

Series EC-5 — 5.6 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-5 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 (e.g., NFPA 13) for a maximum coverage area of 400 ft² (37,2 m²), as compared to the maximum coverage area of 225 ft² (20,6 m²) for standard coverage sprinklers used in light hazard occupancies.

The recessed version of the EC-5, intended for use in areas with a finished ceiling, uses the two-piece Style

50 Recessed Escutcheon. The Style 50 Recessed Escutcheon provides up to 3/8 inch (9,5 mm) of total adjustment from the flush pendent position. The adjustment provided by the Recessed Escutcheon 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

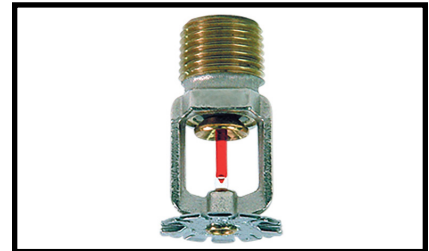
The Series EC-5 Extended Coverage Pendent Sprinklers described herein must be installed and maintained in compliance with this document, as well as with the applicable standards of the National Fire Protection Association, in addition to the standards of any other authorities having jurisdiction. Failure 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

TY3232

Note: TY3232 is a re-designation for C3232.



Technical Data

Approvals

UL and C-UL Listed
FM Approved
NYC Approved

Refer to Table A for complete approval information including corrosion resistant status. The approvals apply to the service conditions indicated in the Design Criteria section.

Maximum Working Pressure

175 psi (12,1 bar)

Pipe Thread Connection

1/2 inch NPT

Discharge Coefficients

K = 5,6 GPM/psi^{1/2}
(K = 80,6 LPM/bar^{1/2})

Temperature Ratings

135°F (57°C) and 155°F (68°C)

Finish

Sprinkler: Refer to Table A

Recessed Escutcheon: Brass Plated, Signal White, or Chrome Plated

Physical Characteristics

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

HAZARD	TYPE	TEMP.	BULB LIQUID COLOR	SPRINKLER FINISH*		
				NATURAL BRASS	CHROME PLATED	POLYESTER*
LIGHT Refer to Table B for UL and C-UL Sensitivity Rating and Refer to Table C for FM Sensitivity Rating	PENDENT	135°F (57°C)	Orange	1, 2, 5		
		155°F (68°C)	Red	1, 2, 3, 5		
	REC. PENDENT w/Style 50 Esc.	135°F (57°C)	Orange	1, 2, 5		
		155°F (68°C)	Red	1, 2, 3, 5		

NOTES:

- Listed by Underwriters Laboratories, Inc. (UL)
- Listed by Underwriters Laboratories, Inc. for use in Canada (C-UL)
- Approved by Factory Mutual Research Corporation (FM)
- Approved by the City of New York under MEA 113-04-E
- 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. Polyester Coating on Frame and Deflector only.

**TABLE A
LABORATORY LISTINGS AND APPROVALS
(REFER TO THE DESIGN CRITERIA SECTION)**

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.

Design Criteria

The Series EC-5 Extended Coverage Pendant Sprinklers must only be installed in accordance with the applicable UL and C-UL Listing or FM Approval requirements as indicated below. Only the Style 50 Recessed Escutcheon is to be used for recessed installation, as applicable (Ref. Table A, B, and C).

UL and C-UL Listing Requirements

- The Series EC-5 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.
- With respect to heat sensitivity, the Series EC-5 Sprinklers are permitted to be used with unobstructed construction consisting of flat, smooth ceilings with a pitch of one in six as defined and permitted by NFPA 13.
- The minimum allowable spacing between the Series EC-5 Sprinklers, to prevent cold soldering, is 8 feet (2,4 m).
- The Series EC-5 Sprinklers are to be installed in accordance with all other requirements of NFPA 13 for extended coverage pendant sprinklers.

AREA	STYLE	135°F (57°C)	155°F (68°C)
16 x 16	Pendent	QR	QR
16 x 16	Style 50 Recessed	QR	QR
18 x 18	Pendent	QR	QR
18 x 18	Style 50 Recessed	QR	QR
20 x 20	Pendent	QR	N/A
20 x 20	Style 50 Recessed	QR	N/A

QR: Quick Response; N/A: Not Applicable

**TABLE B
SENSITIVITY RATING FOR UL AND C-UL LISTING
OF SERIES EC-5 SPRINKLERS**

AREA	STYLE	135°F (57°C)	155°F (68°C)
16 x 16	Pendent	QR	QR
16 x 16	Style 50 Recessed	QR	QR
18 x 18	Pendent	QR	QR
18 x 18	Style 50 Recessed	QR	QR
20 x 20	Pendent	QR	QR
20 x 20	Style 50 Recessed	QR	QR

QR: Quick Response

**TABLE C
SENSITIVITY RATING FOR FM APPROVAL
OF SERIES EC-5 SPRINKLERS**

DESCRIPTION	AREA	GPM	PSI
TY3232 (K=5.6) PENDENT	16 x 16	26	21.6
	18 x 18	33	34.7
	20 x 20	40	51.0

1 ft = 0.3048 m
1 ft² = 0.093 m²

1 gpm = 3.785 lpm
1 psi = 0.06895 bar

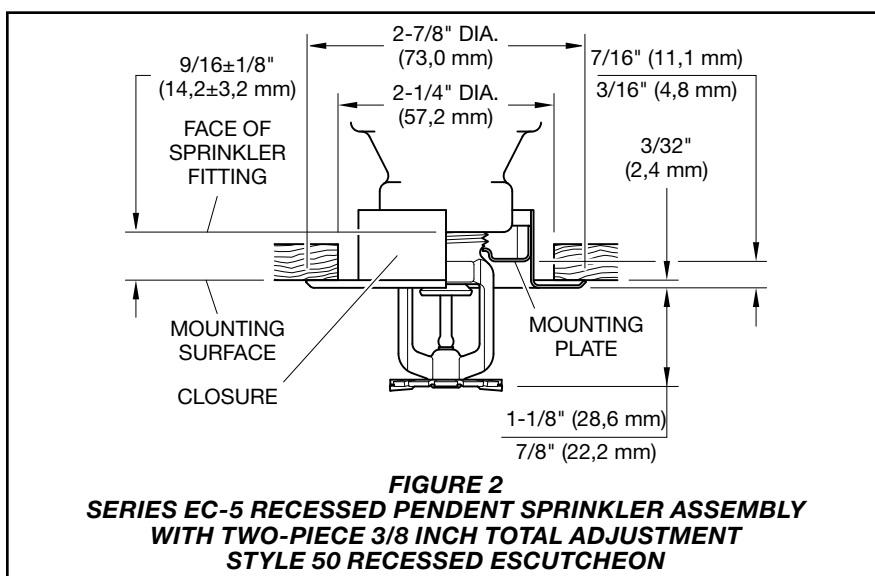
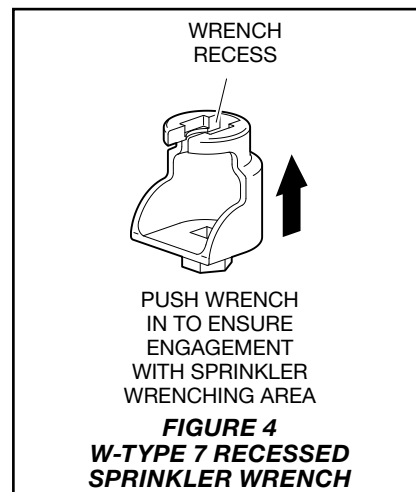
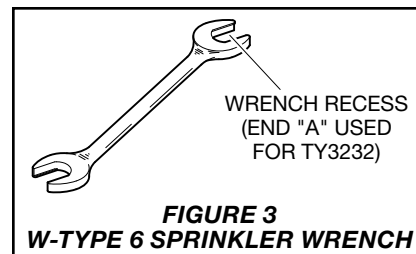
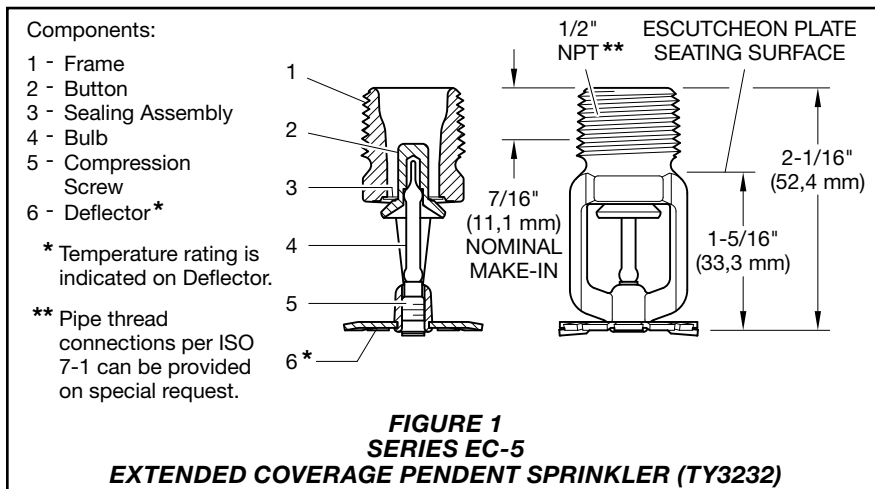
1 gpm/ft² = 40.74 mm/min

**TABLE D
FLOW CRITERIA FOR UL AND C-UL LISTING
OF SERIES EC-5 SPRINKLERS**

FM Approval Requirements

The Series EC-5 Extended Coverage Sprinklers are to be installed in accordance with the applicable Factory Mutual Loss Prevention Data Sheet. Information provided in the FM

Loss Prevention Data Sheets relate to, but are not limited to, hydraulic design, ceiling slope and obstructions, minimum and maximum allowable spacing, and deflector-to-ceiling distance.



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 shown in Figure 3. Apply the W-Type 6 Sprinkler Wrench to the wrench flats as shown in Figure 1. Torque the sprinklers 7 ft-lb to 14 ft-lb (9,5 to 19,0 N·m).

Recessed Pendant Sprinklers

The Series EC-5 Recessed Pendant Sprinklers must be installed in accordance with the following instructions.

Step 1. After installing the Style 50 Mounting Plate over the sprinkler 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 7 Recessed Sprinkler Wrench shown in Figure 4. Apply the W-Type 7 Recessed Sprinkler Wrench to the sprinkler wrench flats shown in Figure 1. Torque the sprinklers 7 ft-lb to 14 ft-lb (9,5 to 19,0 N·m).

Step 3. After the ceiling is installed or the finish coat is applied, slide on the Style 50 Closure over the Series EC-5 Sprinkler and push the Closure over the Mounting Plate until its flange contacts the ceiling as shown in Figure 2.

Installation

The Series EC-5 Extended Coverage Pendant 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 1/2 inch NPT sprinkler joint should be obtained by applying a min-

imum-to-maximum torque of 7 ft-lb to 14 ft-lb (9,5 N·m to 19,0 N·m). Higher levels of torque can distort the sprinkler inlet with consequent leakage or impairment of the sprinkler.

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

Pendant Sprinklers

The Series EC-5 Pendant Sprinklers must be installed in accordance with the following instructions.

Care and Maintenance

The Series EC-5 Extended Coverage Pendent 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 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 sprin-

kler that has a cracked bulb or that has lost liquid from its bulb. (Ref. 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, 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 (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.

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 EC-5 (TY3232), K=5.6, Extended Coverage Pendent Sprinkler, (specify) temperature rating, (specify) finish, P/N (specify):

135°F (57°C)	
Natural Brass	51-051-1-135
Pure White (RAL9010)*	
Polyester	51-051-3-135
Signal White (RAL9003)	
Polyester	51-051-4-135
Chrome Plated	51-051-9-135

155°F (68°C)	
Natural Brass	51-051-1-155
Pure White (RAL9010)*	
Polyester	51-051-3-155
Signal White (RAL9003)	
Polyester	51-051-4-155
Chrome Plated	51-051-9-155

*Eastern Hemisphere sales only

Recessed Escutcheon

Specify: Style 50 Recessed Escutcheon, (specify*) finish, P/N (specify*)

*Refer to Technical Data Sheet TFP770

Sprinkler Wrench

Specify: W-Type 6 Sprinkler Wrench, P/N 56-000-6-387

Specify: W-Type 7 Recessed Sprinkler Wrench, P/N 56-850-4-001



Worldwide
Contacts | www.tyco-fire.com

TFP228

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.
07-16	Added Pure White (RAL9010) finish for Eastern Hemisphere sales.
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.
01-05	Added reference to Installer Warning data sheet TFP700; Added NYC Approved; Added White (RAL9010) finish for Eastern Hemisphere sales.
08-03	New Technical Data Sheet TFP228 describes Series EC-5 Pendent and Recessed Pendent Sprinklers.