

## DeltaV M-series Traditional I/O

March 2026

**Reduced System Footprint:** The DeltaV system's state-of-the-art form factor design of the I/O components enables you to mount the I/O interface carrier in a junction box in the field so you significantly reduce the footprint of your equipment and increase valuable control room space for other uses.

**Installation:** Save on wiring expenses by installing Classic Instrumentation in the field, near the actual field devices. Mounting the controller with the I/O further reduces your wiring expenditures by eliminating the need for long runs of multi-cores. The integrated design of the Traditional I/O subsystem can eliminate the need for marshalling panels. This saves you even more in your total capital costs.

The provision of in-line fuses and bussed power saves on installation costs compared with external fuses and power distribution.

### Decreases Installation Time and Expense

**Plug-and-play Installation Saves Money:** All Traditional I/O components plug into the I/O interface carrier. You can install the I/O interface carriers to manage anticipated growth and postpone the I/O interfaces until you're ready to install your additional field devices.

**Phased Installation Saves Time:** As soon as you mount the I/O interface carrier, you're ready to begin installing the field devices. I/O terminal blocks plug directly onto the I/O interface carrier. There is no need to have the I/O cards installed.

**Keys:** Traditional I/O interfaces and terminal blocks have I/O function keys. These keys ensure that the correct I/O card is always plugged into the corresponding terminal block. It's incredibly easy to use and gives you time to do more.

This design enables you to initially install Traditional I/O quickly and efficiently. When you need to replace an I/O card, the function key design ensures that you will always install it correctly. This keying system provides a safety measure by preventing the wrong I/O interface's being installed.



*Traditional I/O Terminal Block.*

### Increases Productivity

**Real-time, Online Equipment Additions:** Online addition of new I/O interfaces means your process does not get interrupted. As new equipment is added, the DeltaV Explorer acknowledges it and assigns it basic configuration.

### Increases Process Availability

#### **1:1 Redundancy for Traditional and HART I/O Cards:**

DeltaV redundant I/O uses the same Series 2 I/O cards as non-redundant I/O. This allows you to leverage your investment in installed I/O and in I/O spares. No additional configuration is needed when using a redundant channel. The redundant terminal blocks provide the same field wiring connections as simplex blocks, so there is no extra wiring needed.

**Autosense of Redundancy:** DeltaV autosenses redundant I/O, which greatly simplifies the task of adding redundancy to the system. The redundant pair of cards is treated as one card in the system tools.

**Automatic Switchover:** Should a primary I/O card fail, the system automatically switches to the "standby" card without user intervention. The operator is given clear notification of a switchover at the operator display.

[www.emerson.com/deltav](http://www.emerson.com/deltav)

2

## DeltaV M-series Traditional I/O

March 2026

### I/O Card Redundancy

Redundant I/O cards are available for critical applications. The same card can be used in simplex or redundant applications. When installed on a two-wide redundant terminal block, the cards are recognized as a redundant pair by the controller. The controller scans each card and determines which card is acting as the active interface. When a fault is detected, the system automatically switches to the standby I/O card.

DeltaV Control modules reference simplex and redundant I/O channels identically and there is no special configuration required to take advantage of redundancy.

Switchover of a redundant I/O card is completed within two scans of the I/O bus. Make-before-break contacts ensure digital field instruments remain powered and the process is undisturbed. Analog output signals are briefly driven by both cards for < 5 ms during switchover of the card.

Hardware Alerts automatically report hardware integrity errors for both the primary and secondary cards. Any event that causes a switchover is also reported automatically through the system hardware alerts and is logged in the Event Chronicle.

Events that can cause a switchover include:

- Hardware failure within the active card.
- Communications failure between the active card and the controller.
- Detection of a fault in the field wiring.

A switchover may also be initiated from the diagnostics explorer, and the health and status of both cards and their channels are available in the diagnostics explorer.

The system automatically commissions a new standby card. In safe areas, failed cards can be replaced under power. In hazardous areas, appropriate installation procedures must be followed.

## Hardware Specifications

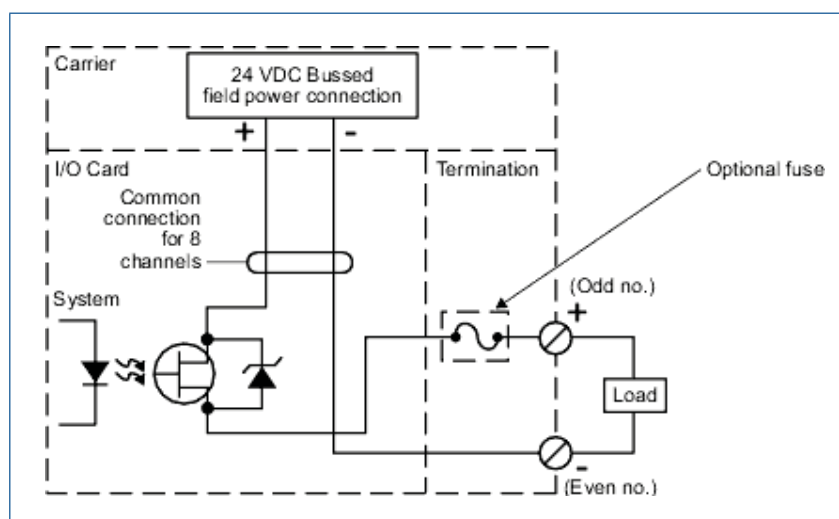
| Common Environmental Specifications for all I/O Interfaces |                                                                      |
|------------------------------------------------------------|----------------------------------------------------------------------|
| Category                                                   | Specifications                                                       |
| Operating Temperature*                                     | -40 to 70°C (-40 to 158°F)                                           |
| Storage Temperature                                        | -40 to 85°C (-40 to 185°F)                                           |
| Relative Humidity                                          | 5 to 95%, non-condensing                                             |
| Airborne Contaminants                                      | ISA-S71.04-1985 Airborne Contaminants Class G3<br>Conformal coating  |
| Protection Rating                                          | IP 20                                                                |
| Shock                                                      | 10 g ½-sine wave for 11 ms                                           |
| Vibration                                                  | 1 mm peak-to-peak from 5 to 16 Hz;<br>0.5 g from 16 to 150 Hz        |
| Dimensions                                                 | H 10.7 cm (4.2 in.)<br>W 4.1 cm (1.6 in.)<br>Depth 10.5 cm (4.1 in.) |

\*Operating any electronics at the higher end of its temperature range for long periods of time will shorten its expected lifetime, see **Effects of Heat and Airflow Inside an Enclosure** White Paper for more information.

## DeltaV M-series Traditional I/O

March 2026

| Specifications for DO Card, 8-channel, 24V DC, High-Side |                                                                                                            |
|----------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| Number of Channels                                       | Eight                                                                                                      |
| Isolation                                                | Each channel is optically isolated from the system and factory tested to 1500V DC                          |
| Output Range                                             | 2V DC to 60V DC                                                                                            |
| Output Rating                                            | 1.0 A continuous per channel;<br>3.0 A maximum per I/O Interface                                           |
| Off State Leakage                                        | 1.2 mA maximum                                                                                             |
| LocalBus Current (12V DC nominal) per Card               | 100 mA typical, 150 mA maximum                                                                             |
| Field Circuit Power per Card                             | 3.0 A at 24V DC per I/O Interface                                                                          |
| Configurable Channel Types                               | Output                                                                                                     |
| Discrete Output                                          | Output stays in last state submitted by the controller                                                     |
| Momentary Output                                         | Output is active for a pre-configured time period (100 ms to 100 s)                                        |
| Continuous Pulse Output                                  | Output is active as a percentage of a pre-configured base time period (100 ms to 100 s). Resolution = 5 ms |
| Optional Fuse                                            | 2.0 A                                                                                                      |



*Simplified Circuit and Connection Diagram for DO Card, 8-channel, 24V DC, High-Side.*

## DeltaV M-series Traditional I/O

March 2026

| I/O Card                                    | I/O Card Keying | Traditional I/O Terminal Blocks                                                                            | Mass Termination Blocks                                                                                            |
|---------------------------------------------|-----------------|------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| PCI, 4-Channel                              | C6              | 32-Channel terminal block                                                                                  | NA                                                                                                                 |
| SOE, 16-Channel, 24V DC                     | C5              | 32-Channel terminal block                                                                                  | 40-pin Mass termination block                                                                                      |
| DO, 8-Channel, 24V DC, High-Side            | B6              | I/O terminal block<br>Fused terminal block                                                                 | 10-pin Mass termination block<br>16-pin Mass termination block                                                     |
| DO, 8-Channel, 24V DC, Isolated             | B5              | I/O terminal block<br>Fused terminal block                                                                 | 16-pin Mass termination block                                                                                      |
| DO Plus, 32-Channel, 24V DC High-Side       | B4              | 32-Channel DO terminal block for Series 2 Plus<br>Redundant 32-Channel DO terminal block for Series 2 Plus | 40-pin DO Mass termination block for Series 2 Plus<br>Redundant 40-pin DO Mass termination block for Series 2 Plus |
| DI, 8-Channel, 120V AC, Dry Contact         | E1              | I/O terminal block<br>Fused terminal block                                                                 | NA                                                                                                                 |
| DI, 8-Channel, 120V AC, Isolated            | E4              | I/O terminal block<br>Fused terminal block                                                                 | NA                                                                                                                 |
| DO, 8-Channel, 120V AC/ w230V AC, High-Side | F1              | I/O terminal block<br>Fused terminal block                                                                 | NA                                                                                                                 |
| DO, 8-Channel, 120V AC/ 230V AC, Isolated   | F4              | I/O terminal block<br>Fused terminal block                                                                 | NA                                                                                                                 |

## System Compatibility

M-series traditional I/O hardware requires:

- MQ, MX or PK controllers
- M-series horizontal or VerticalPlus carriers

S-series and M-series controllers can be installed on the same DeltaV Area Control Network in v11.3.1 and beyond. Control modules can be assigned to any controller and inter-controller references are fully supported.

The following traditional I/O Plus cards require v13.3.1 or higher Software:

- AI Plus, 4-20 mA HART, 16 Channels
- AO Plus, 4-20 mA HART, 16 Channels
- DI Plus, 32-channel, 24V DC Dry contact
- DO Plus, 32-channel, 24V DC High-Side

Termination Fault Detection is a feature that only works within the following cards:

- DI Plus, 32-channel, 24V DC Dry contact
- DO Plus, 32-channel, 24V DC High-Side

when used with the redundant 40-pin Mass DI or DO Terminal Block combined with the M-series Mass Connection Solutions or P+F HiC IS barriers and termination boards for DeltaV DCS.

All other approved third party mass termination products may be used with both non Plus S-series and M-series I/O interfaces.

M-series traditional I/O horizontal carriers are not physically compatible with S-series horizontal controller carriers. Install M-series I/O interfaces with M-series controllers and S-series I/O interfaces with S-series controllers.

## DeltaV M-series Traditional I/O

March 2026

| Discrete Output Cards and Termination Blocks                                                                                                                                            |              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Description                                                                                                                                                                             | Model Number |
| <b>Discrete Output Card: 8 Channels 24V DC, Isolated</b>                                                                                                                                |              |
| Standard I/O Termination Block                                                                                                                                                          | VE4002S1T1B1 |
| Fused I/O Termination Block                                                                                                                                                             | VE4002S1T1B2 |
| 16-Pin Mass Termination Block                                                                                                                                                           | VE4002S1T1B3 |
| <b>Discrete Output Card: 8 Channels 24V DC, High-Side</b>                                                                                                                               |              |
| Standard I/O Termination Block                                                                                                                                                          | VE4002S1T2B1 |
| Redundant Standard I/O Termination Block                                                                                                                                                | VE4032S1T2B1 |
| Fused I/O Termination Block                                                                                                                                                             | VE4002S1T2B2 |
| 16-Pin Mass Termination Block                                                                                                                                                           | VE4002S1T2B3 |
| 10-Pin Mass Termination Block                                                                                                                                                           | VE4002S1T2B4 |
| <b>Discrete Output Plus Card: 32 Channels, 24 V DC, High-Side</b>                                                                                                                       |              |
| 32-Channel DO Terminal Block for Series 2 Plus                                                                                                                                          | VE4002S2T2B8 |
| Redundant 32-Channel DO Terminal Block for Series 2 Plus                                                                                                                                | VE4032S2T2B8 |
| 40-pin DO Mass Termination Block for Series 2 Plus (to be used with DeltaV Signal Conditioning Cards for PLC-5 DO, or P+F HiC IS barriers and terminal boards for DeltaV DCS)           | VE4002S1T2B8 |
| 40-pin DO Mass Termination Block for Series 2 Plus including 4 x 8-channel DO Mass Connection Boards*                                                                                   | VE4052S1T2B8 |
| Redundant 40-pin DO Mass Termination Block for Series 2 Plus (to be used with DeltaV Signal Conditioning Cards for PLC-5 DO, or P+F HiC IS barriers and terminal boards for DeltaV DCS) | VE4032S1T2B8 |
| Redundant 40-pin DO Mass Termination Block for Series 2 Plus including 4 x 8-channel DO Mass Connection Boards*                                                                         | VE4082S1T2B8 |
| <b>Discrete Output Card: 8 Channels 115/230V AC, Isolated</b>                                                                                                                           |              |
| Standard I/O Termination Block                                                                                                                                                          | VE4002S2T1B1 |
| Fused I/O Termination Block                                                                                                                                                             | VE4002S2T1B2 |
| <b>Discrete Output Card: 8 Channels 115/230V AC, High-Side</b>                                                                                                                          |              |
| Standard I/O Termination Block                                                                                                                                                          | VE4002S2T2B1 |
| Fused I/O Termination Block                                                                                                                                                             | VE4002S2T2B2 |

\*For more details on the Mass Connection Boards and connection cables, please refer to the **M-series Mass Connection Solutions** PDS.



GLOBAL INDUSTRIAL AUTOMATION SOURCING

# Ready to source this part?

Ask for availability, pricing and delivery options.

## Request a fast quote

Include the product title and any required part number or quantity.

EMAIL

info@apterpower.com

PHONE

+86 18106909650

[CHAT ON WHATSAPP >](#)



[SCAN TO CHAT ON WHATSAPP](#)

PRODUCT: VE4032S1T2B1 / DeltaV 8-Channel 24 VDC High-Side Redundant Discrete Output Assembly

The enclosed manufacturer pages are reproduced without alteration to technical content.

Apter Power is not an authorized distributor, reseller or representative of the products featured.

Product names, trademarks, brands and logos remain the property of their respective owners.