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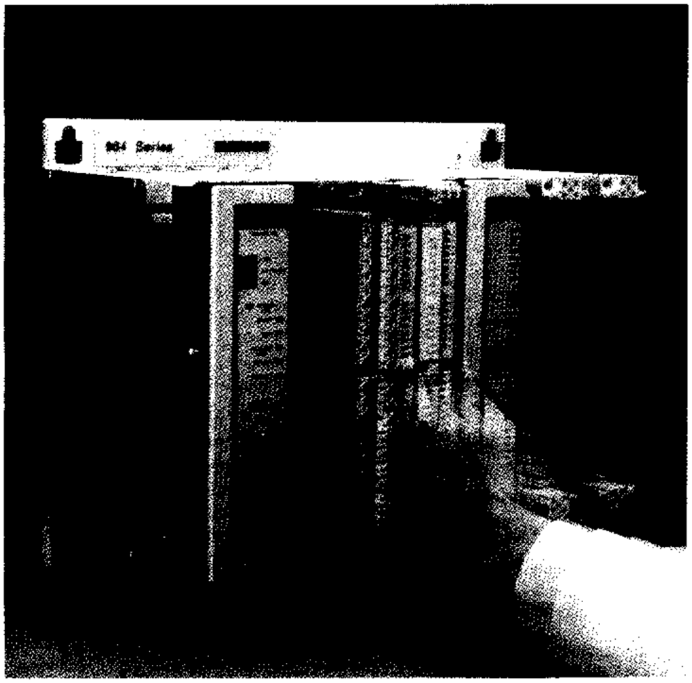
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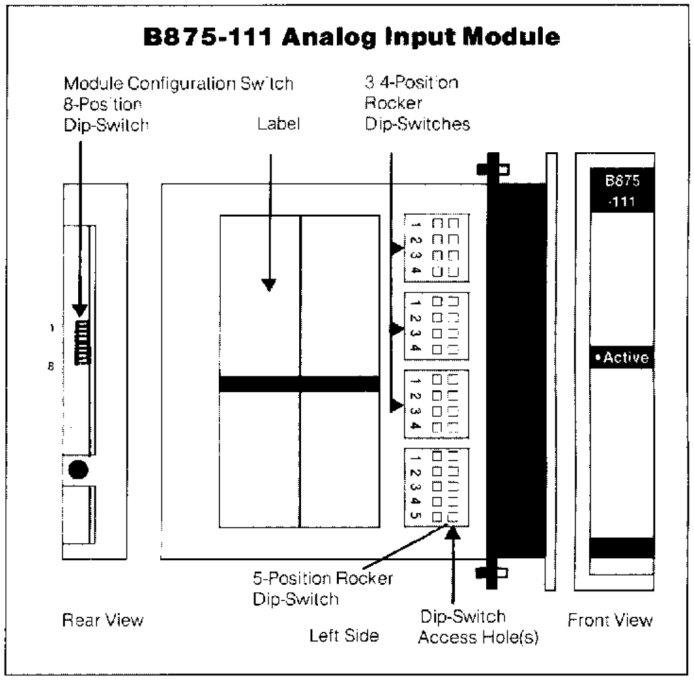
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Find the *Schneider Electric / AEG / Modicon B875-111* at our website: *Click HERE*

B875-111
8/16 Point Analog Input Module
Specifications

AEG





Module Overview

The B875-111 is an 8 point differential or 16 point single-ended analog input module that accepts one of five voltage or three current ranges and converts them to binary logic level input signals used by MODICON Programmable Logic Controllers which are compatible with 800-Series I/O.

Module Features and "Life Value" Benefits

- Compatible with all 800-Series Interfaces, Power Supplies, and Housings
- Can be used in any available 800-Series I/O Slot
- Compatible with previous MODICON analog input modes of operation

Performance and Quality

- Module auto-calibrates for simple, reliable installation and maintenance
- High resolution A/D converter for greater accuracy
- High speed analog conversion for maximum throughput
- User configurable for flexible application
- Meets ANSI and IEEE surge withstand requirements as applied to non-hazardous (user supply) connections
- Inputs electrically isolated from logic circuitry
- Continually monitors communications with controller

System Investment

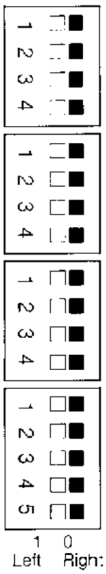
- Flexible configuration eliminates the need for multiple types of analog input modules
- Single-ended input mode reduces input costs for non-critical applications

MODICON

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Current Settings for Single-Ended Inputs

3 4-Position Dip Switches and
1 5-Position Dip Switch
Top of Module



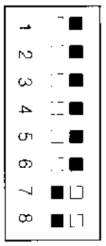
	Switch to Channel Relationship
Switch Bank 1	SW1 = CH1 SW2 = CH2 SW3 = CH3 SW4 = CH4
Switch Bank 2	SW1 = CH5 SW2 = CH6 SW3 = CH7 SW4 = CH8
Switch Bank 3	SW1 = CH9 SW2 = CH10 SW3 = CH11 SW4 = CH12
Switch Bank 4	SW1 = CH13 SW2 = CH14 SW3 = CH15 SW4 = CH16 SW5 = 10V/5V

1 Left 0 Right

Where:	Switches	Functions
		Current Inputs
	Switch Bank 1	For Channels 1-4: SW1-4 = Right Side Down
	Switch Bank 2	For Channels 5-8: SW1-4 = Right Side Down
	Switch Bank 3	For Channels 9-12: SW1-4 = Right Side Down
	Switch Bank 4	For Channels 13-16: SW1-4 = Right Side Down
		Input Ranges
	Switch Bank 4	For 10V (+/– 10V OR 0-10V): SW5 = Left Side Down
		For 5V (All Others): SW5 = Right Side Down

DIP-Switch Settings

Module Configuration Switch
8-Position Dip-Switch
Top of Module



1 On Left Down
0 Off Right Up

Switch to Function Relationship

- SW1 = Bipolar/Unipolar
- SW2 = All Other Ranges/1-5V & 4-20ma
- SW3 = Output Format
- SW4 = Output Format
- SW5 = No. of Samples Averaged
- SW6 = No. of Samples Averaged
- SW7 = 16/8 Channels
- SW8 = 10V/5V

Switches	Functions
SW1	**Input Range** For Bipolar (+/– 10V, +/– 5V, +/– 20mA): SW1 = L For Unipolar (0-10V, 0-5V, 0-20mA, 1-5V, 4-20mA): SW1 = R
SW2	**Input Range** For Offset (1-5V OR 4-20mA): SW2 = R For No Offset (All Other Ranges): SW2 = L
SW3&4	**Output Format** *See Table 1 for Resolutions For Standard (0000-4095): SW3 = R AND SW4 = R For Elevated (4096-8191): SW3 = L AND SW4 = R For Full Resolution (Raw Binary): SW3 = R AND SW4 = L For Decimal (0001-9999): SW3 = L AND SW4 = L
SW5&6	**Samples to Averaged** For 1 Sample: SW5 = R AND SW6 = R For 8 Samples: SW5 = L AND SW6 = R For 16 Samples: SW5 = R AND SW6 = L For 32 Samples: SW5 = L AND SW6 = L
SW7	**Input Types** For 8 Differential: (B875) SW7 = R For 16 Single-Ended: (B877) SW7 = L
SW8	**Input Ranges** For 10V (+/– 10V OR 0-10V): SW8 = L For 5V (All Others): SW8 = R

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Module Specific Information:

Module Topology

Number of Inputs:	8 differential or 16 single-ended (user selectable)
Number of Groups:	8 for differential mode 1 for single-ended mode
Points per Group:	1 for differential mode 16 for single-ended mode

Electrical Information – General

Working Voltage Ranges:	– 10 to + 10 VDC – 5 to + 5 VDC 0 to + 5 VDC 0 to + 10 VDC + 1 to + 5 VDC
Working Current Ranges:	– 20 to + 20 ma 0 to + 20 ma + 4 to + 20 ma

(One Range Selectable Per Module)

Electrical Information – Inputs

Impedance

Current Mode:	250 Ohms (+/– .05%)
Voltage Mode:	> 10 MOhms (within operating range) 5000 Ohms (outside operating range)

Input Filter

Single pole low pass, with – 3dB cut-off frequency of 48Hz, +/– 1

Input Protection (voltage mode)

Normal Mode:	120 V RMS differential input
Common Mode:	120 V RMS
Over Current Protection:	(current mode) Up to 30 mA

Data Format and Resolution – User Selectable (Per Module)

A) Standard Input Data Format
For All Ranges: Full Range = 1 to 4095
Under Range = 0
Over Range = 4096

B) Elevated Input Data Format
For All Ranges: Full Range = 4096 to 8191
Under Range = 4095
Over Range = 8192

C) Full Resolution Input Data Format
For 0 to 5 VDC, 0 to 10 VDC, 0 to 20 ma Ranges
Full Range = 1 to 7499

For 1 to 5 VDC, 4 to 20 ma Ranges
Full Range = 1 to 6000

For – 10 to + 10 VDC, – 5 to + 5 VDC, – 20 to + 20 ma Ranges
Full Range = 1 to 9999

For All Ranges, Out of Range (< 2.4%) As Follows:
Over Range: Most significant bit set high. Register contains absolute value of over range condition.
Under Range: Two most significant bits set high. Register contains absolute value of under range condition.

D) Decimal Input Data Format*
For All Ranges: Full Range = 1 to 9999
Out of Range (< 2.4%) As Follows:
Over Range: Most significant bit set high. Register contains absolute value of over range condition.
Under Range: Two most significant bits set high. Register contains absolute value of under range condition.

*Note: actual resolution will not exceed resolution format C). Values are scaled in the module.

Linearity:	+/– 0.05% of full scale over rated temperature range
Repeatability:	0.025% RMS for constant input voltage and temperature over a 24-hour period
Accuracy:	+/– 0.1% of full scale over rated temperature range

Isolation

Channel to Channel:	30 VAC
Channel to Case:	1500 VAC for 1 minute
Channel to Controller:	1500 VAC for 1 minute

Common Mode

Range:	– 5 to + 5 VDC, 0 to 5 VDC, 1 to 5 VDC, – 20 to + 20 ma, 0 to 20 ma, 4 to 20 ma Ranges: +/– 9V – 10 to + 10 VDC, 0 to 10 VDC Ranges: +/– 4V
Rejection:	– 40 dB typical, DC to 60 Hz

Performance Information

8 inputs – all inputs updated every 10 ms (without averaging)

16 inputs – all inputs updated every 20 ms (without averaging)

Averaging:	User may select 1, 8, 16, or 32 samples to be averaged as input to the controller

Power Supply Requirements

+ 5 VDC: 500 ma
+ 4.3 VDC: 900 ma
– 5 VDC: 0 ma

Required Addressing

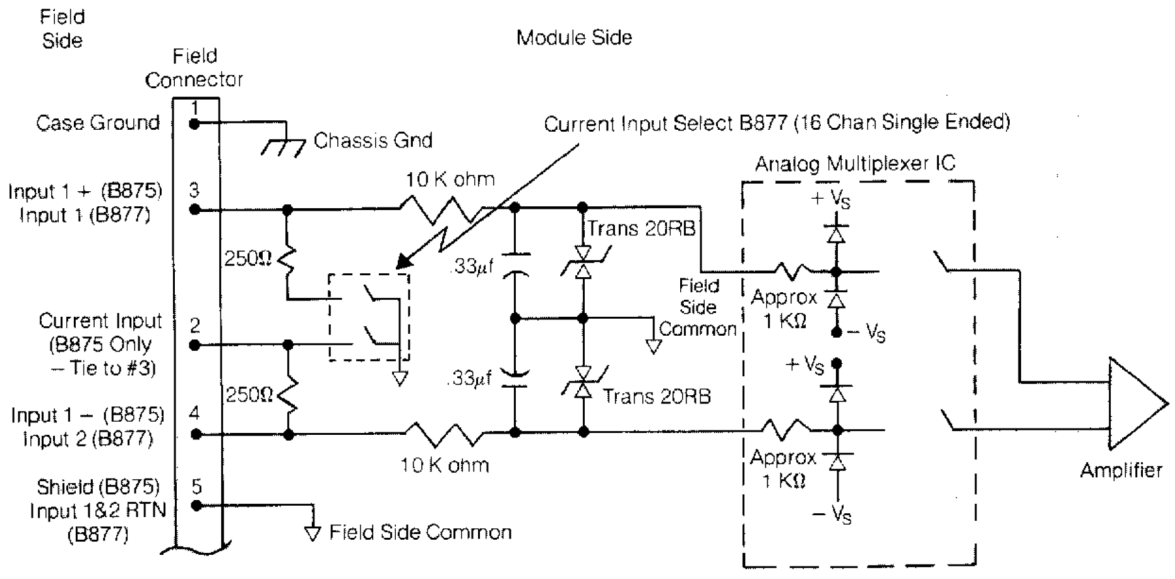
Discrete I/O (bits):	0 in / 0 out
Register I/O (registers):	Differential Mode: 8 in / 0 out (B875) Single-Ended Mode: 16 in / 0 out (B877)

Module Indicators

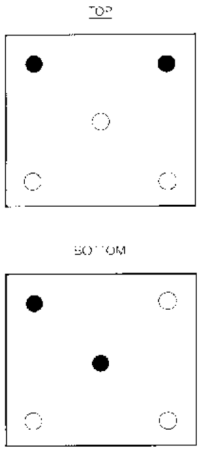
Communications ACTIVE Indicator LED, flashes with out-of-range condition

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B875-111 and B877-111



B875-111 Mechanical Keying



B875 Housing Mating Key Locations
(When facing housing, place pins in holes indicated by black circles.)

800-Series I/O – Family Information

Environmental

Operating Temperature:	0 to 60 Degrees C
Storage Temperature:	- 40 to + 85 Degrees C
Humidity (Non-Condensing):	0 to 95%
Shock (Half Sine Wave):	15 G Peak for 11 ms
Vibration (Displacement):	0.0005 in. (5-50 Hz Double Amplitude, Sine Wave)
Vibration (G-Force):	0.625 G (50-500 Hz Sine Wave)
EMI/RFI:	Meets Applicable Specifications

Electrical – Isolation Voltage

Between inputs and I/O bus, and between input groups: 1500 VAC at 47 to 63 Hz for 60 seconds without breakdown; 2500 VDC for 60 seconds without breakdown. Leakage current shall not exceed 1.5 mA

Electrical – AC Line Surge

150 VAC RMS for 10 seconds maximum or 200 VAC RMS for 1 cycle maximum, repeated at a rate of no greater than once every 3 minutes.

Physical

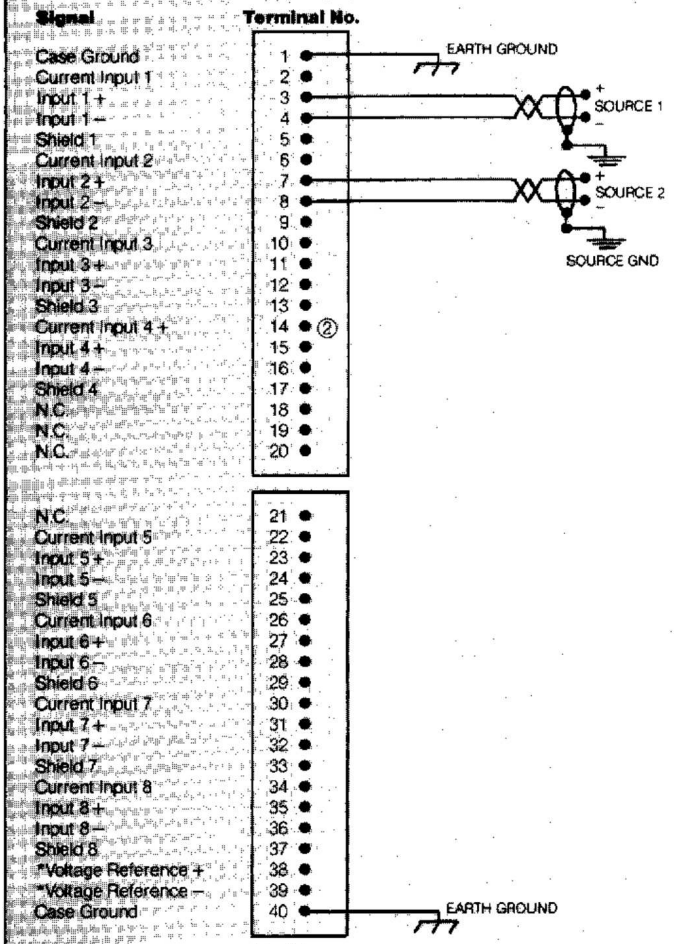
Dimensions (W × H × D):	2.0 × 10.5 × 8.0 in. (50.8 × 266.7 × 203.2 mm)
Approximate Weight:	2 lbs.

800-Series I/O Features – General

- Module handle for easy installation and removal
- Module removal without disturbing field wiring
- Desinged to operate in industrial environments

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Typical Field Connections, 8 Differential Inputs



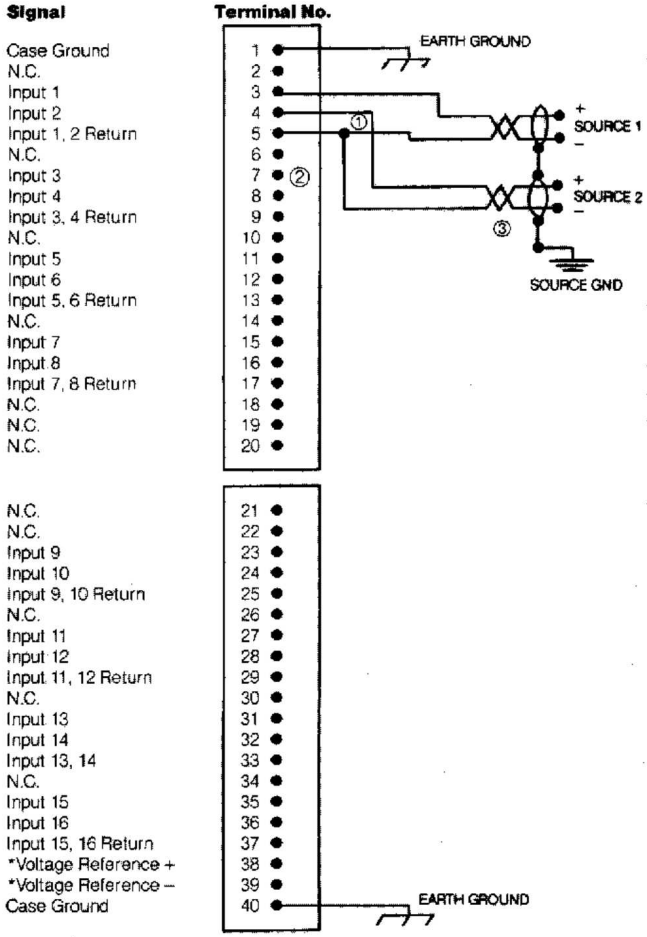
*For reference only. Do not attach field wiring.

① Shields 1-8 are common and tied to field side ground.

② Jumper unused channels to their shields, to avoid ground loops.

③ When using shielded field circuit wires, ground shield at one end only to avoid ground loops.

Typical Field Circuit Connections, Single Ended Inputs



*For reference only. Do not attach field wiring.

① All returns are electrically tied together inside the module.

② Jumper all unused channels to their respective returns, to avoid ground loops.

③ When using shielded field circuit wires, ground shield at one end only.

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