Series TY-L — 5.6 and 8.0 K-factor Upright and Pendent Intermediate Level Sprinklers Standard Response

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/tfp350

General Description

The Series TY-L, 5.6 and 8.0 K-factor Upright and Pendent Intermediate Level Sprinklers described in this data sheet are automatic sprinklers of the "standard response" solder type. They are "standard spray" sprinklers intended for use in fire sprinkler 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 requirements. Both the pendent and upright sprinklers produce a hemispherical water distribution pattern below the deflector. Intermediate level sprinklers are primarily designed for use in rack storage sprinkler systems where their thermally sensitive elements must be shielded from the water spray of higher elevation sprinklers that could operate earlier during a fire. Intermediate Level Sprinklers are also used in other applications such as beneath open gridded catwalks.

NOTICE

The Series TY-L 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, 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 Number (SIN)

TY3113 . . . Upright 5.6K, 1/2 in. NPT
TY3211 . . . Pendent 5.6K, 1/2 in. NPT
TY4113 . . . Upright 8.0K, 3/4 in. NPT

Note:
- TY3113 is a redesignation for S1809 and G3253
- TY3211 is a redesignation for S1801 and G3112
- TY4113 is a redesignation for S1822 and G3153

Technical Data

Approvals

UL and C-UL Listed
FM Approved

Note: *For complete approval information including corrosion resistant status, see Table A.*





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

Natural Brass

Physical Characteristics

Frame	Brass
Sealing Button	Bronze w/TEFLON
Ejection Spring	Stainless Steel
Strut	MONEL
Hook	Bronze/MONEL
Deflector	Bronze
Shield	Brass
Fusible Element	Solder, Copper, Stainless Steel

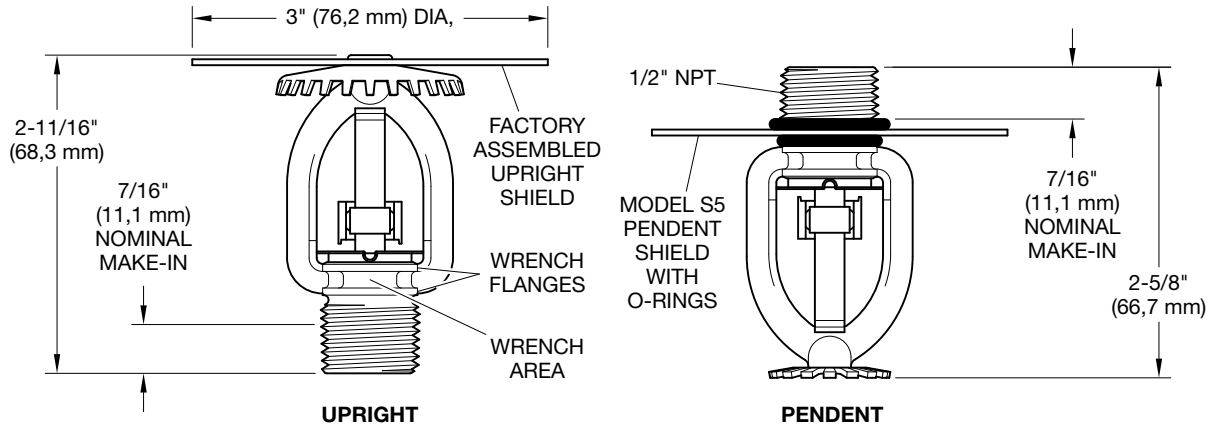


FIGURE 1
STANDARD RESPONSE SERIES TY-L UPRIGHT (TY3113) AND PENDENT (TY3211) SPRINKLERS
INTERMEDIATE LEVEL SPRINKLERS, 5.6 K-FACTOR, 1/2 INCH NPT

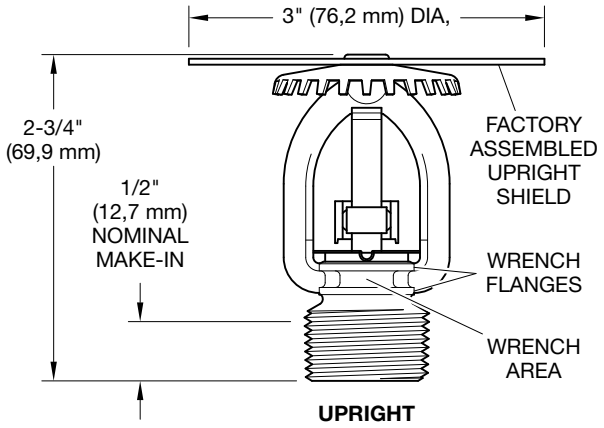


FIGURE 2
STANDARD RESPONSE SERIES TY-L UPRIGHT (TY4113) SPRINKLERS
INTERMEDIATE LEVEL SPRINKLERS, 8.0 K-FACTOR, 3/4 INCH NPT

		Sprinkler Finish	
		K = 5.6 Upright TY3113 K = 5.6 Pendent TY3211	**K = 8.0 Upright TY4113**
Temperature Rating	**Frame Color Code**	**Natural Brass**	**Natural Brass**
165°F (74°C)	UNPAINTED	1, 2, 3	
212°F (100°C)	WHITE		
280°F (138°C)	BLUE		

NOTES
1. Listed by Underwriters Laboratory, Inc. (UL).
2. Listed by Underwriters Laboratory, Inc. for use in Canada (C-UL)
3. Approved by Factory Mutual Research Corporation.

TABLE A
LABORATORY LISTINGS AND APPROVALS

Operation

A copper tube sealed by two stainless steel balls holds a fusible alloy. When the rated temperature is reached, the alloy melts, the balls are forced toward each other releasing the tension mechanism, allowing the sprinkler to operate.

Design Criteria

The Series TY-L Pendent and Upright Intermediate Level Sprinklers 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 the requirements of NFPA 13, and FM Approval is based on the requirements of FM Global's Loss Prevention Data Sheets.

Installation

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

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

Upright Sprinklers
The Series TY-L Intermediate Level Upright Sprinklers must be installed in accordance with the following instructions.

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 9 Sprinkler Wrench shown in Figure 3. Apply the sprinkler wrench to the wrench area of the sprinkler shown in Figure 1 or Figure 2, as applicable

Pendent Sprinklers
The Series TY-L Intermediate Level Pendent Sprinklers must be installed in accordance with the following instructions.

Step 1. Roll one of the two required O-Rings over the sprinkler threads until it seats against the sprinkler wrenching area flange as shown in Figure 1.

Step 2. Install the shield over the sprinkler threads, and then roll the second O-Ring over the sprinkler threads until it is seated firmly against the Shield.

Step 3. With pipe thread sealant applied, hand tighten the sprinkler into the sprinkler fitting.

Step 4. Tighten the sprinkler into the sprinkler fitting using only the W-Type 9 Sprinkler Wrench shown in Figure 3. Apply the sprinkler wrench to the sprinkler wrench area shown in Figure 1.

When installed correctly, the O-Rings will be slightly compressed and the shield will be held firmly in place.

Care and Maintenance

The Series TY-L 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.

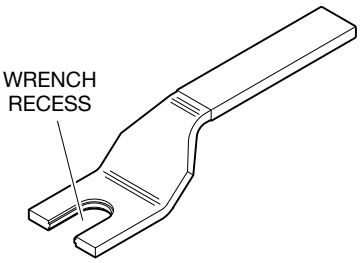


FIGURE 3
W-TYPE 9 SPRINKLER WRENCH

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.

P/N 53 — XXX — X — XXX

		SIN
253	5.6K Upright (1/2 in. NPT)	TY3113
153	8.0K Upright (3/4 in. NPT)	TY4113

	Sprinkler
1	Natural Brass

	Temperature Rating
165	165°F (74°C)
212	212°F (100°C)
280	280°F (138°C)

TABLE B
PART NUMBER SELECTION
SERIES TY-L UPRIGHT INTERMEDIATE LEVEL SPRINKLERS
(UPRIGHT SHIELD INCLUDED WITH SPRINKLER)

P/N 53 — XXX — X — XXX

		SIN
112	5.6K PENDENT (1/2 in. NPT)	TY3211

	Sprinkler
1	Natural Brass

	Temperature Rating
165	165°F (74°C)
212	212°F (100°C)
280	280°F (138°C)

TABLE C
PART NUMBER SELECTION
SERIES TY-L PENDENT SPRINKLERS
(MODEL S5 PENDENT SHIELD & O-RING MUST BE SEPARATELY ORDERED)

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).

Upright Sprinkler Assemblies with Shield and NPT Thread Connections
Specify: (Specify Model/SIN), Standard Response, (specify K-factor), (specify temperature rating), Series TY-L Upright Intermediate Level Sprinklers with natural brass finish, P/N (specify from Table B)

Pendent Sprinkler Assemblies with (Shield Ordered Separately) and NPT Thread Connections
Specify: TY3211, Standard Response, 5.6 K-factor, (specify temperature rating from Table C), Series TY-L Pendent Sprinkler with natural brass finish, P/N (specify from Table C)

Model S5 Pendent Shield Package
Model S5 Pendent Shield Package includes one shield and two o-rings.

Specify: Model S5 Pendent Shield Package, for use with 1/2 in. NPT Series TY-L Pendent Sprinkler, P/N 56-015-6-802

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

1467 Elmwood Avenue, Cranston, RI 02910 | Telephone +1-401-781-8220

© 2023 Johnson Controls. All rights reserved. All specifications and other information shown were current as of document revision date and are subject to change without notice.

NATIONAL FIRE PROTECTION ASSOCIATION and NFPA are registered trademarks of National Fire Protection Association;
MONEL is a registered trademark of Special Metals Corporation; TEFLON is a trademark of The Chemours Company FC, LLC

Johnson Controls