Series TY-FRB — 5.6 and 8.0 K-factor Conventional (Old Style) Sprinklers Quick Response — Eastern Hemisphere Only

IMPORTANT

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

Always refer to Technical Data Sheet TFP700 for the "INSTALLER WARNING" that provides cautions with respect to handling and installation of sprinkler systems and components. Improper handling and installation can permanently damage a sprinkler system or its components and cause the sprinkler to fail to operate in a fire situation or cause it to operate prematurely.

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General Description

The TYCO Series TY-FRB, 5.6 and 8.0 K-factor, Conventional Sprinklers described in this technical data sheet are Quick Response, Standard Coverage, decorative 3 mm glass bulb type spray sprinklers. These sprinklers are intended to be installed either pendent or upright and, in either position, produce a spherical water discharge pattern with approximately 50% of the discharge directed upwards and approximately 50% of the discharge directed downwards.

Conventional sprinklers are generally used with Ordinary and Extra High Hazard Class Systems, as defined by the automatic sprinkler system installation rules of the country and authority having jurisdiction. The NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) permits the use of "Old Style Sprinklers" where special construction features require a unique water distribution, for the protection of fur vaults, or to replace similar sprinklers that had been installed prior to 1955.

Corrosion-resistant coatings, where applicable, are utilized to extend the life of copper alloy sprinklers beyond that which would otherwise be obtained when exposed to corrosive atmospheres. Although corrosion-resistant coated sprinklers have passed the standard corrosion tests of the applicable Approval agencies, the testing is not representative of all possible corrosive atmospheres. Consequently, it is recommended that the end user be consulted with respect to the suitability of these coatings for any given corrosive environment. The effects of ambient temperature, concentration of chemicals, and gas/chemical velocity should be considered, as a minimum, along with the corrosive nature of the chemical to which the sprinklers will be exposed.



NOTICE

The TYCO Series TY-FRB Sprinklers described herein must be installed and maintained in compliance with this document, as well as with the applicable standards of the NFPA, in addition to the standards of any other authorities having jurisdiction. Failure to do so may impair the performance of these devices.

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.

Sprinkler Identification Numbers (SINs)

TY3631 . . . . . 5.6K, 1/2 in. NPT
TY4631 . . . . . 8.0K, 3/4 in. NPT

***** Temperature rating is indicated on Deflector or adjacent to orifice seat on Frame.

****** Pipe thread connections per ISO 7-1 can be provided on special request.

Components:
1 - Frame
2 - Button
3 - Sealing Assembly
4 - Bulb
5 - Compression Screw
6 - Deflector *****

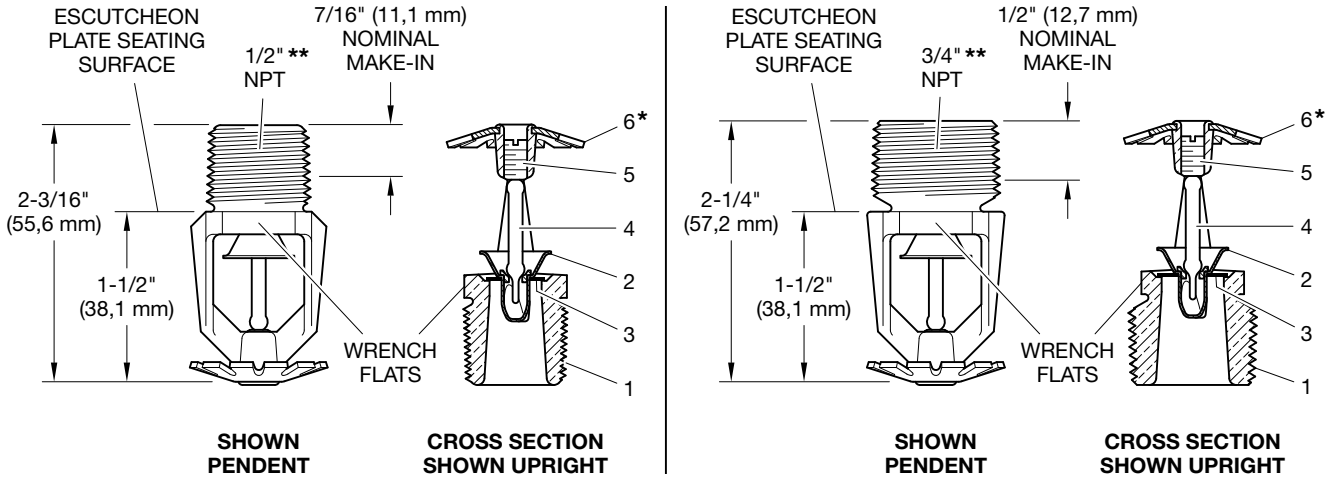


FIGURE 1
SERIES TY-FRB 5.6 K-FACTOR (TY3631) AND 8.0 K-FACTOR (TY4631) QUICK RESPONSE CONVENTIONAL SPRINKLERS

Technical Data

Approvals
UL and C-UL Listed
LPCB Approved
VdS Approved

Note: *For complete approval information, See Table A.*

Sprinklers with Polyester Finish are UL and C-UL Listed as Corrosion-Resistant Sprinklers.

Maximum Working Pressure
175 psi (12,1 bar)

Discharge Coefficient
K=5.6 gpm/psi½ (80,6 Lpm/bar½)
K=8.0 gpm/psi½ (115,2 Lpm/bar½)

Temperature Ratings
See Table A

Finishes
Sprinkler: See Table A

Physical Characteristics

Frame	Bronze
Button	Brass/Copper
Sealing Assembly	Beryllium Nickel w/TEFLON
Bulb	Glass
Compression Screw	Bronze
Deflector	Copper

Operation

The glass bulb contains a fluid which expands when exposed to heat. When the rated temperature is reached, the fluid expands sufficiently to shatter the glass bulb, allowing the sprinkler to activate and water to flow.

Design Criteria

The TYCO Series TY-FRB Conventional Sprinklers are intended for fire protection systems designed in accordance with the standard installation rules recognized by the applicable Listing or Approval agency such as UL Listing is based on NFPA 13 requirements. The Series TY-FRB Conventional Sprinklers are only for non-recessed applications.

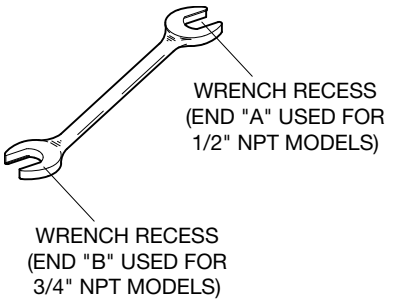


FIGURE 2
W-TYPE 6
SPRINKLER WRENCH

Type	Temperature Rating	Bulb Liquid Color	Sprinkler Finish		
			Natural Brass	Chrome Plated	Polyester[5,6]
5.6K CONVENTIONAL (TY3631)	135°F (57°C)	Orange	1, 2		
	155°F (68°C)	Red			
	175°F (79°C)	Yellow			
	200°F (93°C)	Green			
	286°F (141°C)	Blue			
8.0K CONVENTIONAL (TY4631)	135°F (57°C)	Orange	1, 2, 3, 4		
	155°F (68°C)	Red			
	175°F (79°C)	Yellow			
	200°F (93°C)	Green			
	286°F (141°C)	Blue			

Notes:
1. UL Listed
2. C-UL Listed
3. LPCB Approved (LPCB Ref. No. 094a/06 & 007k/04)
4. VdS Approved (For details, contact Johnson Controls, Enschede, Netherlands, Tel. +31-53-428-4444 / Fax +31-53-428-3377.)
5. Where polyester-coated sprinklers are noted to be UL and C-UL Listed, the sprinklers are UL and C-UL Listed as Corrosion-Resistant Sprinklers
6. Frame and deflector only

TABLE A
LABORATORY LISTINGS AND APPROVALS

Installation

The Series TY-FRB Sprinklers must be installed in accordance with this section.

General Instructions
Do not install any bulb type sprinkler if the bulb is cracked or there is a loss of liquid from the bulb. With the sprinkler held horizontally, a small air bubble should be present. The diameter of the air bubble is approximately 1/16 in. (1,6 mm) for the 135°F (57°C) to 3/32 in. (2,4 mm) for the 286°F (141°C) temperature ratings.

A leak-tight 1/2 in. NPT sprinkler joint should be obtained with a torque of 7 to 14 lb-ft (9,5 to 19,0 N·m). A leak-tight 3/4 in. NPT sprinkler joint should be obtained with a torque of 10 to 20 lb-ft (13,4 to 26,8 N·m). Higher levels of torque may distort the sprinkler inlet and cause leakage or impairment of the sprinkler.

Step 1. With pipe thread sealant applied to the pipe threads, hand-tighten the sprinkler into the sprinkler fitting.

Step 2. Tighten the sprinkler into the sprinkler fitting using only the W-Type 6 Sprinkler Wrench (See. Figure 2). Apply the sprinkler wrench the wrench flats shown in Figure 1.

Care and Maintenance

The TYCO Series TY-FRB Sprinklers must be maintained and serviced in accordance with this section.

Before closing a fire protection system main control valve for maintenance work on the fire protection system that it controls, permission to shut down the affected fire protection system must be obtained from the proper authorities and all personnel who may be affected by this action must be notified.

Sprinklers that are found to be leaking or exhibiting visible signs of corrosion must be replaced.

Automatic sprinklers must never be painted, plated, coated or otherwise altered after leaving the factory. Modified sprinklers must be replaced. Sprinklers that have been exposed to corrosive products of combustion, but have not operated, should be replaced if they cannot be completely cleaned by wiping the sprinkler with a cloth or by brushing it with a soft bristle brush.

Care must be exercised to avoid damage to the sprinklers before, during, and after installation. Sprinklers damaged by dropping, striking, wrench twist/slippage, or the like must be replaced. Also, replace any sprinkler that has a cracked bulb or that has lost liquid from its bulb. Refer to the Installation section for additional information.

Frequent visual inspections are recommended to be initially performed for corrosion resistant coated sprinklers, after the installation has been completed, to verify the integrity of the corrosion resistant coating. Thereafter, annual inspections per NFPA 25 should suffice; however, instead of inspecting from the floor level, a random sampling of close-up visual inspections should be made, so as to better determine the exact sprinkler condition and the long term integrity of the corrosion-resistant coating, as it may be affected by the corrosive conditions present.

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, for example - NFPA 25, in addition to the standards of any other authorities 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 in accordance with local requirements and/or national codes.

P/N 57 XXX X XXX

		SIN
373	5.6K CONVENTIONAL (1/2 in. NPT)	TY3631
393	8.0K CONVENTIONAL (3/4 in. NPT)	TY4631

	SPRINKLER FINISH
1	NATURAL BRASS
3	PURE WHITE (RAL9010) POLYESTER
4	SIGNAL WHITE (RAL9003) POLYESTER
5	JET BLACK (RAL9005)[1] POLYESTER
9	CHROME PLATED

	TEMPERATURE RATING
135	135°F (57°C)
155	155°F (68°C)
175	175°F (79°C)
200	200°F (93°C)
286	286°F (141°C)

Notes:
1. Available only for temperature ratings of 155°F (68°C) or 200°F (93°C)

TABLE B
SERIES TY-FRB CONVENTIONAL SPRINKLERS
PART NUMBER SELECTION

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).

Sprinkler Assemblies with NPT Thread Connections
Specify: (specify) SIN, Series TY-FRB Conventional Sprinkler Quick Response, (specify) SIN, K=(specify), (specify) temperature rating, with (specify) finish, P/N (specify from Table B)

Sprinkler Wrench:
Specify: W-Type 6 Sprinkler Wrench, P/N 560006387

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