

## Bulletin 1756 — ControlLogix

Digital IFMs and Cables **Analog AIFMs and Cables**



### Analog AIFMs and Cables

#### Analog Inputs

| PLC Card    | Wiring System Type*          | Description                                      | Terminals Per Channel | Fixed or Removable TerminalsΔ | Wiring System (IFM) Module Catalog Number | Screw RTB required | Push-in RTB required | Cable Cat. No.   | Wiring Diagram |
|-------------|------------------------------|--------------------------------------------------|-----------------------|-------------------------------|-------------------------------------------|--------------------|----------------------|------------------|----------------|
| 1756-IF6CIS | Single Ended, Internal Power | 6 Channel Isolated                               | 3...4                 | F                             | 1492-AIFM6S-3                             | —                  | —                    | 1492-ACABLE***Z  | 41170-525      |
|             |                              |                                                  | 3...4                 | R                             | 1492-RAIFM6S-3                            | RTB12N             | RTB12P               | 1492-ACABLE***Z  | 41170-525      |
|             | Single Ended, External Power | 6 Channel Isolated                               | 3...4                 | F                             | 1492-AIFM6S-3                             | —                  | —                    | 1492-ACABLE***Z  | 41170-526      |
|             |                              |                                                  | 3...4                 | R                             | 1492-RAIFM6S-3                            | RTB12N             | RTB12P               | 1492-ACABLE***Z  | 41170-526      |
| 1756-IF6I   | Current                      | 6 Channel Isolated                               | 3...4                 | F                             | 1492-AIFM6S-3                             | —                  | —                    | 1492-ACABLE***X  | 41170-496      |
|             |                              |                                                  | 3...4                 | R                             | 1492-RAIFM6S-3                            | RTB12N             | RTB12P               | 1492-ACABLE***X  | 41170-496      |
|             | Voltage                      | 6 Channel Isolated                               | 3...4                 | F                             | 1492-AIFM6S-3                             | —                  | —                    | 1492-ACABLE***Y  | 41170-495      |
|             |                              |                                                  | 3...4                 | R                             | 1492-RAIFM6S-3                            | RTB12N             | RTB12P               | 1492-ACABLE***Y  | 41170-495      |
| 1756-IF8    | Single End Voltage           | 8 Channel Differential / 16 Channel Single Ended | 3                     | F                             | 1492-AIFM8-3                              | —                  | —                    | 1492-ACABLE***TA | 41170-497      |
|             |                              |                                                  | 3                     | R                             | 1492-RAIFM8-3                             | RTB16N             | RTB16P               | 1492-ACABLE***TA | 41170-497      |
|             |                              | Fusible, 8 Channel, Blown Fuse                   | 5                     | F                             | 1492-AIFM8-F-5                            | —                  | —                    | 1492-ACABLE***TA | 41170-510      |
|             | Single End Current           | 8 Channel Differential / 16 Channel Single Ended | 3                     | F                             | 1492-AIFM8-3                              | —                  | —                    | 1492-ACABLE***TB | 41170-498      |
|             |                              |                                                  | 3                     | R                             | 1492-RAIFM8-3                             | RTB16N             | RTB16P               | 1492-ACABLE***TB | 41170-498      |
|             |                              | Fusible, 8 Channel, Blown Fuse                   | 5                     | F                             | 1492-AIFM8-F-5                            | —                  | —                    | 1492-ACABLE***TB | 41170-511      |
|             | Differential Voltage         | 8 Channel Differential / 16 Channel Single Ended | 3                     | F                             | 1492-AIFM8-3                              | —                  | —                    | 1492-ACABLE***TC | 41170-499      |
|             |                              |                                                  | 3                     | R                             | 1492-RAIFM8-3                             | RTB16N             | RTB16P               | 1492-ACABLE***TC | 41170-499      |
|             |                              | Fusible, 8 Channel, Blown Fuse                   | 5                     | F                             | 1492-AIFM8-F-5                            | —                  | —                    | 1492-ACABLE***TC | 41170-512      |
|             | Differential Current         | 8 Channel Differential / 16 Channel Single Ended | 3                     | F                             | 1492-AIFM8-3                              | —                  | —                    | 1492-ACABLE***TD | 41170-500      |
|             |                              |                                                  | 3                     | R                             | 1492-RAIFM8-3                             | RTB16N             | RTB16P               | 1492-ACABLE***TD | 41170-500      |

|                |                      |                                                  |       |   |                  |        |        |                  |           |
|----------------|----------------------|--------------------------------------------------|-------|---|------------------|--------|--------|------------------|-----------|
|                |                      | Fusible, 8 Channel, Blown Fuse                   | 5     | F | 1492-AIFM8-F-5   | —      | —      | 1492-ACABLE***TD | 41170-513 |
| 1756-IF16      | Single End Voltage   | 8 Channel Differential / 16 Channel Single Ended | 3     | F | 1492-AIFM8-3     | —      | —      | 1492-ACABLE***UA | 41170-167 |
|                |                      |                                                  | 3     | R | 1492-RAIFM8-3    | RTB16N | RTB16P | 1492-ACABLE***UA | 41170-167 |
|                |                      | Fusible, 16 Channel, Blown Fuse                  | 3     | F | 1492-AIFM16-F-3  | —      | —      | 1492-ACABLE***UA | 41170-163 |
|                |                      |                                                  | 5     | F | 1492-AIFM16-F-5  | —      | —      | 1492-ACABLE***UA | 41170-160 |
|                |                      | Safety Integrity Level (SIL)♣                    | 3     | F | 1492-TAIFM16-F-3 | —      | —      | 1492-ACABLE***UA | 41170-185 |
|                | Single End Current   | 8 Channel Differential / 16 Channel Single Ended | 3     | F | 1492-AIFM8-3     | —      | —      | 1492-ACABLE***UB | 41170-514 |
|                |                      |                                                  | 3     | R | 1492-RAIFM8-3    | RTB16N | RTB16P | 1492-ACABLE***UB | 41170-514 |
|                |                      | Fusible, 16 Channel, Blown Fuse                  | 3     | F | 1492-AIFM16-F-3  | —      | —      | 1492-ACABLE***UB | 41170-164 |
|                |                      |                                                  | 5     | F | 1492-AIFM16-F-5  | —      | —      | 1492-ACABLE***UB | 41170-515 |
|                | Differential Voltage | 8 Channel Differential / 16 Channel Single Ended | 3     | F | 1492-AIFM8-3     | —      | —      | 1492-ACABLE***UC | 41170-166 |
|                |                      |                                                  | 3     | R | 1492-RAIFM8-3    | RTB16N | RTB16P | 1492-ACABLE***UC | 41170-166 |
|                |                      | Fusible, 8 Channel, Blown Fuse                   | 5     | F | 1492-AIFM8-F-5   | —      | —      | 1492-ACABLE***UC | 41170-516 |
|                |                      | Fusible, 16 Channel, Blown Fuse                  | 3     | F | 1492-AIFM16-F-3  | —      | —      | 1492-ACABLE***UC | 41170-162 |
|                |                      |                                                  | 5     | F | 1492-AIFM16-F-5  | —      | —      | 1492-ACABLE***UC | 41170-159 |
|                | Differential Current | 8 Channel Differential / 16 Channel Single Ended | 3     | F | 1492-AIFM8-3     | —      | —      | 1492-ACABLE***UD | 41170-165 |
|                |                      |                                                  | 3     | R | 1492-RAIFM8-3    | RTB16N | RTB16P | 1492-ACABLE***UD | 41170-165 |
|                |                      | Fusible, 8 Channel, Blown Fuse                   | 5     | F | 1492-AIFM8-F-5   | —      | —      | 1492-ACABLE***UD | 41170-517 |
|                |                      | Fusible, 16 Channel, Blown Fuse                  | 3     | F | 1492-AIFM16-F-3  | —      | —      | 1492-ACABLE***UD | 41170-161 |
|                |                      |                                                  | 5     | F | 1492-AIFM16-F-5  | —      | —      | 1492-ACABLE***UD | 41170-091 |
| 1756-IF4FXOF2F | Current (In and Out) | 6 Channel Isolated                               | 3...4 | F | 1492-AIFM6S-3    | —      | —      | 1492-ACABLE***ZA | 41170-904 |
|                |                      |                                                  | 3...4 | R | 1492-RAIFM6S-3   | RTB12N | RTB12P | 1492-ACABLE***ZA | 41170-904 |
|                |                      | Fusible, 8 Channel, Blown Fuse                   | 5     | F | 1492-AIFM8-F-5   | —      | —      | 1492-ACABLE***ZA | 41170-897 |
|                | Voltage (In and Out) | 6 Channel Isolated                               | 3...4 | F | 1492-AIFM6S-3    | —      | —      | 1492-ACABLE***ZB | 41170-895 |
|                |                      |                                                  | 3...4 | R | 1492-RAIFM6S-3   | RTB12N | RTB12P | 1492-ACABLE***ZB | 41170-895 |
|                |                      | Fusible, 8 Channel, Blown Fuse                   | 5     | F | 1492-AIFM8-F-5   | —      | —      | 1492-ACABLE***ZB | 41170-898 |
|                | Current In and       | 6 Channel Isolated                               | 3...4 | F | 1492-AIFM6S-3    | —      | —      | 1492-ACABLE***ZC | 41170-896 |

|  |             |                                |       |   |                |        |        |                  |           |
|--|-------------|--------------------------------|-------|---|----------------|--------|--------|------------------|-----------|
|  | Voltage Out |                                | 3...4 | R | 1492-RAIFM6S-3 | RTB12N | RTB12P | 1492-ACABLE***ZC | 41170-896 |
|  |             | Fusible, 8 Channel, Blown Fuse | 5     | F | 1492-AIFM8-F-5 | —      | —      | 1492-ACABLE***ZC | 41170-899 |

## Temperature-Sensing Analog Inputs

| PLC Card   | Wiring System Type★ | Description            | Terminals Per Channel | Fixed or Removable TerminalsΔ | Wiring System (IFM) Module Catalog Number | Screw RTB required | Push-in RTB required | Cable Cat. No.   | Wiring Diagram |
|------------|---------------------|------------------------|-----------------------|-------------------------------|-------------------------------------------|--------------------|----------------------|------------------|----------------|
| 1756-IR6I  | Standard            | 6 Channel Isolated     | 3...4                 | F                             | 1492-AIFM6S-3                             | —                  | —                    | 1492-ACABLE***Z  | 41170-524      |
|            |                     |                        | 3...4                 | R                             | 1492-RAIFM6S-3                            | RTB12N             | RTB12P               | 1492-ACABLE***Z  | 41170-524      |
| 1756-IT6I  | Standard            | 6 Channel Thermocouple | 3                     | F                             | 1492-AIFM6TC-3                            | —                  | —                    | 1492-ACABLE***Y  | 41170-527      |
| 1756-IT6I2 | Standard            | 6 Channel Thermocouple | 3                     | F                             | 1492-AIFM6TC-3                            | —                  | —                    | 1492-ACABLE***YT | 41170-528      |

## HART Interface Analog Inputs

| PLC Card   | Wiring System Type★     | Description                                      | Terminals Per Channel | Fixed or Removable TerminalsΔ | Wiring System (IFM) Module Catalog Number | Screw RTB required | Push-in RTB required | Cable Cat. No.   | Wiring Diagram |
|------------|-------------------------|--------------------------------------------------|-----------------------|-------------------------------|-------------------------------------------|--------------------|----------------------|------------------|----------------|
| 1756-IF8H  | Voltage with HART       | 8 Channel Differential / 16 Channel Single Ended | 3                     | F                             | 1492-AIFM8-3                              | —                  | —                    | 1492-ACABLE***UC | 41170-888      |
|            |                         |                                                  | 3                     | R                             | 1492-RAIFM8-3                             | RTB16N             | RTB16P               | 1492-ACABLE***UC | 41170-888      |
|            |                         | Fusible, 8 Channel, Blown Fuse                   | 5                     | F                             | 1492-AIFM8-F-5                            | —                  | —                    | 1492-ACABLE***UC | 41170-886      |
|            | Current with HART       | 8 Channel Differential / 16 Channel Single Ended | 3                     | F                             | 1492-AIFM8-3                              | —                  | —                    | 1492-ACABLE***UD | 41170-883      |
|            |                         |                                                  | 3                     | R                             | 1492-RAIFM8-3                             | RTB16N             | RTB16P               | 1492-ACABLE***UD | 41170-883      |
|            |                         | Fusible, 8 Channel, Blown Fuse                   | 5                     | F                             | 1492-AIFM8-F-5                            | —                  | —                    | 1492-ACABLE***UD | 41170-885      |
| 1756-IF16H | Single Ended with HART  | Fusible, 16 Channel, Blown Fuse                  | 3                     | F                             | 1492-AIFM16-F-3                           | —                  | —                    | 1492-ACABLE***UB | 41171-036      |
|            | Differential with HART‡ | Fusible, 16 Channel, Blown Fuse                  | 3                     | F                             | 1492-AIFM16-F-3                           | —                  | —                    | 1492-C005005UF   | 41171-037      |

## Analog Outputs

| PLC Card | Wiring System Type★ | Description                                   | Terminals Per Channel | Fixed or Removable TerminalsΔ | Wiring System (IFM) Module Catalog Number | Screw RTB required | Push-in RTB required | Cable Cat. No.   | Wiring Diagram |
|----------|---------------------|-----------------------------------------------|-----------------------|-------------------------------|-------------------------------------------|--------------------|----------------------|------------------|----------------|
| 1756-OF4 | Voltage             | 4 Channel Input, Output or 2 Input / 2 Output | 3                     | F                             | 1492-AIFM4-3                              | —                  | —                    | 1492-ACABLE***VA | 41170-493      |
|          |                     |                                               | 3                     | R                             | 1492-RAIFM4-3                             | RTB8N              | RTB8P                | 1492-ACABLE***VA | 41170-         |

|            |          |                                                  |       |   |                |        |        |                  |           |
|------------|----------|--------------------------------------------------|-------|---|----------------|--------|--------|------------------|-----------|
|            |          |                                                  |       |   |                |        |        |                  | 493       |
|            | Current  | 4 Channel Input, Output or 2 Input / 2 Output    | 3     | F | 1492-AIFM4-3   | —      | —      | 1492-ACABLE***VB | 41170-494 |
|            |          |                                                  | 3     | R | 1492-RAIFM4-3  | RTB8N  | RTB8P  | 1492-ACABLE***VB | 41170-494 |
| 1756-OF6CI | Standard | 6 Channel Isolated                               | 3...4 | F | 1492-AIFM6S-3  | —      | —      | 1492-ACABLE***Y  | 41170-529 |
|            |          |                                                  | 3...4 | R | 1492-RAIFM6S-3 | RTB12N | RTB12P | 1492-ACABLE***Y  | 41170-529 |
| 1756-OF6VI | Standard | 6 Channel Isolated                               | 3...4 | F | 1492-AIFM6S-3  | —      | —      | 1492-ACABLE***Y  | 41170-530 |
|            |          |                                                  | 3...4 | R | 1492-RAIFM6S-3 | RTB12N | RTB12P | 1492-ACABLE***Y  | 41170-530 |
| 1756-OF8   | Voltage  | 8 Channel Differential / 16 Channel Single Ended | 3     | F | 1492-AIFM8-3   | —      | —      | 1492-ACABLE***WA | 41170-531 |
|            |          |                                                  | 3     | R | 1492-RAIFM8-3  | RTB8N  | RTB8P  | 1492-ACABLE***WA | 41170-531 |
|            | Current  | 8 Channel Differential / 16 Channel Single Ended | 3     | F | 1492-AIFM8-3   | —      | —      | 1492-ACABLE***WB | 41170-532 |
|            |          |                                                  | 3     | R | 1492-RAIFM8-3  | RTB8N  | RTB8P  | 1492-ACABLE***WB | 41170-532 |

## HART Interface Analog Outputs

| PLC Card  | Wiring System Type | Description                                      | Terminals Per Channel | Fixed or Removable TerminalsΔ | Wiring System (IFM) Module Catalog Number | Screw RTB required | Push-in RTB required | Cable Cat. No.   | Wiring Diagram |
|-----------|--------------------|--------------------------------------------------|-----------------------|-------------------------------|-------------------------------------------|--------------------|----------------------|------------------|----------------|
| 1756-OF8H | Voltage with HART  | 8 Channel Differential / 16 Channel Single Ended | 3                     | F                             | 1492-AIFM8-3                              | —                  | —                    | 1492-ACABLE***WA | 41170-892      |
|           |                    |                                                  | 3                     | R                             | 1492-RAIFM8-3                             | RTB16N             | RTB16P               | 1492-ACABLE***WA | 41170-892      |
|           | Current with HART  | 8 Channel Differential / 16 Channel Single Ended | 3                     | F                             | 1492-AIFM8-3                              | —                  | —                    | 1492-ACABLE***WB | 41170-891      |
|           |                    |                                                  | 3                     | R                             | 1492-RAIFM8-3                             | RTB16N             | RTB16P               | 1492-ACABLE***WB | 41170-891      |

## Specialty Modules

| PLC Card | Wiring System Type | Description                                     | Terminals Per Channel | Fixed or Removable TerminalsΔ | Wiring System (IFM) Module Catalog Number | Screw RTB required | Push-in RTB required | Cable Cat. No.   | Wiring Diagram |
|----------|--------------------|-------------------------------------------------|-----------------------|-------------------------------|-------------------------------------------|--------------------|----------------------|------------------|----------------|
| 1756-HSC | 12...24V DC        | High Speed Counter / Encoder, 2 Channel         | 1                     | F                             | 1492-AIFMCE4                              | —                  | —                    | 1492-ACABLE***XA | 41170-723      |
|          |                    | Fusible High Speed Counter / Encoder, 2 Channel | 1                     | F                             | 1492-AIFMCE4-F                            | —                  | —                    | 1492-ACABLE***XA | 41170-718      |
|          | 5V DC              | High Speed Counter / Encoder, 2 Channel         | 1                     | F                             | 1492-AIFMCE4                              | —                  | —                    | 1492-ACABLE***XB | 41170-724      |
|          |                    | Fusible High Speed Counter / Encoder, 2 Channel | 1                     | F                             | 1492-AIFMCE4-F                            | —                  | —                    | 1492-ACABLE***XB | 41170-719      |

|          |          |                            |   |   |             |   |   |                 |   |
|----------|----------|----------------------------|---|---|-------------|---|---|-----------------|---|
| 1757-PIM | Standard | Fusible, 8 Input, 2 Output | 1 | F | 1492-AIFMPI | — | — | 1492-ACABLE***M | — |
|----------|----------|----------------------------|---|---|-------------|---|---|-----------------|---|

► To order a Pre-wired Cable, add the appropriate **length code** to the end of the Cable **Cat. No.** shown in the chart above.

0.5M Cable = 005

1.0M Cable = 010

2.5M Cable = 025

5.0M Cable = 050

Custom Length Cable = 1492-ACABLE\*\*\*\_. See Catalog Number Explanation on Cat. No. Explanation

Analog Cables for Bulletins 1746, 1756/1757, and 1771 or available Custom Length Codes to replace \*\*\* in Cat. No.

△ If removable terminal block version is selected, the terminal plugs must be ordered separately (two plugs per catalog number). Plugs are available in screw style and push in style terminal types. To order add 1492- in front of code listed above. Example: 1492-RTB20P

\* Some analog I/O modules can be operated in up to four modes (current/voltage, single-ended/differential) based on connections. In all cases, each channel is factory-configured for the same mode. However, you can field configure any channel for another mode. You may need to alter the terminal block wiring to match the application. Refer to the *PLC I/O Module Installation Manual*.

‡ Requires two Cat. No. 1492-AIFM16-F-3, one cable, Cat. No. 1492-C005005UF, is required.

0.5M = 1492-C005005UF

1.0M = 1492-C010010UF

2.5M = 1492-C025025UF

5.0M = 1492-C050050UF

♣ This 1492 module is for use in SIL2 safety systems only. It does not satisfy the requirements for general I/O fault tolerance. To use this module in a SIL2 application, specially developed application software for the ControlLogix processor must be used. To obtain the latest revision of this application software contact Technical Support at 1-440-646-3434.