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

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 pendant 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
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
(Refer to Table A for complete approval information.)

Maximum Working Pressure
175 psi (12.1 bar)

Discharge Coefficient
K=5.6 gpm/psi ½ (80.6 lpm/bar ½)

Temperature Ratings
Refer to Table A

Finishes
Refer to Table A

Physical Characteristics
Frame .......................... Bronze
Strut ............................ MONEL
Deflector ........................ Bronze
Hook ............................ MONEL
Link Assembly ........................ Nickel
Ejection Spring .................. INCONEL
Button .......................... Bronze
Seal ............................ TEFION

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 (e.g., 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.
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 (Ref. Figure 2). With reference to Figure 1, the W-Type 9 Sprinkler Wrench is to be applied to the wrench area.

### Table A

<table>
<thead>
<tr>
<th>K FACTOR</th>
<th>SPRINKLER TYPE</th>
<th>TEMPERATURE RATING</th>
<th>FRAME COLOR CODE</th>
<th>SPRINKLER FINISH</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.6</td>
<td>HORIZONTAL SIDEWALL (TY3321)</td>
<td>165°F (74°C)</td>
<td>Unpainted</td>
<td>1, 2, 3, 4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>212°F (100°C)</td>
<td>White</td>
<td></td>
</tr>
</tbody>
</table>

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
**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: 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

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**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 (e.g., 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.

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**TABLE B**

<table>
<thead>
<tr>
<th>SIN</th>
<th>SPRINKLER FINISH</th>
<th>TEMPERATURE RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td>946</td>
<td>5.6K HSW (1/2 in. NPT)</td>
<td>165°F (74°C)</td>
</tr>
<tr>
<td>1</td>
<td>NATURAL BRASS</td>
<td>165°F (74°C)</td>
</tr>
<tr>
<td>9</td>
<td>CHROME PLATED</td>
<td>212°F (100°C)</td>
</tr>
</tbody>
</table>

P/N 58 – XXX – X – XXX

- **Part Number Selection**