

## Series EC-8 — 8.0 K-factor Extended Coverage (Light Hazard) Pendent and Recessed Pendent Sprinklers

### 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 Series EC-8 Extended Coverage Pendent Sprinklers are decorative glass bulb sprinklers designed for use in light hazard occupancies. They are intended for use in automatic sprinkler systems designed in accordance with standard installation rules such as NFPA 13 for a maximum coverage area of 400 ft<sup>2</sup> (37,2 m<sup>2</sup>), as compared to the maximum coverage area of 225 ft<sup>2</sup> (20,6 m<sup>2</sup>) for standard coverage sprinklers used in light hazard occupancies.

The recessed version of the EC-8 sprinkler, intended for use in areas with a finished ceiling, uses either of the following two-piece escutcheons:

- Style 30 recessed escutcheon
- Style 40 recessed escutcheon

The style 30 recessed escutcheon provides up to 1/2 in. (12,7 mm) of total adjustment from the flush pendent position, whereas, the style 40 provides 3/4 in. (19,1 mm) of vertical adjustment from the flush pendent position. The adjustment provided by the recessed escutcheons reduces the accuracy to which the fixed pipe drops to the sprinklers must be cut.

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 corrosion resistant 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 Series EC-8 Extended Coverage 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)

TY4232 . . . . . Pendent, 8.0K

Note: TY4232 is a re-designation for C4232.

Hazard	Type	Temp.	Bulb Liquid	Sprinkler Finish <sup>4</sup>		
				Natural brass	Chrome Plated	Polyester*
Light	Pendent	135°F (57°C)	Orange	1, 2, 3, 5		
		155°F (68°C)	Red			
Refer to Table B for UL and C-UL Sensitivity Rating and Refer to Table C for FM Sensitivity Rating	Rec. Pendent w/ Style 30 Esc.	135°F (57°C)	Orange	1, 2, 3, 5		
		155°F (68°C)	Red			
	Rec. Pendent w/Style 40 Esc.	135°F (57°C)	Orange	1, 2, 5		
		155°F (68°C)	Red			

**NOTES**

1. Listed by Underwriters Laboratories, Inc. (UL).
2. Listed by Underwriters Laboratories, Inc. for use in Canada (C-UL).
3. Approved by Factory Mutual (FM).
4. 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.
5. Approved by the City of New York under MEA 113-04-E.  
\*Frame and Deflector only.

**TABLE A**  
**LABORATORY LISTINGS AND APPROVALS**  
(Refer to the Design Criteria Section)

## Technical Data

### Approvals

UL and C-UL Listed.  
FM Approved  
NYC Approved.

*Note: For complete approval information including corrosion resistant status, see Table A. The approvals apply to the service conditions indicated in the Design Criteria section.*

### Maximum Working Pressure

175 psi (12,1 bar)

### Pipe Thread Connection

3/4 in. NPT

### Discharge Coefficients

K=8.0 gpm/psi<sup>1/2</sup>  
(115,2 lpm/bar<sup>1/2</sup>)

### Temperature Ratings

135°F (57°C)  
155°F (68°C)

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

### Finish

Sprinkler: See Table A

Recessed Escutcheon: Natural Brass,  
Signal White, Chrome Plated

### Physical Characteristics

Frame ..... Bronze  
Button ..... Bronze  
Sealing Assembly . . . Beryllium Nickel w/TEFLON  
Bulb ..... Glass (3 mm dia.)  
Compression Screw ..... Bronze  
Deflector ..... Brass

## Operation

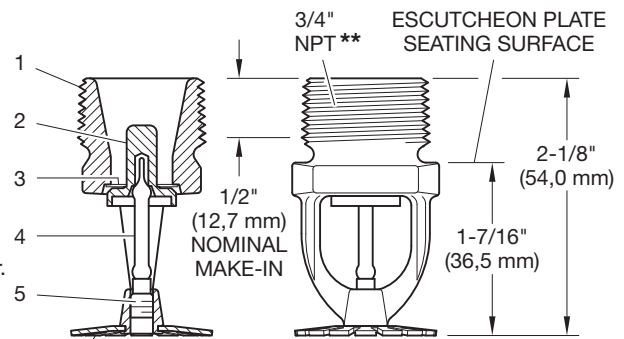
The glass bulb contains a fluid that expands when exposed to heat. When the rated temperature is reached, the fluid expands sufficiently to shatter the glass bulb, allowing the sprinkler to activate and flow water.

### Components:

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

\*Temperature rating is indicated on Deflector.

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



**FIGURE 1**  
**SERIES EC-8 (TY4232)**  
**EXTENDED COVERAGE PENDENT SPRINKLER**

## Design Criteria

The Series EC-8 Extended Coverage Pendent Sprinklers must only be installed in accordance with the applicable UL and C-UL Listing or FM Approval requirements as indicated below. Only a style 30 or 40 recessed escutcheon is to be used for recessed installation, as applicable For more information, see Tables A, B, and C.

### UL and C-UL Listing Requirements

1. The Series EC-8 Sprinklers may be used for the coverage areas shown in Table D, based on maintaining the minimum specified flow rate as a function of coverage area and hazard group for all of the sprinklers in the design area.
2. With respect to heat sensitivity, the Series EC-8 Sprinklers can be used with unobstructed construction consisting of flat, smooth ceilings

(including bar joists) with a maximum pitch of one in six as defined and permitted by NFPA 13.

3. The minimum allowable spacing between the Series EC-8 Sprinklers, to prevent cold soldering, is 8 ft (2,4 m).
4. The Series EC-8 Sprinklers are to be installed in accordance with all other requirements of NFPA 13 for extended coverage pendent sprinklers.

### FM Approval Requirements

The Series EC-8 Extended Coverage Sprinklers are to be installed in accordance with the applicable Factory Mutual (FM) Loss Prevention Data Sheet. Information provided in the FM Loss Prevention Data Sheet relate to, but are not limited to, hydraulic design, ceiling slope and obstructions, minimum and maximum allowable spacing, and deflector-to-ceiling distance.

## Installation

The Series EC-8 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).

A leak tight 3/4 in. NPT sprinkler joint should be obtained with a 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 with consequent leakage or impairment of the sprinkler.

Do not attempt to compensate for insufficient adjustment of an escutcheon plate by under-or over-tightening the sprinkler. Re-adjust the position of the sprinkler fitting to suit.

**Step 1.** The sprinkler must be installed with the deflector parallel to the mounting surface. Pendent sprinklers must be installed in the pendent position.

**Step 2.** After installing the style 30 or 40 mounting plate (or other 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 3.** Wrench tighten pendent sprinklers using only the W-Type 3 (End A) Sprinkler Wrench. Wrench tighten the recessed pendent sprinklers using only the W-Type 23 Sprinkler Wrench. The wrench recess of the applicable sprinkler wrench as shown in Figures 4 and 5 is to be applied to the sprinkler wrench flats as shown in Figure 1.

## Care and Maintenance

The Series EC-8 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 systems 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 other-

Area	Style	135°F (57°C)	155°F (68°C)
16 x 16	Pendent	QR	QR
16 x 16	Style 30 Recessed	QR	QR
16 x 16	Style 40 Recessed	QR	QR
18 x 18	Pendent	QR	QR
18 x 18	Style 30 Recessed	QR	SR
18 x 18	Style 40 Recessed	QR	SR
20 x 20	Pendent	QR	SR
20 x 20	Style 30 Recessed	QR	SR
20 x 20	Style 40 Recessed	SR	SR

**NOTES**

- QR: Quick Response
- SR: Standard Response

**TABLE B**  
**SENSITIVITY RATING FOR UL AND C-UL LISTING OF SERIES EC-8 SPRINKLERS**

Area	Style	135°F (57°C)	155°F (68°C)
16 x 16	Pendent	QR	QR
16 x 16	Style 30 Recessed	QR	N/A
16 x 16	Style 40 Recessed	N/A	N/A
18 x 18	Pendent	QR	QR
18 x 18	Style 30 Recessed	QR	N/A
18 x 18	Style 40 Recessed	N/A	N/A
20 x 20	Pendent	QR	QR
20 x 20	Style 30 Recessed	QR	N/A
20 x 20	Style 40 Recessed	N/A	N/A

**NOTES**

- QR: Quick Response
- SR: Standard Response
- N/A: Not Applicable

**TABLE C**  
**SENSITIVITY RATING FOR FM APPROVAL OF SERIES EC-8 SPRINKLERS**

Description	Area	gpm	psi
TY4232 (K=8.0) Pendent	16 x 16	26	10.6
	18 x 18	33	17.0
	20 x 20	40	25.0

**NOTES**

- 1 ft = 0.3048 m
- 1 ft<sup>2</sup> = 0.093 m<sup>2</sup>
- 1 gpm = 3.785 Lpm
- 1 psi = 0.06895 bar
- 1 acfm/ft<sup>2</sup> = 40.74 mm/min

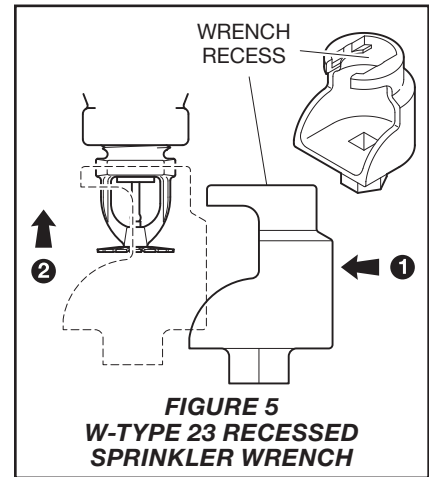
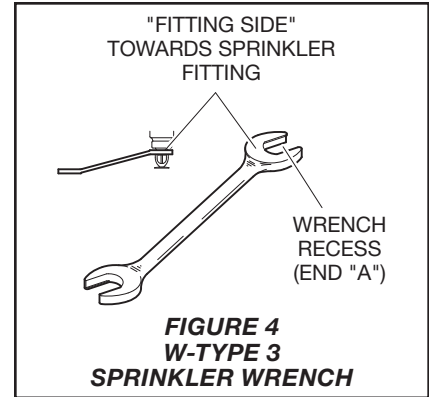
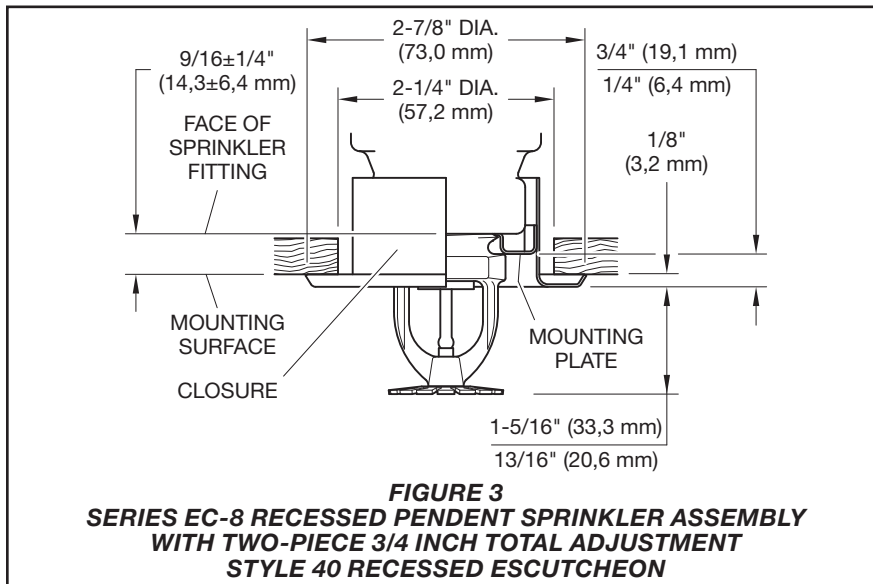
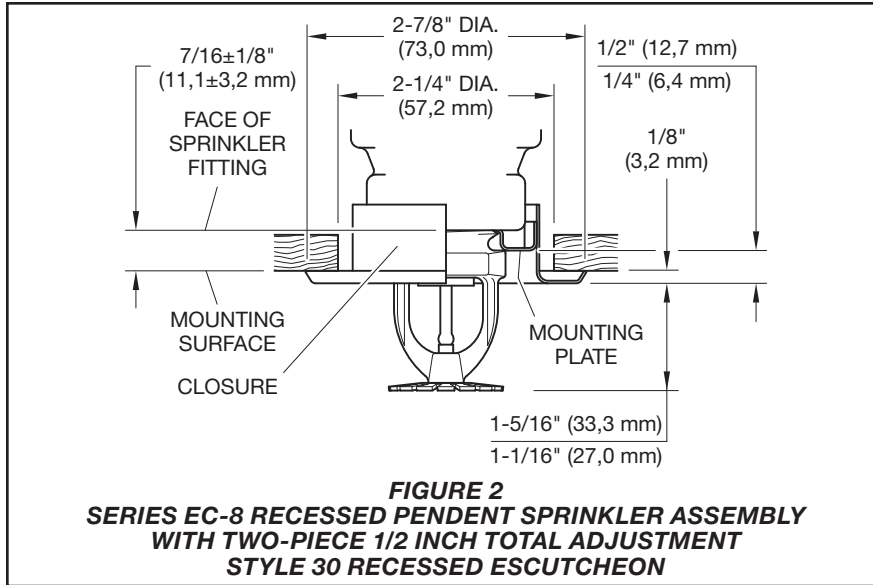
**TABLE D**  
**FLOW CRITERIA FOR UL AND C-UL LISTING OF SERIES EC-8 SPRINKLERS**

wise 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. For information about replacing a sprinkler, see the Installation Section.)

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 according to NFPA 25 should suffice; however,



**Sprinkler Assemblies with NPT Thread Connections**

Specify: Series EC-8 (TY4232), K=8.0, Extended Coverage (Light Hazard) Pendant Sprinkler, (specify) temperature rating, (specify) finish, P/N (specify):

**135°F (57°C)**

Natural Brass	.....	PSN 50-801-1-135
Signal White (RAL9003)	.....	
Polyester	.....	PSN 50-801-4-135
Chrome Plated	.....	PSN 50-801-9-135

**155°F (68°C)**

Natural Brass	.....	PSN 50-801-1-155
Signal White (RAL9003)	.....	
Polyester	.....	PSN 50-801-4-155
Chrome Plated	.....	PSN 50-801-9-155

**Recessed Escutcheon**

Specify: Style (30 or 40) Recessed Escutcheon with (specify\*) finish, P/N (specify\*)

\*Refer to Technical Data Sheet TFP770

**Sprinkler Wrench**

Specify: W-Type 3 Sprinkler Wrench, P/N 56-895-1-001

Specify: W-Type 23 Recessed Sprinkler Wrench, P/N 56-000-6-838

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 such as NFPA 25, in addition to the standards of any other authorities having jurisdiction. The installing contractor or sprinkler manufacturer should be contacted relative to 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).



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## **TFP223**

### **Change History Appendix**

ISSUE DATE	NOTES
08-22	Reduced to 4 pages, formerly 6 pages; 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.
09-18	Clarified FM Approval for recessed pendent applications applies only to 135°F (57°C) temperature rating installed with Style 30 Recessed Escutcheon.
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.
12-14	Corrected 135°F (57°C) temperature rating in Tables B and C, formerly shown as 35°F (57°C).
09-14	Restored W-Type 23 to Ordering Procedure.
03-14	Clarified polyester finish on sprinklers.
05-13	Updated and standardized RAL color finishes; Removed escutcheon part numbers, replaced by reference to data sheet TFP770 for escutcheon finish selection and part numbers.
03-07	Changed recessed sprinkler wrench to to W-Type 23, formerly W-Type 4.
01-05	Added reference to Installer Warning data sheet TFP700; Added NYC Approved.
12-03	New Technical Data Sheet TFP223 describes Series EC-8 Pendent and Recessed Pendent Sprinklers.