

## Series TY-FRL – 5.6 K-factor Horizontal Sidewall Sprinkler Quick Response, Standard Coverage

### 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.

Scan the QR code or enter the URL in a web browser to access the most up-to-date electronic version of this document. Data rates may apply.



[docs.jci.com/tycofire/tfp140](http://docs.jci.com/tycofire/tfp140)

### General Description

TYCO Series TY-FRL 5.6K Horizontal Sidewall Sprinklers (HSW), Quick Response, Standard Coverage are solder-type spray sprinklers designed for use in light and ordinary hazard commercial occupancies such as banks, hotels, shopping malls, offices, etc. They are designed for installation along a wall or the side of a beam and just beneath a smooth ceiling. Horizontal sidewall sprinklers are commonly used instead of pendent or upright sprinklers due to aesthetics or building construction considerations, where piping across the ceiling is not desirable.

### NOTICE

The Series TY-FRL Sprinklers 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 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)

TY3321 – HSW 5.6K, 1/2 in. NPT

*Note:* TY3321 is a re-designation for Star SIN S1878 and Gem SIN G8946.

### Technical Data

#### Approvals

UL and C-UL Listed  
FM and NYC Approved

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

#### Maximum Working Pressure

175 psi (12,1 bar)

#### Discharge Coefficient

$K=5.6 \text{ gpm/psi}^{1/2}$  (80,6 lpm/bar<sup>1/2</sup>)

#### Temperature Ratings

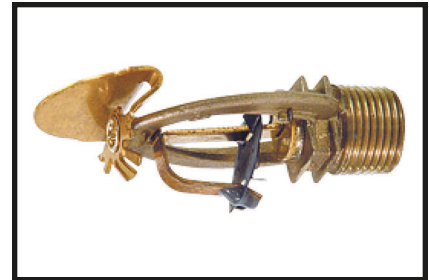
See Table A

#### Finishes

See Table A

#### Physical Characteristics

Frame .....	Bronze
Strut .....	MONEL
Deflector .....	Bronze
Hook .....	MONEL
Link Assembly .....	Nickel
Ejection Spring .....	INCONEL
Button .....	Bronze
Seal .....	TEFLON



### Operation

The fusible link (heat collector) assembly is comprised of two halves that are joined together by a thin layer of solder. When the rated temperature is reached, the solder melts and the two link halves separate, allowing the sprinkler to operate.

### Design Criteria

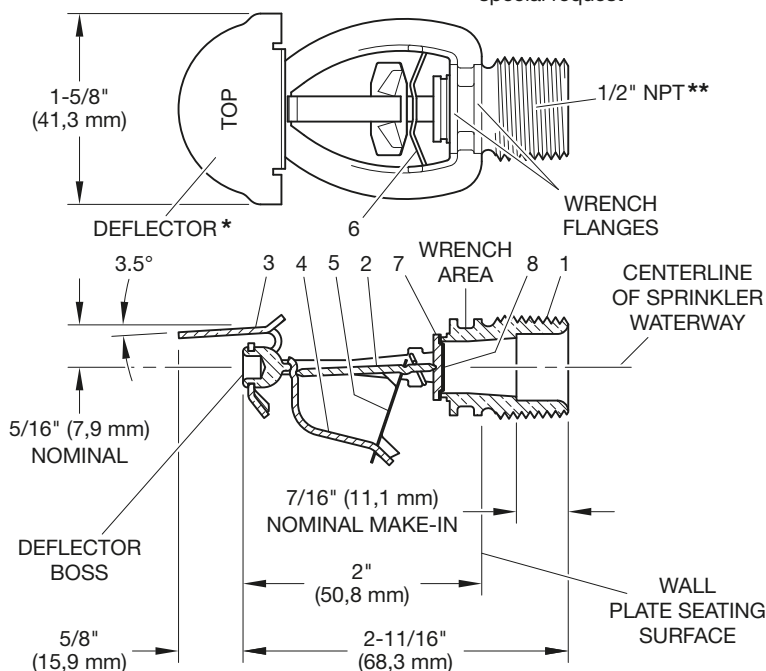
TYCO Series TY-FRL 5.6K HSW Sprinklers, Quick Response, Standard Coverage are intended for fire protection systems designed in accordance with the standard installation rules recognized by the applicable listing or approval agency - for example, the UL Listing is based on NFPA 13 requirements; however, the minimum distance between sprinklers to prevent cold soldering is 8 ft (2,4 m). The Series TY-FRL HSW Sprinklers must be installed with a deflector-to-ceiling distance of 4 in. to 6 in. (100 mm to 150 mm). To meet this requirement the centerline of the sprinkler waterway must be located 4-5/16 in. to 6-5/16 in. (110 mm to 160 mm) below the ceiling. Installation of the Series TY-FRL HSW Sprinklers in recessed escutcheons will void all manufacturer's warranties, as well as possibly void the sprinkler's approvals and/or listings.

K FACTOR	SPRINKLER TYPE	TEMPERATURE RATING	FRAME COLOR CODE	SPRINKLER FINISH	
				NATURAL BRASS	CHROME PLATED
5.6 1/2 in. NPT	HORIZONTAL SIDEWALL (TY3321)	165°F (74°C)	Unpainted	1, 2, 3, 4	
		212°F (100°C)	White		

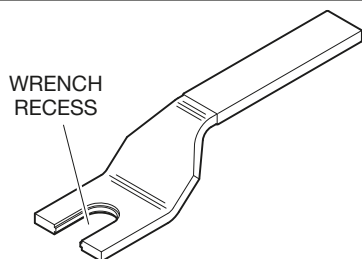
**Notes:**  
 1. UL Listed for light or ordinary hazard occupancies as Quick Response sprinklers  
 2. C-UL Listed for light or ordinary hazard occupancies as Quick Response sprinklers  
 3. FM Approved for light hazard occupancies Quick Response sprinklers  
 4. Approved by the City of New York under MEA 112-04-E

**TABLE A**  
**LABORATORY LISTINGS AND APPROVALS**

- 1 - Frame
  - 2 - Strut
  - 3 - Deflector\*
  - 4 - Hook
  - 5 - Link Assembly
  - 6 - Ejection Spring
  - 7 - Button
  - 8 - Seal
- \* Temperature rating is indicated on Deflector  
 \*\* Pipe thread connections per ISO 7-1 can be provided on special request



**FIGURE 1**  
**QUICK RESPONSE**  
**SERIES TY-FRL (TY3321) HORIZONTAL SIDEWALL SPRINKLER**  
**5.6 K-FACTOR, 1/2 INCH NPT**



**FIGURE 2**  
**W-TYPE 9**  
**SPRINKLER WRENCH**

## Installation

TYCO Series TY-FRL 5.6K HSW Sprinklers, Quick Response, Standard Coverage must be installed in accordance with this section.

### General Instructions

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 maximum of 21 lb-ft. (28,5 N·m) of torque may be used to install sprinklers with 1/2 NPT connections. Higher levels of torque may distort the sprinkler inlet and cause leakage or impairment of the sprinkler.

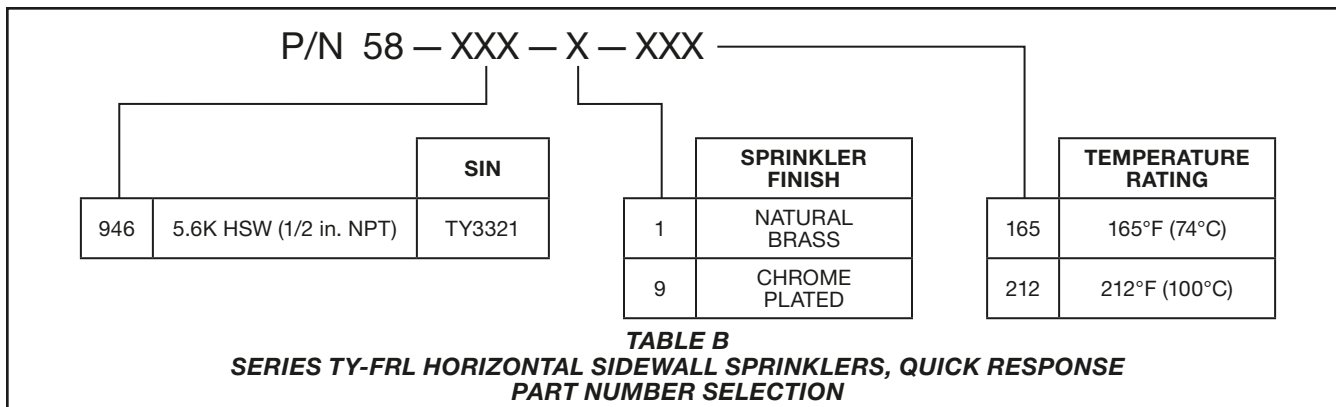
Do not attempt to make-up for insufficient adjustment in the escutcheon plate by under- or over-tightening the sprinkler. Readjust the position of the sprinkler fitting to suit.

### Horizontal Sidewall Sprinklers

**Note:** The Series TY-FRL HSW Sprinklers must be installed with their centerline of waterway parallel to the ceiling and perpendicular to the back wall surface. The word "TOP" on the deflector must face upwards toward the ceiling.

**Step 1.** After installing an escutcheon (as applicable) over the sprinkler pipe threads and 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 9 Sprinkler Wrench as shown in Figure 2. Apply the W-Type 9 Sprinkler Wrench to the wrench area shown in Figure 1.



## Care and Maintenance

TYCO Series TY-FRL 5.6K HSW Sprinklers, Quick Response, Standard Coverage 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.

Absence of an escutcheon, which is used to cover a clearance hole, may delay the time to sprinkler operation in a fire situation.

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 or over-heated sprinklers must be replaced.

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.

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 such as 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.

## Limited Warranty

For warranty terms and conditions, visit [www.tyco-fire.com](http://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: Series TY-FRL 5.6K Quick Response Horizontal Sidewall Sprinklers, SIN TY3321, (specify) temperature rating, (specify) finish, P/N (specify from Table B)

### Sprinkler Wrench

Specify: W-Type 9 Sprinkler Wrench, P/N 56-000-1-849





Worldwide  
Contacts | [www.tyco-fire.com](http://www.tyco-fire.com)

## **TFP140 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 4, 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.
12-16	Updated limited warranty information.
07-04	Added reference to Installer Warning data sheet TFP700; Added NYC Approval.
01-03	Added new Tyco Fire & Building Products masthead.
11-02	New Technical Data Sheet TFP140 describes Series TY-FRL HSW Sprinklers.