FIRELEC Migration Solution

RS3™ > DeltaV™

BC-FIC

FMS-RS3FIC-DV-1

Summary

1. INTRODUCTION

The purpose of this document is to guide the user of a FIC series I/Os RS3™ system within the safe, efficient and easy way to migrate toward a DeltaV™ system.

FIRELEC has developed a migration solution "**FMS-RS3FIC-DV-1**" allowing to protect the existing wiring investment as the user converts from an existing RS3 system (FIC-series I/Os) to the DeltaV™ system.

The **FMS-RS3FIC-DV-1** solution is a set of migration files and adapters installed in place of existing FIC controller files.
The Input / Output termination panels are kept in place or plugged on the BC-FIC files.
The module configuration on the panels remains unchanged.

1.1. KEY ADVANTAGES OF THE FMS-RS3FIC-DV-1 SOLUTION

FMS-RS3FIC-DV-1 solution protects your wiring investment as you convert from the RS3™ FIC series system to the DeltaV™ system of Emerson Process Management with following advantages :

FMS-RS3FIC-DV-1 is a pre-engineered marshalling solution ready to work without any technical rework or limitation regarding existing capabilities of the RS3™ system to be migrated.

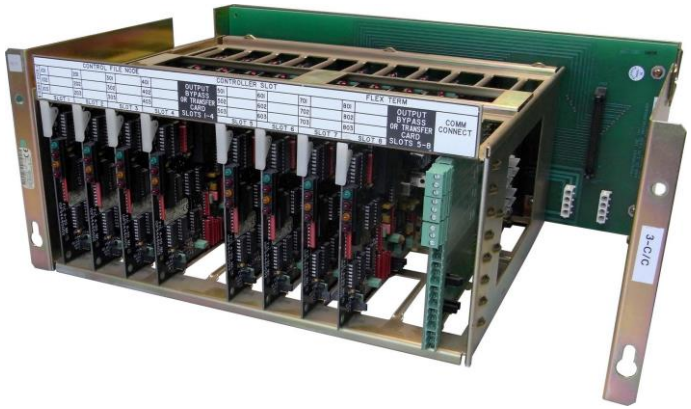
The system migration can be done gradually, step by step with reduced risk for the process unit

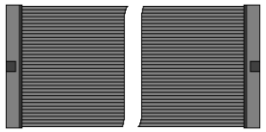
As the instrument wiring is not disturbed, the instrument checkout during start-up is reduced to the minimum

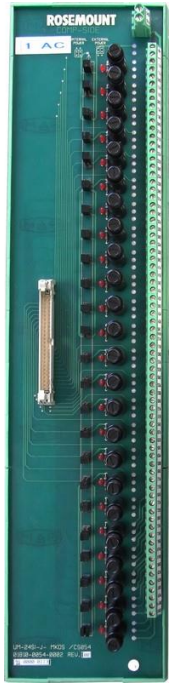
The DeltaV™ system's configuration allows for the engineering conversion to be done efficiently. The speed at which **FMS-RS3FIC-DV-1** solution can be implemented ensures to reduce the process downtime to the minimum.

All existing documentation (electrical schemes, loop drawings, maintenance procedures, ...) remain unchanged as the existing I/O panels are kept in place.

2. ANALOG INPUTS/OUTPUTS

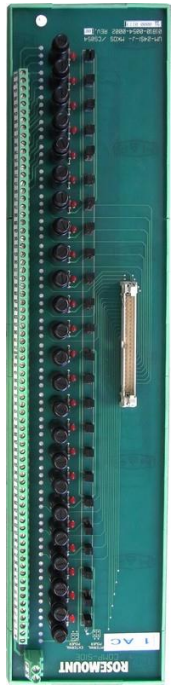
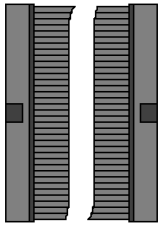
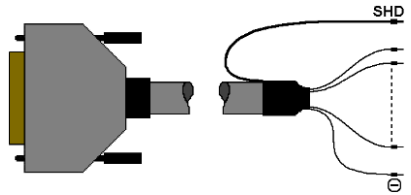
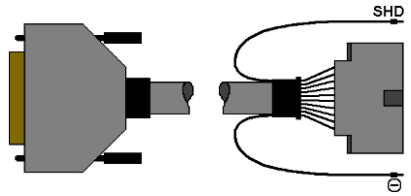




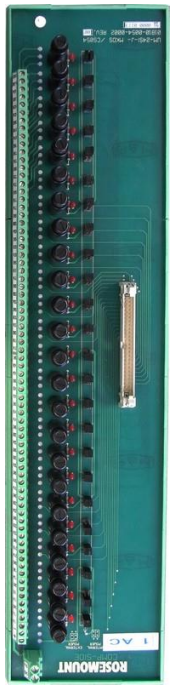
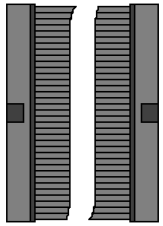
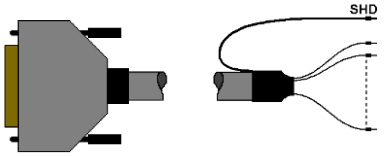
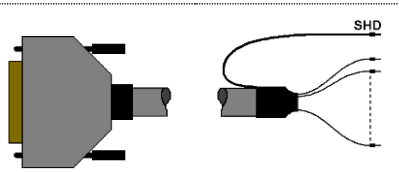
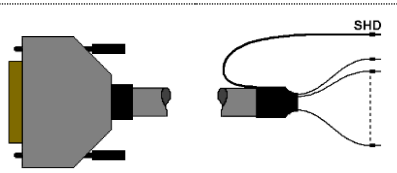
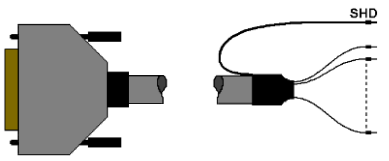

ROSEMOUNT

2.1. EXISTING RS3 PANEL TO BE KEPT : 01810-0054-0002

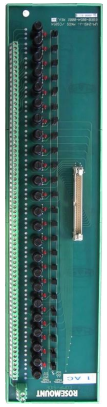
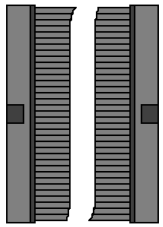
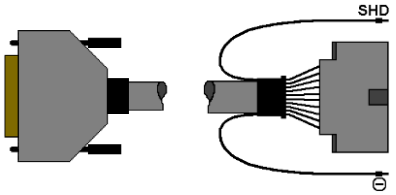
The existing HE1050 cable coming from the Analog Marshalling Panel is simply disconnected from the RS3 controller file and connected to the BC-FIC-AIAO.

New DeltaV™ architecture - FMS-RS3FIC-DV-1-AIAO1-A1				
Existing Panel	**Cable**	**Adapter**	**Cables**	**I/O Cards**
Analog Marshalling Panel 01810-0054-0002 10P54620001	**HE1050**	**BC-FIC-AIAO** File (19 inches) for RS3™ FIC I/Os (AI/AO)		
			**CBL-348** (Shielded Round Cable) SUB37F > 34 labeled wires	**VE4003S2B6 / SE4003S2B6** Analog Input Card: 16 Channels 4-20 mA, HART, AI 16-Channel Terminal Block
				
			CBL-435 (Shielded Round Cable) SUB25F > HE1016 Connector	**VE4003S2B4 / SE4003S2B4** Analog Input Card : 8 Channels 4-20 mA, HART, 16-Pin Mass I/O Terminal Block
				

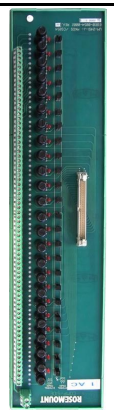
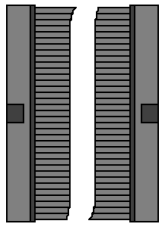
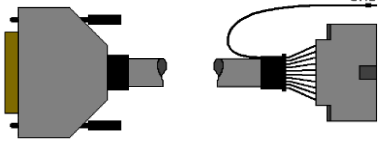
New DeltaV™ architecture - FMS-RS3FIC-DV-1-AIAO1-A2

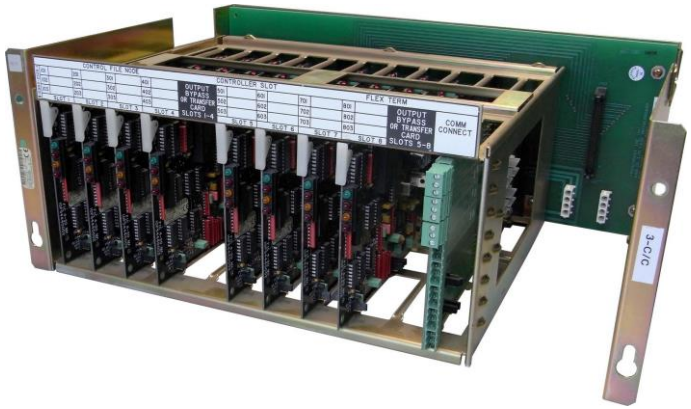
Existing Panel	Cable	Adapter	Cables	I/O Cards
Analog Marshalling Panel 01810-0054-0002 10P54620001	**HE1050**	**BC-FIC-AIAO** File (19 inches) for RS3™ FIC I/Os (AI/AO)	**4 x CBL-920** (Shielded Round Cable) SUB9F > 8 labeled wires	**4 x VE4015 / 4 x SE4015** Multifunction card (AI-AO-DI or PCI Card) 4 Channels, 24 VDC Dry Contact Discrete 32 Channel Terminal Block
			   	   

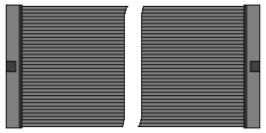
New DeltaV™ architecture - FMS-RS3FIC-DV-1-AIAO1-A3

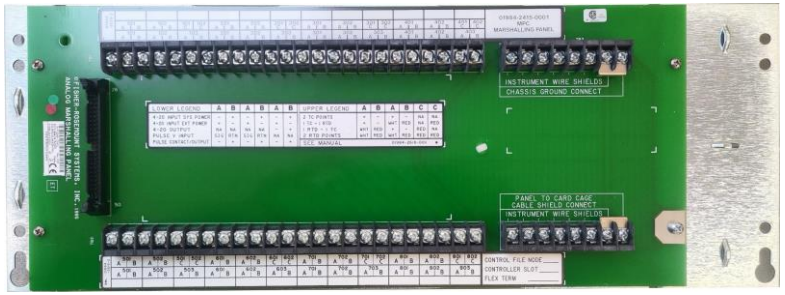
Existing Panel	Cable	Adapter	Cables	I/O Cards
Analog Marshalling Panel 01810-0054-0002 10P54620001	**HE1050**	**BC-FIC-AIAO** File (19 inches) for RS3™ FIC I/Os (AI/AO)	**CBL-864** (Shielded Round Cable) SUB25F > HE1020 Connector CH 1 to 16 : Cable option A CH 17 to 32 : Cable option B	**½ VE4002S1T2B6 / ½ VE4002S1T2B6** DO Card, 32 Channels, 24Vdc, High Side, 40-Pin Mass I/O Terminal Block
				

New DeltaV™ architecture - FMS-RS3FIM-DV-1-AIAO1-A4

Existing Panel	Cable	Adapter	Cables	I/O Cards
Analog Marshalling Panel 01810-0054-0002 10P54620001	**HE1050**	**BC-FIC-AIAO** File (19 inches) for RS3™ FIC I/Os (AI/AO)	**CBL-350** (Shielded Round Cable) SUB25F > HE1016 Connector	**VE4005S2B3 / SE4005S2B3** Analog Output Card : 8 Channels 4-20 mA, HART, 16-Pin Mass Terminal Block
				

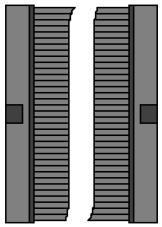
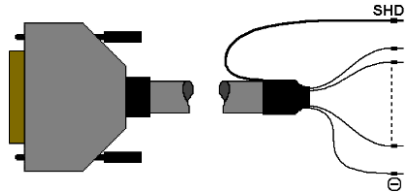
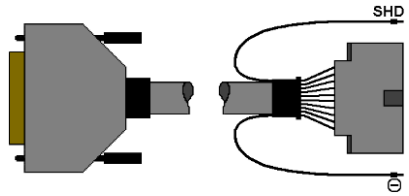




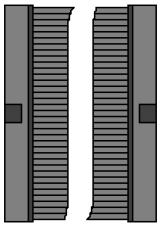
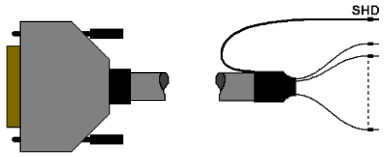
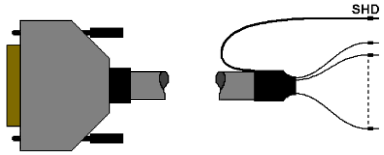
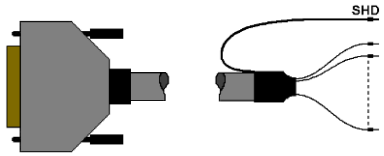
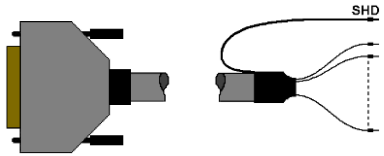


2.1. EXISTING RS3 PANEL TO BE KEPT : 01984-2415-0001

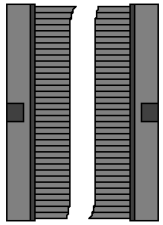
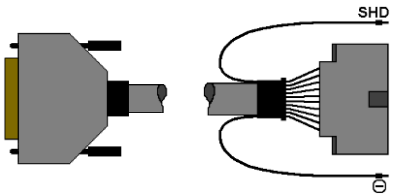
The existing HE1050 cable coming from the Analog Marshalling Panel is simply disconnected from the RS3 controller file and connected to the BC-FIC-AIAO.

New DeltaV™ architecture - FMS-RS3FIC-DV-1-AIAO2-A1				
Existing Panel	**Cable**	**Adapter**	**Cables**	**I/O Cards**
Analog Marshalling Panel 01984-2415-0001	**HE1050**	**BC-FIC-AIAO** File (19 inches) for RS3™ FIC I/Os (AI/AO)		
			**CBL-348** (Shielded Round Cable) SUB37F > 34 labeled wires	**VE4003S2B6 / SE4003S2B6** Analog Input Card: 16 Channels 4-20 mA, HART, AI 16-Channel Terminal Block
				
			CBL-435 (Shielded Round Cable) SUB25F > HE1016 Connector	**VE4003S2B4 / SE4003S2B4** Analog Input Card : 8 Channels 4-20 mA, HART, 16-Pin Mass I/O Terminal Block
				

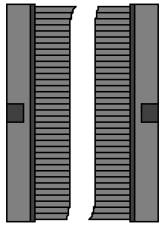
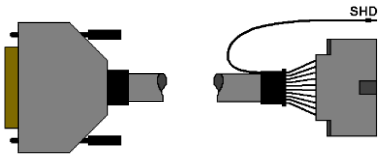
New DeltaV™ architecture - FMS-RS3FIC-DV-1-AIAO2-A2

Existing Panel	Cable	Adapter	Cables	I/O Cards
Analog Marshalling Panel 01984-2415-0001	**HE1050**	**BC-FIC-AIAO** File (19 inches) for RS3™ FIC I/Os (AI/AO)	**4 x CBL-920** (Shielded Round Cable) SUB9F > 8 labeled wires	**4 x VE4015 / 4 x SE4015** Multifunction card (AI-AO-DI or PCI Card) 4 Channels, 24 VDC Dry Contact Discrete 32 Channel Terminal Block
			   	   

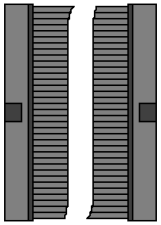
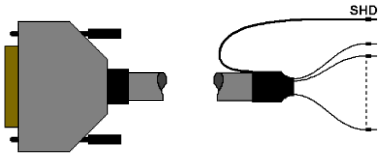
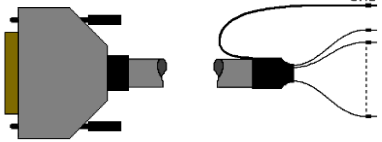
New DeltaV™ architecture - FMS-RS3FIC-DV-1-AIAO2-A3

Existing Panel	Cable	Adapter	Cables	I/O Cards
Analog Marshalling Panel 01984-2415-0001	**HE1050**	**BC-FIC-AIAO** File (19 inches) for RS3™ FIC I/Os (AI/AO)	**CBL-864** (Shielded Round Cable) SUB25F > HE1020 Connector CH 1 to 16 : Cable option A CH 17 to 32 : Cable option B	**½ VE4002S1T2B6 / ½ VE4002S1T2B6** DO Card, 32 Channels, 24Vdc, High Side, 40-Pin Mass I/O Terminal Block
				

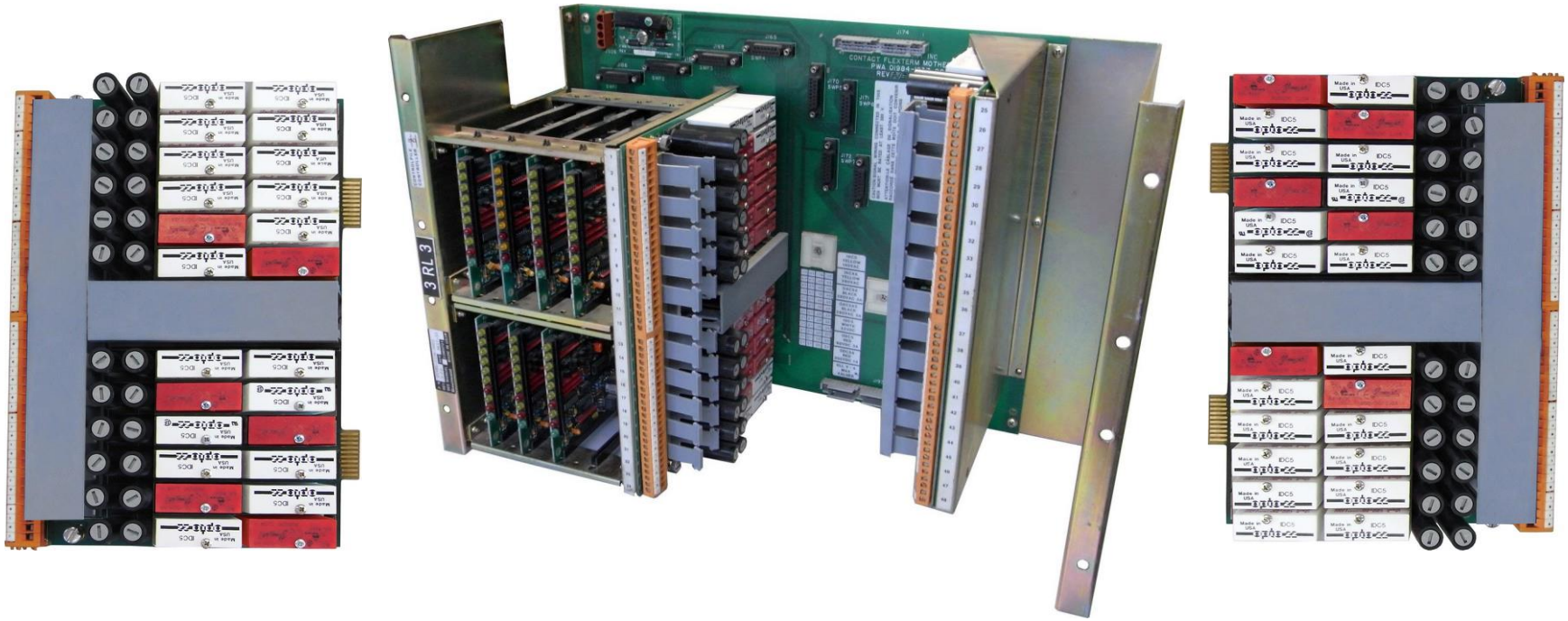
New DeltaV™ architecture - FMS-RS3FIM-DV-1-AIAO2-A4

Existing Panel	Cable	Adapter	Cables	I/O Cards
Analog Marshalling Panel 01984-2415-0001	**HE1050**	**BC-FIC-AIAO** File (19 inches) for RS3™ FIC I/Os (AI/AO)	**CBL-350** (Shielded Round Cable) SUB25F > HE1016 Connector	**VE4005S2B3 / SE4005S2B3** Analog Output Card : 8 Channels 4-20 mA, HART, 16-Pin Mass Terminal Block
				

New DeltaV™ architecture - FMS-RS3FIM-DV-1-AIAO2-A5

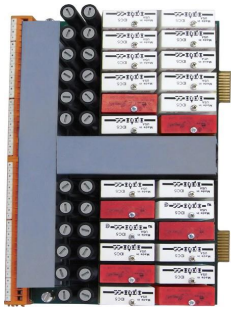
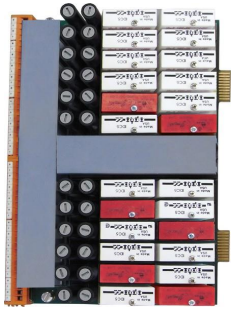
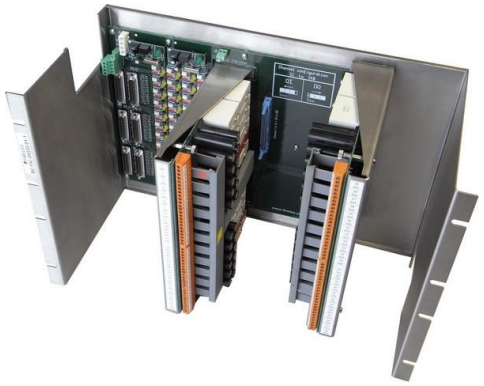
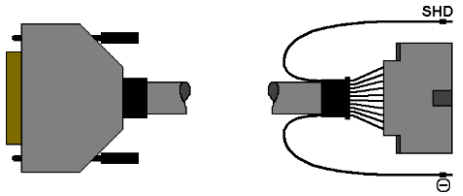
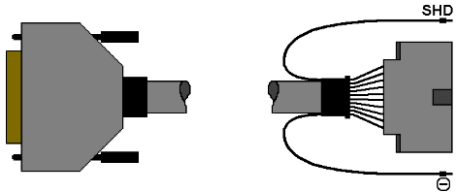
Existing Panel	Cable	Adapter	Cables	I/O Cards
Analog Marshalling Panel 01984-2415-0001	**HE1050**	**BC-FIC-AIAO** File (19 inches) for RS3™ FIC I/Os (AI/AO)	**2 x CBL-1247** (Shielded Round Cable) SUB9F > 24 labeled wires	**2 x VE4003S6B1 2 x VE4003S6B1** RTD Card: 8 Channels RTD/ Resistance Terminal Block
			 	 

3. DISCRETE INPUTS/OUTPUTS



3.1. EXISTING RS3 PANEL TO BE KEPT : DIGITAL MARSHALLING PANEL 01984-1287-0001

Contact Termination Boards are simply removed from the RS3 controller files and plugged into the BC-FIC-DIDO.
The 48 channels of the two Contact Termination Boards are divided into three groups of 16 channels. Each channel can be configured as a DI or DO using a jumper.
Depending on the type of signal per group, three to six I/O cards will be needed to cover the 48 channels.
Example :
If a group of 16 channels consists of mixed DI **and** DO signals, one DI card **and** one DO card are needed.
If a group of 16 channels consists exclusively of DI **or** DO signals, only one DI **or** DO card will be required.

<table>
<tr><th colspan="4">New DeltaV™ architecture - FMS-RS3FIC-DV-1-DIDO1-A1</th></tr>
<tr><th>Existing Cards</th><th>Adapter</th><th>Cables</th><th>I/O Cards</th></tr>
<tr><td>2 x Contact Termination Board
01984-1287-0001
To be removed from the RS3 file and re-plugged into the BC-FIC-DIDO file</td><td>BC-FIC-DIDO
File (19 inches) for RS3™ FIC I/Os (DI/DO)</td><td></td><td></td></tr>
<tr><td rowspan="4"> 
  </td><td rowspan="4">  </td><td>CBL-864
(Shielded Round Cable)
SUB25F > HE1020 Connector
CH 1 to 16 : Cable option A
CH 17 to 32 : Cable option B</td><td>VE4001S2T2B5 / SE4001S2T2B5
Discrete Input Card : 32 Channels, 24 Vdc, Dry Contact, 40-pin Mass Terminal Block</td></tr>
<tr><td> 
</td><td>  </td></tr>
<tr><td>CBL-864
(Shielded Round Cable)
SUB25F > HE1020 Connector
CH 1 to 16 : Cable option A
CH 17 to 32 : Cable option B</td><td>VE4002S1T2B6 / SE4002S1T2B6
DO Card, 32 Channels, 24Vdc, High Side, 40-Pin Mass I/O Terminal Block</td></tr>
<tr><td> 
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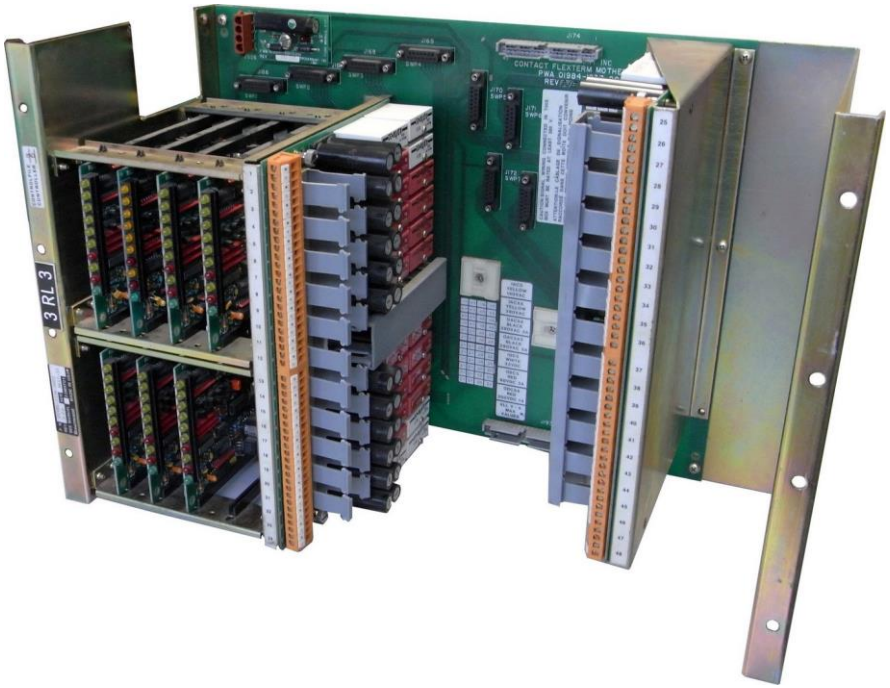
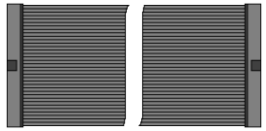
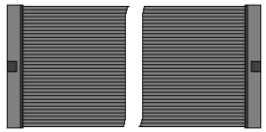
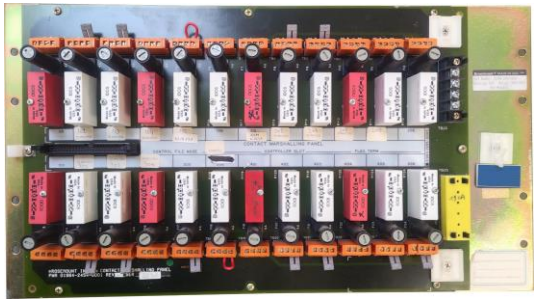
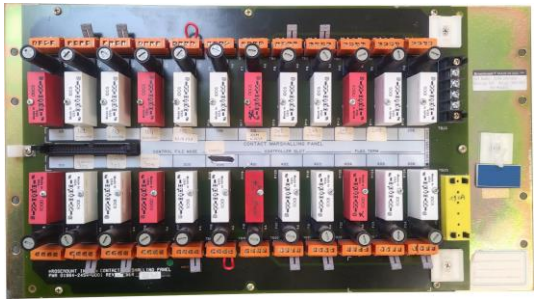




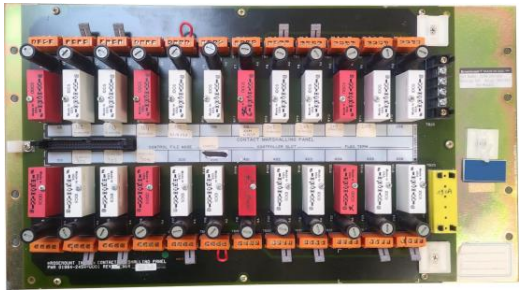
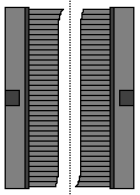
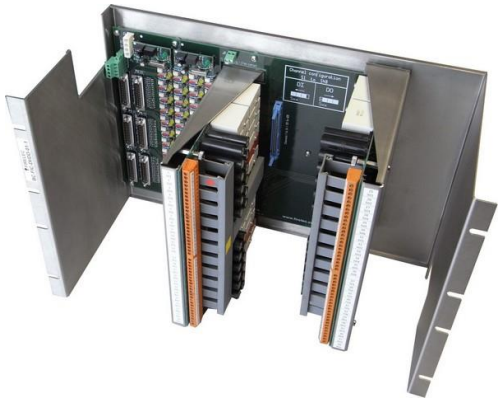
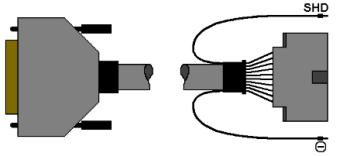
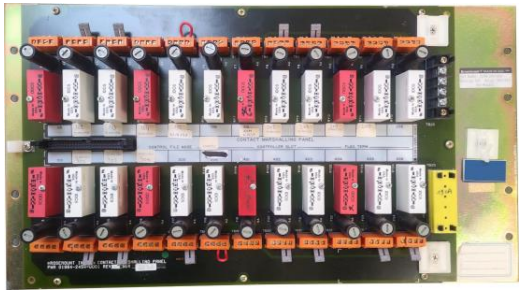
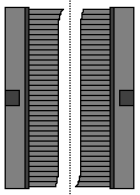
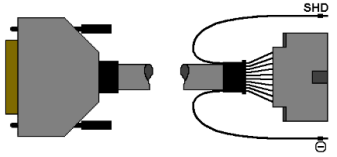


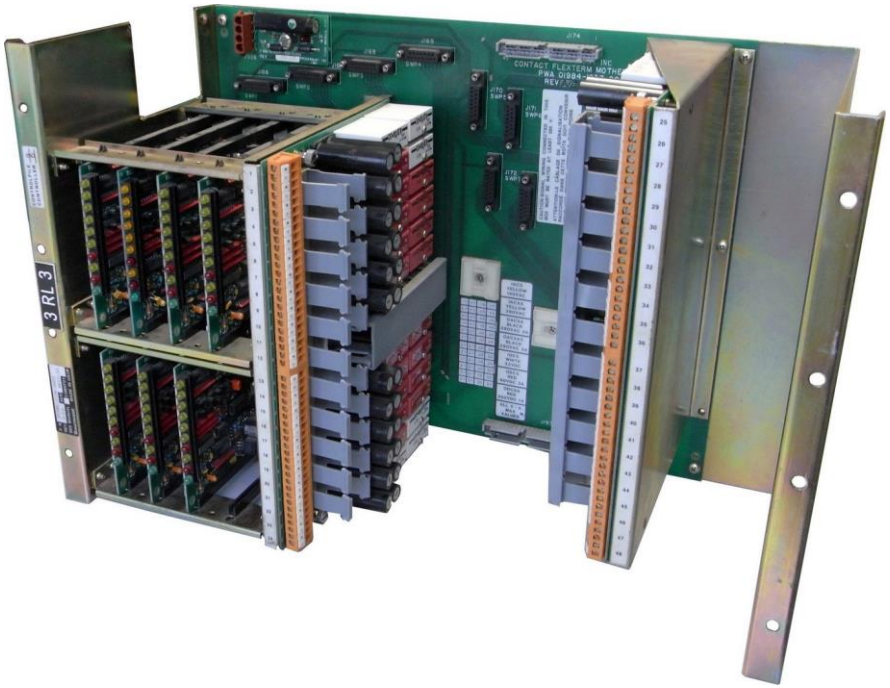


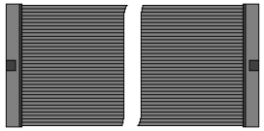


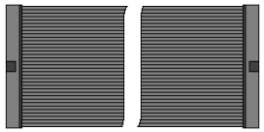
3.2. EXISTING RS3 PANEL TO BE KEPT : DIGITAL MARSHALLING PANEL 01984-2454-0001

The existing HE1050 cables coming from the Digital Marshalling Panels are simply disconnected from the controller files and connected to the BC-FIC-DIDO.
The 48 channels of the two Digital Marshalling Panels are divided into three groups of 16 channels. Each channel can be configured as a DI or DO using a jumper.
Depending on the type of signal per group, three to six I/O cards will be needed to cover the 48 channels.
Example :
If a group of 16 channels consists of mixed DI **and** DO signals, one DI card **and** one DO card are needed.
If a group of 16 channels consists exclusively of DI **or** DO signals, only one DI **or** DO card will be required.

New DeltaV™ architecture - FMS-RS3FIC-DV-1-DIDO2-A1				
Existing pannel	**Cable**	**Adapter**	**Cables**	**I/O Cards**
2 x Digital Marshalling Panel 01984-2454-0001	**HE1050**	**BC-FIC-DIDO** File (19 inches) for RS3™ FIC I/Os (DI/DO)		
			**CBL-864** (Shielded Round Cable) SUB25F > HE1020 Connector CH 1 to 16 : Cable option A CH 17 to 32 : Cable option B	**VE4001S2T2B5 / SE4001S2T2B5** Discrete Input Card : 32 Channels, 24 Vdc, Dry Contact, 40-pin Mass Terminal Block
				
			**CBL-864** (Shielded Round Cable) SUB25F > HE1020 Connector CH 1 to 16 : Cable option A CH 17 to 32 : Cable option B	**VE4002S1T2B6 / SE4002S1T2B6** DO Card, 32 Channels, 24Vdc, High Side, 40-Pin Mass I/O Terminal Block
				

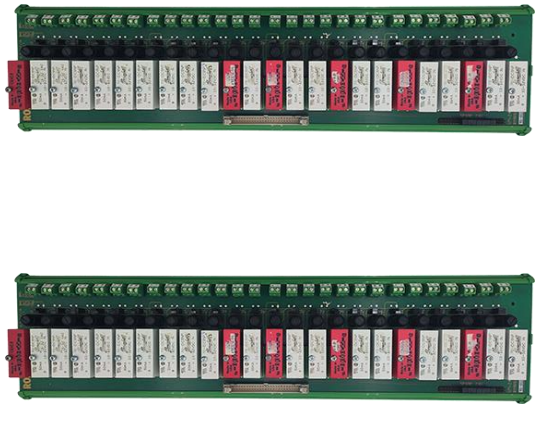
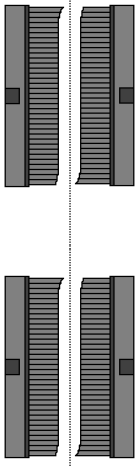
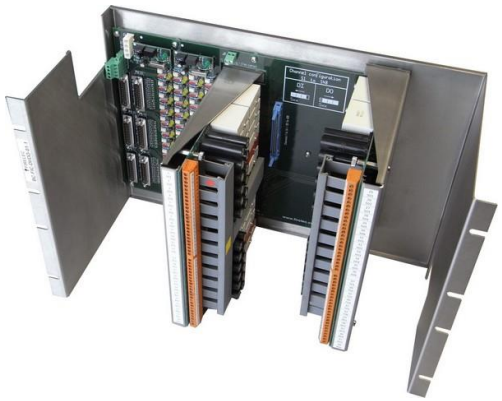
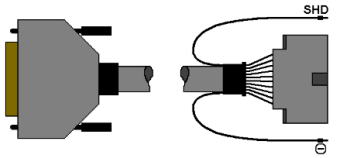
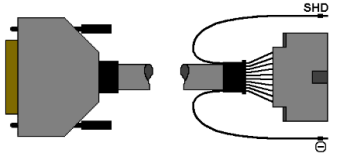






3.3. EXISTING RS3 PANEL TO BE KEPT : DIGITAL MARSHALLING PANEL 01985-1810-0762

The existing HE1050 cable coming from the Digital Marshalling Panels are simply disconnected from the controller files and connected to the BC-FIC-DIDO.
The 48 channels of the two Digital Marshalling Panels are divided into three groups of 16 channels. Each channel can be configured as a DI or DO using a jumper.
Depending on the type of signal per group, three to six I/O cards will be needed to cover the 48 channels.
Example :
If a group of 16 channels consists of mixed DI **and** DO signals, one DI card **and** one DO card are needed.
If a group of 16 channels consists exclusively of DI **or** DO signals, only one DI **or** DO card will be required.

New DeltaV™ architecture - FMS-RS3FIC-DV-1-DIDO3-A1				
Existing pannel	**Cable**	**Adapter**	**Cables**	**I/O Cards**
2 x Digital Marshalling Panel 01985-1810-0762	**HE1050**	**BC-FIC-DIDO** File (19 inches) for RS3™ FIC I/Os (DI/DO)		
			**CBL-864** (Shielded Round Cable) SUB25F > HE1020 Connector CH 1 to 16 : Cable option A CH 17 to 32 : Cable option B 	**VE4001S2T2B5 / SE4001S2T2B5** Discrete Input Card : 32 Channels, 24 Vdc, Dry Contact, 40-pin Mass Terminal Block 
			CBL-864 (Shielded Round Cable) SUB25F > HE1020 Connector CH 1 to 16 : Cable option A CH 17 to 32 : Cable option B 	**VE4002S1T2B6 / SE4002S1T2B6** DO Card, 32 Channels, 24Vdc, High Side, 40-Pin Mass I/O Terminal Block