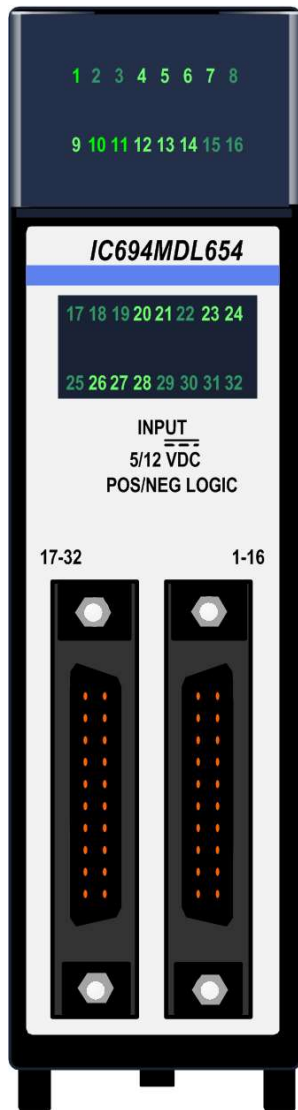


6.13 Input Modules, 5/12 Vdc (TTL) 32-Point Pos/Neg Logic IC694MDL654, IC694MDL655, and IC694MDL658

Figure 166: IC694MDL654



PACSystems RX3i **32-Point Positive/Negative Logic** input modules each provide thirty-two positive or negative logic input points in four isolated groups of eight. Each group is referenced to its own common connection.

5/12 Vdc (TTL) 32-Point Positive/Negative Logic Input module, IC694MDL654, provides thirty-two discrete TTL voltage threshold input points that operate at levels up to 15 V. A single, regulated +5 V supply (current limited to approximately 150 mA) is available through the I/O connectors on the front of Module. This supply is generated on Module and is isolated from the backplane. Its power input comes from the +5 V logic supply on the PLC backplane. By installing jumpers on the I/O connector, you can choose to power the inputs from this internal supply instead of powering them with an external user-provided supply.

24 Vdc 32-Point Positive/Negative Logic Input module, IC694MDL655, provides thirty-two discrete input points that operate at levels up to 30 V. Power to operate field devices can come from an external supply or the isolated +24 Vdc output of Module.

48 Vdc 32-Point Positive/Negative Logic Input module, IC694MDL658, provides thirty-two discrete input points that operate at levels up to 60 V. Power to operate field devices must be provided using an external supply.

The blue band on the front label indicates a low-voltage module.

These modules do not report a special fault or alarm diagnostics. Green LEDs indicate the ON/OFF status of each input point.

These modules can be installed in any I/O slot in the RX3i system.

These modules support insertion into and removal from an RX3i Universal Backplane which is under power. Refer to Section 2.6.4, *Hot Insertion and Removal*.

6.13.1 Specifications: MDL654, MDL655, MDL658

Specifications	IC694MDL654	IC694MDL655	IC694MDL658
Rated Voltage, Positive or Negative Logic	5 to 12 Vdc	24 Vdc	48 Vdc
Input Voltage Range	0 to 15 Vdc	0 to 30 Vdc	0 to 60 Vdc
Input Current (typical ON current at rated voltage)	3.0 mA at 5 Vdc 8.5 mA at 12 Vdc	7.0 mA at 24 Vdc	1.7 mA at 48 Vdc
Input Characteristics			
On-state Voltage	4.2 to 15 Vdc	11.5 to 30 Vdc	34 to 60 Vdc
Off-state Voltage	0 to 2.6 Vdc	0 to 5 Vdc	0 to 10 Vdc
On-state Current	≥2.5 mA (min) guaranteed on	≥3.2 mA (min) guaranteed on	≥1.0 mA (min) guaranteed on
Off-state Current	≤1.2 mA (max) guaranteed off	≤1.1 mA (max) guaranteed off	≤0.4 mA (max) guaranteed off
On or Off Response Time ²³	1 ms maximum	2 ms maximum	2 ms maximum
Inputs per Module	32 (four groups of eight inputs each) 30 m (98.4 ft), maximum cable length for module IC694MDL654. For modules MDL654 and MDL655, the maximum number of inputs per group that can be on at the same time depends on the ambient temperature as displayed in Figure 167. There is no thermal derating for module MDL658.		
Isolation: Field to Backplane (optical) and to frame ground Group to Group	250 Vac continuous; 1500 Vac for one minute For modules IC694MDL654 and IC694MDL655, if the 5 V OUT/24 V OUT pin is used to connect to input devices in the field, the isolation is 50 Vac continuous; 500 Vac for one minute. 50 Vac continuous; 500 Vac for one minute		
Internal Power Consumption	440 mA (max) from +5 Vdc bus on backplane (if module isolated +5 Vdc supply used to power inputs and all 32 inputs ON) 96 mA (typical) from user input supply at 5 Vdc and 32 inputs ON; 272 mA (typical) from user input supply at 12 Vdc and 32 inputs ON	195 mA (max) from +5 Vdc bus on backplane; (29 mA + 0.5mA/point ON + 4.7 mA/LED ON) 224 mA (typical) from isolated +24 Vdc supply ²⁴	195 mA (max) from +5 Vdc bus on backplane; (29 mA + 0.5 mA/point ON + 4.7 mA/LED ON)
Isolated +5 Vdc Supply	For MDL654: +5 Vdc ±5%		
Current limit	For MDL654: 150 mA (typical)		

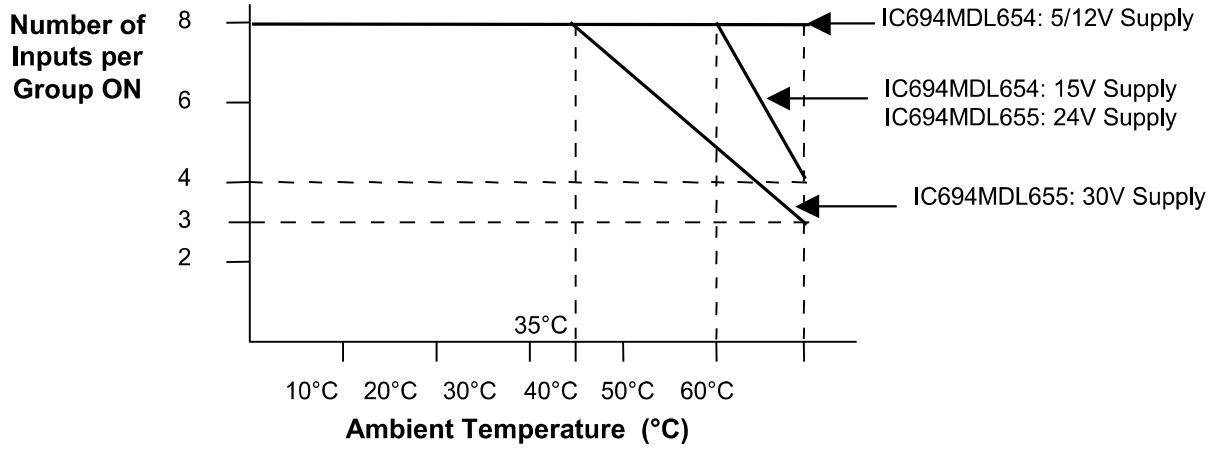
For product standards and general specifications, refer to Appendix A: Product Certifications and Installation Guidelines for Conformance.

²³ Within Module; does not include communications with CPU

²⁴ If Module is located in an RX3i Universal Backplane, an external source of Isolated +24 Vdc is required. The external source must be connected via the TB1 connector located on the left side of the backplane.
If this module is located in an RX3i Expansion Backplane or Series 90-30 backplane, the backplane power supply provides the isolated +24 Vdc for Module.

6.13.2 Thermal Derating: MDL654 & MDL655

Figure 167: Thermal Derating MDL654 & MDL655



6.13.3 Field Wiring: MDL654, MDL655, MDL658

Connections are made to two male 24-pin connectors (Fujitsu FCN-365P024-AU) on the front of Module. Inputs are arranged in four groups of eight. Each group has its own common connection. Within each group, four points attach to the A half of the connector and four points attach to the B half of the connector.

Figure 168: Left-side and Right-side Connectors MDL654, MDL655, MDL658

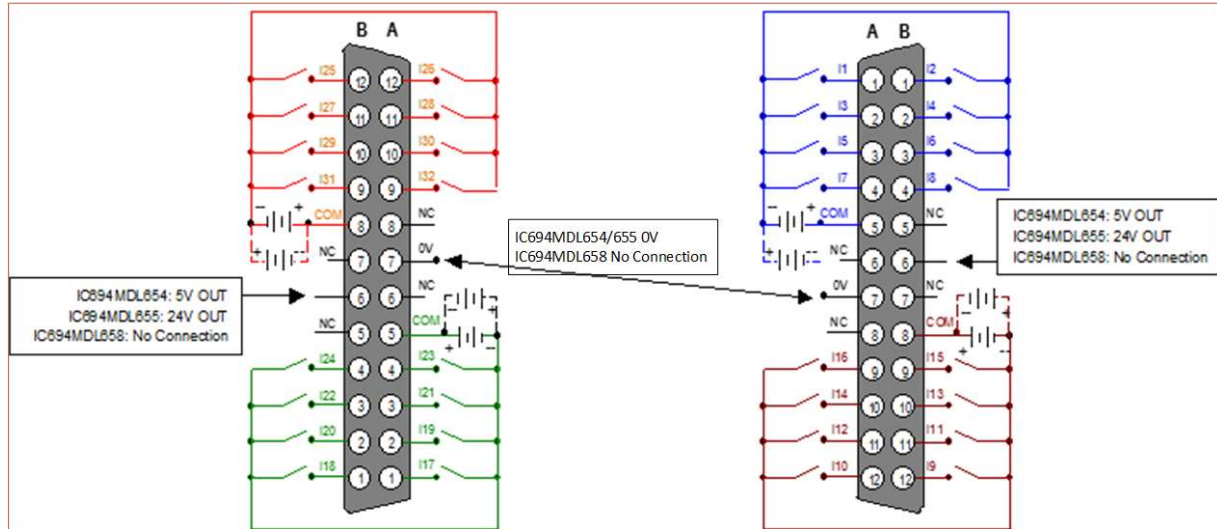
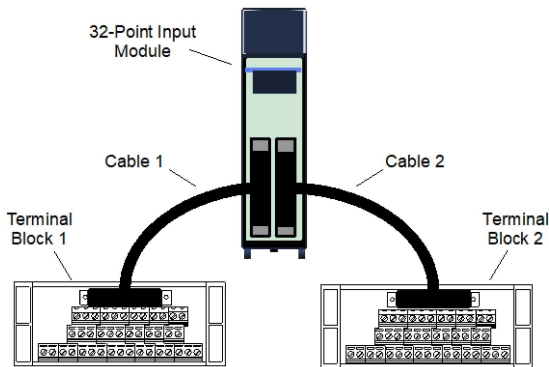


Figure 169: Attachment to Terminal Blocks for Field Wiring



Wiring from each module connector to field devices is made through a cable. Prewired cables are available, or custom cables can be used. Input devices can be wired directly to the cables, or intermediate Terminal Blocks, IC693ACC337. Refer to Chapter 17 for information about prewired cables, custom cables, and Terminal Block IC693ACC337.