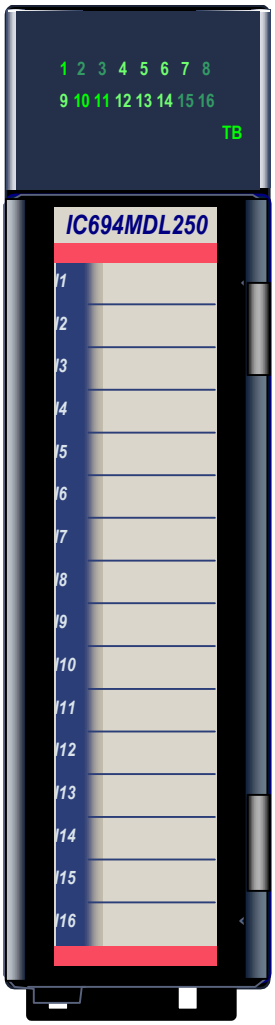
Input Module, 120VAC 16-Point Isolated, IC694MDL250



The ***120VAC 16-Point Isolated Input*** module, IC694MDL250, provides 16 isolated input points. Input points can be used on different phases of the AC supply or powered from the same supply. An RC snubber protects each input against transient electrical noise on the power line.

The module's input filtering time can be changed during system operation by the application program. No DIP switch settings are required.

This module can be used with a Box-style (IC694TBB032), Extended Box-style (IC694TBB132), Spring-style (IC694TBS032), or Extended Spring-style (IC694TBS132) Terminal Block. Extended terminal blocks provide the extra shroud depth typically needed for field wiring to AC devices. See chapter 15 for more information about Terminal Blocks. Terminal Blocks are ordered separately.

Individually numbered LEDs show the ON/OFF status of each Input point. The TB LED is green when the module's removable terminal block is locked in place. It is red when the terminal block is not locked. The red bands on the door card indicate the MDL250 is a high-voltage module.

This module can be installed in any I/O slot in an RX3i system. It must be used with RX3i CPU release 3.50 or later. It cannot be used with a Series 90-30 PLC CPU.

Specifications: MDL250

Rated Voltage	120VAC
Input Voltage Range	0 – 132VAC (47 to 63 Hz), 120VAC nom.
Inputs per Module	16 isolated
Isolation:	
Field to Backplane	250 VAC continuous; 1500 VAC for 1 minute
Group to Group	250 VAC continuous; 1500 VAC for 1 minute
Input Current	7.0 mA per point (typical) at rated voltage
Input Filter Times	20 msec – 2540 msec in 20 msec increments. Sent from CPU.
Power Consumption	220mA (all inputs on) from 5 volt bus on backplane
Diagnostics	Field side terminal block reported to RX3i CPU.
Input Characteristics:	
On–state Voltage	70-132VAC
Off–state Voltage	0 to 20VAC
On–state Current	5mA minimum
Off–state Current	2.5mA maximum
On/Off Response Time	±0-1 AC cycles for filter times up to 840ms ±1-2 AC cycles for filter times of 840 to 1600ms ±2-3 AC cycles for filter times of 1600 to 1920ms ±3-4 AC cycles for filter times of 1920ms or more

Refer to Appendix A for product standards and general specifications.

Input Filter Setup

If an input filter time should be applied to all the module's inputs, input filtering should be enabled in the module's software configuration. The Digital Filter Settings Length must be set to 16, and a memory location to be used for the filter value must be specified. Configuring a Digital Filter Settings Length of 0 disables the input filter.

During system operation, the input filter time can be changed from the programmer by entering a filter setting value from 1 to 127 decimal (1_{hex} to $7F_{hex}$) into the assigned memory location. This filter setting value is equal to the new filter time divided by 20 decimal. For example, to change the filter time to 200ms, enter the value 10_{dec} ($0A_{hex}$) into the memory location. Some example filter times and their hexadecimal setting values are listed below.

Setting (hexadecimal)	*Filter Time in ms*	*Setting (hexadecimal)*	*Filter Time in ms*	*Setting (hexadecimal)*	*Filter Time in ms*
0A	200	21	660	5A	1800
0F	300	22	680	5F	1900
11	340	2A	840	71	2260
12	360	2F	940	72	2280
1A	520	51	1620	7A	2240
1F	620	52	1660	7F	2540

Field Wiring: IC694MDL250

Connections	Terminals	Terminals	Connections
Input 1	1	19	Input 9
Input 1 Return	2	20	Input 9 Return
Input 2	3	21	Input 10
Input 2 Return	4	22	Input 10 Return
Input 3	5	23	Input 11
Input 3 Return	6	24	Input 11 Return
Input 4	7	25	Input 12
Input 4 Return	8	26	Input 12 Return
Input 5	9	27	Input 13
Input 5 Return	10	28	Input 13 Return
Input 6	11	29	Input 14
Input 6 Return	12	30	Input 14 Return
Input 7	13	31	Input 15
Input 7 Return	14	32	Input 15 Return
Input 8	15	33	Input 16
Input 8 Return	16	34	Input 16 Return
No connection	17	35	No connection
No connection	18	36	No connection