

FIRELEC Migration Solution

PROVOX™ > DeltaV™

DM Series - Using DIA

Analog Outputs

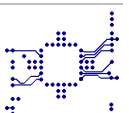
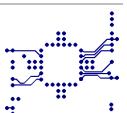
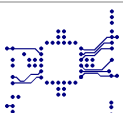


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1. INTRODUCTION



The purpose of this document is to guide the user of a 10 series PROVOX™ system with the safe, efficient and easy way to migrate toward a DeltaV™ system.

FIRELEC has developed an economical migration solution (**FMS-PVXDM-DV-2**) allowing to protect the existing wiring investment as the user convert from an existing PROVOX™ system toward the DeltaV™ system.

The **FMS-PVXDM-DV-2** solution is a set of migration adapters installed in place of the existing I/O cards in the 10 series PROVOX™ files, allowing to migrate easily PROVOX™ I/Os toward a new DeltaV™ system, keeping the I/O wiring in place.

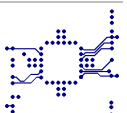
The process I/Os connected with the existing I/O field termination assemblies (FTAs) are kept in place and connected to the migration adapters using the existing front flat cables.

The migration adapters are connected to the DeltaV™ I/O cards using suitable cables provided with each type of migration adapter and DeltaV™ I/O card.

1.1. Key advantages of the FMS-PVXDM-DV-2 solution

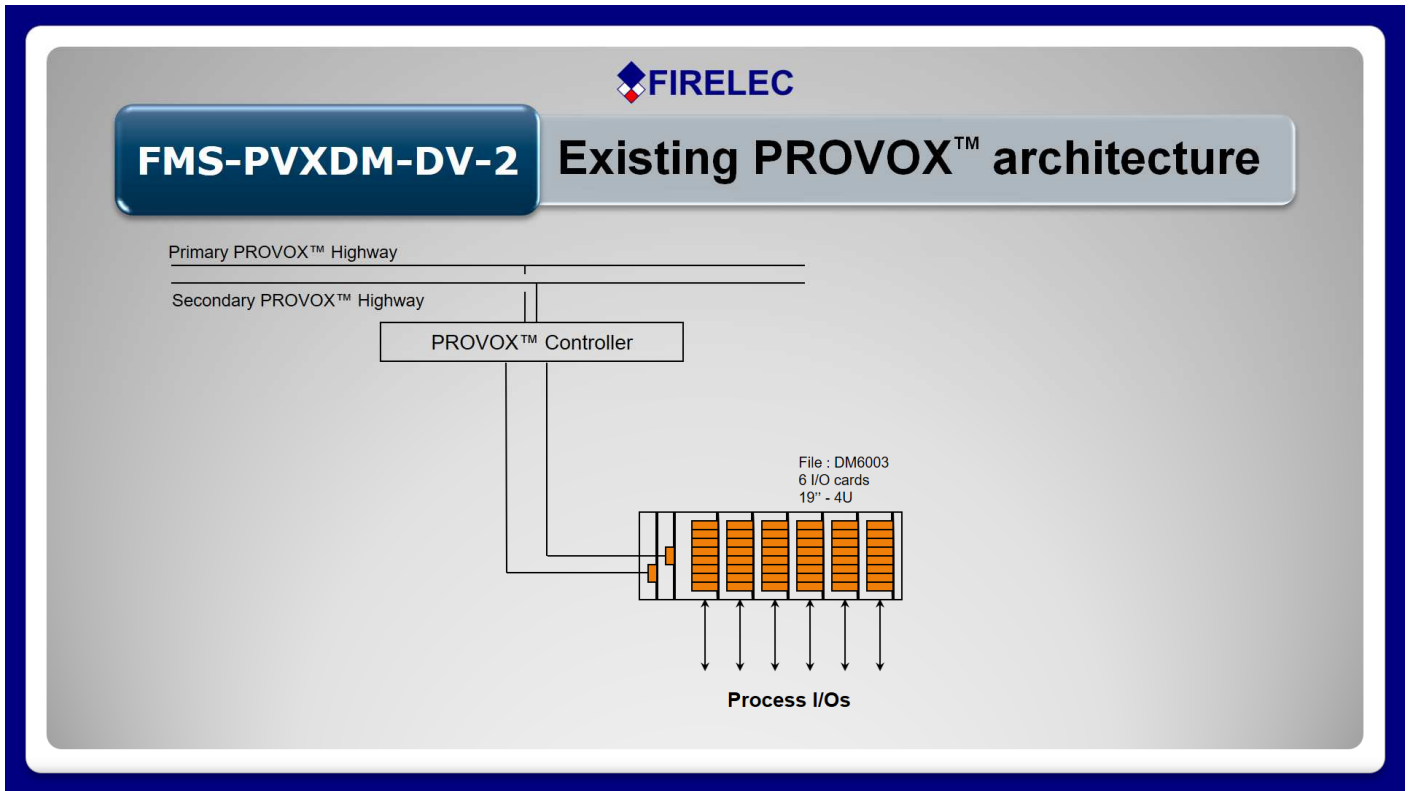
FMS-PVXDM-DV-2 solution protects the wiring investment as the user converts from the 10 series PROVOX™ system toward the DeltaV™ system of Emerson Process Management with following advantages :

- **FMS-PVXDM-DV-2** is a pre-engineered solution, ready to work without any technical rework or limitation regarding the existing capabilities of the PROVOX™ system to be migrated.
- 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-PVXDM-DV-2** solution can be implemented ensures to reduce the process downtime to the minimum.
- All existing documentations (electrical and loop drawings, maintenance procedures, ...) remain unchanged as the I/O labelling is strictly the same on new migration adapters than on previous PROVOX™ I/O field termination assemblies removed.

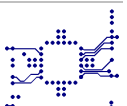
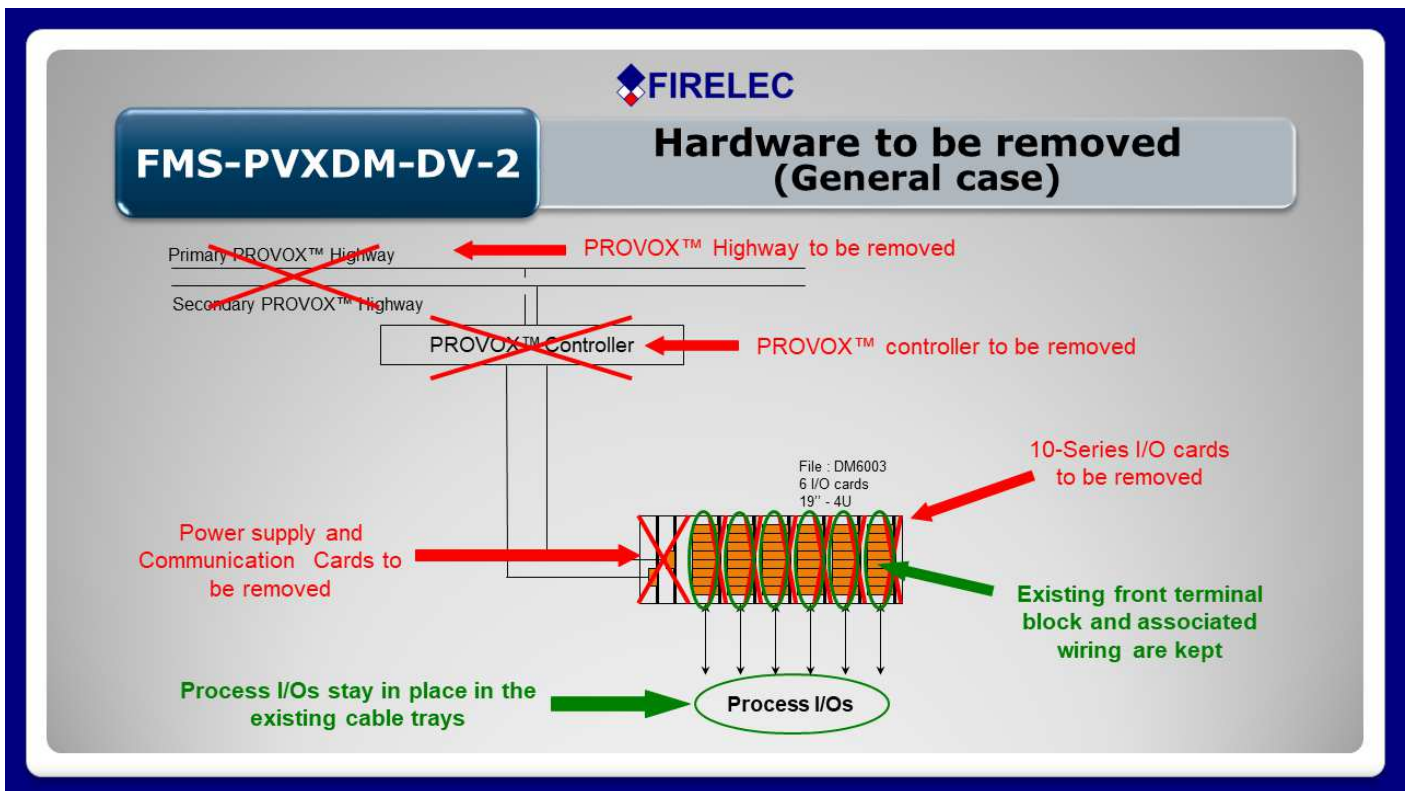


1.2. Description of the FMS-PVXDM-DV-2 solution

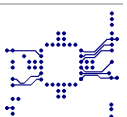
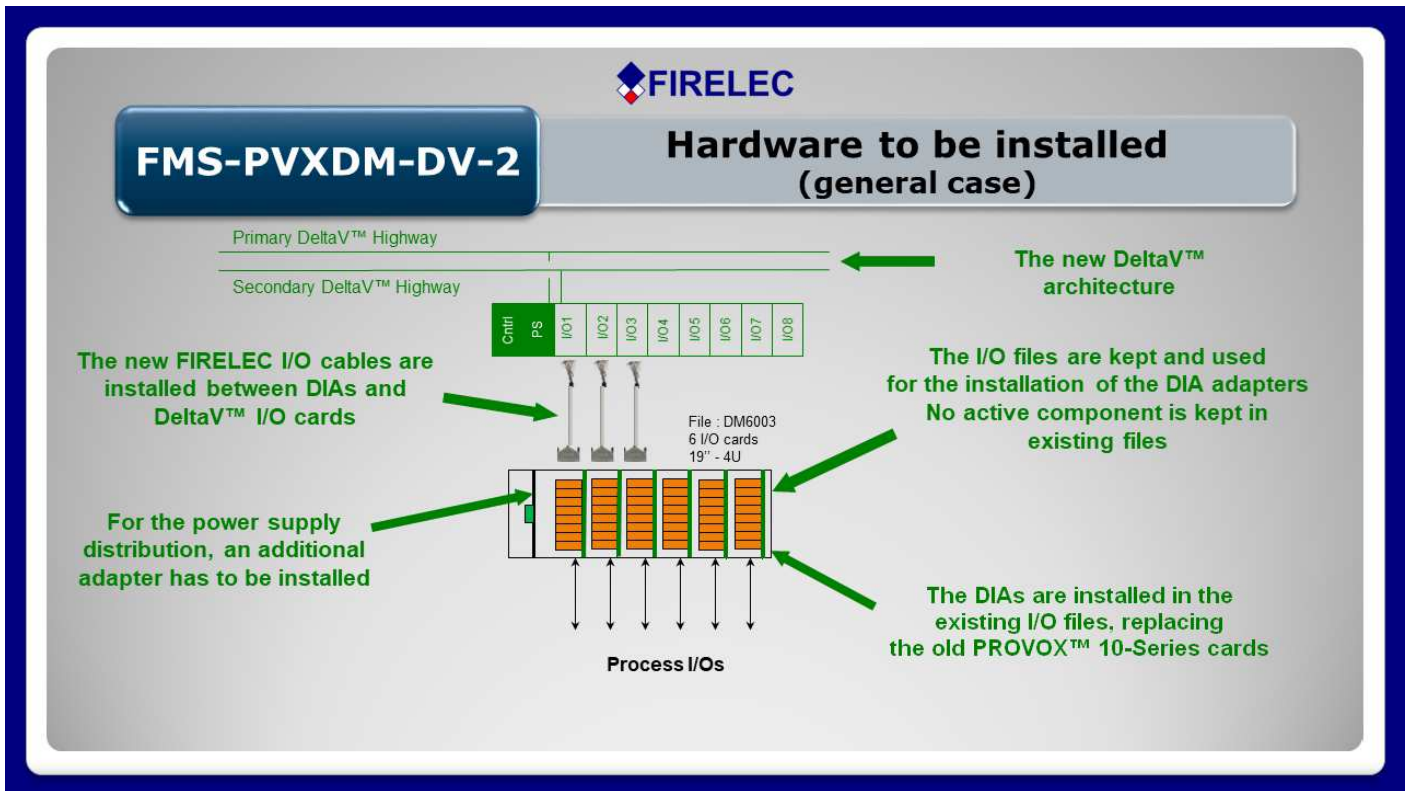
1.2.1. Existing PROVOX™ architecture



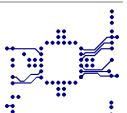
1.2.1. Existing PROVOX™ Hardware to be removed (general case)



1.2.2. New DeltaV™ architecture (general case)



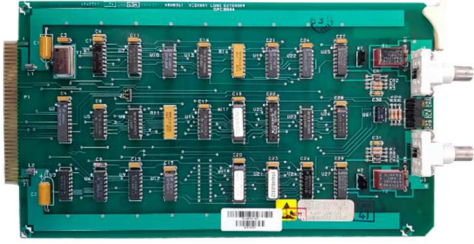


2. POWER SUPPLY



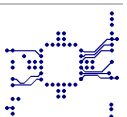
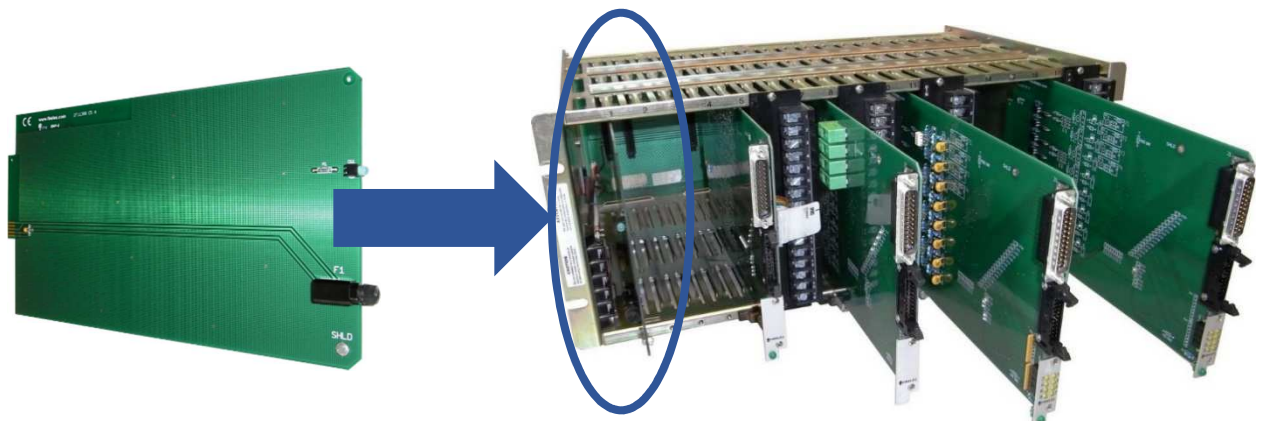
2.1. DM6003X1-GAX (Parallel Buffer) or DH6001X1-GAX (Serial Buffer)

This card, ensured previously the power supply of I/O cards of the file and the parallel or serial communication with the I/O driver located in the PROVOX™ controller. Now, this card and its functionalities is not necessary anymore. It is to be replaced by a “bypass” card providing the 24vdc distribution to the migration adapters (DIAs) located in the file.

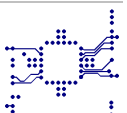
Existing PROVOX™ architecture	
I/O file and communication card	
I/O file	
DM6003	
	
Power distribution and communication Card	
Parallel Buffer DM6003X1-GAX - PN : 31B1834X012 or Serial Buffer DH6001X1-GAX - PN : 38A8362X012	
	



New FIRELEC DIA : DIA-PWS-01-1	
Description	
Power supply distribution adapter (No active component - Only bypass fonctionnality)	






3. ANALOG OUTPUTS



3.1. DM6411

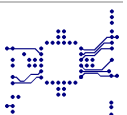
3.1.1. Description and connection

4 channels - Analog output 1-5V

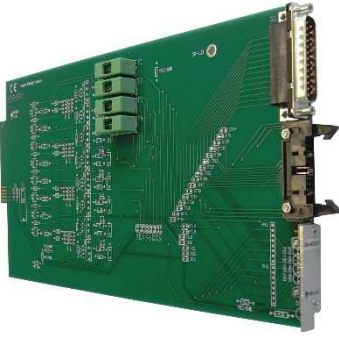
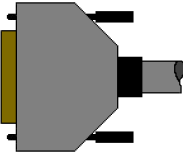
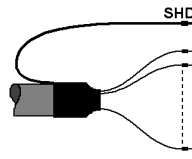

Existing PROVOX™ architecture	
I/O file and communication card	
I/O file	
DM6003	
	
I/O Card	Field Termination Assembly
DM6411-A1 - PN : 46A3554X022	PN : 36A3885X062
Analog output - 1-5V	AO
	



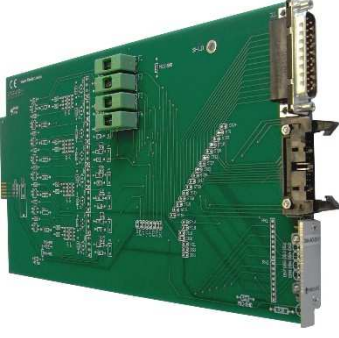
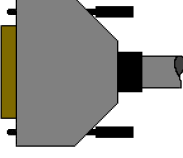
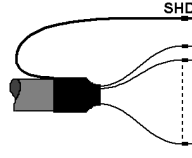

New FIRELEC DIA : DIA-AO-02-1 (4 channels)
Description
4 channels - Analog output adapter - voltage output (1-5V)

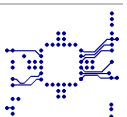


3.1.2. Solution : FMS-PVXDM-DV-2-AO1-A1

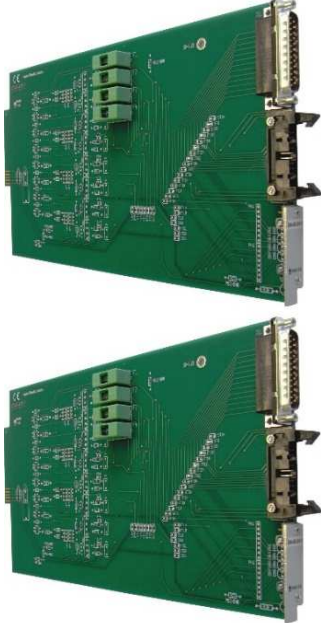
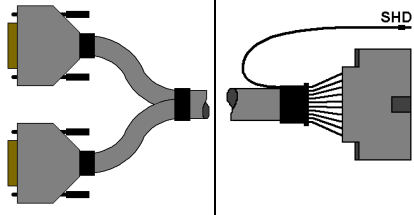

New DeltaV™ architecture - FMS-PVXDM-DV-2-AO1-A1			
Interface unit	Cable		DeltaV™ card
DIA-AO-02-1 installed in the existing I/O file type DM6003 and connected to the existing Field Termination Assembly	CBL-PVXDM-DV-2-AO1-A1 CH 1 to 4 : Cable option A CH 5 to 8 : Cable option B		½ VE4005S2B1 or ½ SE4005S2B1 Analog Output card, 8 channels, 4- 20 mA, Hart, Terminal block
			

3.1.3. Solution : FMS-PVXDM-DV-2-AO1-A2

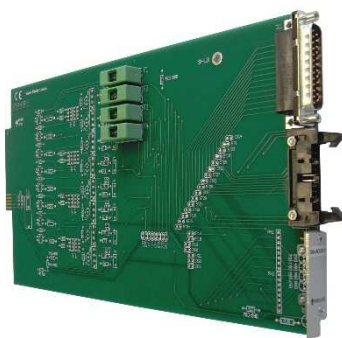
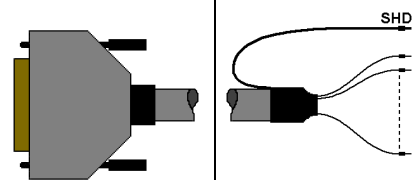

New DeltaV™ architecture - FMS-PVXDM-DV-2-AO1-A2			
Interface unit	Cable		DeltaV™ card
DIA-AO-02-1 installed in the existing I/O file type DM6003 and connected to the existing Field Termination Assembly	CBL-PVXDM-DV-2-AO1-A2 CH 1 to 4 : Cable option A CH 5 to 8 : Cable option B		½ VE4035S2B1 or ½ SE4035S2B1 2 x Analog Output card, 8 channels, 4-20 mA, Hart, Terminal block
			

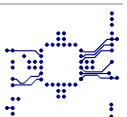


3.1.4. Solution : FMS-PVXDM-DV-2-AO1-A3

New DeltaV™ architecture - FMS-PVXDM-DV-2-AO1-A3		
Interface unit	Cable	DeltaV™ card
<p>DIA-AO-02-1 installed in the existing I/O file type DM6003 and connected to the existing Field Termination Assembly</p>	<p>CBL-1315</p>	<p>VE4005S2B3 or SE4005S2B3 Analog Output Card : 8 Channels 4-20 mA, HART, 16-Pin Mass Terminal Block</p>
		

3.1.5. Solution : FMS-PVXDM-DV-2-AO1-A4

New DeltaV™ architecture - FMS-PVXDM-DV-2-AO1-A4		
Interface unit	Cable	DeltaV™ card
<p>DIA-AO-02-1 installed in the existing I/O file type DM6003 and connected to the existing Field Termination Assembly</p>	<p>CBL- PVXDM-DV-2-AO1-A4 <u>CH 1 to 4</u> : Cable option A <u>CH 5 to 8</u> : Cable option B <u>CH 9 to 12</u> : Cable option C <u>CH 13 to 16</u> : Cable option D</p>	<p>¼ SE4005S2B4 Analog Output Plus Card : 16 Channels, 4-20 mA, HART 48 Pin AO Mass Terminal Block</p>
		

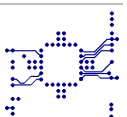


3.1.6. Solution : FMS-PVXDM-DV-2-AO1-A5

New DeltaV™ architecture - FMS-PVXDM-DV-2-AO1-A5		
Interface unit	Cable	DeltaV™ card
<p>2 x DIA-AO-02-1 installed in the existing I/O file type DM6003 and connected to the existing Field Termination Assembly</p>	<p>CBL- PVXDM-DV-2-AO1-A5 <u>CH 1 to 8</u> : Cable option A <u>CH 9 to 16</u> : Cable option B</p>	<p>1/2 x SE4005S2B5 Analog Output Plus Card : 16 Channels, 4-20 mA, HART 48 Pin AO Mass Terminal Block</p>

3.1.7. Solution : FMS-PVXDM-DV-2-AO1-A6




New DeltaV™ architecture - FMS-PVXDM-DV-2-AO1-A6		
Interface unit	Cable	DeltaV™ card
<p>DIA-AO-02-1 installed in the existing I/O file type DM6003 and connected to the existing Field Termination Assembly</p>	<p>CBL- PVXDM-DV-2-AO1-A6 <u>CH 1 to 8</u> : Cable option A <u>CH 9 to 16</u> : Cable option B</p>	<p>1/2 x SE4035S2B5 2 x Analog Output Plus Card 16 Channels, 4-20 mA, HART Red. 48 Pin AO Mass Terminal Block</p>



3.2. DM6421

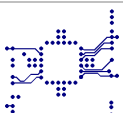
3.2.1. Description and connection

4 channels - Analog output 4-20mA

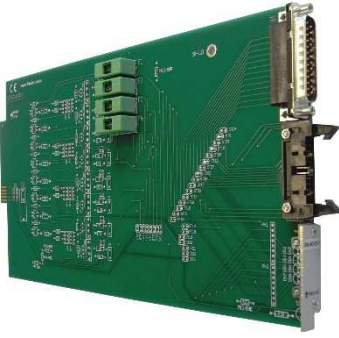
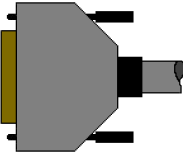
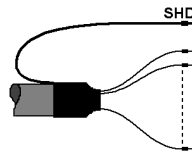

Existing PROVOX™ architecture	
I/O file and communication card	
I/O file	
DM6003	
	
I/O Card	Field Termination Assembly
DM6421-A1 - PN : 46A3554X012	PN : 36A3885X062
Analog output - 4-20mA	AO
	



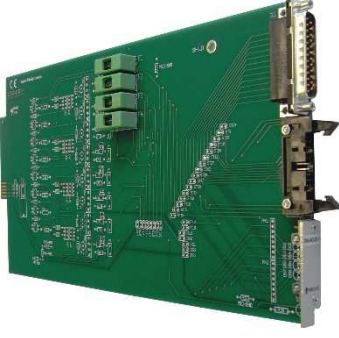
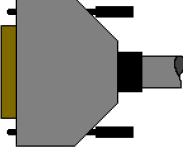
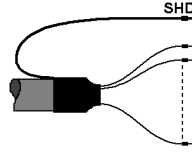

New FIRELEC DIA : DIA-AO-01-1 (4 channels)
Description
4 channels - Analog output adapter current output (4-20mA)

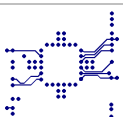


3.2.1. Solution : FMS-PVXDM-DV-2-AO2-A1

New DeltaV™ architecture - FMS-PVXDM-DV-2-AO2-A1			
Interface unit	Cable		DeltaV™ card
DIA-AO-01-1 installed in the existing I/O file type DM6003 and connected to the existing Field Termination Assembly	CBL-PVXDM-DV-2-AO2-A1 CH 1 to 4 : Cable option A CH 5 to 8 : Cable option B		½ VE4005S2B1 or ½ SE4005S2B1 Analog Output card, 8 channels, 4- 20 mA, Hart, Terminal block
			

3.2.2. Solution : FMS-PVXDM-DV-2-AO2-A2

New DeltaV™ architecture - FMS-PVXDM-DV-2-AO2-A2			
Interface unit	Cable		DeltaV™ card
DIA-AO-01-1 installed in the existing I/O file type DM6003 and connected to the existing Field Termination Assembly	CBL-PVXDM-DV-2-AO2-A2 CH 1 to 4 : Cable option A CH 5 to 8 : Cable option B		½ VE4035S2B1 or ½ SE4035S2B1 2 x Analog Output card, 8 channels, 4-20 mA, Hart, Terminal block
			

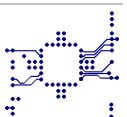


3.2.3. Solution : FMS-PVXDM-DV-2-AO2-A3

New DeltaV™ architecture - FMS-PVXDM-DV-2-AO2-A3		
Interface unit	Cable	DeltaV™ card
<p>DIA-AO-01-1 installed in the existing I/O file type DM6003 and connected to the existing Field Termination Assembly</p>	<p>CBL-1315</p>	<p>VE4005S2B3 or SE4005S2B3 Analog Output Card : 8 Channels 4-20 mA, HART, 16-Pin Mass Terminal Block</p>

3.2.4. Solution : FMS-PVXDM-DV-2-AO2-A4

New DeltaV™ architecture - FMS-PVXDM-DV-2-AO2-A4		
Interface unit	Cable	DeltaV™ card
<p>DIA-AO-01-1 installed in the existing I/O file type DM6003 and connected to the existing Field Termination Assembly</p>	<p>CBL- PVXDM-DV-2-AO2-A4 <u>CH 1 to 4</u> : Cable option A <u>CH 5 to 8</u> : Cable option B <u>CH 9 to 12</u> : Cable option C <u>CH 13 to 16</u> : Cable option D</p>	<p>¼ SE4005S2B4 Analog Output Plus Card : 16 Channels, 4-20 mA, HART 48 Pin AO Mass Terminal Block</p>



3.2.5. Solution : FMS-PVXDM-DV-2-AO2-A5

New DeltaV™ architecture - FMS-PVXDM-DV-2-AO2-A5		
Interface unit	Cable	DeltaV™ card
<p>2 x DIA-AO-01-1 installed in the existing I/O file type DM6003 and connected to the existing Field Termination Assembly</p>	<p>CBL- PVXDM-DV-2-AO2-A5 CH 1 to 8 : Cable option A CH 9 to 16 : Cable option B</p>	<p>1/2 x SE4005S2B5 Analog Output Plus Card : 16 Channels, 4-20 mA, HART 48 Pin AO Mass Terminal Block</p>

3.2.6. Solution : FMS-PVXDM-DV-2-AO2-A6

New DeltaV™ architecture - FMS-PVXDM-DV-2-AO2-A6		
Interface unit	Cable	DeltaV™ card
<p>DIA-AO-01-1 installed in the existing I/O file type DM6003 and connected to the existing Field Termination Assembly</p>	<p>CBL- PVXDM-DV-2-AO2-A6 CH 1 to 8 : Cable option A CH 9 to 16 : Cable option B</p>	<p>1/2 x SE4035S2B5 2 x Analog Output Plus Card 16 Channels, 4-20 mA, HART Red. 48 Pin AO Mass Terminal Block</p>

