

Model DP-1 Dry Pilot Actuator For Deluge and Preaction Systems Dry Pilot Release Service

IMPORTANT

Refer to Technical Data Sheet TFP2300 for warnings pertaining to regulatory and health information.

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docs.jci.com/tycofire/tfp1380

General Description

The TYCO Model DP-1 Dry Pilot Actuator is an auxiliary releasing device designed for use with TYCO Deluge and Preaction Valves having dry pilot release systems. Also, the Model DP-1 is used for TYCO Preaction Valves having double-interlock electric/pneumatic release. The Model DP-1 actuates these automatic water control valves upon release of air (nitrogen) pressure. In the case of dry pilot actuation, air pressure is released due to opening of a pilot sprinkler, or in the case of double-interlock preaction systems air pressure is released from the system piping due to the opening of an automatic sprinkler. When the Model DP-1 actuates, it permits water pressure to be released from the deluge or preaction valve differential chamber, thereby allowing the deluge or preaction valve to open.

The Model DP-1 Dry Pilot Actuator is a redesignation for the Central Model DP, Gem Model B-1, and Star Model S440.

NOTICE

The Model DP-1 Dry Pilot Actuator described herein must be installed and maintained in compliance with this document, as well as with the applicable standards of the National Fire Protection Association (NFPA), in addition to the standards of any other authorities having jurisdiction. Failure to do so may impair the integrity of this device.

The owner is responsible for maintaining their fire protection system and devices in proper operating condition. Contact the installing contractor or product manufacturer with any questions.

Technical Data

Approvals

UL and C-UL Listed
FM Approved
LPCB Approved

Maximum Inlet Water Pressure

250 psi (17,2 bar)

Maximum Air (Nitrogen) Pressure

50 psi (3,4 bar) (Ref. Graph A)

Physical Characteristics

Body Bronze
Cover Bronze
Elastomer Water Seal Buna-N
Diaphragm Nitrile-coated Nylon

Operation

Parts and features described in this section are depicted in Figure 1.

When the TYCO Model DP-1 Dry Pilot Actuator is in service, the pilot line or sprinkler line pressure, as applicable, at the Inlet (No. 11) holds the Diaphragm (No. 7) depressed and the Disc (No. 8) seated against the water pressure from the Deluge/Preaction Valve Differential Chamber (No. 12).

Operation of a pilot sprinkler or automatic sprinkler, as applicable, relieves the air pressure from the diaphragm. The Spring (No. 6) and water pressure from the differential chamber of the deluge or preaction valve then combine to force the Diaphragm (No. 7) and Disc (No. 8) open, which permits



water to begin flowing through the 1/8 inch diameter holes located in the wall of the Guide (No. 5). As the air pressure continues to decrease, the flow out of the Outlet (No. 13) increases to a rate which is greater than can be replenished through the restricted water supply to the differential chamber of the deluge or preaction valve, which in turn permits the deluge or preaction valve to open and allow a flow of water into the system piping.

The relationship of the air pressure which should be maintained for system water pressures to 250 psi (17,2 bar) and the opening pressure drop required for opening of the Model DP-1 Dry Pilot Actuator are plotted in Graph A.

Installation

The Model DP-1 Dry Pilot Actuator, which as applicable is provided as a trim component for TYCO Deluge or Preaction Valves, must be installed in accordance with the specific instructions provided with the TYCO Deluge or Preaction Valve Technical Data Sheets.

Note: The dew point of the pilot line or sprinkler system air pressure must be maintained below the lowest ambient temperature to which the piping system will be exposed. Accumulation of water in the air connection to the Model DP-1 will lower the air pressure at which the Model DP-1 will open.

Care and Maintenance

The TYCO Model DP-1 Dry Pilot Actuator must be maintained and serviced in accordance with this section. Before closing a fire protection system

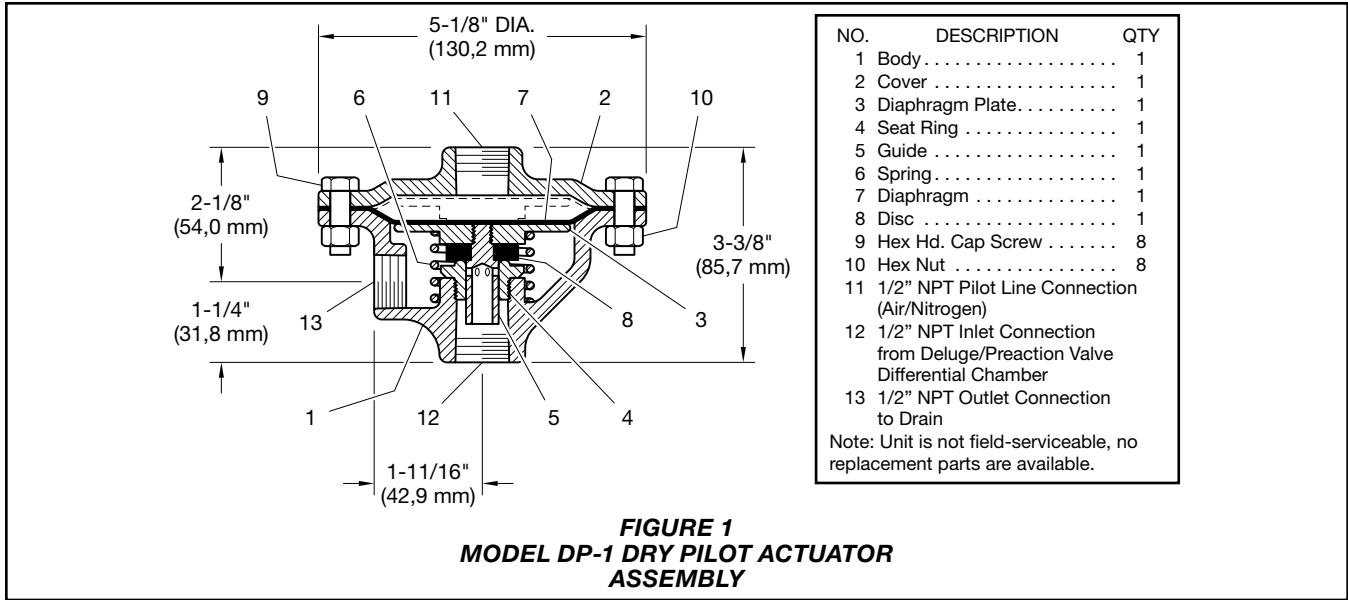


FIGURE 1
MODEL DP-1 DRY PILOT ACTUATOR ASSEMBLY

control valve for inspection or maintenance work on the fire protection system which it controls, permission to shut down the affected fire protection system must first be obtained from the proper authorities and all personnel who may be affected by this action must be notified.

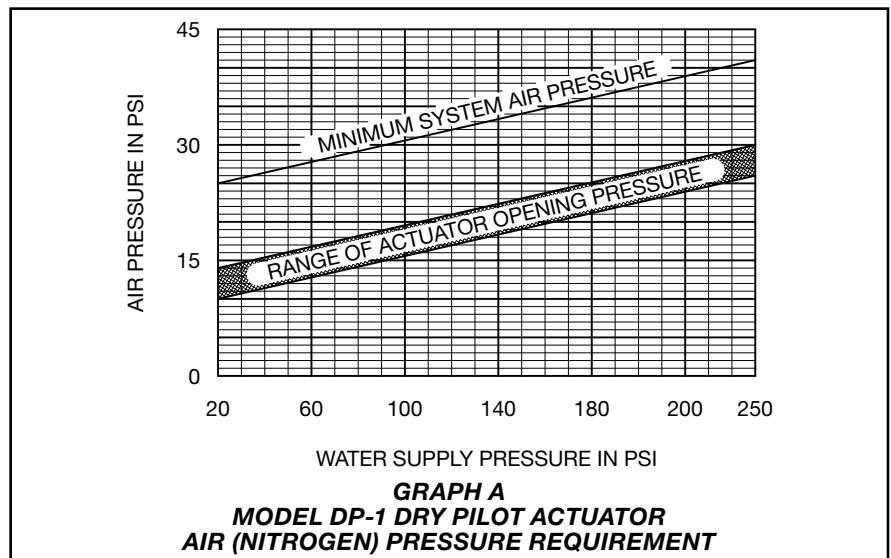
After placing a fire protection system in service, notify the proper authorities and advise those responsible for monitoring proprietary and/or central station alarms.

The owner is responsible for the inspection, testing, and maintenance of their fire protection system and devices in compliance with this document, as well as with the applicable standards of the National Fire Protection Association (e.g., NFPA 25), in addition to the standards of any authority having jurisdiction. Contact the installing contractor or product manufacturer with any questions.

It is recommended that automatic sprinkler systems be inspected, tested, and maintained by a qualified Inspection Service.

Note: No attempt is to be made to repair an impaired Model DP-1 Dry Pilot Actuator. The complete assembly must be replaced if there is indication of malfunction.

The following inspection procedure must be performed as indicated, in addition to any specific requirements of the NFPA, and any impairment must be immediately corrected:



GRAPH A
MODEL DP-1 DRY PILOT ACTUATOR AIR (NITROGEN) PRESSURE REQUIREMENT

Inspection Procedure

The Model DP-1 Dry Pilot Actuator must be inspected quarterly in accordance with the following instructions, and any impairment must be corrected by replacing the DP-1.

Step 1. When in the set position there should not be any air or water leakage from the outlet connection to drain.

Step 2. During the quarterly test of actuation devices, verify that the Model DP-1 opens within the specified range of pressures and that flow out of the Model DP-1 increases to a rate which will trip the deluge or preaction valve.

Step 3. It is recommended that accumulated moisture be removed from air supply moisture filtration equipment, at least quarterly. More frequent inspections may be necessary in particularly humid environments.

Limited Warranty

For warranty terms and conditions, visit www.tyco-fire.com.

Ordering Procedure

Contact your local distributor for availability. When placing an order, indicate the full product name and part number (P/N).

Model DP-1

Specify: Model DP-1 Dry Pilot Actuator, P/N 52-280-1-001



Worldwide
Contacts | www.tyco-fire.com

TFP1380 Change History Appendix

ISSUE DATE	NOTES
08-22	Page 1, added QR code and URL to allow convenient access to electronic version from printed document; Page 2, changed corporate address and telephone number to 1467 Elmwood Avenue, Cranston, RI 02910 Telephone +1-401-781-8220, formerly 1400 Pennbrook Parkway, Lansdale, PA 19446 Telephone +1-215-362-0700.
08-18	Updated Tyco® branding and document format; Added Johnson Controls copyright; Added disclaimer stating specifications and information subject to change without notice; Added reference to Regulatory and Health Warning Technical Data Sheet TFP2300.
07-18	Changed ULC Listed to C-UL Listed.
12-16	Updated limited warranty information.
05-08	Correct metric equivalent for 50 psi in Technical Data section to 3,4 bar, formerly shown as 12,1 bar.
03-06	Removed availability of repair parts, DP-1 not field serviceable; Updated Care and Maintenance section with inspection procedure to determine when DP-1 must be replaced.
03-03	Corrected maximum inlet water pressure rating to 250 psi (17,2 bar).
01-03	Added new Tyco Fire & Building Products masthead.
06-02	New Technical Data Sheet TFP1380 describes Model DP-1 Dry Pilot Actuator.