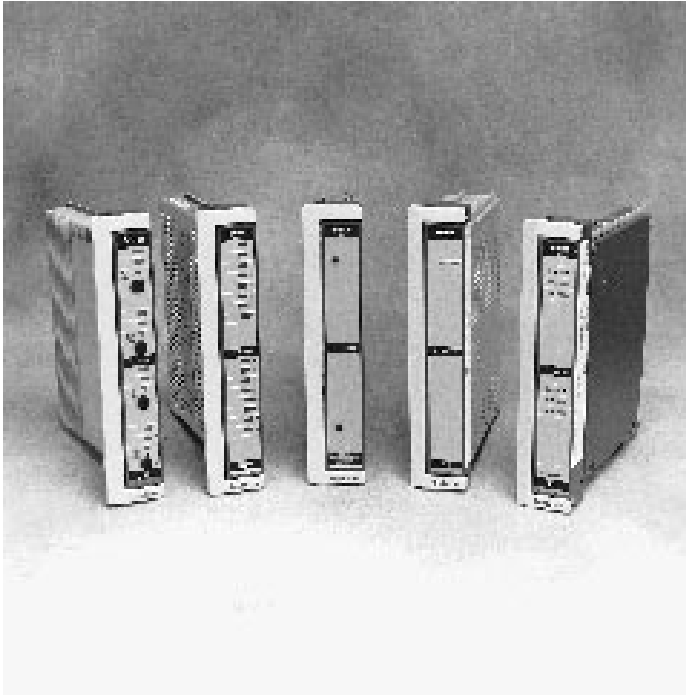# Overview

The Modicon 800-Series input/output modules offer one of the industry's widest ranges of I/O modules. Their dependability has been proven in thousands of applications worldwide. With over 50 modules to choose from, you can select the most cost-effective module for field device requirements.

The Modicon I/O Family offers discrete, analog, special purpose and intelligent modules to meet the most demanding I/O and process control needs:

- *Discrete In* – which convert signals coming from field input devices such as pushbuttons, limit and proximity switches, or photo sensors into signals that can be used by the PLC.

- *Discrete Out* – which convert signals generated by the PLC into output signals used to control field devices such as motor starters, relays, lamps, or solenoids.

- *Analog In* – which convert analog signals coming from field input devices such as pressure, level, temperature, or weight sensors into numerical data that can be used by the PLC.

- *Analog Out* – which convert numerical data generated by the PLC into analog output signals to be used by field devices — such as heaters, valves, pumps, instrumentation, or drives.

- *Special Purpose* – which handle unique signal requirements. Examples include high speed counter, CAM Emulator, RTD, and Thermocouple Modules.

- *Intelligent* – designed for unique field applications that require bi-directional (in/out) capabilities and on-board processing power. Examples include an ASCII/BASIC Module and a high speed logic solver.

Benefits

True Industrial Grade Design for High Reliability

800-Series modules meet domestic and international safety standards.

Isolation voltage between outputs and the I/O bus and between output groups is:

1500 Vac at 47-63 Hz for 60 seconds without breakdown

2500 Vdc for 60 seconds without breakdown

All modules have surge protection that meets IEEE-472-1974 and ANSI C37-90A-1974 standards— which helps ensure their operation when subjected to the surge spikes normally encountered in industrial environments.   Solid mechanical packaging ensures that modules withstand the rigors of industrial environments.

Easy to Configure, Wire, and Maintain

All 800-Series I/O modules are software addressable via the 984's Traffic Cop software. Designed for efficient system configuration, it allows any module to be configured in any slot, regardless of the module type. Furthermore, it recognizes incorrect module placement and prevents PLC misoperation.

A mechanical keying scheme ensures that modules cannot be inserted in the wrong slot.

800-Series I/O modules can be changed without disturbing field wiring because wires are connected to rigid mounted terminal blocks on the housing. Modules slide in and out easily so changing modules is safe and quick.

Built-in diagnostic indicators let maintenance personnel quickly determine module status. For example, every 800-Series I/O module has an ACTIVE light which is a green LED located at the center of the front panel. When an I/O module's ACTIVE LED is on constantly, it indicates that the module has been properly configured and that communications between it and the 984 PLC are healthy.

When communications between the module and the PLC are invalid for any reason, the ACTIVE LED on the module goes OFF. If communication fails, the module automatically shuts down, and the PLC sets all inputs to 0. When communication is restored, the ACTIVE LED goes back ON. This ACTIVE LED is mapped into a register within the PLC for remote diagnosis and annunciation.
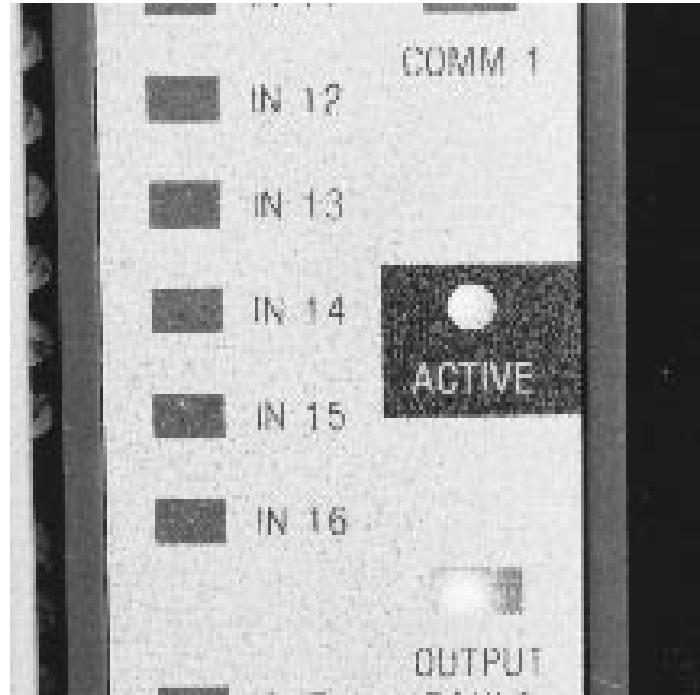
General 800-Series I/O Specifications

Environmental Specifications

Ambient Temperature	0-60°C
	32-140°F
Humidity	0-95% non-condensing
Shock	10 G's for 11 msec
Vibration	.625 @ 50-500 Hz
RFI/EMI Emission	Complies with applicable
	FCC requirements
RFI/EMI Susceptibililty	ML-STD-461B
	CS02-Conducted
	RS03-Radiated
UL Listing	E54088
CSA Listing	LR32678

Discrete In

Voltage	Number of Points	Number per Common	Required Addressing I/O Bits	Module #	Required Connector
115 Vac	32	8	32/0	AS-B807-132	AS-8535-000
115 Vac	16	8	16/0	AS-B805-016	AS-8534-000
115 Vac	16	1	16/0	AS-B817-116	AS-8535-000
115 Vac	8	1	8/0	AS-B803-008	AS-8534-000
230 Vac	16	8	16/0	AS-B809-016	AS-8534-000
230 Vac	16	1	16/0	AS-B817-216	AS-8535-000
24 Vdc Supr. Wire	32	8	64/0	AS-B863-132	AS-8535-000
24 Vdc (TH)	32	32	32/0	AS-B827-032	AS-8535-000
24 Vdc (TH)	16	8	16/0	AS-B825-016	AS-8534-000
24 Vdc (TL)	16	8	16/0	AS-B833-016	AS-8534-000
24 Vdc (LATCH)	16	8	16/16	AS-B881-001	AS-8534-000
24 Vdc*	32	16	16/0	AS-B863-032	AS-8535-000
10-60 Vdc (TH)	8	2	8/0	AS-B821-108	AS-8534-000
24 Vac/DC	16	8	16/0	AS-B837-016	AS-8534-000
48 Vac/DC	16	8	16/0	AS-B849-016	AS-8534-000
115 Vac	16	8	16/0	AS-B853-016	AS-8534-000
5 V TTL	16	8	16/0	AS-B829-116	AS-8534-000
TTL Register	16	—	16/0	AS-B865-001	AS-8535-000
12 Vdc Intr. Safe	16	1	16/0	AS-B855-016	AS-8535-000

*Monitored Input.

Discrete Out

Voltage	Number of Points	Number per Common	Required Addressing I/O Bits	Module #	Required Connector
115 Vac	32	16	0/32	AS-B806-032	AS-8535-000
115 Vac	16	8	0/16	AS-B804-116	AS-8534-000
115 Vac	8	1	0/8	AS-B810-008	AS-8534-000
115 Vac	8	2	0/8	AS-B802-008	AS-8534-000
115 Vac Protected	8	1	16/16	AS-B881-108	AS-8535-000
48 Vac	16	8	0/16	AS-B804-148	AS-8534-000
24 Vac	32	16	0/32	AS-B806-124	AS-8535-000
230 Vac	16	8	0/16	AS-B808-016	AS-8534-000
24 Vdc Supr. Wire	16	8	16/16	AS-B882-116	AS-8534-000
24 Vdc (TH)	32	8	0/32	AS-B838-032	AS-8535-000
24 Vdc (TH)	32	32	0/32	AS-B826-032	AS-8535-000
24 Vdc (TH)	16	8	0/16	AS-B824-016	AS-8534-000
24 Vdc (TL)	16	8	0/16	AS-B832-016	AS-8534-000
24 Vdc Diagnostic	32	8	32/32	AS-B882-032	AS-8535-000
10-60 Vdc (TH)	8	2	0/8	AS-B820-008	AS-8534-000
12-250 Vdc	16	1	0/16	AS-B836-016	AS-8535-000
Relay (NO/NC)	8	1	0/8	AS-B814-108	AS-8534-000
Reed Relay (NO/NC)	8	1	0/8	AS-B840-108	AS-8534-000
5 V TTL	16	16	0/16	AS-B828-016	AS-8534-000
TTL Register	—	—	0/128	AS-B864-001	AS-8535-000
125 Vdc	8	—	16/16	AS-B881-508	AS-8535-000

Broad Range of Module Types

With over 50 modules to choose from, the Modicon I/O line offers one of the industry's broadest range of I/O modules.

Analog In

Application/Range	Number of Points	Required Addressing I/O Bits	Module #	Required Connector
Fast A/D: 4-20 mA; $\pm$5 V; $\pm$10 V; 0-10 V; 0-5 V; 1-5 V	8	128/0	AS-B875-102	Included
A/D; 4-20 mA;1-5 V	8	128/0	AS-B875-002	Included
A/D; 4-20 mA;1-5 V	4	64/0	AS-B873-001	Included
A/D; -10 to 10 V	8	128/0	AS-B875-012	Included
A/D; -10 to 10 V	4	64/0	AS-B873-011	Included
Thermocouple, Type B,E,J,K,R, S,T,N, or linear V	10	48/48	AS-B883-200	Included
RTD, American or European 100 Ohm Platinum	8	48/48	AS-B883-201	Included
Analog Multiplexer; 16 Voltage In, 1 Output	16	0/16	AS-B846-001	AS-8535-000
Analog Multiplexer, 16 Current In, 1 Output	16	0/16	AS-B846-002	AS-8535-000
A/D; 4-20mA; 1-5 V; -10 to10 V 0-20mA; -5 to 5 V	8/16	128/0 256/0	AS-B875-111	AS-8535-000
User Configurable Analog	8	128/0	AS-B875-200	AS-8535-000

Analog Out

Application/Range	Number of Points	Required Addressing I/O Bits	Module #	Required Connector
D/A: 4-20 mA	4	0/64	AS-B872-100	AS-8535-000
D/A: $\pm$10 V; $\pm$5 V; 0-10 V; 0-5 V	4	0/64	AS-B872-200	AS-8535-000

Intelligent/Special Purpose

Description	Required Addressing I/O Bits	Module #	Required Connector
High speed counter, 2 up-counters, 0-30 kHz	32/32	AS-B882-239	Included
High speed counter, 2 up/down, 0-50 kHz, Internal clock	48/48	AS-B883-001	Included
CAM emulator, absolute encoder input, 8 discrete out	48/48	AS-B883-101	Included
CAM emulator with velocity compensation	48/48	AS-B883-111	Included
PID: 2 loops, cascadable, standalone, 11 total I/O	64/64	AS-B884-002	Included
ASCII/BASIC, 64K RAM, 2 RS232/422 ports	96/96	AS-B885-002	Included
Discrete High Speed Logic Solver	64/64 or 128/128	AS-B984-100	Included
Motion Control Module	96/96	AS-B885-100	Included
Motion Control Module (with Encoder Feedback)	96/96	AS-B885-110	Included

Individual Module Descriptions
Technical Specifications, Mechanical Keying, and Wiring Diagrams

3-49

Specification	AS-B802-008
Description	115 Vac output
Number of Points	8
Operating Voltage	80 ... 130 Vac / 47 ... 63 Hz
Number of Groups	4
Outputs per Group	2
ON Current	
Max. per Point	2 A continuous
	50 A (max) one cycle
Max. per Module	12 A
Leakage Current	3 mA (max) @ 115 Vac
Max. Response Time	
OFF to ON	8.3 ms @ 60 Hz
ON to OFF	8.3 ms @ 60 Hz
Power Required	
+5 V	76 mA
+4.3 V	240 mA
-5 V	0 mA
Dimensions	
Space Required	1 slot
Weight	2.55 lbs (1.16 kg)
Terminal Connector	AS-8534-000
Fusing	One per group

Specification	AS-B803-008
Description	115 Vac isolated input
Number of Points	8
Operating Voltage	80 ... 130 Vac / 47 ... 63 Hz
Number of Groups	8
Inputs per Group	1
Max. Input Voltage	
Continuous	130 Vac
Surge	220 Vac for one cycle
ON Conditions	80 ... 130 Vac (Z<1kΩ)
OFF Conditions	0 ... 35 Vac (Z=0 Ω)
	0 ... 130 Vac (Z≥40 kΩ)
Wetting Current	7 mA (typical) @ 115 Vac
Max. Response Time	
OFF to ON	6 ms (4 ms typical)
ON to OFF	18 ms (12 ms typical)
Power Required	
+5 V	27 mA
+4.3 V	1 mA
-5 V	2 mA
Dimensions	
Space Required	1 slot
Weight	2.11 lbs (0.96 kg)
Terminal Connector	AS-8534-000

AS-B802-008 Terminal Numbering and Wire Connections
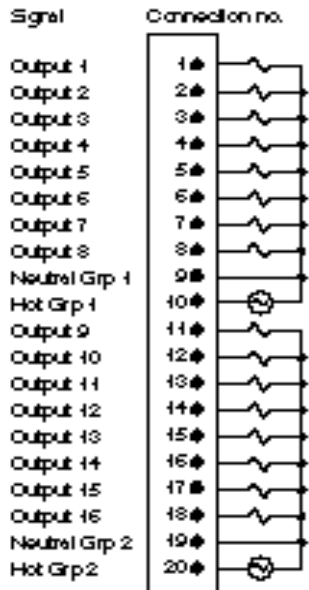

AS-B802-008 Mechanical Keying for Housings

(When facing housing, place pins in holes shown by black circles.)

AS-B803-008 Terminal Numbering and Wire Connections

AS-B803-008 Mechanical Keying for Housings

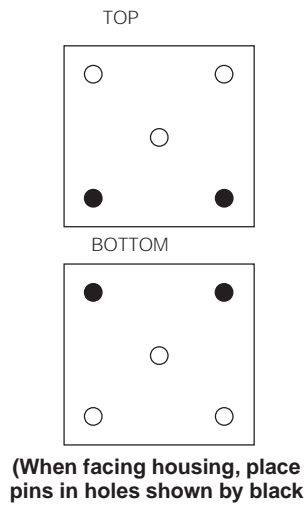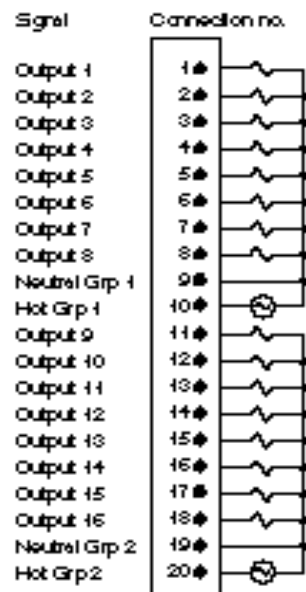(When facing housing, place pins in holes shown by black circles.)

Specification	AS-B804-116
Description	115 Vac output
Number of Points	16
Operating Voltage	80 ... 130 Vac / 47 ... 63 Hz
Number of Groups	2
Outputs per Group	8
ON Current	
Max. per Point	2 A continuous
	50 A one cycle
Max. per Group	6 A
Max. per Module	12.0 A
Leakage Current	3 mA (max) @ 115 Vac
Max. Response Time	
OFF to ON	8.3 ms @ 60 Hz
ON to OFF	8.3 ms @ 60 Hz
Power Required	
+5 V	76 mA
+4.3 V	480 mA
-5 V	0 mA
Dimensions	
Space Required	1 slot
Weight	2.75 lbs (1.25 kg)
Terminal Connector	AS-8534-000
Fusing	One per group

Specification	AS-B804-148
Description	48 Vac output
Number of Points	16
Operating Voltage	40 ... 56 Vac / 47 ... 63 Hz
Number of Groups	2
Outputs per Group	8
ON Current	
Max. per Point	2 A continuous
	50 A one cycle
Max. per Group	6 A
Max. per Module	12.0 A
Leakage Current	3 mA (max)
Max. Response Time	
OFF to ON	8.3 ms @ 60 Hz
ON to OFF	8.3 ms @ 60 Hz
Power Required	
+5 V	76 mA
+4.3 V	480 mA
-5 V	0 mA
Dimensions	
Space Required	1 slot
Weight	2.75 lbs (1.25 kg)
Terminal Connector	AS-8534-000
Fusing	One per group

AS-B804-116 Terminal Numbering and Wire Connections
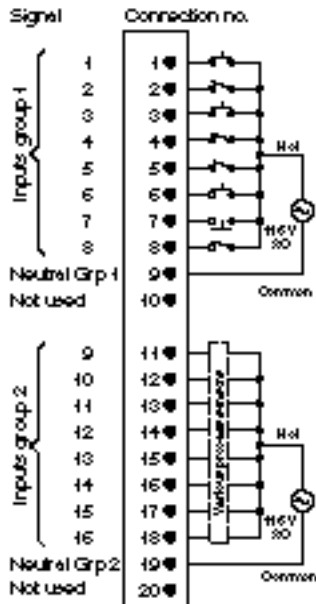
AS-B804-116 Mechanical Keying for Housings

TOP

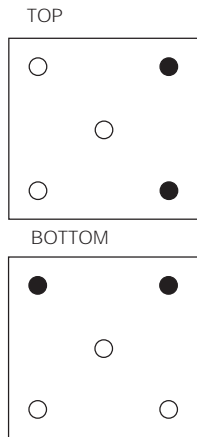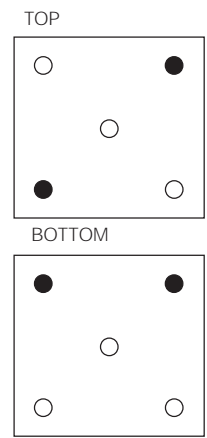BOTTOM

(When facing housing, place pins in holes shown by black

AS-B804-148 Terminal Numbering and Wire Connections

AS-B804-148 Mechanical Keying for Housings

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(When facing housing, place pins in holes shown by black circles.)
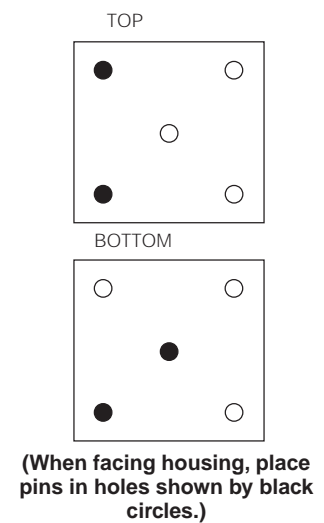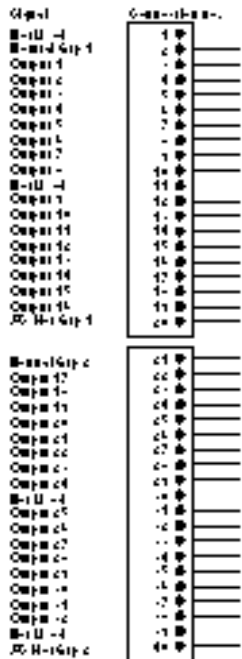
Specification	AS-B805-016
Description	115 Vac input
Number of Points	16
Operating Voltage	80 ... 130 Vac / 47 ... 63 Hz
Number of Groups	2
Inputs per Group	8
Max. Input Voltage	
Continuous	130 Vac
Surge	220 Vac for one cycle
ON Conditions	80 ... 130 Vac (Z<1kΩ)
OFF Conditions	0 ... 35 Vac (Z=0 Ω)
	0 ... 130 Vac (Z$\geq$40 kΩ)
Wetting Current	6 mA (typical) @ 115 Vac
Max. Response Time	
OFF to ON	6 ms (4 ms typical)
ON to OFF	18 ms (11 ms typical)
Power Required	
+5 V	40 mA
+4.3 V	1 mA
-5 V	14 mA
Dimensions	
Space Required	1 slot
Weight	2.2 lbs (1.01 kg)
Terminal Connector	AS-8534-000

Specification	AS-B806-032
Description	115 Vac output
Number of Points	32
Operating Voltage	80 ... 130 Vac / 47 ... 63 Hz
Number of Groups	2
Outputs per Group	16
ON Current	
Max. per Point	1 A continuous
	15 A one cycle
Max. per Group	8 A
Max. per Module	16 A
Leakage Current	2 mA (max) @ 115 Vac
Max. Response Time	
OFF to ON	8.3 ms @ 60 Hz
ON to OFF	8.3 ms @ 60 Hz
Power Required	
+5 V	210 mA
+4.3 V	1 mA
-5 V	0 mA
Dimensions	
Space Required	1 slot
Weight	2.49 lbs (1.13 kg)
Terminal Connector	AS-8535-000
Fusing	None

AS-B805-016 Terminal Numbering and Wire Connections

AS-B805-016 Mechanical Keying for Housings

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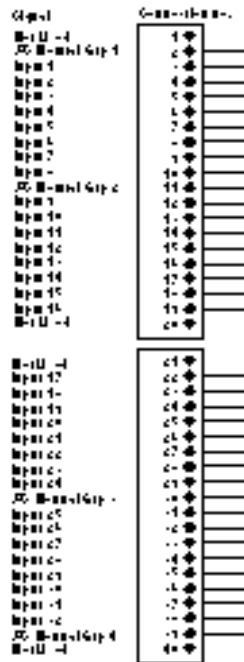
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AS-B806-032 Terminal Numbering and Wire Connections

AS-B806-032 Mechanical Keying for Housings

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(When facing housing, place pins in holes shown by black circles.)

Specification	AS-B806-124
Description	24 Vac output
Number of Points	32
Operating Voltage	20 ... 28 Vac / 47 ... 63 Hz
Number of Groups	2
Outputs per Group	16
ON Current	
Max. per Point	1 A continuous
	15 A one cycle
Max. per Group	8 A
Max. per Module	16 A
Leakage Current	2 mA (max.)
Max. Response Time	
OFF to ON	8.3 ms @ 60 Hz
ON to OFF	8.3 ms @ 60 Hz
Power Required	
+5 V	210 mA
+4.3 V	1 mA
-5 V	0 mA
Dimensions	
Space Required	1 slot
Weight	2.49 lbs (1.13 kg)
Terminal Connector	AS-8535-000
Fusing	None

Specification	AS-B807-132	
	115 Vac	**125 Vdc**
Description	115 Vac hi-density input	125 Vdc input
Number of Points	32	32
Operating Voltage	80 ... 130 Vac/	115 ...140 Vdc cont.
	47 ... 63 Hz	
Number of Groups	4	4
Inputs per Group	8	8
Max. Input Voltage		
Continuous	130 Vac	
Surge	200 Vac for 1 cycle	
ON Conditions	80 ... 130 Vac (Z<1kΩ)	115 ...140 Vdc
OFF Conditions	0 ... 35 Vac (Z=0 Ω)	0 ... 20 Vdc
	0 ... 130 Vac (Z≥40 kΩ)	
Wetting Current	6 mA (typical) @ 115 Vac	
Max. Response Time		
OFF to ON	6 ms	1.2 ms
ON to OFF	12 ms	55ms
Power Required		
+5 V	80 mA	80 mA
+4.3 V	2 mA	2 mA
-5 V	0 mA	0 mA
Dimensions		
Space Required	1 slot	1 slot
Weight	2 lbs (0.91 kg)	2 lbs (0.91 kg)
Terminal Connection	AS-8535-000	AS-8535-000

AS-B806-124 Terminal Numbering and Wire Connections

AS-B806-124 Mechanical Keying for Housings

TOP

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(When facing housing, place pins in holes shown by black circles.)

AS-B807-132 Terminal Numbering and Wire Connections

AS-B807-132 Mechanical Keying for Housings

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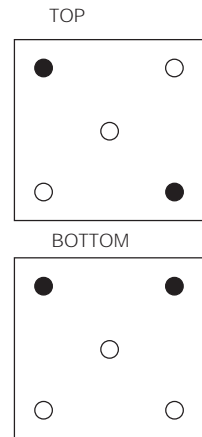
(Optional)

(When facing housing, place pins in holes shown by black circles.)

Specification	AS-B808-016
Description	230 Vac output
Number of Points	16
Operating Voltage	160 ... 260 Vac / 47 ... 63 Hz
Number of Groups	2
Outputs per Group	8
ON Current	
Max. per Point	2 A continuous
	50 A one cycle
Max. per Group	6 A
Max. per Module	12 A
Leakage Current	8 mA (max) @ 230 Vac
Max. Response Time	
OFF to ON	8.3 ms
ON to OFF	8.3 ms
Power Required	
+5 V	76 mA
+4.3 V	480 mA
-5 V	0 mA
Dimensions	
Space Required	1 slot
Weight	2.75 lbs (1.25 kg)
Terminal Connector	AS-8534-000
Fusing	One per group

Specification	AS-B809-016
Description	230 Vac input
Number of Points	16
Operating Voltage	160 ... 260 Vac / 47 ... 63 Hz
Number of Groups	2
Inputs per Group	8
Max. Input Voltage	
Continuous	260 Vac
300 Vac for 10 sec.	
Surge	400 Vac for 1 cycle
ON Conditions	112 ... 148 Vac (RS=1 Kmax)
OFF Conditions	0 ... 90 Vac (Z=0 Ω)
Wetting Current	8.5 mA (typical) @ 230 Vac
Max. Response Time	
OFF to ON	7 ms (5 ms typical)
ON to OFF	18 ms (12 ms typical)
Power Required	
+5 V	42 mA
+4.3 V	1 mA
-5 V	15 mA
Dimensions	
Space Required	1 slot
Weight	2.38 lbs (1.08 kg)
Terminal Connector	AS-8534-000

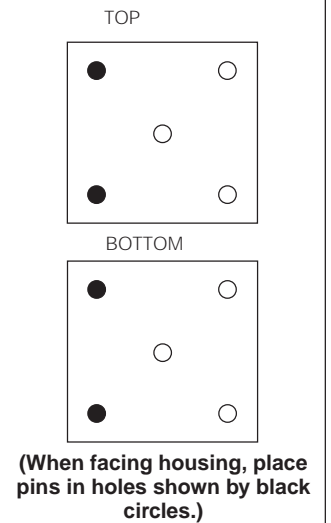**AS-B808-016 Terminal Numbering and Wire Connections**

AS-B808-016 Mechanical Keying for Housings

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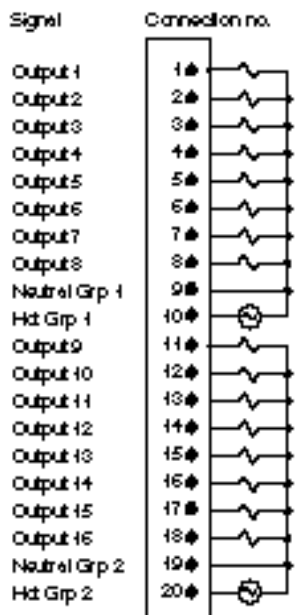
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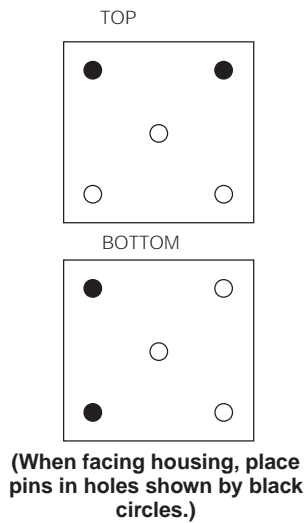
AS-B809-016 Terminal Numbering and Wire Connections

AS-B809-016 Mechanical Keying for Housings

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(When facing housing, place pins in holes shown by black circles.)
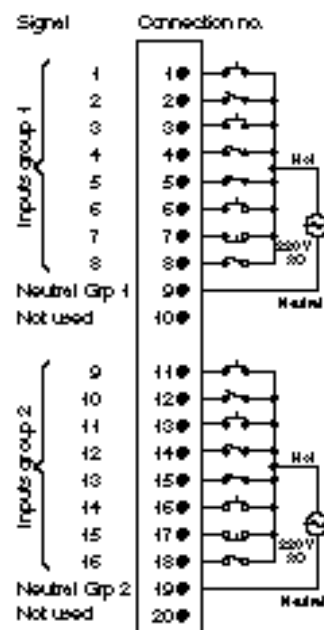
Specification	AS-B820-008
Description	10 ... 60 Vdc (True High) output
Number of Points	8
Operating Voltage	10 ... 60 Vdc
Number of Groups	4
Outputs per Group	2
ON Current	
Max. per Point	2 A
Max. per Group	6 A
Max. per Module	12 A
Leakage Current	5 mA (max.) @ 60 Vdc
Max. Response Time	
OFF to ON	1 ms (.1 ms typical)
ON to OFF	1 ms (.1 ms typical)
Power Required	
+5 V	90 mA
+4.3 V	80 mA
5 V	0 mA
External Power Supply	10 ... 60 Vdc, 200 mA @ 60 Vdc
	(Excluding field load current)
Dimensions	
Space Required	1 slot
Weight	2.55 lbs (1.16 kg)
Terminal Connector	AS-8534-000
Fusing	One per group

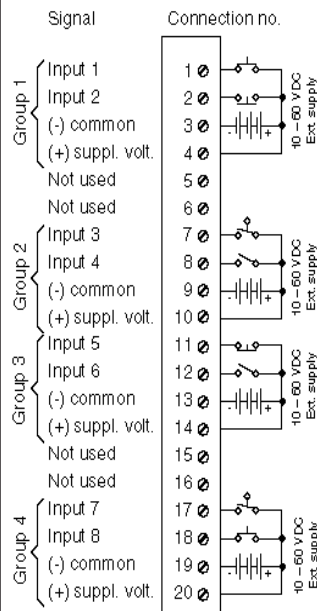| Specification	AS-B821-108
Description	10 ... 60 Vdc input
Type of Operation	True High
Number of Points	8
Operating Voltage	10 ... 60 Vdc
Number of Groups	4
Inputs per Group	2
Max. Input Voltage	
Continuous	10 ... 60 Vdc
Surge	80 Vdc for 10 msec
Wetting Current	2 mA (max.) @ 10 Vdc
	5 mA (max.) @ 24 Vdc
	10 mA (max.) @ 48 Vdc
	12 mA (max.) @ 60 Vdc
Max. Response Time	
OFF to ON	11 ms
ON to OFF	11 ms
Power Required	
+5 V	27 mA
+4.3 V	1 mA
5 V	10 mA
External Power Supply	10 ... 60 Vdc, 200 mA @ 60 Vdc
Dimensions	
Space Required	1 slot
Weight	2.11 lbs (0.96 kg)
Terminal Connector	AS-8534-000

AS-B820-008 Terminal Numbering and Wire Connections
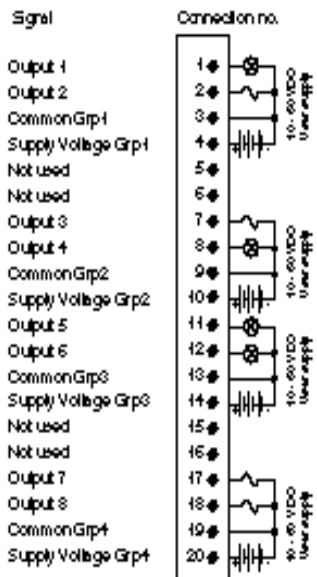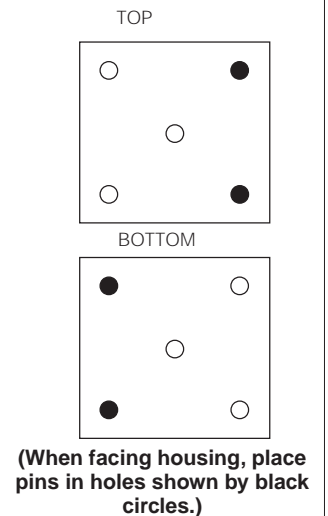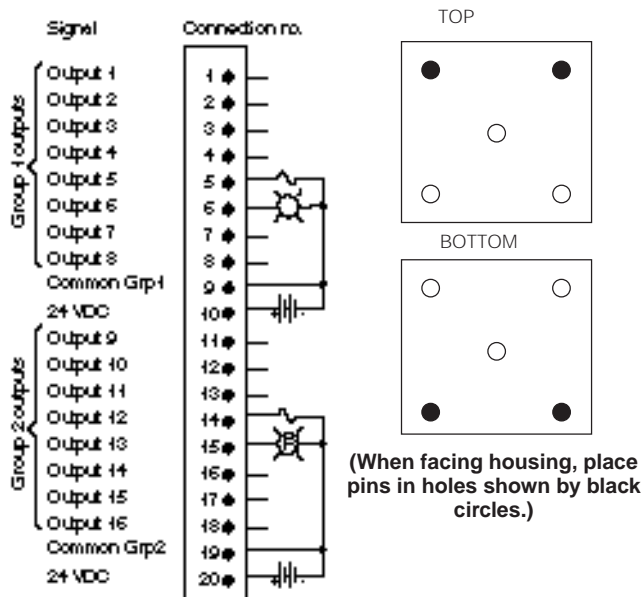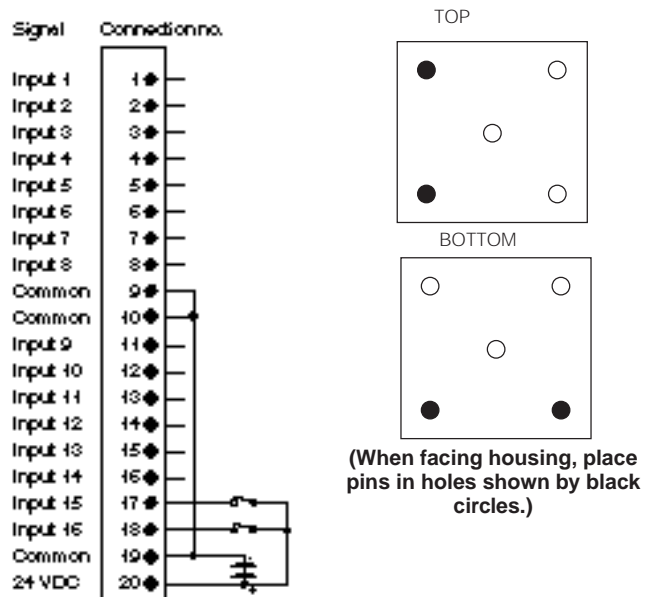
AS-B820-008 Mechanical Keying for Housings

TOP

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(When facing housing, place pins in holes shown by black circles.)

AS-B821-108 Terminal Numbering and Wire Connections

AS-B821-108 Mechanical Keying for Housings

TOP

BOTTOM

(When facing housing, place pins in holes shown by black circles.)

Specification	AS-B824-016
Description	24 Vdc (True High) output
Number of Points	16
Operating Voltage	20 ... 28 Vdc
Number of Groups	2
Outputs per Group	8
ON Current	
Max. per Point	2 A continuous
	5 A for 10 ms
Max. per Group	6 A
Max. per Module	12 A
Leakage Current	1 mA (max.) @ 24 Vdc
Max. Response Time	
OFF to ON	1 ms
ON to OFF	1 ms
Power Required	
+5 V	32 mA
+4.3 V	260 mA
5 V	0 mA
External Power Supply	24±4 Vdc, 175 mA
	(Excluding field load current)
Dimensions	
Space Required	1 slot
Weight	2.75 lbs (1.25 kg)
Terminal Connector	AS-8534-000
Fusing	One per group

Specification	AS-B825-016
Description	24 Vdc input
Type of Operation	True High
Number of Points	16
Operating Voltage	20 ... 28 Vdc
Number of Groups	1
Inputs per Group	16
Max. Input Voltage	
Continuous	30 Vdc
Surge	500 Vdc for 3 ms
ON Conditions	< 1000 Ω
OFF Conditions	> 25,000 Ω
Wetting Current	6 mA (typical) @ 24 Vdc
Max Response Time	
OFF to ON	11 ms (2.5 ms typical)
ON to OFF	11 ms (2.5 ms typical)
Power Required	
+5 V	27 mA
+4.3 V	2 mA
5 V	15 mA
External Power Supply	24±4 Vdc, 200 mA
Dimensions	
Space Required	1 slot
Weight	2.75 lbs (1.25 kg)
Terminal Connector	AS-8534-000

AS-B824-016 Terminal Numbering and Wire Connections

AS-B824-016 Mechanical Keying for Housings

TOP

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(When facing housing, place pins in holes shown by black circles.)

AS-B825-016 Terminal Numbering and Wire Connections

AS-B825-016 Mechanical Keying for Housings

TOP

BOTTOM

(When facing housing, place pins in holes shown by black circles.)

Specification	AS-B826-032
Description	24 Vdc True High output
Number of Points	32
Operating Voltage	20 ... 28 Vdc
Number of Groups	1
Outputs per Group	32
ON Current	
Max. per Point	0.25 A
	2.5 A for .5 ms
Max. per Group	8 A
Max. per Module	8 A
Leakage Current	0.1 mA (typical) @ 24 Vdc
Max. Response Time	
OFF to ON	1 ms
ON to OFF	1 ms
Power Required	
+5 V	90 mA
+4.3 V	1 mA
5 V	0 mA
External Power Supply	24 Vdc, 600 mA
	(Excluding field load current)
Dimensions	
Space Required	1 slot
Weight	2.55 lbs (1.16 kg)
Terminal Connector	AS-8535-000
Fuse	One per group

Specification	AS-B827-032
Description	24 Vdc hi-density input
Type of Operation	True High
Number of Points	32
Operating Voltage	20 ... 28 Vdc
Number of Groups	1
Inputs per Group	32
Max. Input Voltage	
Continuous	30 Vdc
Surge	40 Vdc for 10ms
ON Conditions	8 ... 11 kΩ
OFF Conditions	6 ... 8 kΩ
Wetting Current	6 mA (typical) @ 24 Vdc
Max Response Time	
OFF to ON	1 ms
ON to OFF	1 ms
Power Required	
+5 V	30 mA
+4.3 V	1 mA
-5 V	0 mA
External Power Supply	24±6 Vdc, 70 mA
Dimensions	
Space Required	1 slot
Weight	2.31 lbs (1.05 kg)
Terminal Connector	AS-8535-000

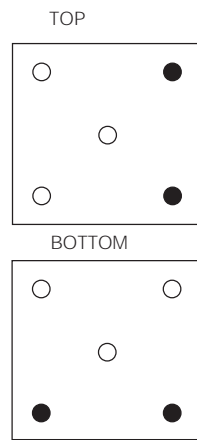**AS-B826-032 Terminal Numbering and Wire Connections**

AS-B826-032 Mechanical Keying for Housings

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(When facing housing, place pins in holes shown by black circles.)

AS-B827-032 Terminal Numbering and Wire Connections

AS-B827-032 Mechanical Keying for Housings
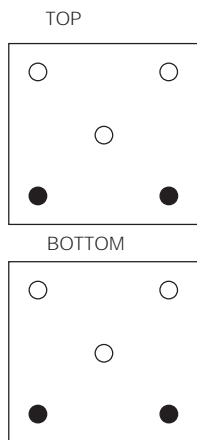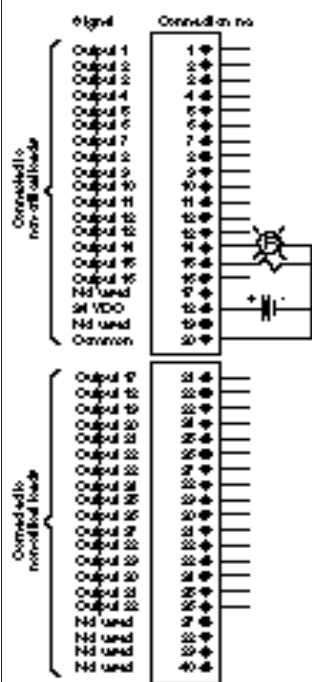
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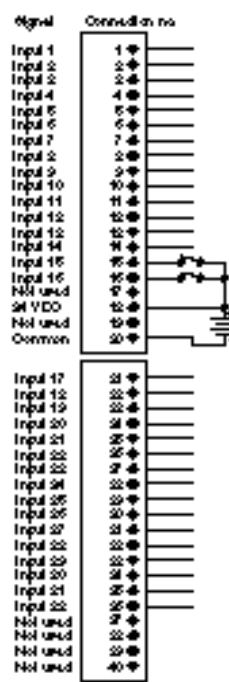
(When facing housing, place pins in holes shown by black circles.)

Specification	AS-B828-016
Description	5 V TTL output
Number of Points	16
Operating Voltage	5 V TTL
Number of Groups	1
Outputs per Group	16
OFF Current	
Max. per Point	75 mA max. (sinking)
	100 mA for 10 ms
Max. Response Time	
OFF to ON	1 ms
ON to OFF	1 ms
Power Required	
+5 V	32 mA
+4.3 V	220 mA
-5 V	0 mA
External Power Supply	5.0±.25 Vdc, 325 mA
	(Excluding field load current)
Dimensions	
Space Required	1 slot
Weight	2.33 lbs (1.06 kg)
Terminal Connector	AS-8534-000
Fusing	One per group

Specification	AS-B829-116
Description	5 V TTL input
Type of Operation	TTL
Number of Points	16
Operating Voltage	5 V TTL
Number of Groups	1
Inputs per Group	16
Max. Input Voltage	
Continuous	8 Vdc
Surge	15 Vdc for 10 ms
Max. Response Time	
OFF to ON	1 ms
ON to OFF	1 ms
Power Required	
+5 V	27 mA
+4.3 V	1 mA
-5 V	0 mA
External Power Supply	5.0 ±.25 Vdc, 325 mA
Dimensions	
Space Required	1 slot
Weight	2.26 lbs (1.03 kg)
Terminal Connector	AS-8534-000

AS-B828-016 Terminal Numbering and Wire Connections

AS-B828-016 Mechanical Keying for Housings

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(When facing housing, place pins in holes shown by black circles.)

AS-B829-116 Terminal Numbering and Wire Connections

AS-B829-116 Mechanical Keying for Housings

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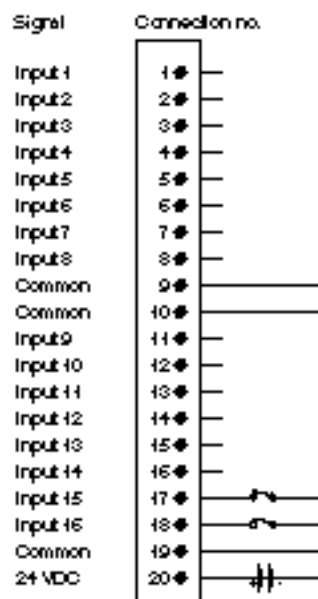**(When facing housing, place pins in holes shown by black circles.)**

Specification	AS-B832-016
Description	24 Vdc True Low output
Number of Points	16
Operating Voltage	20 ... 28 Vdc
Number of Groups	2
Outputs per Group	8
ON Current	
Max. per Point	250 mA
	1A for 10 ms
Max. per Group	2 A
Max. per Module	4 A
Leakage Current	0.5 mA (typical) @ 24 Vdc
Max. Response Time	
OFF to ON	1 ms
ON to OFF	1 ms
Power Required	
+5 V	32 mA
+4.3 V	235 mA
5 V	0 mA
External Power Supply	24±4 Vdc, 600 mA
Dimensions	
Space Required	1 slot
Weight	2.75 lbs (1.25 kg)
Terminal Connector	AS-8534-000
Fusing	One per module

Specification	AS-B833-016
Description	24 Vdc True Low input
Type of Operation	True Low
Number of Points	16
Operating Voltage	20 ... 28 Vdc
Number of Groups	2
Inputs per Group	8
Max. Input Voltage	
Continuous	30 Vdc
Surge	500 Vdc for 3 ms
ON Conditions	< 200 Ω
OFF Conditions	> 10,000 Ω
Wetting Current	6 mA (typical) @ 24 Vdc
Max. Response Time	
OFF to ON	11 ms
ON to OFF	11 ms
Power Required	
+5 V	27 mA
+4.3 V	2 mA
-5 V	0 mA
External Power Supply	24 ±4 Vdc, 300 mA
	(Excluding field load current)
Dimensions	
Space Required	1 slot
Weight	2.75 lbs (1.25 kg)
Terminal Connector	AS-8534-000
Fusing	One per module

AS-B832-016 Terminal Numbering and Wire Connections

Signal	Connection no.
Output 1	1
Output 2	2
Output 3	3
Output 4	4
Output 5	5
Output 6	6
Output 7	7
Output 8	8
Common	9
Common	10
Output 9	11
Output 10	12
Output 11	13
Output 12	14
Output 13	15
Output 14	16
Output 15	17
Output 16	18
Common	19
24 VDC Supply	20
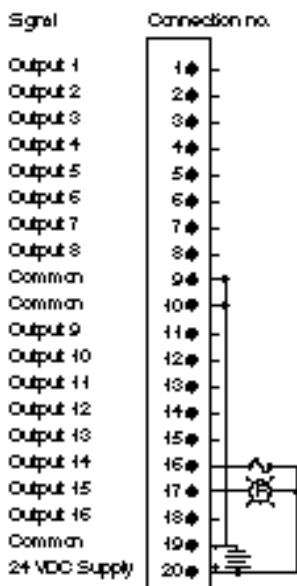
AS-B832-016 Mechanical Keying for Housings

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(When facing housing, place pins in holes shown by black circles.)

AS-B833-016 Terminal Numbering and Wire Connections

Signal	Connection no.
Input 1	1
Input 2	2
Input 3	3
Input 4	4
Input 5	5
Input 6	6
Input 7	7
Input 8	8
Common	9
Common	10
Input 9	11
Input 10	12
Input 11	13
Input 12	14
Input 13	15
Input 14	16
Input 15	17
Input 16	18
Common	19
24 VDC	20

AS-B833-016 Mechanical Keying for Housings

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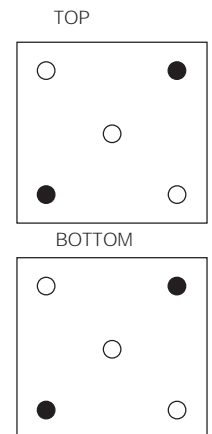
(When facing housing, place pins in holes shown by black circles.)

Specification	AS-B836-016
Description	12 ... 250 Vdc isolated output
Number of Points	16
Operating Voltage	12 ... 250 Vdc
Number of Groups	16
Outputs per Group	1
ON Current	
Max. per Point	0.75 A (typical) @ 250 Vdc
	1 A (typical) @ 125 Vdc
	1.5 A (typical) @ 48 Vdc
Max. per Module	8 A
Leakage Current	1mA (max.) @ 12 Vdc
Surge Current	5 A for 10 ms at repetition rate of 1 sec.
Max. Response Time	
OFF to ON	1 ms
ON to OFF	5 ms
Power Required	
+5 V	50 mA
+4.3 V	603 mA
-5 V	0 mA
Dimensions	
Space Required	1 slot
Weight	2.55 lbs (1.16 kg)
Terminal Connector	AS-8535-000
Fusing	One per group

Specification	AS-B837-016
Description	24 Vac/DC input
Number of Points	16
Operating Voltage	20 ... 27 Vac/47 ... 63 Hz; 19 ... 30 Vdc
Number of Groups	2
Inputs per Group	8
Max. Input Voltage	
Continuous	27 Vac / 30 Vdc
Surge	32 Vac / 36 Vdc
ON Conditions	>20.4 Vac or 19.2 Vdc w/Inp Z of 1 K max.
OFF Conditions	< 6 Vac/ 10 Vdc
	< 27 Vac w/Inp Z > 15 K
	< 30 Vac w/Inp Z > 30 K
Wetting Current	7.5 mA (typical) @ 24 Vdc
Max. Response Time	
OFF to ON	6 ms
ON to OFF	18 ms
Power Required	
+5 V	40 mA
+4.3 V	1 mA
-5 V	15 mA
External Power Supply	24 Vac/DC, 300 mA
Dimensions	
Space Required	1 slot
Weight	2.75 lbs (1.25 kg)
Terminal Connector	AS-8534-000

AS-B836-016 Terminal Numbering and Wire Connections
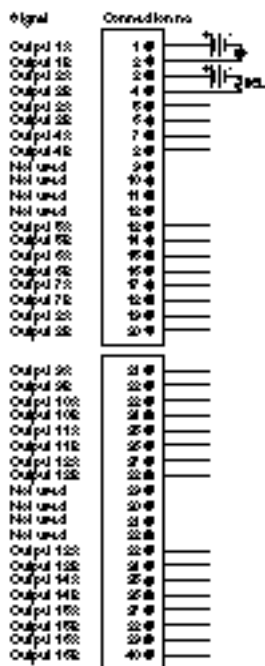
AS-B836-016 Mechanical Keying for Housings

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(When facing housing, place pins in holes shown by black circles.)

AS-B837-016 Terminal Numbering and Wire Connections
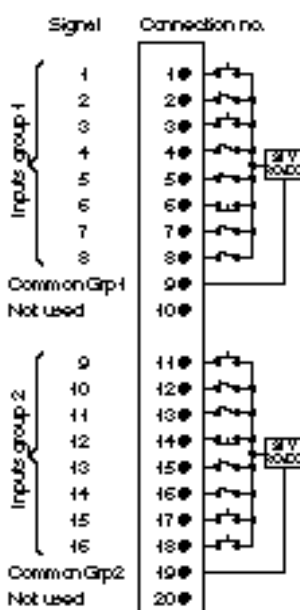
AS-B837-016 Mechanical Keying for Housings

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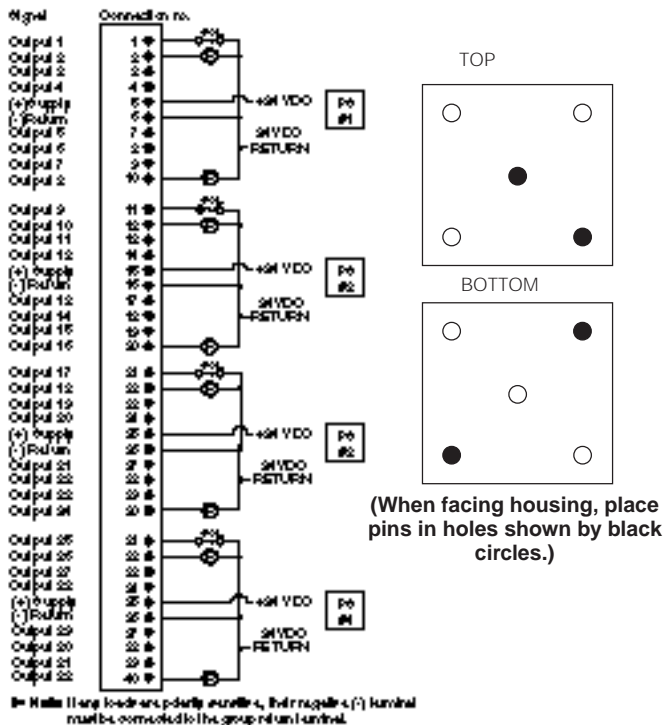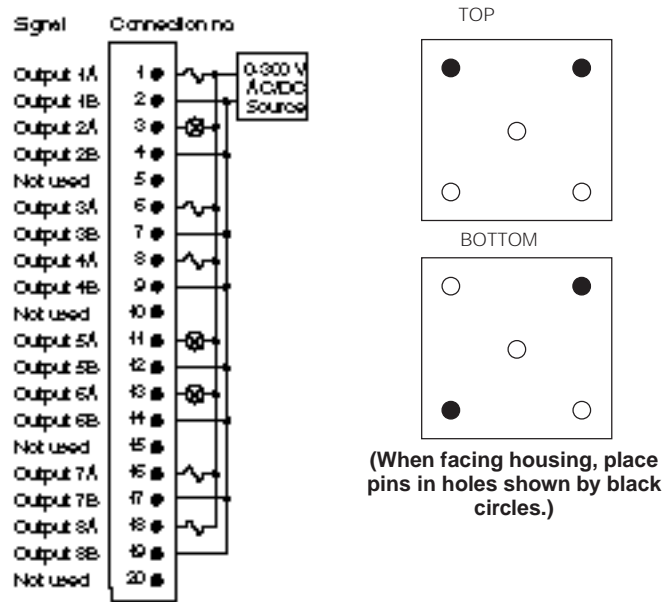(When facing housing, place pins in holes shown by black circles.)

Specification	**AS-B838-032**
Description	24 Vdc True High output
Number of Points	32
Operating Voltage	20 ... 28 Vdc
Number of Groups	4
Outputs per Group	8
ON Current	
Max. per Point	0.5 A
	2.5 A for .5 ms
Max. per Group	4 A
Max. per Module	12 A
Leakage Current	1 mA (typical) @ 30 Vdc
Max. Response Time	
OFF to ON	1 ms
ON to OFF	1 ms
Power Required	
+5 V	160 mA
+4.3 V	1 mA
-5 V	0 mA
External Power Supply	24 ±4Vdc, 125 mA
	(Excluding field load current)
Dimensions	
Space Required	1 slot
Weight	2.4 lbs (1.09 kg)
Terminal Connector	AS-8535-000

Specification	**AS-B840-108**
Description	Reed Relay (NO/NC) output
Number of Points	8
Operating Voltage	0 ... 300 Vdc;
	0 ... 230 Vac / 47 ... 63 Hz
Number of Groups	8
Outputs per Group	1
ON Current	
Max. per Point	3 A continous
	2 A switching current
Max. per Module	24 A
Switching Capability	100 vA
Max. Response Time	
OFF to ON	6 ms (2 ms typical)
ON to OFF	6 ms (2 ms typical)
Power Required	
+5 V	67 mA
+4.3 V	400 mA
5 V	0 mA
Dimensions	
Space Required	1 slot
Weight	2.62 lbs (1.19 kg)
Terminal Connector	AS-8534-000
Fusing	One per group

AS-B838-032 Terminal Numbering and Wire Connections
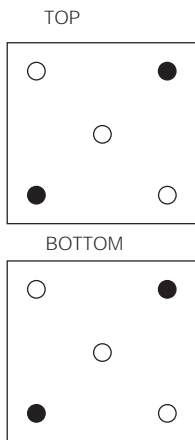
AS-B838-032 Mechanical Keying for Housings

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(When facing housing, place pins in holes shown by black circles.)

AS-B840-108 Terminal Numbering and Wire Connections

AS-B840-108 Mechanical Keying for Housings

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(When facing housing, place pins in holes shown by black circles.)

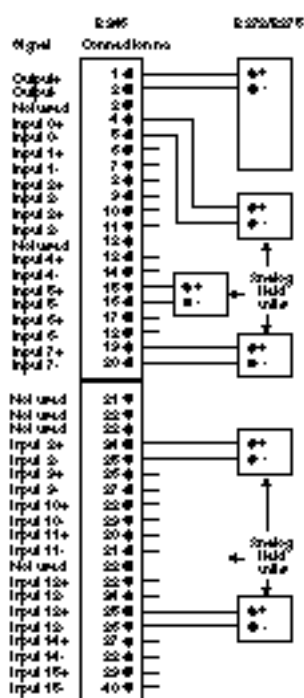| Specification	AS-B846-001
Description	Analog Input Multiplexer
Number of Channels	16, potential isolated to each other
Address Capacity	1 register out (channel select)
I/O Range	-10 to 10 Vdc (voltage)
Input Impedance	Equal to B873 or B875
Response Time	3 ms
Switching Behavior	Break before Make, switching time: 3 ms
Power Required	
+5 Vdc	65 mA
+4.3 Vdc	1 mA
-5 Vdc	0 mA
Dimensions	
Space Required	1 slot
Weight	2.55 lbs (1.16 kg)
Terminal Connector	AS-8535-000

Specification	AS-B846-002
Description	Analog Input Multiplexer
Number of Channels	16, potential isolated to each other
Address Capacity	1 register out (channel select)
I/O Range	4 to 20 mA (current)
Input Impedance	250 Ω
Response Time	3 ms
Switching Behavior	Break before Make, switching time: 3 ms
Power Required	
+5 Vdc	65 mA
+4.3 Vdc	1 mA
-5 Vdc	0 mA
Dimensions	
Space Required	1 slot
Weight	2.55 lbs (1.16 kg)
Terminal Connector	AS-8535-000

AS-B846-001 Mechanical Keying for Housings

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(When facing housing, place pins in holes shown by black circles.)

AS-B846-001 Terminal Numbering and Wire Connections

AS-B846-002 Terminal Numbering and Wire Connections
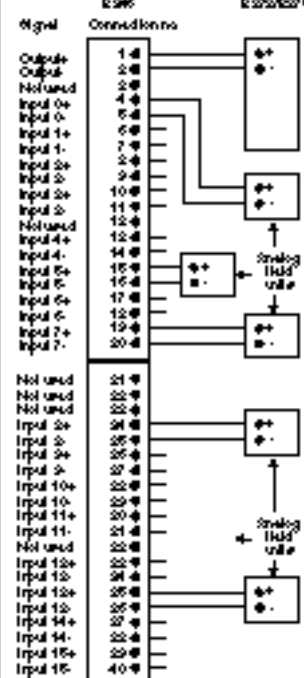
AS-B846-002 Mechanical Keying for Housings
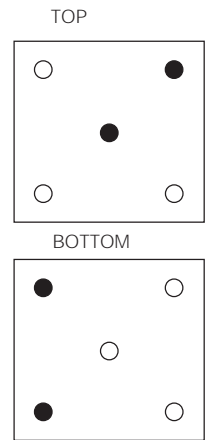
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(When facing housing, place pins in holes shown by black circles.)

Specification	AS-B849-016
Description	48 Vac / DC input
Number of Points	16
Operating Voltage	41 ... 53 Vac / 47 ... 63 Hz;
	39 ... 58 Vdc
Number of Groups	2
Inputs per Group	8
Max. Input Voltage	
Continuous	53 Vac / 58 Vdc
Surge	63 Vac / 70 Vdc for 10 sec
	110 V for 10 ms
ON Conditions	> 41 Vac or 39 Vdc
	w/Inp Z of 1 K max.
OFF Conditions	< 15 Vac / 20 Vdc
	< 53 Vac w/Inp Z > 25 K
	< 58 Vac w/Inp Z > 50 K
Wetting Current	6.5 mA (typical) @ 48 Vdc
Max. Response Time	
OFF to ON	6 ms
ON to OFF	18 ms
Power Required	
+5 V	40 mA
+4.3 V	1 mA
5 V	15 mA
External Power Supply	48 Vac/DC, 200 mA
Dimensions	
Space Required	1 slot
Weight	2.75 lbs (1.25 kg)
Terminal Connector	AS-8534-000

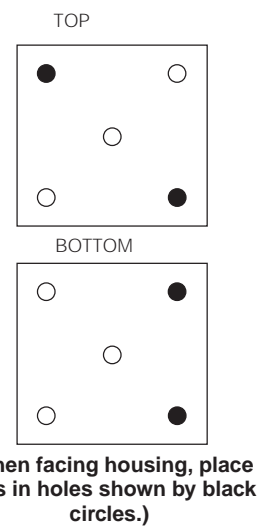| Specification	AS-B853-016
Description	115 Vac
Number of Points	16
Operating Voltage	80 ... 130 Vac / 47 ... 63 Hz;
Number of Groups	2
Inputs per Group	8
Max. Input Voltage	
Continuous	130 Vac
Surge	150 Vac
280 V for 10 ms	
ON Conditions	> 80 Vac
w/Inp Z of 1 K max.	
OFF Conditions	< 35 Vac
< 130 Vac w/Inp Z > 40 K	
< 150 Vac w/Inp Z > 80 K	
Wetting Current	6 mA (typical) @ 125 Vdc
Max. Response Time	
OFF to ON	6 ms
ON to OFF	18 ms
Power Required	
+5 V	40 mA
+4.3 V	1 mA
5 V	15 mA
Dimensions	
Space Required	1 slot
Weight	2.75 lbs (1.25 kg)
Terminal Connector	AS-8534-000

AS-B849-016 Terminal Numbering and Wire Connections

AS-B849-016 Mechanical Keying for Housings

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(When facing housing, place pins in holes shown by black circles.)

AS-B853-016 Terminal Numbering and Wire Connections

AS-B853-016 Mechanical Keying for Housings
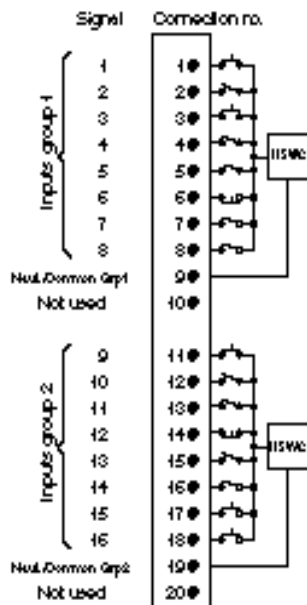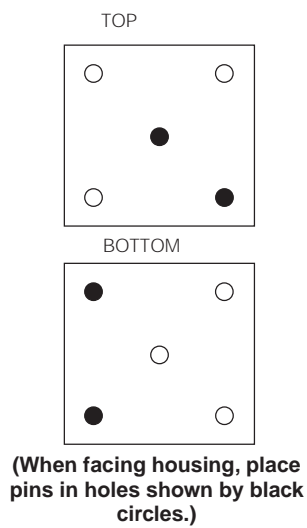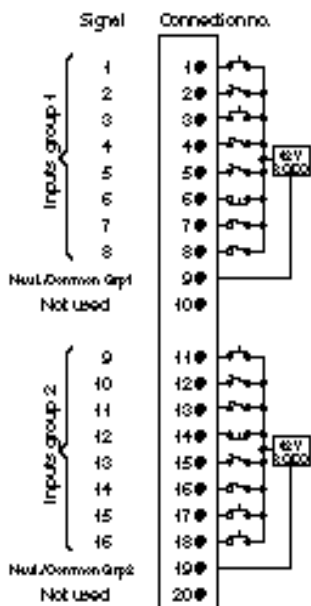
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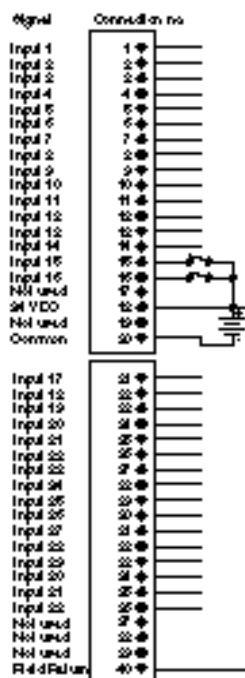
(When facing housing, place pins in holes shown by black circles.)

Specification	AS-B855-016
Description	12 Vdc intrinsically safe input
Mode of Operation	True Low
Number of Points	16
Operating Voltage	11.4 ... 12.6 Vdc
Number of Groups	1
Inputs per Group	16
Max. Input Voltage	
Continous	12 Vdc (±5%)
Surge	500 Vdc for 3 ms
ON Conditions	≤ 100 Ω total impedance
OFF Conditions	>100,000 Ω; 0 Vdc
Max. Response Time	
OFF to ON	1 ms
ON to OFF	5 ms
Power Required	
+5 V	80 mA
+4.3 V	1 mA
5 V	1.5 mA
External Power Supply	12 Vdc±5%, 1 A minimum
Dimensions	
Space Required	1 slot
Weight	2.4 lbs (1.1 kg)
Terminal Connector	AS-8535-000
Agency	Factory mutual 3610 (Requires use of key pins and MD-8741-000 barrier strip, included with module)
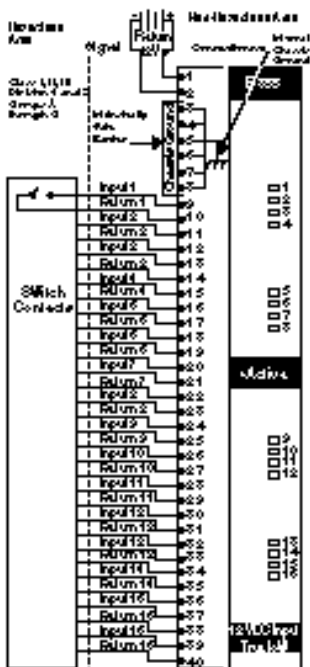
Specification	AS-B863-032
Description	24 Vdc hi-density monitored input
Type of Operation	True High
Number of Points	32
Operating Voltage	18 ... 30 Vdc
Number of Groups	2
Inputs per Group	16
Max. Input Voltage	
Continous	30 Vdc
Surge	40 Vdc for 10ms
ON Conditions	8 ... 11 kΩ
OFF Conditions	6 ... 8 kΩ
Wetting Current	2 mA (typical) @ 24 Vdc
Max Response Time	
OFF to ON	10 ms
ON to OFF	10 ms
Power Required	
+5 V	250 mA
+4.3 V	0 mA
5 V	0 mA
External Power Supply	24±6 Vdc, 20 mA
Dimensions	
Space Required	1 slot
Weight	2.31 lbs (1.05 kg)
Terminal Connector	AS-8535-000

AS-B855-016 Terminal Numbering and Wire Connections

AS-B855-016 Mechanical Keying for Housings

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(When facing housing, place pins in holes shown by black circles.)

AS-B863-032 Terminal Numbering and Wire Connections

AS-B863-032 Mechanical Keying for Housings
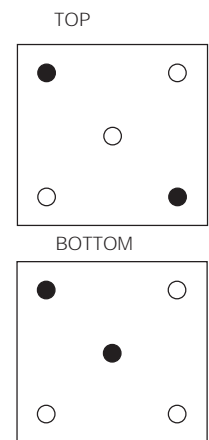
TOP

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(When facing housing, place pins in holes shown by black circles.)

Specification	AS-B863-132
Description	24 Vdc Supervised wire input
	Senses & reports broken wire
	faults for each I/O point to PLC
Type of Operation	True High
Number of Points	32
Number of Groups	4 (8 inputs per group)
Reference Current	9 to 15 mA per group
Threshold Voltage	11 to 15 Vdc
Working Voltage	0 to 30 Vdc
Reference Voltage	19.2 to 30 Vdc
Input Current	1.8 to 3 mA low state
	5.75 to 7.1 mA high state
Transition Time	
ON	Vin = 20 Vdc 200 ms minimum
	Vin = 30 Vdc 25 ms minimum
OFF	Vin = 20 Vdc 100 ms maximum
	Vin = 30 Vdc 250 ms maximum
Max. Response Time	2.0 ms, contact opening
OFF to ON	and/or closing 100 ms, fault
ON to OFF	detection time maximum
Power Required	
+ 5V	350 mA
+4.3V	10 mA
-5V	0mA (not used)
External Power Supply	30 Vdc maximum
Dimensions	
Space Required	1 slot
Weight	2 lbs (0.91 kg.)
Terminal Connector	AS-8535-000

AS-B863-132 Terminal Numbering and Wire Connections
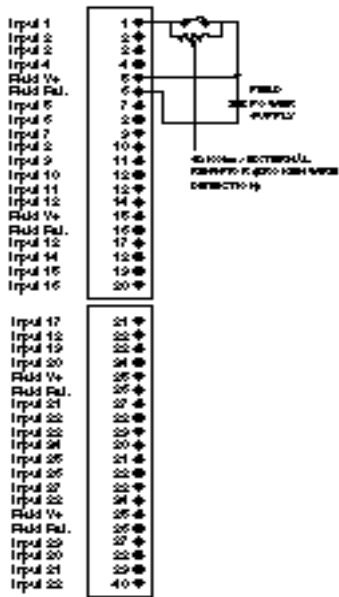
AS-B863-132 Mechanical Keying for Housings
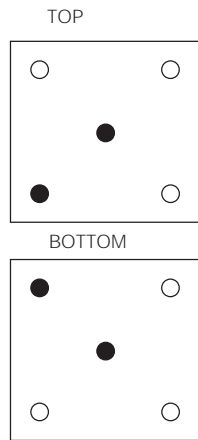
TOP

BOTTOM

(When facing housing, place pins in holes shown by black circles.)

Specification	AS-B864-001
Description	TTL register ouput
Number of Points	8 channels, 16 data lines
Operating Voltage	5V TTL
Number of Groups	NA
Outputs per Group	NA
ON Current	
Max. per Point	NA
Max. per Group	NA
Max. per Module	NA
Leakage Current	NA
Max. Response Time	
OFF to ON	11.3 ms
ON to OFF	11.3 ms
Power Required	
+5 V	220 mA
+4.3 V	180 mA
-5 V	0 mA
Dimensions	
Space Required	1 slot
Weight	3.99 lbs (1.81 kg)
Terminal Connector	AS-8535-000

AS-B864-001 Terminal Numbering and Wire Connections

AS-B864-001 Mechanical Keying for Housings
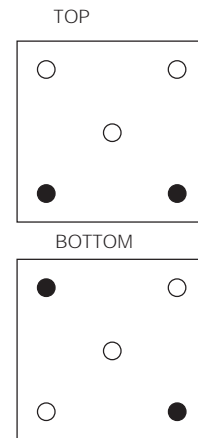
TOP

BOTTOM

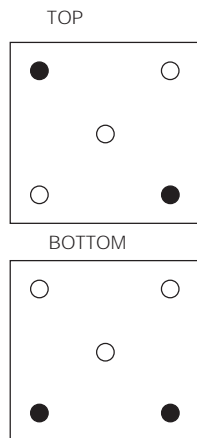**(When facing housing, place pins in holes shown by black circles.)**

Specification	B865-001
Description	TTL register input
Number of Inputs	8 channels, 16 data lines
Operating Voltage	5 VTTL
Max. Response Time	
OFF to ON	20 ms
ON to OFF	20 ms
Power Required	
+5 V	400 mA
+4.3 V	600 mA
-5 V	0 mA
Dimensions	
Space Required	1 slot
Weight	2.75 lbs (1.25 kg)
Terminal Connector	AS-8535-000

Specification	AS-B872-100
Description	D/A; 4 ... 20 mA
Number of Channels	4
Operating Range	4 ... 20 mA
Max. Loop Supply Voltage	60 Vdc
Resolution	12 bit
Accuracy	±0.1% of full scale at 25°C
Linearity	0 to 60°C, ±1 LSB
Update Times	<1 ms, all 4 channels
Isolation	
Channel to Channel	1000 V continuous
Channel to Case	1000 V continuous
Channel to Module	1000 V continuous
Power Required	
+5 V	475 mA
+4.3 V	5 mA
-5 V	0 mA
Dimensions	
Space Required	1 slot
Weight	3 lbs (1.4 kg)
Terminal Connector	AS-8535-000

B865-001 Terminal Numbering and Wire Connections

Pin Num	Signal	Pin Num	Signal
1	Not used	21	Not used
2	Not used	22	Not used
3	Not used	23	Not used
4	DATA 01	24	DATA 15
5	DATA 02	25	DATA 16
6	DATA 03	26	Logic GND
7	DATA 04	27	Strobe 1
8	DATA 05	28	Strobe 2
9	DATA 06	29	Strobe 3
10	DATA 07	30	Strobe 4
11	DATA 08	31	Strobe 5
12	DATA 09	32	Strobe 6
13	DATA 10	33	Strobe 7
14	DATA 11	34	Strobe 8
15	DATA 12	35	Logic GND
16	DATA 13	36	GND
17	DATA 14	37	Not used
18	DO	38	Not used
19	Not used	39	Not used
20	Not used	40	Not used

B865-001 Mechanical Keying for Housings

TOP

BOTTOM

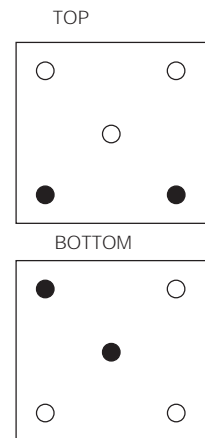**(When facing housing, place pins in holes shown by black circles.)**

AS-B872-100 Terminal Numbering and Wire Connections
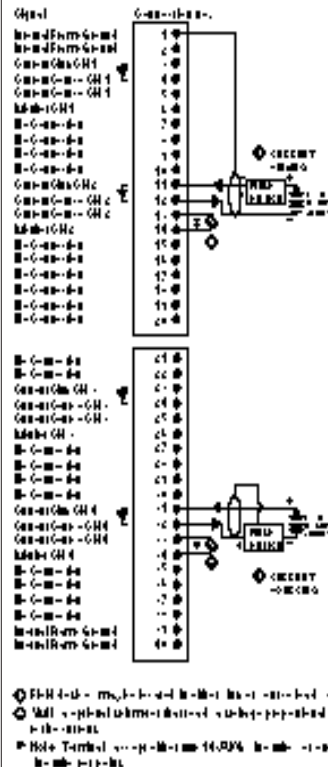
AS-B872-100 Mechanical Keying for Housings

TOP

BOTTOM

(When facing housing, place pins in holes shown by black circles.)

Specification	AS-B872-200
Description	D/A; ±10 Vdc, ±5 Vdc, 0 ... 10 Vdc, 0 ... 5 Vdc
Number of Channels	4
Operating Range	
Voltage	-10 to 10 Vdc; -5 to 5 Vdc; 0 ... 5 Vdc, 0 ... 10 Vdc, selectable per channel
Resolution	12 bit
Accuracy	±0.1% at 25°C
	±0.17% at 0-60°C
Linearity	0 to 60°C, ±1 LSB
Update Times	<1 ms, all 4 channels
Isolation	
Channel to Channel	1000 V continuous
Channel to Case	1000 V continuous
Channel to Module	1000 V continuous
Power Required	
+5 V	750 mA
+4.3 V	5 mA
-5 V	0 mA
Dimensions	
Space Required	1 slot
Weight	3 lbs (1.4 kg)
Terminal Connector	AS-8535-000

Specification	AS-B873-001
Description	A/D: 4 ... 20 mA; 1 ... 5 Vdc
Number of Channels	4
Operating Range	
Voltage/Current	1 ... 5 Vdc / 4 ... 20 mA
Impedance	1 MΩ (voltage mode)
	250 Ω (current mode)
Resolution	12 bit
Accuracy	7 mV
Linearity	±.05% of full scale @ 25°C
Update Time	400 ms for 4 channels
Isolation	
Channel to Channel	250 Vac coninuous
Channel to Module	300 Vac continuous
Power Required	
+5 V	300 mA
+4.3 V	300 mA
-5 V	0 mA
Dimensions	
Space Required	1 slot
Weight	3.3 lbs (1.5 kg)
Terminal Connector	Included

AS-B872-200 Terminal Numbering and Wire Connections

AS-B872-200 Mechanical Keying for Housings

TOP

BOTTOM

(When facing housing, place pins in holes shown by black circles.)
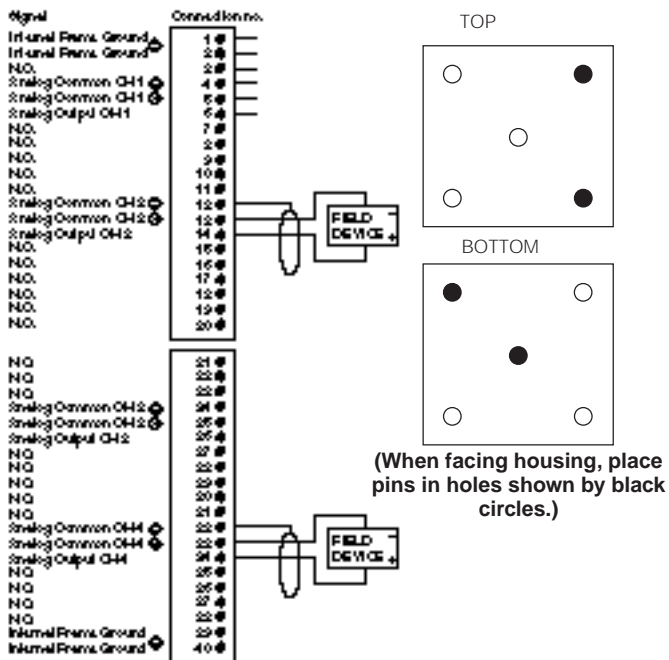
AS-B873-001 Terminal Numbering and Wire Connections

AS-B873-001 Mechanical Keying for Housings

TOP

BOTTOM

(When facing housing, place pins in holes shown by black circles.)

Specification	AS-B873-011
Description	A/D: -10 to 10 Vdc
Number of Channels	4
Operating Range	
Voltage/Current	-10 to 10 Vdc
Impedance	1 MΩ
Resolution	13 bit
Accuracy	17 mV
Linearity	±.05% of full scale @ 25°C
Update Time	400 ms for 4 channels
Isolation	
Channel to Channel	250 Vac continuous
Channel to Module	300 Vac continuous
Power Required	
+5 V	300 mA
+4.3 V	300 mA
-5 V	0 mA
Dimensions	
Space Required	1 slot
Weight	3.3 lbs (1.5 kg)
Terminal Connector	Included

Specification	AS-B875-002
Description	A/D: 4 ... 20 mA; 1 ... 5 Vdc
Number of Channels	8
Operating Range	
Voltage/Current	1 ... 5 Vdc / 4 ... 20 mA
Impedance	1 MΩ (voltage mode)
	250 Ω (current mode)
Resolution	12 bit
Accuracy	7 mV
Linearity	±.05% of full scale @ 25°C
Update Time	710 ms for 8 channels
Isolation	
Channel to Channel	250 Vac continuous
Channel to Module	300 Vac continuous
Transfer Times	
Power Required	
+5 V	300 mA
+4.3 V	300 mA
-5 V	0 mA
Dimensions	
Space Required	1 slot
Weight	3.3 lbs (1.5 kg)
Terminal Connector	Included

AS-B873-011 Terminal Numbering and Wire Connections
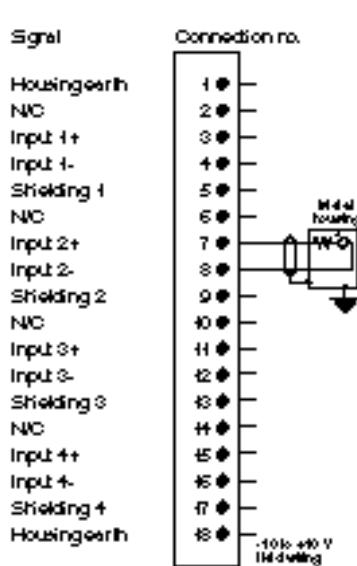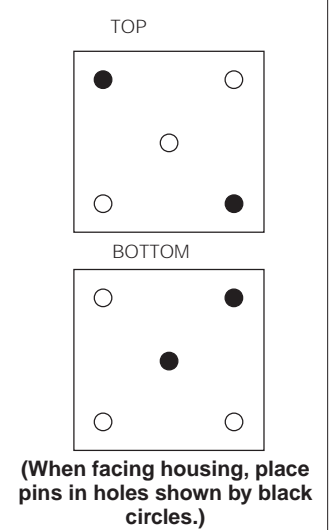
AS-B873-011 Mechanical Keying for Housings

TOP

BOTTOM

(When facing housing, place pins in holes shown by black circles.)
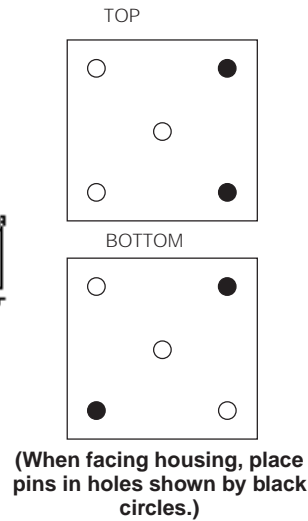
AS-B875-002 Terminal Numbering and Wire Connections

AS-B875-002 Mechanical Keying for Housings

TOP

BOTTOM

(When facing housing, place pins in holes shown by black circles.)
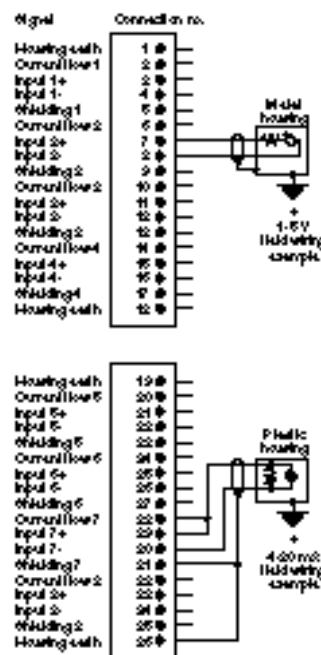
Specification	AS-B875-012
Description	A/D: -10 to 10 Vdc
Number of Channels	8
Operating Range	
Voltage/Current	-10 to 10 Vdc
Impedance	1 MΩ
Resolution	13 bit
Accuracy	17 mV
Linearity	±.05% of full scale @ 25°C
Update Time	710 ms for 8 channels
Isolation	
Channel to Channel	250 Vac continuous
Channel to Module	300 Vac continuous
Power Required	
+5 V	300 mA
+4.3 V	300 mA
-5 V	0 mA
Dimensions	
Space Required	1 slot
Weight	3.3 lbs (1.5 kg)
Terminal Connector	Included

Specification	AS-B875-102
Description	Fast A/D: ±10 Vdc; ±5 Vdc; 0 ... 10 V; 0 ... 5 Vdc; 1 ... 5 Vdc user selectable
Number of Channels	4 or 8
Operating Range	
Voltage/Current	1 ... 5 Vdc / 4 ... 20 mA
	0 ... 5 Vdc / 0 ... 20 mA
	0 ... 10 V / 0 ... 40 mA
	-5 ... 5 V / -20 ... 20 mA
	-10 ... 10 V / -40 ... 40 mA
Output Impedance	10 MΩ (voltage mode)
	250 Ω (current mode)
Resolution	12 bit
Accuracy	±0.1% of full scale @ 25°C
Linearity	±.02% of full scale @ 25°C
Update Time	2.4 ms for 4 channels
	3.0 ms for 8 channels
Isolation	
Channel to Channel	30 Vac continuous
Channel to Module	1500 Vac for 1 minute
Power Required	
+5 V	650 mA
+4.3 V	975 mA
-5 V	0 mA
Dimensions	
Space Required	1 slot
Weight	4 lbs (1.8 kg)
Terminal Connector	Included

AS-B875-012 Terminal Numbering and Wire Connections
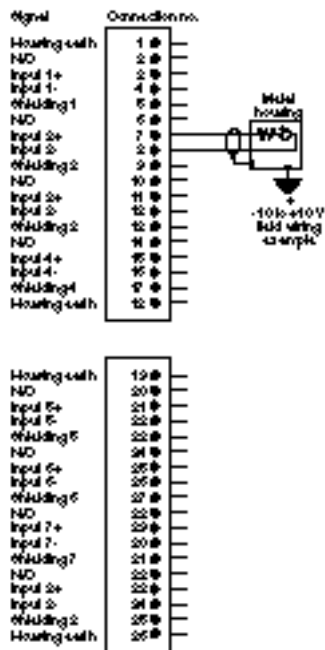
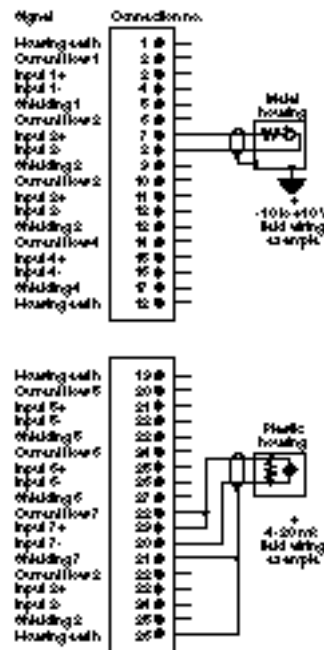**AS-B875-012 Mechanical Keying for Housings**

TOP

BOTTOM

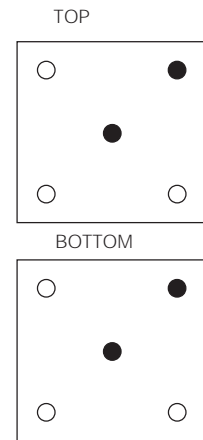(When facing housing, place pins in holes shown by black circles.)

AS-B875-102 Terminal Numbering and Wire Connections

AS-B875-102 Mechanical Keying for Housings

TOP

BOTTOM

(When facing housing, place pins in holes shown by black circles.)

Specification	AS-B875-111		
Description	A/D: 4 ... 20 mA; 1 ... 5 Vdc; -10 to 10 Vdc; 0 ... 20 mA; -5 to 5 Vdc	Isolation	
		Channel to Channel	30 Vac
		Channel to Module	1500 Vac for 1 minute
Number of Channels	8 differential or 16 single-ended (user selectable)	Power Required	
		+5 V	500 mA
Operating Range		+4.3 V	900 mA
Voltage/Current	-5 Vdc to +5 Vdc	-5 V	0 mA
	0 to 5 Vdc	Dimensions	
	1 Vdc to 5 Vdc	Space Required	1 slot
	-10 Vdc to +10 Vdc	Weight	3.52 lbs (1.6 kg)
	0 to 10 Vdc	Terminal Connector	AS-8535-000
	-20 mA to +20 mA		
	0 to 20 mA		
	4 to 20 mA		
Output Impedance	> 10 MΩ (voltage mode) 250 Ω (current mode)		
Resolution	14 bit		
Accuracy	±0.1%		
Linearity	±.05%		
Update Time			
8 inputs	10 ms		
16 inputs	20 ms		

AS-B875-111 Terminal Numbering and Wire Connections

8 Differential Inputs
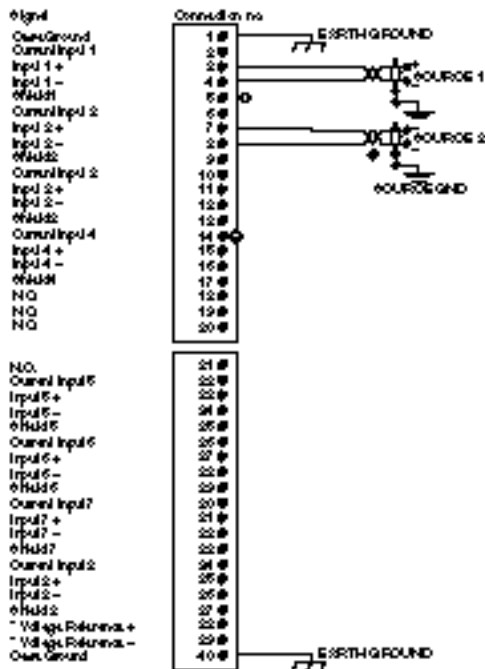
16 Single-Ended Inputs
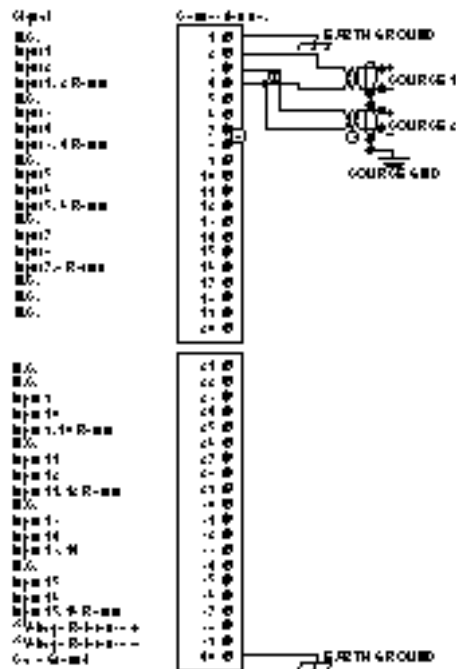
AS-B875-111 Mechanical Keying for Housings
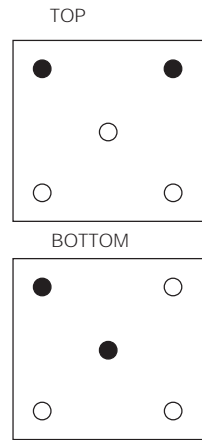
TOP

BOTTOM

(When facing housing, place pins in holes shown by black circles.)
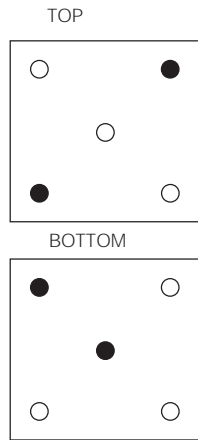
3-69

Specification	AS-B875-200
Description	A/D; Thermocouples, RTD Strain Gauges, 4 ... 20 mA Various Input Voltage Ranges
Number of Channels	4/8
Operating Range	Selectable per channel
Resolution	12 bit
Accuracy	
Calibration Accuracy	±.15% at 25° C
Non-Linearity	±.05%
Gain Drift	±.01%/° C
Zero Drift	±.002%/° C
Update Times	4 ms, all 4 channels
Isolation	
Channel to Channel	1500 V continuous
Power Required	
+5 V	< 600 mA
+4.3 V	< 10 mA
-5 V	0 mA
Dimensions	
Space Required	2 slots
Weight	3 lbs (1.4 kg)
Terminal Connector	AS-8535-000

AS-B875-200 Terminal Numbering and Wire Connections

AS-B875-200 Mechanical Keying for Housings

TOP

BOTTOM

(When facing housing, place pins in holes shown by black circles.)

List of 5B Packs

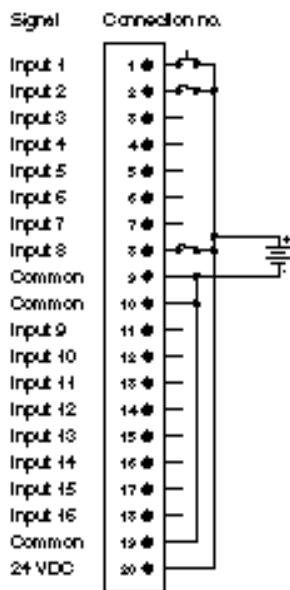| Part Number	Description
Voltage Input, 4 Hz.	
AS-5B30001A	0 to +10 mV
AS-5B30002A	0 to +50 mV
AS-5B30003A	0 to +100 mV
AS-5B30004A	-10 to +10 mV
AS-5B30005A	-50 to +50 mV
AS-5B30006A	-100 to +100 mV
AS-5B31001A	0 to +1 V
AS-5B31002A	0 to +5 V
AS-5B31003A	0 to +10 V
AS-5B31004A	-1 to +1 V
AS-5B31005A	-5 to +5 V
AS-5B31006A	-10 to +10 V
Voltage Input, 10KHz.	
AS-5B40001A	0 to +10 mV
AS-5B40002A	0 to +50 mV
AS-5B40003A	0 to +100 mV
AS-5B40004A	-10 to +10 mV
AS-5B40005A	-50 to +50 mV
AS-5B40006A	-100 to +100 mV
AS-5B41001A	0 to +1 V
AS-5B41002A	0 to +5 V
AS-5B41003A	0 to +10 V
AS-5B41004A	-1 to +1 V
AS-5B41005A	-5 to +5 V
AS-5B41006A	-10 to +10 V
Current Input, 4 Hz.	
AS-5B32001A	4 to 20 ma
AS-5B32002A	0 to 20 ma
Thermocouple Input, Linear, 4 Hz.	
AS-5B47J01A	(Type J) 0 to +760°C
AS-5B47J02A	(Type J) -100 to +300°C
AS-5B47J03A	(Type J) 0 to +500°C
AS-5B47K04A	(Type K) 0 to +1000°C
AS-5B47K05A	(Type K) 0 to +500°C
AS-5B47T06A	(Type T) -100 to +400°C
AS-5B47T07A	(Type T) 0 to +200°C
AS-5B47E08A	(Type E) 0 to +1000°C
AS-5B47R09A	(Type R) +500 to +1750°C
AS-5B47S10A	(Type S) +500 to +1750°C
AS-5B47B11A	(Type B) +500 to +1800°C
RTD Input, Isolated, 4 Hz.	
AS-5B34P01A	-100 to +100°C
AS-5B34P02A	0 to +100°C
AS-5B34P03A	0 to +200°C
AS-5B34P04A	0 to +600°C
AS-5B34C01A	0 to +120°C, 10 Ω @ 0°C
AS-5B34C02A	0 to +120°C, 10 Ω @ 25°C
AS-5B34N01A	0 to +300°C
Strain Gauge, 10 KHz.	
AS-5B38002A	Full Bridge, 3 mV/V 300 Ω min.
AS-5B38004A	Half Bridge, 3 mV/V 300 Ω min.
AS-5B38005A	Full Bridge, 2 mV/V 300 Ω min.

Specification	AS-B881-001
Description	24 Vdc (LATCH) input
Type of Operation	True High
Number of Points	16
Operating Voltage	20 ... 28 Vdc
Number of Groups	1
Inputs per Group	16
Max. Input Voltage	
Continuous	30 Vdc
Surge	40 Vdc for 10ms
Wetting Current	6 mA (typical) @ 24 Vdc
Min. Pulse Width	0.5 ms
Repetition Rate	One per second
Power Required	
+5 V	30 mA
+4.3 V	1.1 mA
-5 V	0 mA
External Power Supply	24±4 Vdc, 310 mA
Dimensions	
Space Required	1 slot
Weight	2.75 lbs (1.25 kg)
Terminal Connector	AS-8534-000
Fusing	One per group

Specification	AS-B881-108
Description	115 Vac protected output
Number of Points	8
Operating Voltage	80 ... 130 Vac / 47 ... 63 Hz
Number of Groups	8
Outputs per Group	1
ON Current	
Max. per Point	2 A continuous
	30 A for one cycle
Max. per Group	2 A
Max. per Module	16 A
Leakage Current	5 mA max @ 130 Vac
Max. Response Time	
OFF to ON	9 ms @ 60 Hz
ON to OFF	9 ms @ 60 Hz
Power Required	
+5 V	285 mA
+4.3 V	240 mA
-5 V	0 mA
Dimensions	
Space Required	1 slot
Weight	2.4 lbs (1.1 kg)
Terminal Connector	AS-8535-000

AS-B881-001 Terminal Numbering and Wire Connections

AS-B881-001 Mechanical Keying for Housings

TOP

BOTTOM

(When facing housing, place pins in holes shown by black circles.)

AS-B881-108 Terminal Numbering and Wire Connections

AS-B881-108 Mechanical Keying for Housings
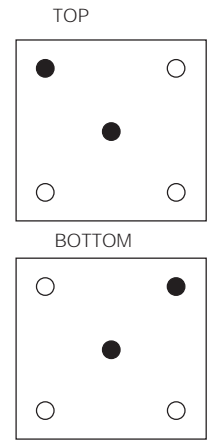
TOP

BOTTOM

(When facing housing, place pins in holes shown by black circles.)
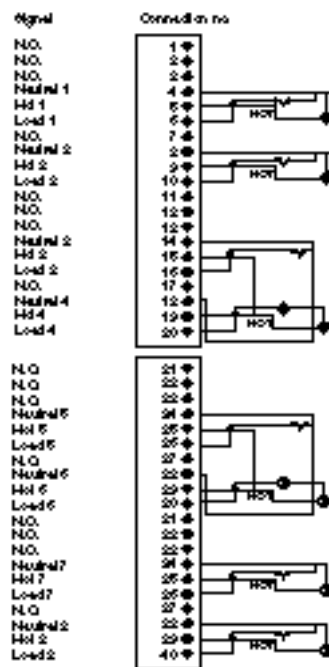
Specification	AS-B881-508
Description	125 Vdc True High output
Number of Points	8
Operating Voltage	5 ... 140 Vdc
Number of Groups	8
Outputs per Group	1
ON Current	
Max. per Point	4.0 A
Max. per Module	29 A
Leakage Current	< 30 mA
Max. Response Time	
OFF to ON	< 75 µs
ON to OFF	< 100 µs
Power Required	
+5 V	300 mA
+4.3 V	0 mA
-5 V	0 mA
External Power Supply	5 ... 140 Vdc
Dimensions	
Space Required	1 slot
Weight	2.4 lbs (1.1 kg)
Terminal Connector	AS-8535-000

Specification	AS-B882-032
Description	24 Vdc diagnostic output
Number of Points	32
Operating Voltage	20 ... 28 Vdc
Number of Groups	4
Outputs per Group	8
ON Current	
Max. per Point	1 A
Max. per Group	6 A
Max. per Module	24 A
Leakage Current	1 mA max. @ 28 Vdc
Max. Response Time	
OFF to ON	1 ms
ON to OFF	1 ms
Power Required	
+5 V	300 mA
+4.3 V	10 mA
-5 V	0 mA
External Power Supply	24±4 Vdc, 600 mA
	(Excluding field load current)
Dimensions	
Space Required	1 slot
Weight	2.42 lbs (1.1 kg)
Terminal Connector	AS-8535-000
Fusing	Electronic, one-per point

AS-B881-508 Terminal Numbering and Wire Connections
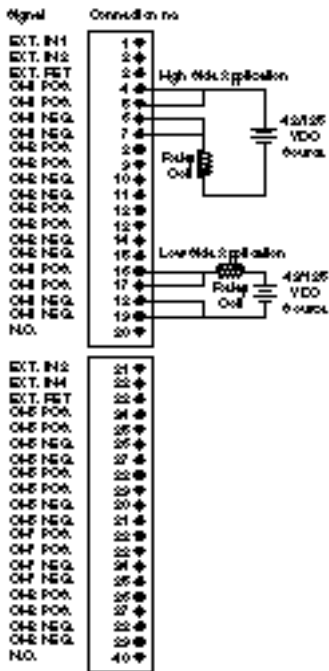
AS-B881-508 Mechanical Keying for Housings

TOP

BOTTOM

(When facing housing, place pins in holes shown by black circles.)

AS-B882-032 Terminal Numbering and Wire Connections
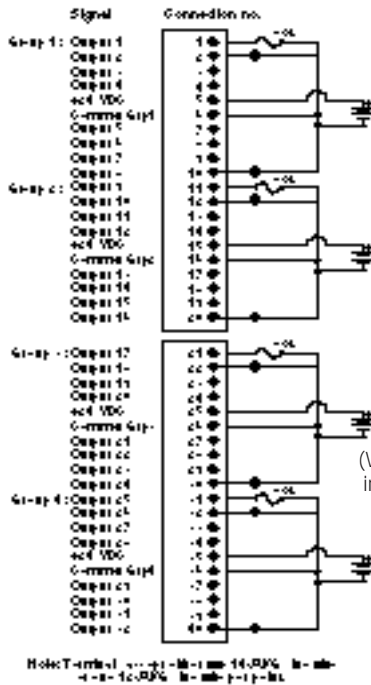
AS-B882-032 Mechanical Keying for Housings

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BOTTOM

(When facing housing, place pins in holes shown by black circles.)
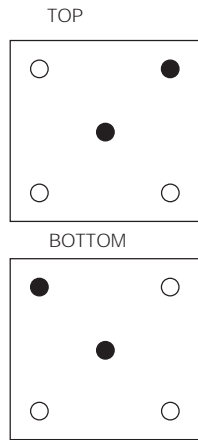
Specification	AS-B882-116

Description   24 Vdc Supervised wire output
                                            Detects open or short circuits on each I/O point and reports fault to PLC

Number of Points	16
Working Voltage	19.2 to 30.0 Vdc
Number of Groups	2
Outputs per Group	8
Continuous Current	
Max. Per Point	0.5 A
Max. Per Group	4.0 A
Max. Per Module	8.0 A
Off State Leakage Current	3 mA max. at 30 Vdc, max. allowable load resistance is 6K Ω
On State Voltage Drop	0.5 Vdc maximum at 0.5A
Inrush Current	1.0A peak for 0.1 ms at 4 pulses per second while carrying 0.5A DC minimum load current 10 mA
Power Required	
+5 Vdc	350 mA maximum all outputs ON
+4.3 Vdc	10 mA
-5 Vdc	0 mA (not used)
External Power Supply	Nominal 24 Vdc at external load current plus 0.5 amps. Supply must be capable of pulse current of external load plus 5 amps.
Dimensions	
Space Required	1 slot
Weight	2 lbs (0.91 kg)
Terminal Connector	AS-8535-000
Fusing	No internal fusing

*For additional details, consult user guide #GM-DISC-800.

AS-B882-116 Terminal Numbering and Wire Connections

AS-B882-116 Mechanical Keying for Housings

TOP

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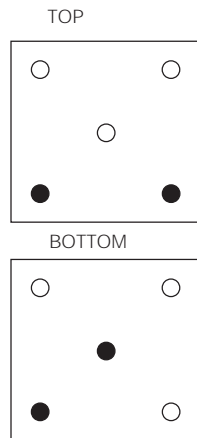
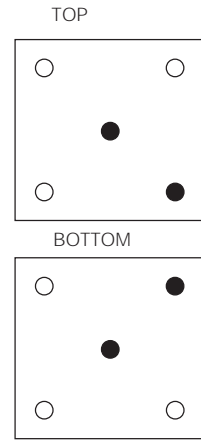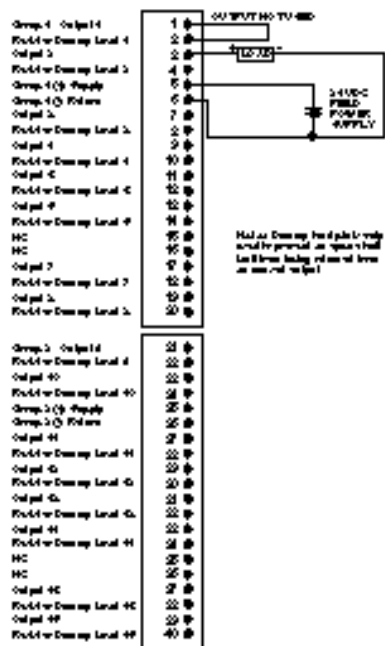**(When facing housing, place pins in holes shown by black circles.)**

B882-239 High Speed Counter Module

The B882-239 High Speed Counter Module has two identical and independent counters for applications that require counting or comparisons. Because the module handles the counting within its own internal logic, the PLC is free to do other tasks.

Each counter counts to 9999, and the two counters can be cascaded to count to 99,999,999. Each counter counts up to 30,000 pulses per second. The module has two modes of operation, high frequency and low frequency, so its maximum count rate varies from 350 Hz (low frequency) to 30 KHz (high frequency).

Because the module acts independently of the PLC, it counts the high speed pulses from the field independently of the PLC scan. The counter automatically reports its current count to the PLC every scan. Where high performance is required, the module's own outputs can trigger independently of the controller scan.

The major features of the B882-239 High Speed Counter Module include:

• Two independent counters (0-32 Vdc, True Low)
• 0-30 Khz operation with selectable low frequency filter
• Six auxiliary field inputs (0-32 Vdc, True Low)
• Six field outputs (0-32 Vdc, True Low)
• Self-diagnostics

Specifications	AS-B882-239
Number of Counters	2
Number of Auxiliary Inputs	6
Number of Outputs	6
Number of Groups	1
Input Voltage Range	0-32 Vdc
Input Current	8.1 mA with 32 Vdc supply
	5 mA with 28 Vdc supply
Output ON Voltage	1.0 Vdc (max.) @ 0.5 A
	0.3 Vdc (typ.) @ 0.5 A
	0.4 Vdc (max.) @ 0.1 A
	0.2 Vdc (typ.) @ 0.1 A
Output OFF Leakage Current	1.0 mA (max.) @ 32 Vdc
Output Load Current	0.5 A continuous per output
	1.5 A fusing per group
Max. Count Frequency	
High Frequency Mode	30 KHz
Low Frequency Mode	350 Hz
Reset Pulse Width	13 µs (min.)
Enable Set Up Time	
High Frequency Mode	11 µs (max.)
Low Frequency Mode	1.3 µs (max.)
Range of Signal Values	
-Log "1" Neg. Threshold	1.1 Vdc (min.), 2.2 Vdc (typ.)
-Log "0" Pos. Threshold	3.5 Vdc (max.), 2.7 Vdc (typ.)
-Hysteresis	0.36 Vdc (min.), 0.49 Vdc (typ.)
Power Required	
+ 5 Vdc	188 mA
+ 4.3 Vdc	0 mA
-5 Vdc	0 mA
Dimensions	
Space Required	1 slot
Weight	2.94 lbs (1.34 kg)
Terminal Connector	Included
Fusing	One per group

AS-B882-239 Terminal Numbering and Wire Connections

Signal		Connections
Counter 1	Counting	1
	Enabling	2
	Reset 1	3
	Reset 2	4
	Coil 1	5
	Coil 2	6
	Overflow	7
Counter 2	Counting	8
	Enabling	9
	Reset 1	10
	Reset 2	11
	Coil 1	12
	Coil 2	13
	Overflow	14
	Field return	15
	Field return	16
	Field return	17
	Field return	18
	Field return	19
	Field return	20
	Field Power	21
	Field Power	22
	Not used	23
	Not used	24

AS-B882-239 Mechanical Keying for Housings

TOP

BOTTOM

(When facing housing, place pins in holes shown by black circles.)
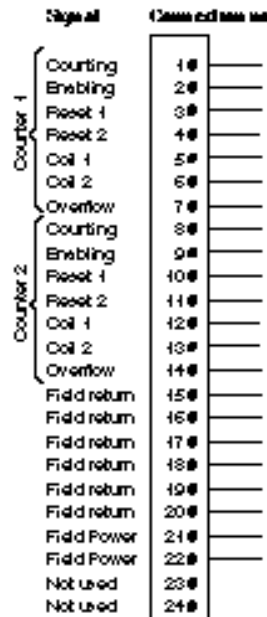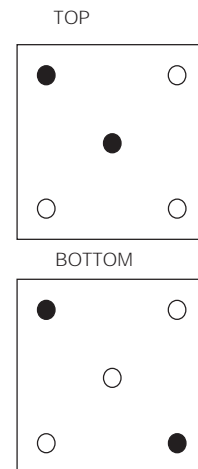
Specifications   AS-B883-001

Number of Counters	2
Number of Auxiliary Inputs	6
Number of Outputs	3
Voltage Range	
5 Vdc	2.4 to 5.5 Vdc
12 Vdc	6 to 16 Vdc
24 Vdc	12 to 32 Vdc
Transition	0 to 1 1 to 0
5 Vdc	2.4 Vdc 1.6 Vdc
12 Vdc	5.6 Vdc 4.0 Vdc
24 Vdc	11.2 Vdc 8.0 Vdc
Output Load Current	At 5 Vdc, 140 mA per output
Max Count Frequency	50 kHz
Ramp Time	7 V per sec
Power Required	
+ 5 Vdc	677 mA
+ 4.3 Vdc	0 mA
-5 Vdc	0 mA
Dimensions	
Space Required	1 slot
Weight	3.3 lbs (1.49 kg)
Terminal Connector	Included

AS-B883-001 Terminal Numbering and Wire Connections

AS-B883-001 Mechanical Keying for Housings

TOP

BOTTOM

(When facing housing, place pins in holes shown by black circles.)

B883-001 High Speed Counter Module

The Modicon B883-001 High Speed Counter Module is a powerful control tool providing solutions for both simple high speed counting and more involved timing and sampling control applications, all at speeds up to 50 kHz.

While programmed directly through a Modicon programmable controller, the High Speed Counter Module is microprocessor-based and operates independent of the PLC. The module provides two counters that can operate separately or jointly, depending on the control system's needs.

Counter #1	Counter #2
Bi-direction (up/down) count	Unidirectional up counter
Pulse or Quadrature encoder input modes	1 kHz and 1 MHz internal clock
Counts up to 9,999,999	Counts up to 9,999
Two programmable outputs with three modes of operation	Hardwire reset and enable
Hardwire enable and preset	Software reset and enable
Software enable and preset	Programmable match output

B883-101 and B883-111 CAM Emulator Modules

The B883-101 and B883-111 CAM emulator modules are used to automate the operation of metal shaping and cutting presses for any mass production industry such as automobile parts fabrication.

The CAM module receives a 12-bit (plus control) parallel position code from an encoder. The module then transmits an 8-bit parallel control code to its discrete outputs based on the received position data.

Programming and operation of the CAM module is simple. You load the operating instructions into a CAM module through the PLC via the I/O system. You can define up to 16 output intervals distributed at random among the 8 outputs. The CAM module accepts inputs in binary, binary coded decimal, or Gray code. Once programmed, the module receives, processes, and outputs the position codes at a rate of 4,000 Hz (once every 250 microseconds).

If your application requires velocity compensation, choose the B883-111 module. The B883-111 module compensates for changes in velocity.

Specifications   **AS-B883-101/111**

Number of Inputs	12
Number of Outputs	8
Supply Voltage	Max. 7 Vdc
Internal Signal Loading	RTH = 10 kΩs
	VTH = 0.925 x VDD,
	(VDD = 5 Vdc ± 5%)
Working Voltage	20 to 28 Vdc
Peak Voltage	32 Vdc max for 10 ms
ON State Voltage Drop	0.6 Vdc max at 200 mA
	one channel on
Inrush Current	Max. 2.5 A per channel
	0.5 ms at 5% duty cycle
OFF State Leakage Current	Max. 0.75 mA at 28.8 Vdc
	Typ. 0.1 mA
Response Time	Max. 20 ms
Transition Time	Max. 32 ms
Power Required	
+5 Vdc	1000 mA
+4.3 Vdc	0 mA
–5 Vdc	0 mA
Dimensions	
Space Required	1 slot
Weight	3.98 lbs (1.81 kg)
Terminal Connector	Included

AS-B883-101/111 Terminal Numbering and Wire Connections
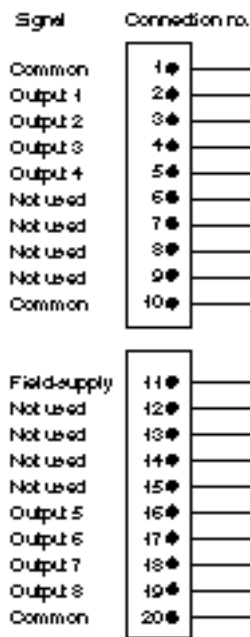
AS-B883-101/111 Mechanical Keying for Housings

TOP

BOTTOM

(When facing housing, place pins in holes shown by black circles.)

37 Pin 'D' Male Connector

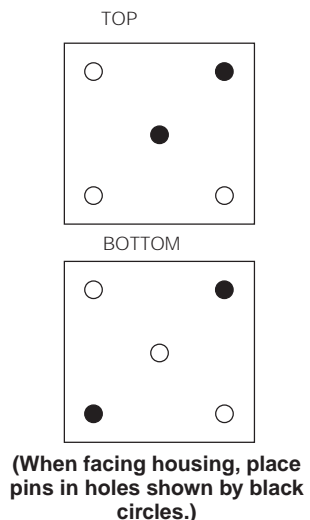| Specifications	AS-B883-200
Description	Thermocouple input Type B,E,J,K,R,S,T,N or linear mV
Inputs per Module	10
Max. Common Mode Voltage	200 Vdc/Vac (peak)
Resolution	1°C, 1°F, 10 mV
Under Program Control	0.1°C, 0.1°F, 1 mV
Update Time	100 ms per selected channel 1 sec. max. all channels
Power-up Time	13 sec. max.
Warm-up Time	2 Min. max.
Power Required	
+5 Vdc	400 mA
+4.3 Vdc	5 mA
-5 Vdc	0 mA
Dimensions	
Space Required	1 slot
Weight	4 lbs (1.8 kg)
Terminal Connector	Included

B883-200 Thermocouple Input Module

The Modicon B883-200 Thermocouple Input Module is a smart I/O module that multiplexes up to ten thermocouples into three consecutive input registers of the control system.

Each B883-200 module provides reference junction temperature compensation, open circuit detection, and linearization for ten thermocouples. Also built-in are self-calibration, internal diagnostics, and 800-Series bus diagnostics.

Any mix of type B, E, J, K, R, S, T, or N thermocouple operations or simple -20 to +80 mV input operations may be set by the user under program control.

For thermocouple inputs, the PLC can access individual temperature readings in degrees Centigrade, Fahrenheit, or in compensated millivolts. Each time the PLC scans the B883-200 module, it receives the specified temperature or millivolt reading along with open-circuit and module health data. The thermocouple wire is terminated on a special isothermal connector assembly on the housing. Each B883-200 module uses three consecutive input registers and three output registers.

AS-B883-200 Terminal Numbering and Wire Connections
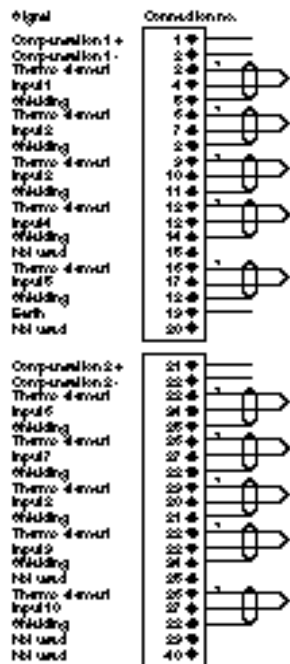
AS-B883-200 Mechanical Keying for Housings

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(When facing housing, place pins in holes shown by black circles.)
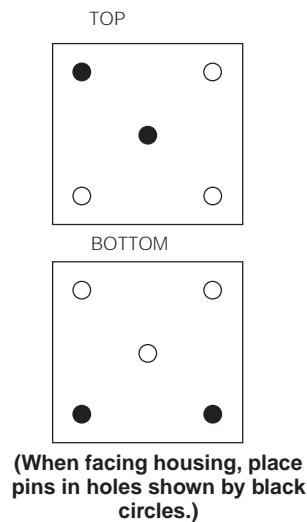
B883-201 RTD Input Module

The Modicon B883-201 Resistance Temperature Detector (RTD) module is a smart I/O module that multiplexes up to eight two- or three-wire RTDs into three consecutive input registers of a control system.

Each B883-201 module provides linearization for any mix of 8 RTDs. Also built-in are self-calibration, internal diagnostics, and 800-Series bus diagnostics.

American standard platinum, European standard platinum per DIN, or linear resistance input can be selected by the user under program control.

When an RTD is selected, the PLC can access each individual temperature reading in Centigrade, Fahrenheit, or in compensated millivolts. Each time the PLC scans the B883-201 module, it receives the specified temperature or millivolt reading along with open-circuit and module health data.

Each B883-201 uses three consecutive input registers and three output registers. These registers are assigned to the same slot within the channel.

Specifications	AS-B883-201
Description	RTD input
	American or European
	100 Ω Platinum
Inputs per Module	8
Max. Common Mode Voltage	7 Vdc/Vac (peak)
Resolution	1°C, 1°F, 10 Ω
Under Program Control	0.1°C, 0.1°F, 1 Ω
Update Time	125 ms per selected channel
	1 sec. max. all channels
Power-up Time	13 sec. max.
Warm-up Time	2 min. max.
Power Required	
+5 Vdc	640 mA
+4.3 Vdc	5 mA
-5 Vdc	0 mA
Dimensions	
Space Required	1 slot
Weight	4 lbs (1.8 kg)
Terminal Connector	AS-8535-000

AS-B883-201 Terminal Numbering and Wire Connections

AS-B883-201 Mechanical Keying for Housings

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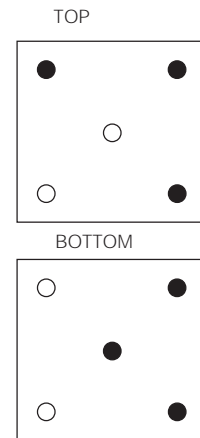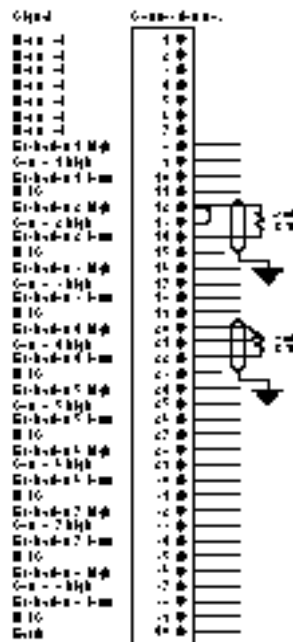
(When facing housing, place pins in holes shown by black circles.)

| Specifications	AS-B884-002
Analog Inputs	**4, current/voltage**
Input Range	4 ... 20 mA, 1 ... 5 Vdc, 0 ... 10 Vdc
Common-mode Rejection	> -90 db, 50/60 Hz
Max. Common-mode Voltage	180 Vdc/Vac peak
Normal Mode Rejection	60 db
Accuracy (at 25° C)	0.05% typ, +0.02% max
Thermocouple Inputs	**2**
Types	B,E,J,K,N,R,S,T
Common-mode Rejection	> -120 db, 50/60 Hz
Max. Common-mode Voltage	180 Vdc/Vac peak
Normal Mode Rejection	60 db
Repeatability (constant temp.)	+0.5° F, +0.3° C in 24 hours
Frequency Inputs	1, sine wave/magnetic pick-up (bipolar) and rectangular wave (unipolar)
Input Voltage Range	
Unipolar	2 Vpp to 50 Vpp
Bipolar	10 mVpp to 360 Vpp
Discrete inputs	**2**
Input Voltage	24 Vdc, potential isolated
ON Threshold	5.0 Vdc or more
OFF Threshold	0.8 Vdc or less
Min. Turn On Current	5 mA
Analog outputs	**2, current voltage**
Output Range	4 ... 20 mA, 1 ... 5 Vdc, 0 ... 10 Vdc
Common-mode Rejection	> -120 db, 50/60 Hz
Max. Common-mode Voltage	180 Vdc/Vac peak
Accuracy (at 25° C)	0.2% max, 0.05% typ
Output Setting Time	< 10 ms
Discrete Outputs	**2**
Output Voltage	24 Vdc, potential isolated
Output Current	250 mA, 1 V drop max
OFF State Leakage	0.1 mA max
Loop Solve Time	150 ms
Power Required	
+5 Vdc	50 mA
+4.3 Vdc	2 mA
-5 Vdc	0 mA
External Power Supply	24±4 Vdc, 330 mA
Dimensions	
Space Required	1 slot
Weight	4 lbs (1.81kg)
Terminal Connector	Included

B884-002 PID Module

The B884-002 PID Module provides two completely independent and separate Proportional Integral Derivative (PID) loops. You can configure the PID loops for control strategies including open loop, closed loop, PID, PID on error squared, and cascade control.

You configure the PID module using a configuration program (Part # SW-B8DD-3DA) on an IBM or compatible personal computer. You can download the data either through the PLC or directly to the modules, where it is stored in a non-volatile EEPROM memory.

To ensure the highest accuracy and reliability, the module has fully floating, isolated, and protected inputs and outputs. The module has seven independently configured analog inputs (4 voltage/current, 2 thermocouple, 1 frequency), two analog outputs, two discrete inputs, and two discrete outputs. Each loop is assigned two voltage and one thermocouple inputs. There is no need for any analog adjustments such as trimpots for zero, offset, or span, which results in superior accuracy, stability, and reliability.

AS-B884-002 Terminal Numbering and Wire Connections

AS-B884-002 Mechanical Keying for Housings
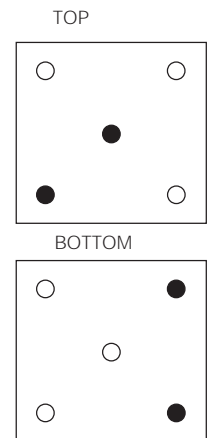
(When facing housing, place pins in holes shown by black circles.)

B885-002 ASCII / BASIC Module

The B885-002 ASCII / BASIC Module runs user-written BASIC programs independently of the controller's memory logic and scan. It also performs READ and WRITE commands to and from serial devices connected to either of the module's two RS 232/422 ports (jumper selectable). In addition, its real-time clock/calendar allows the module to run a BASIC program or flag and return a value to the PLC at a user specified date and time.

The module provides report generation, interactive operator interface, high level math, peripheral communications, and data storage.

Using a dumb terminal or an IBM personal computer with Emulator Software (Part # SW-E885-1DA), you program the module's 53K of user memory. If you need more memory, you may provide an additional 32K of user EPROM. You can designate part of the memory as retentive variable memory to store formulas or other process parameters.

Specifications	AS-B885-002	
Data Exchange		
Module to PLC	Via OURBUS, 6 input registers, 6 output registers	
Module to Terminal Transmission Rate	Via 2 ports, RS 232C or RS 422 110, 300, 600, 1200, 2400, 4800, 9600, 19200 baud software selectable	
Power Required	RS 422 mode	RS 232 mode
+5 Vdc	500 mA	400 mA
+4.3 Vdc	1760 mA	1000 mA
-5 Vdc	0 mA	0 mA
Dimensions		
Space Required	1 slot	
Weight	3 lbs (1.4 kg)	
Terminal Connector	Included	

AS-B885-002 Terminal Numbering and Wire Connections

Pin #	Direction	Signal
1	N/A	Protective ground
2	OUT	RS232 Send data
3	IN	RS232. Receive data
4	OUT	RS232 Request to send
5	IN	RS232 Clear to send
6	IN	RS232 Data set ready
7	N/A	RS232 & RS422 Common
12	OUT	RS422 Request to send high
13	OUT	RS422 Request to send low
14	OUT	RS422 Send data high
15	OUT	RS422 Send data low
16	IN	RS422 Clear to send low
17	IN	RS422 Clear to send high
18	OUT	+5V (Current limited, 5mA by 1K)
19	IN	Select input-RS422 high/ RS232 low
20	OUT	RS232 Data terminal ready
21	IN	RS422 Receive data high
25	IN	RS422 Receive data low

AS-B885-002 Mechanical Keying for Housings

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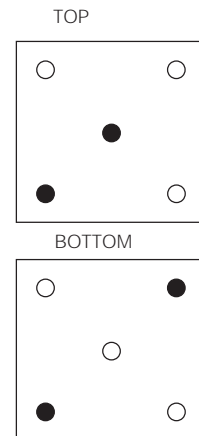
(When facing housing, place pins in holes shown by black circles.)

B885-101 and B885-111 Motion Modules

Modicon B885-1xx Motion Modules are high performance, single axis servo motion controllers contained in a single-width 800-Series I/O module. They are designed to plug directly into the I/O rack of the Modicon 984 PLC, although they are capable of standalone operation. They can control brushless and brush-type servo motors, as well as hydraulics.

The modules use Schneider Automation's patented Direct Numerical Processing (DNP) technology. Advanced digital brushless motion control eliminates potentiometer adjustments and analog velocity loops for optimal control.

The B885-101 module uses a resolver to provide feedback for the position, velocity, and commutation of the motor. Essentially, a rotary brushless transformer that provides absolute position information to the motion module, the resolver gives the module a high degree of noise immunity.

The B885-111 module additionally has two quadrature encoder interfaces for extra position and velocity feedback.

Control communication interface to the B885-1xx modules can be either through the 800 I/O system backplane or the Modbus/RS-232 serial port. The module is designed to work directly with the Modicon Cyberline 1000 series brushless servo amplifiers as well as those of third-party vendors.

The PLC communicates with the motion modules through six input and six output registers with the control instructions providing a powerful, smooth and fast link between the two. Adjustable command buffering and direct register to function bits provide added communication speed for high response functions.

Motion programs, developed using MMDS, are either stored directly in the flash memory of the motion module or as registers in the PLC.

The Modicon Motion Development Software (MMDS) is an on-line/off-line, menu driven package (Part # SW-MMDS-1DB) for the IBM-AT or compatible computers. It enables the user to set up, program, operate and diagnose operation of the motion module. The program and file manipulation features are a versatile system for application management. The MMDS communicates via a computer serial port to the Modbus port on the motion module.

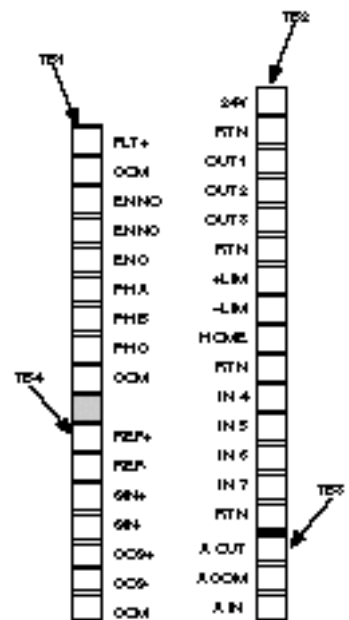**AS-B885-1xx Mechanical Keying for Housings**

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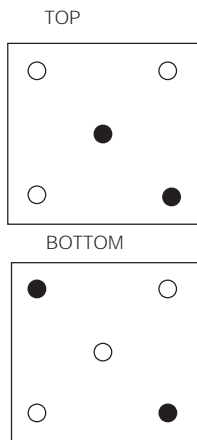
(When facing housing, place pins in holes shown by black circles.)

AS-B885-111 Encoder Feedback Signal Wiring to Breakout Module

AS-B885-1xx Terminal Numbering and Wire Connections

Specifications   **AS-B885-1xx**

Motion

Absolute Positioning Range 2^{32} bits; in., mm, or other units
Speed Range 2^{32} to 1; counts/sec, in/sec, mm/sec, RPM, etc.
Digital Servo Loop
    Position Loop Update   1 msec
    Velocity Loop Update   0.5 msec
    Commutation Update   0.25 msec
Potentiometer Adjustments   None; parameters set in software

Feedback

Resolver   Modicon "T" type brushless
                                    Used for position, velocity and commutation
    Max. Speed   6,000 RPM, motor/drive dependent
    Resolution   65535 (16-bit) counts/revolution (maximum)
System Accuracy
    Typical   ±10 arcmin
    Worst Case   ±15 arcmin
    Position Repeatability   ±3 arcmin
Encoder (-110 only, two channels)   Encoders supplied by customer. Used for position
                                    and velocity
    Type   Differential or single end
    Voltage   5 ... 24 volt ± 20%
    Impedance   >500 Ω @ 5V nominal
Frequency
    Nominal   200 KHz
    Maximum   500 KHz
Input Multiplier   4X
Maximum Speed   Encoder dependent, 2 MHz internal pulse rate max.
System Accuracy   Encoder dependent; 0.5 arcmin maximum
Source Power Supplied by
Module (Encoder may be   400 mA @ 5 Vdc ± 10% and/or
powered externally)   200 mA @ 12 Vdc ± 10%

Servo Output   3-phase bipolar commutated current command compatible
                                    with all Modicon Cyberline drives or Bipolar current or
                                    velocity command (±10 V, 3 mA max., 12 bit resolution)
                                    for DC or hydraulic drives
Drive Enable Output   Form "C" relay contact, 30 Vdc @ 0.5 A resistive max.
Drive Fault Input   True high with internal pullup, TTL compatible

I/O

Digital Inputs   7 (24 Vdc, ±20 %)
Digital Outputs   3 (24 Vdc, ±20 %, 150 mA max. each)
Analog Output   ±10 V, 3 mA max., 12 bit resolution
Analog Input   ±10 V, 10 bit resolution

Communications

Port   RS-232 serial, Modbus slave
    Baud Rate   300 ... 9600 baud, software selectable (9600 default)
    Connector   DB9, female
Backplane   I/O bus, 6 input/6 output registers

Power Requirements

External Power Supply   24 Vdc ±20% @ .375 A max. plus output current draw
I/O Rack Power
    +5.0 V   25 mA
    +4.3 V   0 mA
    -5.0 V   0 mA

Physical

    Space Required   1 slot
    Weight   2 lbs (.9 kg)

Specification	AS-B984-100/101
Mode of Operation	True high
Working Voltage	20 ... 28 Vdc
Response Time	
Inputs	100 μsec max (no filtering)
Outputs	1 msec max.
Input	
Number of Inputs	16
Number of Groups	1
Source Resistance	1000 Ω
ON Level (<1M Source Impedence)	19.2 Vdc
OFF Level (0 Source Impedence)	6 Vdc
ON Condition Threshold	18 Vdc
Input Wetting Current	6 mA minimum at 24 Vdc
Outputs	
Number of Outputs	8
Number of Groups	1
Min. ON State Output Voltage	19.2 Vdc
ON Current	Max. 1 A per channel
	Max. 8 A per module
Max. OFF State Leakage	1 mA
Min. Load Current	100 mA
Diagnostic Information	Open Load, Short to Ground or Supply, Current limit, Over temperature
Power Required	
+5 Vdc	0 mA
+4.3 Vdc	0 mA
-5 Vdc	0 mA
External Power Required	CPU 20 ... 30 Vdc, 2A (Excluding field load current) Output 20 ... 30 Vdc, 10A
Dimensions	
Space Required	1 slot
Weight	2 lbs (0.9 kg)
Terminal Connector	Included

**AS-B984-100
Terminal Numbering
and Wire Connections**

MAX WIRE SIZE IS ONE 14 AWG WIRE; TWO 18 PIN CONNECTORS

**AS-B984-100
Mechanical Keying for
Housings**

TOP

BOTTOM

(When facing housing, place pins in holes shown by black circles.)

B984 Discrete High Speed Logic Solver Module

The Modicon B984-100 Discrete High Speed Logic Solver offers the power of a 984 PLC with the response of an intelligent I/O module. With a total system throughput of less than one millisecond, the module provides the capability to control high speed applications not possible with conventional PLCs.

The full 984 basic instruction set makes the module compatible with existing 984 application and programming software, and 4K user logic plus 2K registers provide ample space for application programs.

The B984-100 is fully compatible with the rest of the 984 Family. It services its own dedicated I/O and communicates with the host PLC via the I/O bus. The B984 module and the host PLC pass four or eight 16-bit registers bi-directionally each time the host PLC scans its logic. A built-in Modbus port on the B984 allows connection to programmers, operator interfaces, local area networks, and host computers.
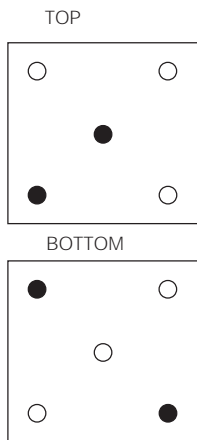
Inputs on the B984 have programmable filtering to allow for quick response and maximum system reliability. Outputs provide fault diagnostic information which is annunciated in the B984 and is available to the host PLC.

Multiple B984 modules may be used in any control system using 800-Series I/O. They can be inserted in any slot, and are limited only by the I/O bits available in the system.

*AS-B984-101 does not support open load detection.