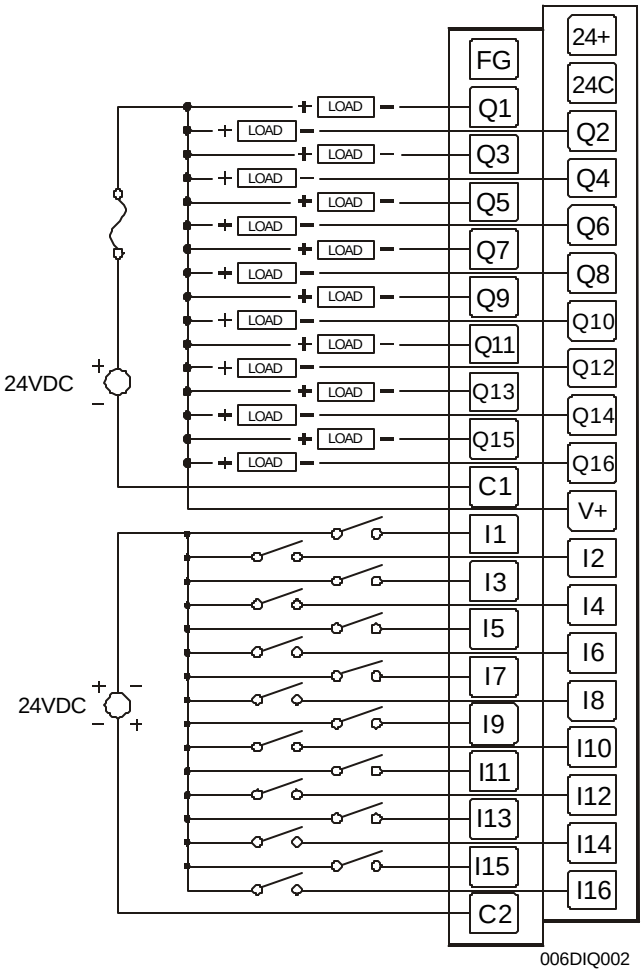
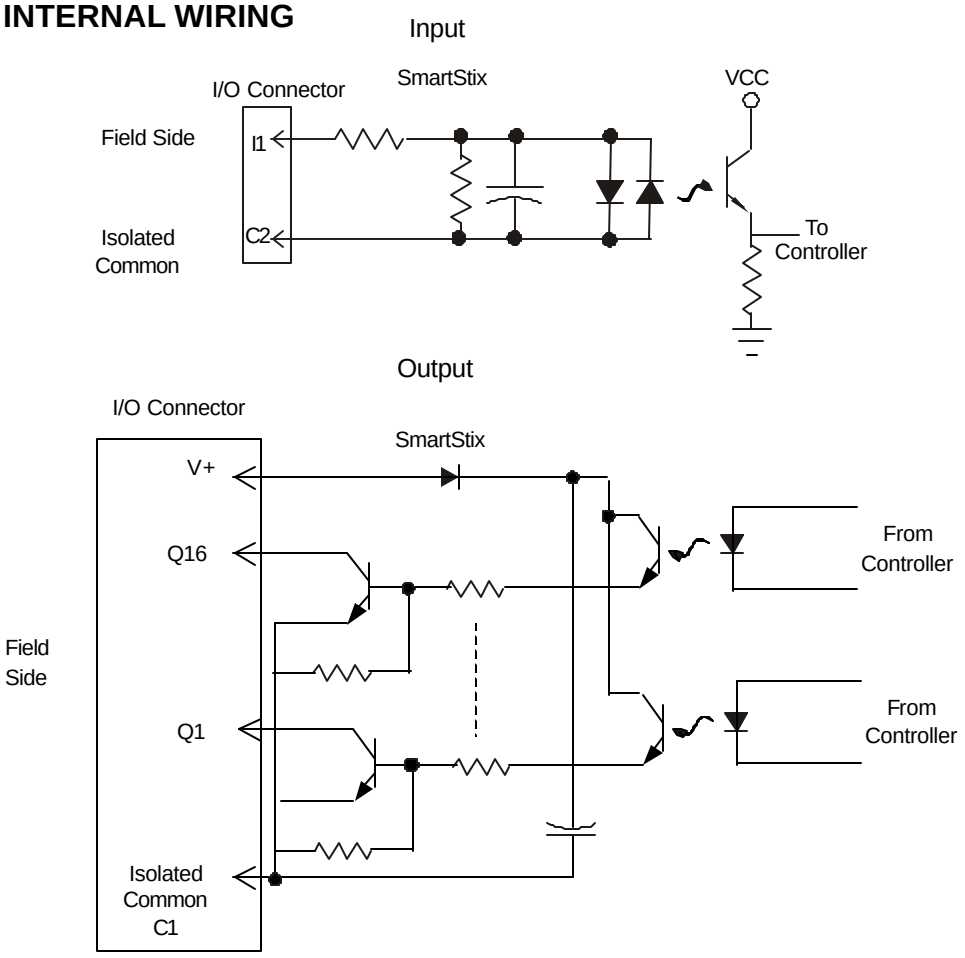
3 WIRING



Output Pin	Signal DIQ811
24+	24V Power Supply
FG	Frame Ground
24C	Power Supply Return
Q1	Output 1
Q2	Output 2
Q3	Output 3
Q4	Output 4
Q5	Output 5
Q6	Output 6
Q7	Output 7
Q8	Output 8
Q9	Output 9
Q10	Output 10
Q11	Output 11
Q12	Output 12
Q13	Output 13
Q14	Output 14
Q15	Output 15
Q16	Output 16
C1	Isolated Common
V+	Isolator Power

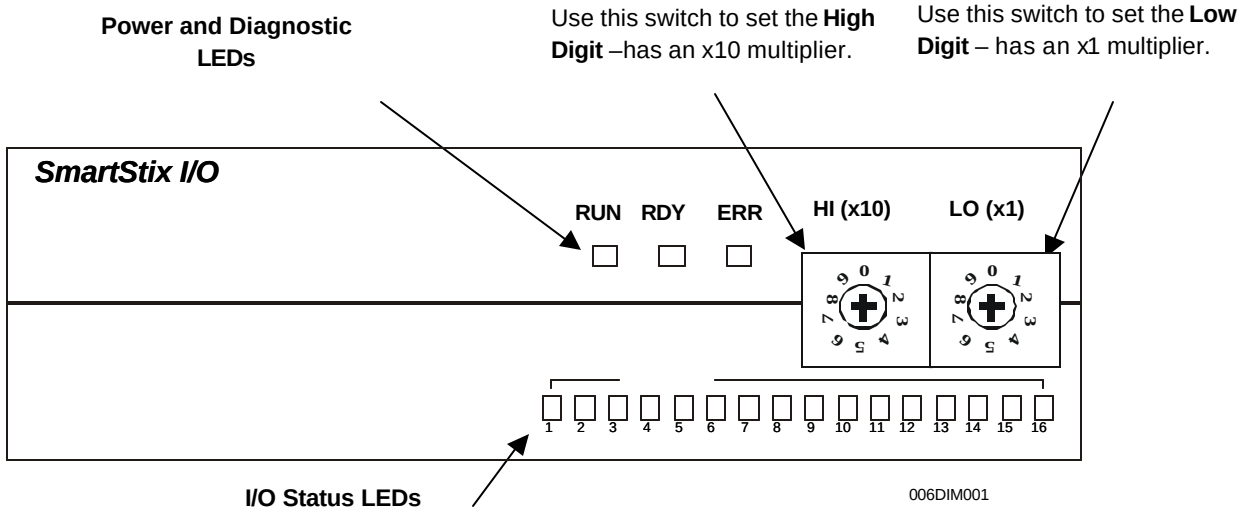
Input Pin	Signal DIQ811
I1	Input 1
I2	Input 2
I3	Input 3
I4	Input 4
I5	Input 5
I6	Input 6
I7	Input 7
I8	Input 8
I9	Input 9
I10	Input 10
I11	Input 11
I12	Input 12
I13	Input 13
I14	Input 14
I15	Input 15
I16	Input 16
C2	Isolated Common

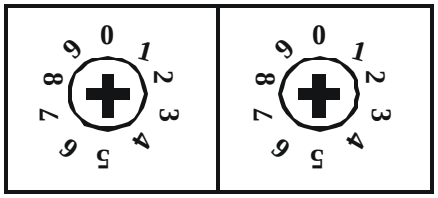
4 INTERNAL WIRING



5 SETTING ID SWITCHES

Profibus addresses are set using the decimal number system from 1 to 99. Set a unique Network ID by inserting a small Phillips screwdriver into the two *identical* switches as shown in the example.





Close-up of Switches

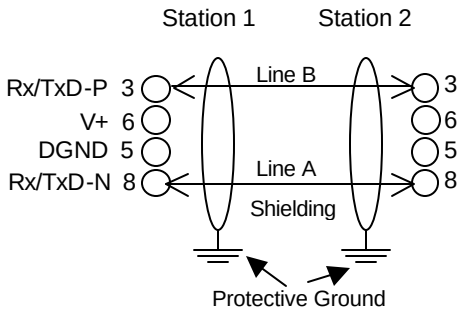
6 LEDs

Communication LED	MEANING
RUN	Displays the status of the power
RDY	Displays the communication status of the communication module
ERR	Displays abnormal condition of communication module

7 NETWORK CABLE

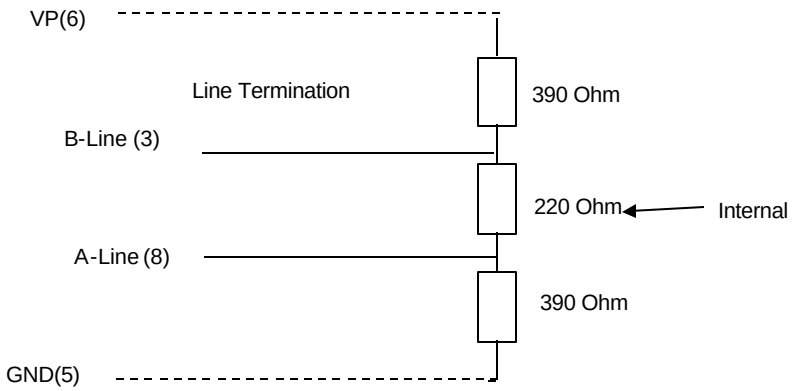
For detailed network information, refer to www.profibus.org.

a. A SmartStix module uses a 9-pin D-sub plug connector for its DP port. The pin assignment of the plug connector and the wiring are shown below.



b. It is necessary to terminate both ends of the network. Both terminations must have power to them to insure proper operation of the network. The following diagram illustrates the correct connection for the termination resistors. The diagram is for illustrative purposes only.

Note: Cabling and connectors need to be PTO-approved to achieve the desired performance results.



c. The shield braiding (and if present, the shield foil) must be connected to protective ground on both sides and must have good conductivity via shield clamps that cover as large an area as possible. In addition, it is recommended that the data lines be kept separate from all high-voltage cables.

8 INSTALLATION / SAFETY

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

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