

Ultra K17 — 16.8 K-factor Upright Control Mode Specific Application Sprinkler Standard Response, 155°F (68°C) & 200°F (93°C)

General Description

The TYCO 16.8 K-factor, Ultra K17, Standard Response, Upright Control Mode Specific Application Sprinkler (Ref. Figure 1) is an automatic sprinkler of the frangible bulb type. It is intended for use with National Fire Protection Association Control Mode Specific Application installation criteria for the protection of high piled storage. It may also be utilized as a 16.8 K-factor, upright, standard response storage sprinkler in accordance with Factory Mutual Loss Prevention Data Sheets. See FM 2-0 and 8-9 for specific design and installation criteria.

The Ultra K17 Sprinkler can provide a higher level of protection than other standard spray sprinklers and, in some cases, it can provide an economical advantage by eliminating in-rack sprinklers.

Applications for the Ultra K17 Upright Control Mode Specific Application Sprinkler are expanding beyond the current specific application listings/approvals. For information regarding research fire tests which may be acceptable to an authority having jurisdiction, please contact the Technical Services Department.

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.

NOTICE

The Ultra K17, Standard Response, Upright Control Mode Specific Application Sprinkler described herein must be installed and maintained in compliance with this document and with the applicable standards of the National Fire Protection Association, in addition to the standards of any 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)

Refer to Table A for sprinkler identification number.

Technical Data

Approvals

UL and C-UL Listed
FM and NYC Approved

Refer to Table C for specific details on laboratory listings and approvals. The approvals apply to the service conditions indicated in the Design Criteria section.

Finish

Natural Brass



Physical Characteristics

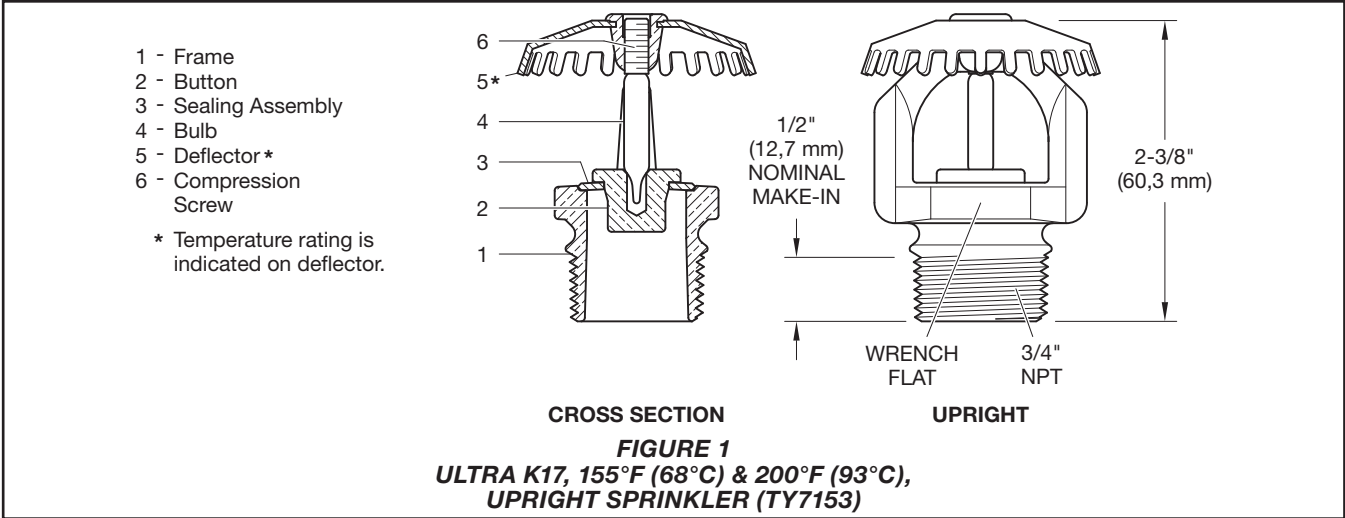
Frame	Bronze
Button	Bronze
Sealing Assembly	Beryllium Nickel w/TEFLON
Bulb (5 mm)	Glass
Compression Screw	Brass
Deflector	Chrome Plated Brass

Additional Technical Data

Refer to Table A for additional technical data.

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

UL and C-UL Listing Requirements

The TYCO 16.8 K-factor, Ultra K17, Standard Response, Upright Control Mode Specific Application Sprinkler may be installed in accordance with NFPA 13 "Control Mode Specific Application Sprinkler (for Storage Use)" requirements to provide ceiling only protection (that is, no in-rack sprinklers) for high piled storage occupancies (Solid-piled, palletized and rack storage including but not limited to Class I-IV and Group A plastics) using the criteria from NFPA 13. Refer to Table B for additional information.

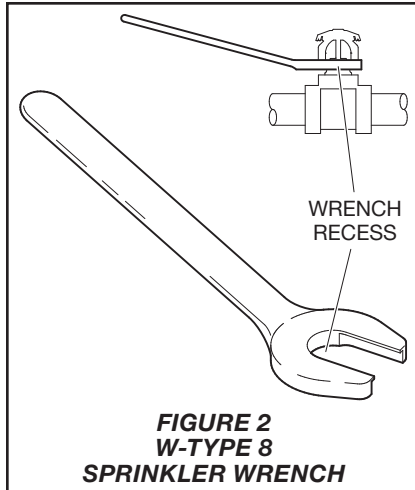
FM Approval Requirements

The TYCO 16.8 K-factor, Ultra K17 Sprinklers may be installed with the applicable storage sprinkler guidelines provided by Factory Mutual. (FM guidelines may differ from UL and C-UL Listing criteria.)

Item	Description
Sprinkler Identification Number (SIN)	TY7153 TY7153 is a redesignation for C7153, G1887, and S8042.
K-factor, gpm/psi ^{1/2} (lpm/bar ^{1/2})	16.8 gpm/psi ^{1/2} (241,9 lpm/bar ^{1/2})
Temperature Rating °F (°C) ¹	155°F (68°C) ¹ 200°F (93°C)
Thread Size	3/4 in. NPT
Sprinkler Orientation	Upright
Maximum Working Pressure, psi (bar)	175 psi (12 bar)
Note: 1. Refer to Table C for laboratory listings and approvals.	
TABLE A ULTRA K17 UPRIGHT SPRINKLER TECHNICAL DATA	

Storage Type	NFPA	FM Global
Sprinkler Type	CMSA	Storage
Response Type	SR	SR
System Type	Wet and Dry	Wet and Dry
Temperature Rating °F (°C) ¹	155°F (68°C) ¹ 200°F (93°C)	155°F (68°C) ¹ 200°F (93°C)
Open Frame (i.e., no solid shelves) Single, Double, Multiple-Row, or Portable Rack Storage of Class I-IV and Group A or B Plastics	Refer to NFPA 13	Refer to FM 2-0 and 8-9
Solid Pile or Palletized Storage of Class I-IV and Group A or B Plastics	Refer to NFPA 13	Refer to FM 2-0 and 8-9
Idle Pallet Storage	Refer to NFPA 13	Refer to FM 2-0, 8-9, and 8-24
Rubber Tire Storage	Refer to NFPA 13	Refer to FM 2-0 and 8-3
Roll Paper Storage (Refer to the Standard)	Refer to NFPA 13	Refer to FM 8-21
Flammable/Ignitable Liquid Storage (Refer to the Standard)	Refer to NFPA 30	Refer to FM 7-29
Aerosol Storage (Refer to the Standard)	Refer to NFPA 30B	Refer to FM 7-31
Automotive Components in Portable Racks (Control mode only; refer to the Standard)	Refer to NFPA 13	N/A
Notes: 1. Refer to Table C for laboratory listings and approvals. N/A – Not Applicable		
TABLE B ULTRA K17 UPRIGHT SPRINKLER COMMODITY SELECTION AND DESIGN CRITERIA OVERVIEW		

			SPRINKLER FINISH
TYPE	TEMPERATURE	BULB LIQUID	NATURAL BRASS WITH CHROME DEFLECTOR
UPRIGHT K16.8 (TY7153)	155°F (68°C)	Red	3, 4
	200°F (93°C)	Green	1, 2, 3, 4
NOTES: 1. Listed by Underwriters Laboratories, Inc. (UL Listed) 2. Listed by Underwriters Laboratories, Inc. for use in Canada (C-UL Listed) 3. Approved by Factory Mutual Research Corporation (FM Approved) 4. Approved by the City of New York under MEA 177-03-E			
TABLE C LABORATORY LISTINGS AND APPROVALS (Refer to the Design Criteria section)			



Installation

The TYCO 16.8 K-factor, Ultra K17, Standard Response, Upright Control Mode Specific Application Sprinkler 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 horizontal, 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 by applying a minimum-to-maximum torque of 7 to 14 lb-ft (9,5 to 19,0 N·m). Higher levels of torque can distort the sprinkler Inlet with consequent leakage or impairment of the sprinkler.

Step 1. With pipe thread sealant applied to the pipe threads, hand tighten the Ultra K17 Sprinkler into the sprinkler fitting.

Step 2. Using the W-Type 8 Sprinkler Wrench (Ref. Figure 2) applied to the sprinkler Wrench Flats (Ref. Figure 1), tighten the Ultra K17 Sprinkler into the sprinkler fitting.

Care and Maintenance

The TYCO 16.8 K-factor, Ultra K17, Standard Response, Upright Control Mode Specific Application Sprinkler 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 sprinkler that has a cracked bulb or that has lost liquid from its bulb. Refer to Installation section for additional information.

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.

Automatic sprinkler systems are recommended to 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: Ultra K17 (TY7153), K = 16.8, Upright Control Mode Specific Application Sprinkler, Standard Response, (specify) temperature rating, P/N (specify):

155°F (68°C) 51-887-1-155
200°F (93°C) 51-887-1-200

Sprinkler Wrench

Specify: W-Type 8 Sprinkler Wrench, P/N 56-892-1-001