

RS3™ > CHARMs
Discrete Inputs/Outputs

RIA (RS3 Interface Adapters)

FMS-RS3FIM-DVC-1

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FMS-RS3FIM-DVC-1-DIDO

1. INTRODUCTION





EMERSON RS3™ > DeltaV™ Electronic Marshalling FIM Series – Using RIAs

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FMS-RS3FIM-DVC-1-DIDO

The purpose of this document is to guide the user of a FIM series I/Os RS3TM system within the safe, efficient and easy way to migrate toward DeltaVTM Electronic Marshalling.

FIRELEC has developed a migration solution "FMS-RS3FIM-DVC-1" allowing to protect the existing wiring investment as the user converts from an existing RS3[™] system (FIM-series I/Os) to the DeltaV[™] CHARM I/O architecture.

The **FMS-RS3FIM-DVC-1** solution is a set of migration adapters installed in place of existing FIM electronic modules onto Input/Output termination panels.

On the front of the RIAs, D-SUB connectors are used for connecting existing I/Os to the CHARM using dedicated shielded cables with D-SUB connectors at one end and labelled wires or suitable connectors (matching with the type of CHARM terminal block) at the other end.

1.1. KEY ADVANTAGES OF THE FMS-RS3FIM-DVC-1 SOLUTION

FMS-RS3FIM-DVC-1 solution protect your wiring investment as you convert from the RS3[™] FIM series system to the DeltaV[™] Electronic Marshalling of Emerson Process Management with following advantages:

- **FMS-RS3FIM-DVC-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-RS3FIM-DVC-1 solution can be implemented ensures to
 reduce the process downtime to the minimum.
- All existing documentations (electrical schemes, loop drawings, maintenance procedures,) remain unchanged as the existing I/O panels are kept in place.



FIM Series – Using RIAs

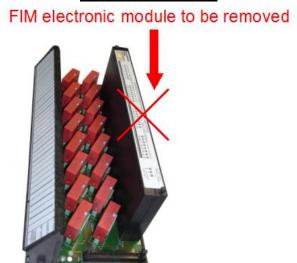
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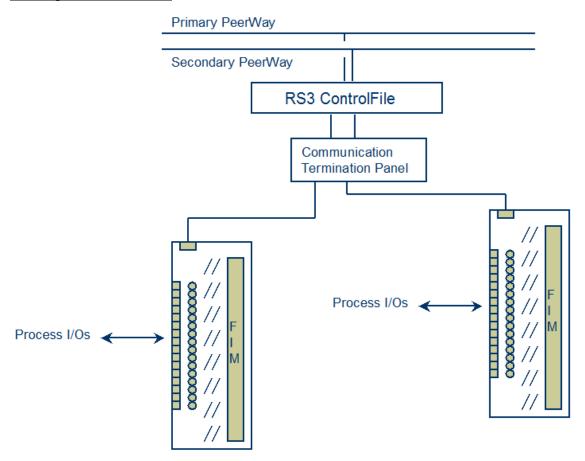
1.2. DESCRIPTION OF THE "FMS-RS3FIM-DVC-1" SOLUTION

1.2.1. Principle of migration





1.2.2. Existing RS3 architecture

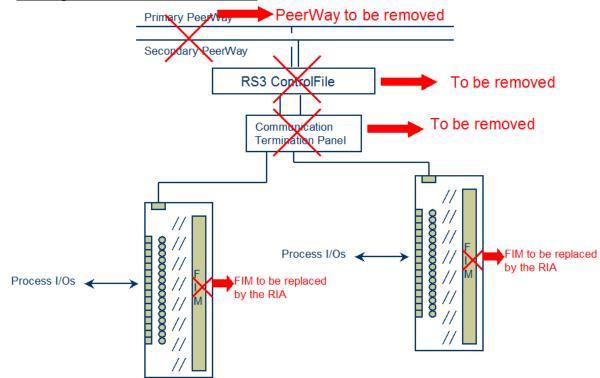




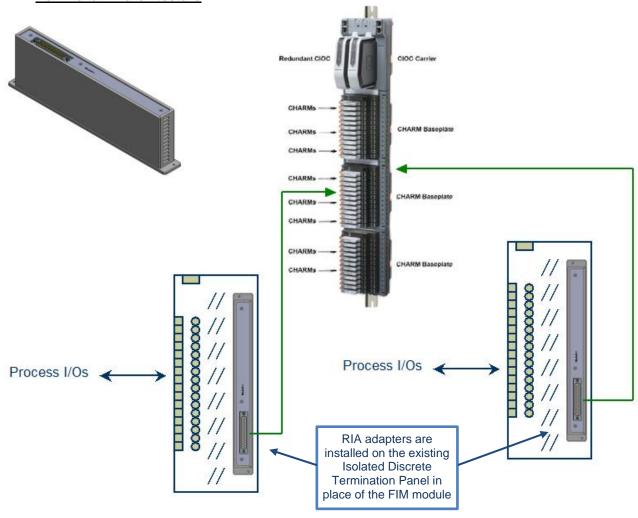
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1.2.3. Existing RS3 Hardware to be removed



1.2.4. New DeltaV™ architecture







2. <u>DISCRETE</u> INPUTS/OUTPUTS

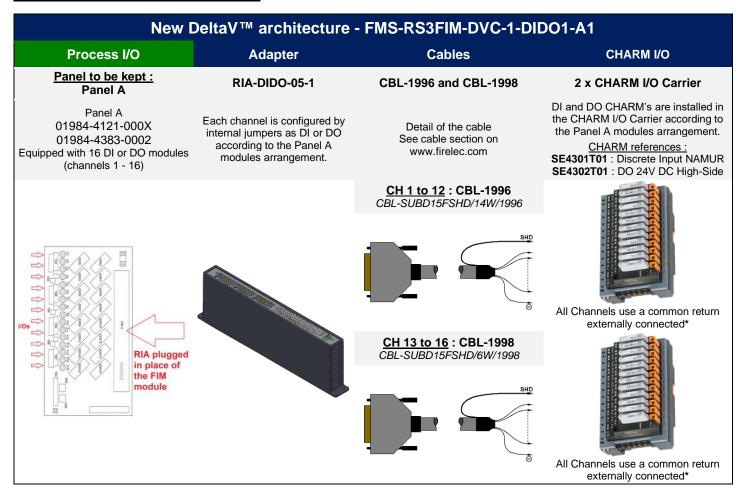
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2.1. EXISTING RS3 PANEL TO BE KEPT: ISOLATED DISCRETE TERMINATION PANEL (A / B)

2.1.1.MDIO Type: 01984-4121-000X (Panel A): 16 DI /DO (CH1 - CH16)

Panel A with I/O distribution as follow: Channels 1 to 16: DI or DO



^{*} The terminal 2 of each channel must be externally connected to the common return of the Firelec cable.



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FMS-RS3FIM-DVC-1-DIDO

New DeltaV™ architecture - FMS-RS3FIM-DVC-1-DIDO1-A2 Process I/O **Adapter Cables CHARM I/O** Panel to be kept: 2 x CHARM I/O Carrier RIA-DIDO-05-1 2 x CBL-2002 Panel A **Equipped with TP-FM02-05** DI and DO CHARM's are installed in Panel A the CHARM I/O Carrier according to Each channel is configured by 01984-4121-000X Detail of the cable the Panel A modules arrangement. internal jumpers as DI or DO 01984-4383-0002 See cable section on according to the Panel A CHARM references: www.firelec.com Equipped with 16 DI or DO modules modules arrangement. SE4301T01 : Discrete Input NAMUR (channels 1 - 16) SE4302T01: DO 24V DC High-Side CH 1 to 12: CBL-2002 CBL-SUBD15FSHD/SUBD15F/2002 CH 13 to 16: CBL-2002 RIA plugged CBL-SUBD15FSHD/SUBD15F/2002 in place of module



EMERSON RS3™ > DeltaV™ Electronic Marshalling FIM Series – Using RIAs Rev :2025_02 FMS-RS3FIM-DVC-1-DIDO

2.1.2.MDIO Type: 01984-4121-000X (Panel A): 16 DI /DO (CH1 - CH16) and 01984-4124-000X (Panel B): 16DI (CH17 - CH32)

<u>Panel A with I/O distribution as follow:</u> Channels 1 to 16: DI or DO <u>Panel B with I/O distribution as follow:</u> Channels 17 to 32: DI

New	DeltaV™ architecture -	FMS-RS3FIM-DVC-1-DII	DO2-A1
Process I/O	Adapter	Cables	CHARM I/O
Panel to be kept : Panel A and Panel B	RIA-DIDO-05-1	2 x CBL-1996 and CBL-1997	3 x CHARM I/O Carrier
Panel A : 01984-4121-000X 01984-4383-0002 Equipped with 16 DI or DO modules (channels 1 - 16)	Adapter installed on existing Isolated Discrete Termination Panel A in place of the FIM module	Detail of the cable See cable section on www.firelec.com	For CH1 to CH16, DI and DO CHARM's are installed in the CHAR I/O Carrier according to the Panel A modules arrangement. For CH17 to CH32, DI modules are
Panel B : 01984-4124-000X 01984-4383-0002 Equipped with 16 DI modules (channels 17 - 32)	For CH1 to CH16, each channel is configured by internal jumpers as DI or DO according to the Panel A modules arrangement.		installed. <u>CHARM references:</u> SE4301T01 : Discrete Input NAMUI SE4302T01 : DO 24V DC High-Sid
		<u>CH 1 to 12</u> : CBL-1996 CBL-SUBD15FSHD/14W/1996	
		SHD	All Channels use a common retuexternally connected*
RIA plugged in place of the FIM module		CH 13 to 24 : CBL-1996 CBL-SUBD15FSHD/14W/1996	
			All Channels use a common return externally connected*
		CH 25 to 32 : CBL-1997 CBL-SUBD15FSHD/10W/1997	
Panel B connected to the panel A		SHD	The state of the s
		Θ	All Channels use a common return externally connected*

^{*} The terminal 2 of each channel must be externally connected to the common return of the Firelec cable.



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FIM Series – Using RIAs

New DeltaV™ architecture - FMS-RS3FIM-DVC-1-DIDO2-A2 Process I/O **Adapter Cables CHARM I/O** 3 x CHARM I/O Carrier Panel to be kept: RIA-DIDO-05-1 3 x CBL-2002 Panel A and Panel B **Equipped with TP-FM02-05** Panel A: For CH1 to CH16, DI and DO 01984-4121-000X Adapter installed on existing CHARM's are installed in the CHARM Isolated Discrete Termination 01984-4383-0002 I/O Carrier according to the Panel A Panel A in place of the FIM Equipped with 16 DI or DO modules modules arrangement. module Detail of the cable (channels 1 - 16) For CH17 to CH32, DI modules are See cable section on Panel B: For CH1 to CH16, each channel www.firelec.com installed. 01984-4124-000X is configured by internal jumpers CHARM references: 01984-4383-0002 SE4301T01 : Discrete Input NAMUR SE4302T01 : DO 24V DC High-Side as DI or DO according to the Equipped with 16 DI modules Panel A modules arrangement. (channels 17 - 32) CH 1 to 12 : CBL-2002 CBL-SUBD15FSHD/SUBD15F/2002 **RIA** plugged CH 13 to 24: CBL-2002 in place of the FIM CBL-SUBD15FSHD/SUBD15F/2002 module

CH 25 to 32 : CBL-2002 CBL-SUBD15FSHD/SUBD15F/2002



