

DIRECT FIRED IMPULSE ACTUATOR (DFIA) KIT

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General

The Edwards SIGA-REL and GSA-REL releasing modules have been compatibility tested for use in activating the Direct Fired Impulse Actuator (DFIA) used on Fike's Impulse Valve clean agent containers. The releasing modules provide the required supervision of the releasing circuit wiring (open and ground fault conditions) from the impulse valve containers to the compatible Edwards panel. Refer to Edwards SIGA-REL or GSA-REL Technical Reference Manual for module specifications and installation instructions.

Kit Components

The kits primary component is the DFIA, which provides both an automatic and manual means of activating the Impulse valve it is connected to. Automatic activation of the DFIA is accomplished when 24 VDC power is supplied by the SIGA-REL or GSA-REL releasing module to the DFIA causing it to activate. Upon activation, the DFIA firing piston will extend and open the container valve allow the agent to be released from the container. Manual activation of the DFIA can be accomplished by striking the RED button on the DFIA itself.

The kit also includes a Impulse Valve Operator Supervisor (IVOS) that must be installed to secure the DFIA to the container valve and to continuously monitor the DFIA connection to the impulse valve. When the IVOS is removed from the valve, it will cause a "Supervisory event" at the host control panel indicating that the DFIA has been disconnected from the valve, essentially disabling the suppression system.

DIRECT FIRED IMPULSE ACTUATOR (DFIA) KIT (P/N 70-311)	
Part Number	Description
02-13279	Direct Fired Impulse Actuator (DFIA)
02-14263	Impulse Valve Operator Supervisor (IVOS)

Specifications

DFIA (P/N 02-13279)	
Supply Voltage	24 VDC nominal (15.6-29.5 VDC range)
Current Consumption	Alarm = 420 mA maximum Standby = Consult Edward's SIGA-REL Technical Reference Manual
Cable Whip	2 x 20 AWG, 36" (91 cm) long, Blk/Blk
Electrical Connection	½" NPT threaded hub for conduit connection
DFIA Material	Stainless Steel (Body) Brass (End Cap)
Temperature Range	32° F to 130° F (0° C to 54.4° C)
Listings & Approvals	UL / ULC Listed & FM Approved
IVOS (P/N 02-14263)	
Electrical Connection	0.25" ID SST Flexible Conduit 33.50" (85 cm) long with 1/2" knockout connector
Wire Leads	6 x 22 AWG, 60" (152 cm) long 2x Red = Common 2x Black = Normally Closed 2x White = Normally Open

Before Installing

Remove the DFIA from its packaging and thoroughly inspect it for signs of damage. Do not attempt to install the DFIA if any sign of damage is found. Return the DFIA to Fike for repair or replacement.

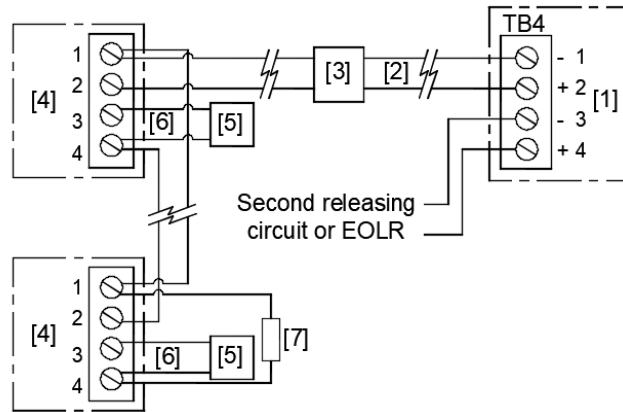
Wiring

These following instructions cover the general wiring of the DFIA kit components to the appropriate Edwards components.

1. Connect the DFIA wire leads to the RELA-EOL relay as shown in the diagram below. The DFIA is not polarity sensitive. Refer to the installation instructions supplied with the RELA-EOL relay and SIGA-REL/GSA-REL releasing modules for detailed wiring instructions.

Notes:

- [1] SIGA-REL/GSA-REL releasing module.
- [2] Class B, 24Vdc release circuit. Up to 4 devices per circuit.
- [3] Listed service disconnect station.
- [4] RELA-EOL.
- [5] Fike DFIA actuator.
- [6] DFIA wire leads, 3 ft. (0.9m) long.
- [7] SIGA-REL/GSA-REL TB4 EOL.



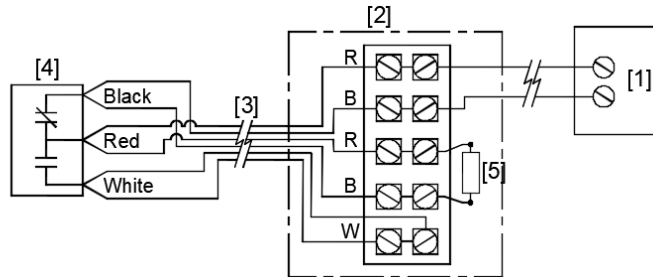
DFIA Wiring

Note: All wiring must conform to applicable local codes, ordinances, and regulations.

2. Connect the IVOS wire leads to the Edwards SIGA-CT1 or GSA-MM1 monitor module as shown in the diagram below. Refer to the installation instructions supplied with the SIGA-CT1 or GSA-MM1 monitor module for detailed wiring instructions.

Notes:

- [1] SIGA-CT1/GSA-MM1 monitor module. Supervisory input to host panel.
- [2] Terminal block with notched clamping plate installed in junction box.
- [3] IVOS switch wire leads in flex conduit, 44 in. (112 cm) long.
- [4] IVOS switch. Contacts shown transferred under pressure.
- [5] SIGA-CT1/GSA-MM1 EOL.



IVOS Wiring

Note: With the IVOS disconnected from the container, the IVOS switch will be active and should cause a "Supervisory" signal at the host control panel until it is reattached to the container.

3. Visually verify that the DFIA firing pin is in the armed (retracted) state. Reset the DFIA if necessary following the instructions provided in this document.
4. With the DFIA removed from the container, perform a full functional test of the system operation verifying that the DFIA activates only when required. Test shall include manual activation of the DFIA by pressing the RED manual release button on the DFIA. Reset the DFIA after each activation.

DFIA Kit Component Installation

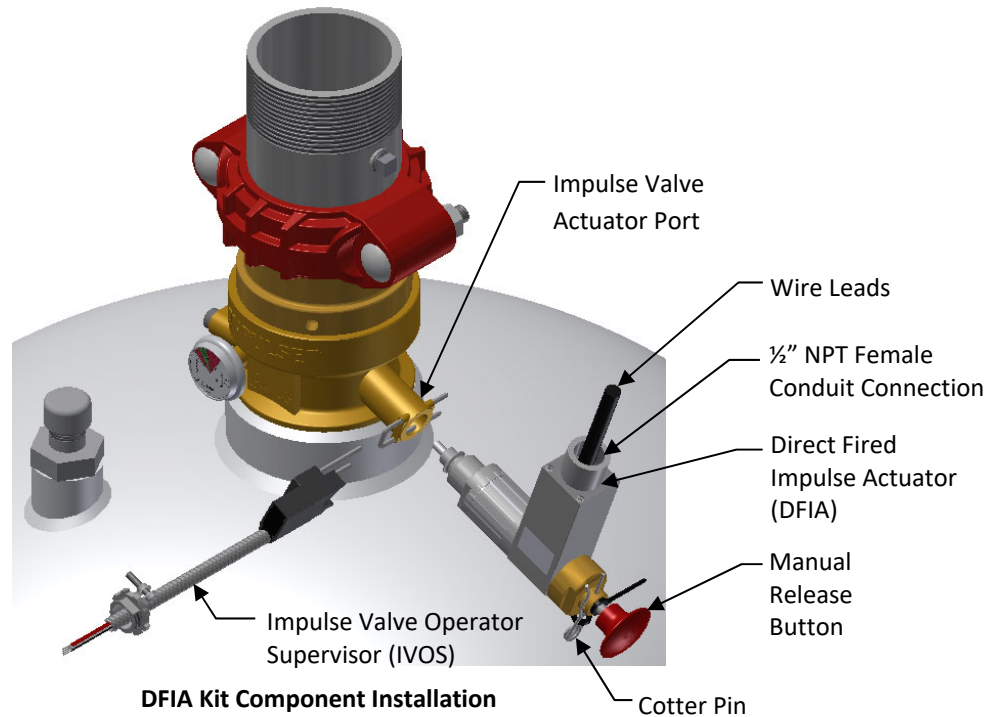
CAUTION: Do not connect the DFIA to the suppression container until the system has been fully tested and is ready to be armed.

Refer to the figure below for kit component installation.

1. Install the cotter (safety) pin to the DFIA and secure in place with the security tie. Cotter pin must be installed to prevent accidental activation of the manual release button.
2. Remove the retaining clip and SST plug from the ProInert valve actuator port.
3. Insert the DFIA into the valve actuator port.

CAUTION: DO NOT attempt to install the DFIA into the actuator port if the firing pin is extended. This may cause accidental activation of the ProInert valve.

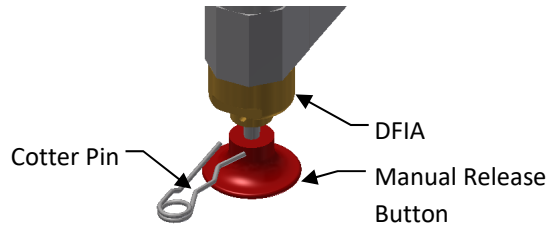
4. Secure the DFIA to the valve actuator port by inserting the IVOS retaining pins into the retaining clip holes in ProInert valve actuator port.
5. Verify that the DFIA and IVOS are securely attached to the container.
6. Verify that the "Supervisory" signal that was caused by the IVOS disconnection clears at the host control panel.
7. The container is **"NOW ARMED"**.



DFIA Reset Instructions

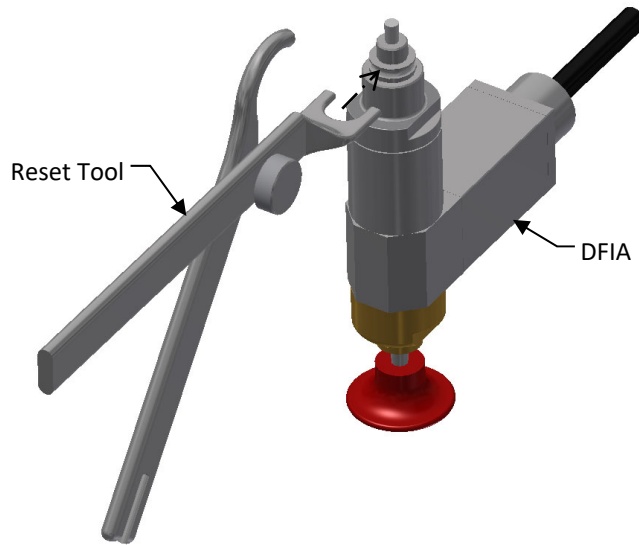
After a system activation, the DFIA must be manually reset using the Reset Tool (P/N 02-14782). Use the following instructions to reset each activated DFIA.

1. Remove the IVOS from the valve acuator port. Verify that a supervisory signal is received at the host control panel indicating that the DFIA is disconnected.
2. Remove the DFIA from the valve acuator port.
3. Remove the security tie and cotter pin from the DFIA, unless already removed for system activation.



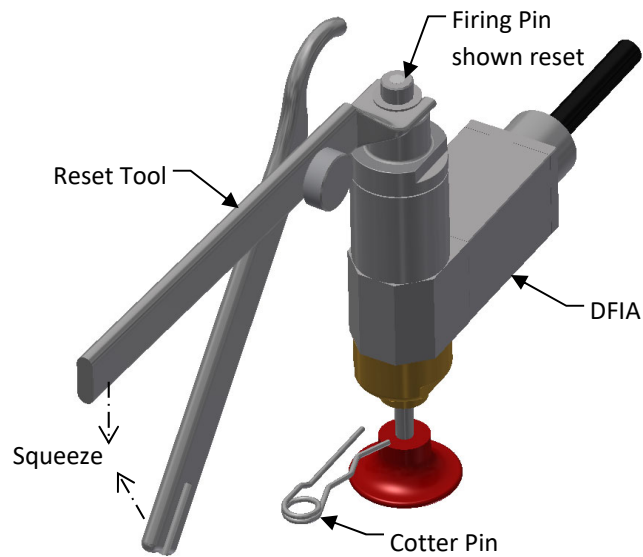
Manual Release Button Reset

4. Pull the Manual Release button until it resets. An internal click should be heard.
5. With the Reset Tool in hand, align the forked end of the tool around the grooved end of the DFIA operator tip as shown below.



Reset Tool Alignment

6. Squeeze reset tool handles together until the firing pin resets (clicks into place) as shown below. The face of the firing pin should be flush or slightly recessed with the DFIA operator tip once reset.



DFIA Reset

7. Reinstall the cotter pin and security tie (not shown) onto the DFIA.
8. The DFIA is now reset and can now be reattached to the Impulse valve container following the aforementioned installation instructions.