AC Input Modules (1746-IM4, -IM8, -IM16)

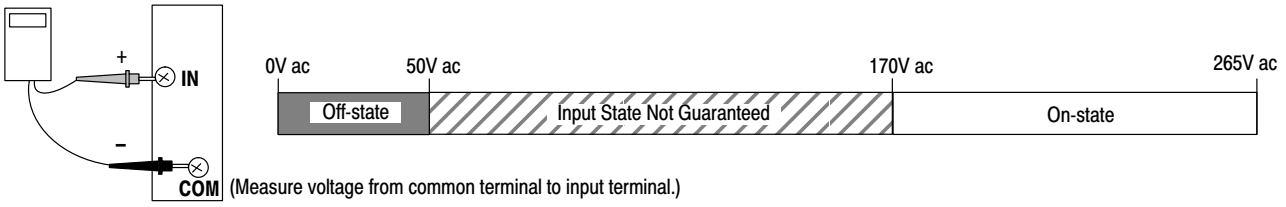
Voltage Category	Operating ① Voltage	Number of Inputs	Points per Common	Catalog Number	Backplane Current Draw 5V	Backplane Current Draw 24V	Signal Delay (max.)	Off-State Current (max.)	Nominal Input Current	Inrush ② Current (max.)	Inrush ② Current Time Duration (max.)
200/240V ac	170 to 265V ac	4	4	**1746-IM4**	0.035A	0.0A	on = 35 ms off = 45 ms	2 mA	12 mA at 240V ac	1.6A	500 µsec
		8	8	**1746-IM8**	0.050A	0.0A	on = 35 ms off = 45 ms	2 mA	12 mA at 240V ac	1.6A	500 µsec
		16	16	**1746-IM16** (RTB)	0.085A	0.0A	on = 35 ms off = 45 ms	2 mA	12 mA at 240V ac	1.6A	500 µsec

① Frequency = 47 to 63 Hz

② An ac input device must be compatible with SLC 500 input circuit inrush current.
A current limiting resistor can be used to limit inrush current; however, the operating characteristics of the ac input circuit will be affected.

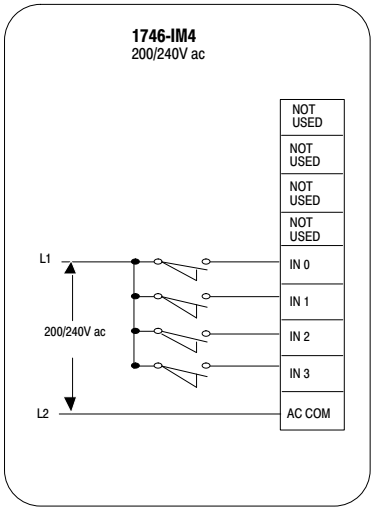
RTB = Removable Terminal Block.

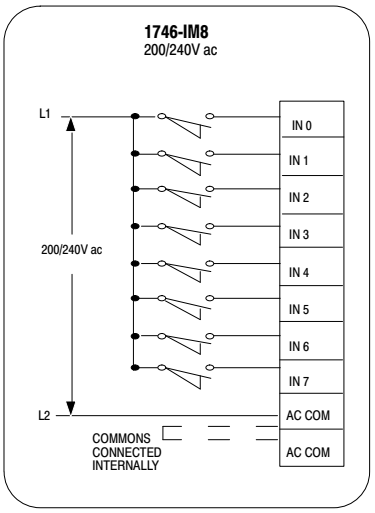
On/Off-State Voltage Range

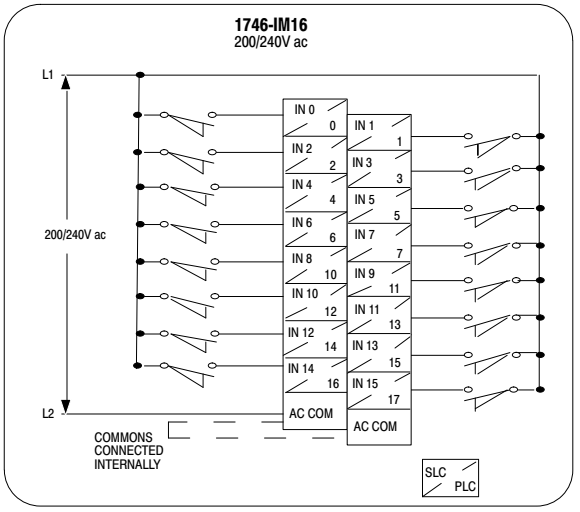


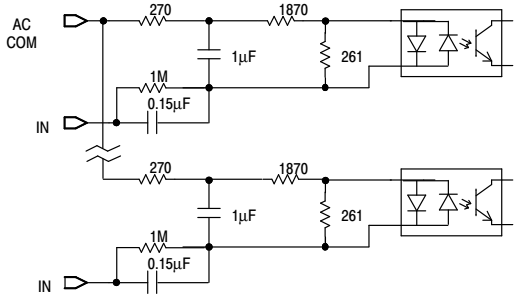
(Measure voltage from common terminal to input terminal.)

Wiring and Circuit Diagrams









Environmental Specifications

Operating Temperature	0°C to 60°C (32°F to 140°F)①
Storage Temperature	–40°C to 85°C (–40°F to 185°F)
Operating Humidity	5% to 95% (non-condensing)
Noise Immunity	NEMA standard ICS 2–230
Vibration (Operating)	Displacement 0.015 inch peak at 5–57 Hz. Acceleration 2.5Gs at 57–2000 Hz
Shock (Operating)	30Gs (all modules except relay contact). 10Gs (relay contact modules, 1746-OW, -OX, I/O Combo).
Isolation②	1500 Volts
Certification③④	UL listed. CSA approved. CE compliant for all applicable directives when product or packaging is marked.
Hazardous Environment Class④	Class I Division 2 Hazardous Environment

① Exceptions are indicated with certain modules.

② Electro-optical isolation between I/O terminals and control logic

③ Some modules are not CE marked. See page 12.

④ All modules meet Class I, Division 2 requirements for hazardous location. Some modules are rated Class I, Division 2 by CSA only. See page 12.

Discrete I/O Power Dissipation

The table on the following page lists the power dissipation for all discrete I/O modules operating at nominal voltage. An explanation of the terms used in the table follows:

Watts per point — the heat dissipation that can occur in each field wiring point when energized at nominal voltage.

Minimum watts — the amount of heat dissipation that can occur when there is no field power present.

Total watts — the watts per point plus the minimum watts (with all points energized).

For examples on calculating system heat dissipation, refer to the SLC 500 Modular Hardware Style Installation and Operation User Manual (Publication 1747-6.2) or the SLC 500 Fixed Hardware Style Installation and Operation User Manual (Publication 1747-6.21).

Power Dissipation for All Discrete I/O Modules

Hardware Component	Catalog Numbers	Watts per Point	Minimum Watts	Total Watts
Input Modules	1746-IA4	0.27	0.175	1.30
	1746-IA8	0.27	0.250	2.40
	1746-IA16	0.27	0.425	4.80
	1746-IM4	0.35	0.175	1.60
	1746-IM8	0.35	0.250	3.10
	1746-IM16	0.35	0.425	6.00
	1746-IB8	0.20	0.250	1.90
	1746-IB16	0.20	0.425	3.60
	1746-IB32	0.20	0.530	6.90
	1746-IV8	0.20	0.250	1.90
	1746-IV16	0.20	0.425	3.60
	1746-IV32	0.20	0.530	6.90
	1746-IG16	0.02	0.700	1.00
	1746-IN16	0.35	0.425	6.00
	1746-ITV16	0.20	0.425	3.60
	1746-ITB16	0.20	0.425	3.60
	1746-IC16	0.22	0.425	3.95
	1746-IH16	0.32	0.217	5.17
Output Modules	1746-OA8	1.00	0.925	9.00
	1746-OA16	0.462	1.85	9.30
	1746-OAP12	1.00	1.85	10.85
	1746-OB8	0.775	0.675	6.90
	1746-OB16	0.338	1.40	7.60
	1746-OBP8	0.30	0.675	3.08
	1746-OBP16	0.31	1.25	6.26
	1746-OB32	0.078	2.26	4.80
	1746-OV8	0.775	0.675	6.90
	1746-OV16	0.338	1.40	7.60
	1746-OVP16	0.31	1.25	6.26
	1746-OV32	0.078	2.26	4.80
	1746-OW4	0.133	1.31	1.90
	1746-OW8	0.138	2.59	3.70
	1746-OW16	0.033	5.17	5.70
	1746-OX8	0.825	2.59	8.60
	1746-OG16	0.033	0.90	1.50
Combination Input & Output Modules	1746-IO4	0.27 — per input pt. 0.133 — per output pt.	0.75	1.60
	1746-IO8	0.27 — per input pt. 0.133 — per output pt.	1.38	3.00
	1746-IO12	0.27 — per input pt. 0.133 — per output pt.	2.13	4.60

Accessories

The following accessories are available for use with Discrete I/O modules:

Catalog Number	Item	Description
1746-N2	Modular card slot filler	Helps prevent debris from entering the SLC enclosure that can cause shorts or improper operation.
1492-IFMxx	Feed-through interface modules	Connects electronic wiring (discrete I/O modules, particularly 16 and 32-point) to electric wiring (factory devices). Available with either 20 or 40 terminals.
1492-CABLExx	Cables: – 1 m. (3.3 ft.) – 2.5 m. (8.2 ft.) – 5 m. (16.4 ft.)	Connects directly to the 1492-IFMxx interface module and is available with a removable terminal block or a ready-to-wire free end.
1746-N3	Connector kit	This kit allows you to create your own cable (3.2 meters max.) if the Catalog Number 1746-C15 cable is not long enough. It contains one female connector and 45 crimp contacts. ***Note:*** *32-point modules are shipped with one connector kit.*

Support Services

In today's competitive environment, when you buy any product, you expect that product to meet your needs. You also expect the manufacturer of that product to back it up with the kind of customer service and product support that will prove you made a wise purchase.

As the people who design, engineer and manufacture your Industrial Automation Control equipment, Allen-Bradley has a vested interest in your complete satisfaction with our products and services.

Allen-Bradley offers support services worldwide, with over 75 Sales/Support offices, 512 authorized distributors and 260 authorized systems integrators located throughout the United States alone, plus Allen-Bradley representatives in every major country in the world.

Contact your local Allen-Bradley representative for:

- sales and order support
- product technical training
- warranty support
- support service agreements