

**IC693MDL260**

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**Series 90-30**

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120VAC 32 PT INPUT IC693M IC693MD IC693MDL

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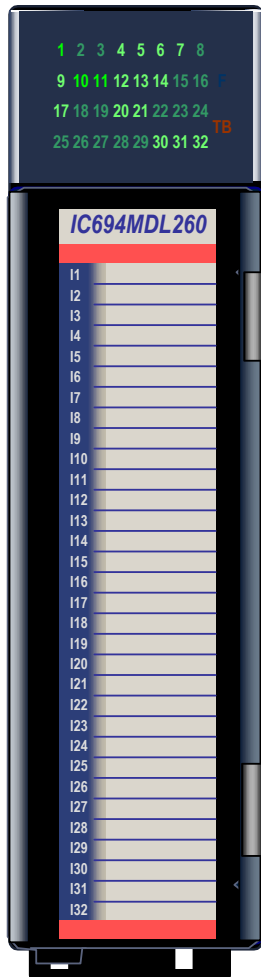
# PACSystems™ RX3i and Series 90™-30

## IC694MDL260 and IC693MDL260

### 120VAC 32-Point Grouped Input Module

GFK-2403

September 2005



The **120VAC Grouped Input** module provides 32 discrete input points. The inputs are arranged in four isolated groups of eight. Isolation is provided between the four groups of inputs, however all inputs within a group are referenced to the same user common connection.

This module is available as a PACSystems RX3i module (catalog number IC694MDL260), illustrated at left, or as a Series 90-30 PLC module (catalog number IC693MDL260).

IC693MDL260 can be installed in any I/O slot in a PAC Systems RX3i or Series 90-30 PLC. IC694MDL260 can be installed in any I/O slot in a PAC Systems RX3i PLC System Module. IC694MDL260 cannot be installed in a Series 90-30 PLC system.

Module MDL260 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 the *PACSystems RX3i System Manual*, GFK-2314 revision B or later for more information about Terminal Blocks. Terminal Blocks are ordered separately.

Input filter times are selectable. For both versions of the MDL260 module installed in an RX3i system, filter times can be set from the programmer using the module's assigned output data references. When IC693MDL260 module is installed in a Series 90-30 PLC or a RX3i PLC system, a DIP switch on the back of the module can be used to control the ability to change input filter times.

Individually-numbered LEDs indicate the ON/OFF status of points 1 through 32. The red/green 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 module also sends an Terminal Block status message to an RX3i CPU. It does not send this diagnostic message to a Series 90-30 CPU.

The red bands on the door card show that MDL260 is a high-voltage module.

### Specifications: MDL260

Rated Voltage	120 volts AC
Input Voltage Range	0 to 132 VAC (47 to 63Hz)
Inputs per Module	32 (four isolated groups of 8 inputs)
Isolation, Field to Backplane (optical)	264VAC continuous; 1500 VAC for one minute
Isolation, Group to Group	264VAC continuous; 1500 VAC for one minute
Thermal Derating	See next page
Input Current	7.0 mA per point (typical) at rated voltage
Input Filter Times	20ms to 2540ms in 20ms increments. Sent from CPU. Enabled by DIP switch.
Power Consumption	220mA at 5VDC with all inputs on
Diagnostics	Terminal block presence reported to RX3i CPU only
<b>Input Characteristics</b>	
On-state Voltage	70 to 132 VAC
Off-state Voltage	0 to 20 VAC
On-state Current	5mA minimum
Off-state Current	2.5mA maximum
On/Off response Time	$\pm 0$ -1 AC cycles for filter times up to 840ms, $\pm 1$ -2 AC cycles for filter times of 840 to 1600ms, $\pm 2$ -3 AC cycles for filter times of 1600 to 1920ms, $\pm 3$ -4 AC cycles for filter times of 1920ms or more

GFK-2403

## Release Information

### Release History

Release	Comments
IC694MDL260-AA IC693MDL260-AA	Initial Release

### Functional Compatibility

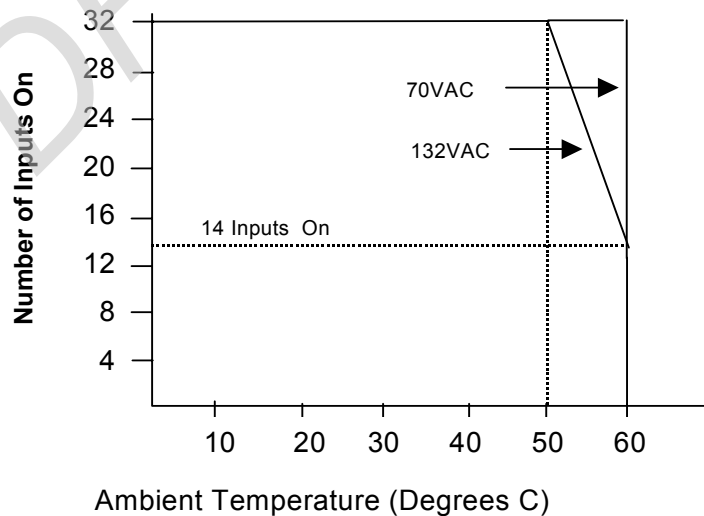
Module Version	RX3i CPU Firmware Version	Series 90-30 CPU Firmware Version	Machine Edition Version
IC694MDL260	3.50	Not Compatible	5.5
IC693MDL260	3.00	CPU350 - 10.60 CPU352 - 10.50 CPU364 - XX.XX CPU374 - 11.03	5.0

### Installation in Hazardous Locations

- EQUIPMENT LABELED WITH REFERENCE TO CLASS I, GROUPS A, B, C & D, DIV. 2 HAZARDOUS LOCATIONS IS SUITABLE FOR USE IN CLASS I, DIVISION 2, GROUPS A, B, C, D OR NON-HAZARDOUS LOCATIONS ONLY
- WARNING - EXPLOSION HAZARD - SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 2;
- WARNING - EXPLOSION HAZARD - WHEN IN HAZARDOUS LOCATIONS, TURN OFF POWER BEFORE REPLACING OR WIRING MODULES; AND
- WARNING - EXPLOSION HAZARD - DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NONHAZARDOUS.

### Thermal Derating

The number of inputs that can be on at the same time depends on the ambient temperature, as shown below.



## 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. For an MDL260 module installed in an RX3i main backplane, this is done by setting the Digital Filter Settings Length to 16 and specifying a memory location for the data. Configuring a Digital Filter Settings Length of 0 disables the input filter.

During system operation, the input filter time can easily be changed from the programmer by entering a filter setting value from 1 to 127 decimal ( $1_{\text{hex}}$  to  $7F_{\text{hex}}$ ) into the assigned memory location. This filter setting value is equal to the new filter time divided by 20. For example, to change the filter time to 200ms, enter the value  $10_{\text{dec}}$  ( $200 / 20 = 10$ ) into the memory location. The input filter time is automatically sent to the module each scan.

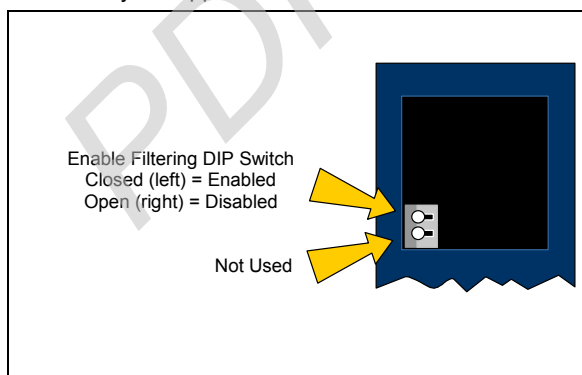
Some example filter times and their hexadecimal setting values are listed below.

Setting (hexadecimal)	Filter Time in milliseconds	Setting (hexadecimal)	Filter Time in milliseconds	Setting (hexadecimal)	Filter Time in milliseconds
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

## Enabling Input Filter Changes in a Series 90-30 Backplane

When IC693MDL260 is installed in any Series 90-30 PLC or in a PACSystems RX3i, the ability to change the input filter time is controlled by a DIP switch on back of the module.

The module must be removed from the backplane to set this switch. Note that there are two DIP switches on the module. Only the upper switch is used.



With the DIP switch the left position (closed), the input filter time can be changed from the programmer. The use of input filtering must also be enabled as described above, and a memory location must be assigned for the data

When the switch is in the right (open) position, the module ignores any output data sent from the programmer (regardless of the configuration).

**Field Wiring: MDL260**

Connections	Terminals	Terminals	Connections
Input 1	1	19	Input 17
Input 2	2	20	Input 18
Input 3	3	21	Input 19
Input 4	4	22	Input 20
Input 5	5	23	Input 21
Input 6	6	24	Input 22
Input 7	7	25	Input 23
Input 8	8	26	Input 24
Common 1 - 8	9	27	Common 17 - 24
Input 9	10	28	Input 25
Input 10	11	29	Input 26
Input 11	12	30	Input 27
Input 12	13	31	Input 28
Input 13	14	32	Input 29
Input 14	15	33	Input 30
Input 15	16	34	Input 31
Input 16	17	35	Input 32
Common 9 - 16	18	36	Common 25 - 32

