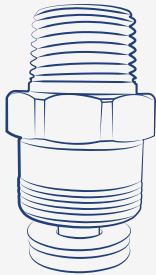
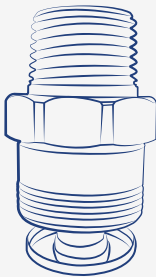




FLUSH



TYPE



SPRINKLER

TECHNICAL DATA
for use by Architects & Engineers

STANDARD AND QUICK RESPONSE, FLUSH TYPE SPRINKLERS

Product Description

FLAMEGUARD Flush Type Sprinkler with its aesthetical design and compact size, is designed to meet both aesthetic and practical requirements for airports, high-class hotels, luxurious apartments, theaters, department stores, hospitals, multi-purpose buildings and sports facilities. They are decorative, low profile, flush mount sprinklers. When aesthetics is the major consideration, the Model FL100F or FL200F should be your first choice.

It is intended for use in installations where sprinkler misoperation or physical damage due to impact is a major concern. It is designed for excellent impact resistance and sealing performance. When properly installed, only small portion of the sprinkler is visible below the ceiling. With the deflector hidden until the sprinkler is operated, the exterior of the flush type sprinkler is aesthetically designed to maintain the structural beauty of the ceiling.

It has a protective cap which protects sprinkler head from any external damage during transport and install. It uses Teflon sheet which has better sealing and elasticity than conventional copper plate gasket.

Variations

Standard Response FL100F

SR (Standard Response) Type Sprinkler uses special alloy fusible element. When the heat from a fire reaches the operating temperature of the sprinkler, the fusible element melts and the deflector is automatically ejected downward for quick water spray.

- Also available with uncoated/natural brass-colored threaded body.



Quick Response FL200F

QR (Quick Response) Type Sprinkler has the same operating mechanism with SR type. The distinct difference is that the QR type reacts to heat from fire quickly resulting to a more rapid operation time. The QR type sprinkler is essential for early fire suppression purpose.

- Also available with uncoated/natural brass-colored threaded body.



Technical Details

Specifications	
Min. Operating Pressure	7 PSI(0.5 bar)
Max. Working Pressure	175 PSI(12.1 bar)
Hydrostatic Test Pressure	500 PSI(34.5 bar)
Thread Size	1/2" NPT(15A)
K-Factor	5.6 GPM/PSI ^{1/2} (80 LPM/bar ^{1/2})
Max. Ambient Temperature	165°F(74°C): 100 °F(38°C) 205°F(96°C), 220°F(105°C): 150°F(65°C)
Finish Options	Natural Brass, Chrome Plated, Nickel-Chrome Plated

Material Specifications	
Deflector	Brass UNS-C48600
Loading Plates	Brass
Frame	Brass Forging UNS-C48600
Valve Cap	Brass
Locking Screw	Stainless Steel
Spring Seat	Nickel Beryllium + Teflon
Fuse Metal	Fusible Alloy
Body	Brass
Retaining Ring	Titanium Wire
Spring	Nickel Beryllium
Washer	Fiber
Inner Loading Plate	UNS-C48600
Outer Loading Plate	UNS-C48600
Seal	Teflon Tape
Fusible Element	Solder
Deflector Assembly	Stainless Steel and UNS-C48600
Heat Collector Assembly	Copper UNS-C11000
Standard Escutcheon	White Color Plastic
Wrench	Type F2 1/2" ratchet is required

Installation

WARNING: The Flameguard flush type sprinkler is manufactured and tested to meet the rigid requirements of approving agencies. The flush type sprinkler is designed to be installed in accordance with recognized installation standards. Deviation from the standards or any alteration to the Flameguard flush type sprinkler after it leaves the factory including, but not limited to: painting, plating, coating, or modification, may render the device inoperative and would automatically nullify the approval and any guarantee made by The Flameguard Corporation.

Fire Sprinkler Systems should only be designed and installed by those component and completely familiar with automatic Sprinkler system design, installation procedures, and techniques.

Several criteria may apply to the installation and usage of each sprinkler.

Consequently, it is recommended that the sprinkler system designer review and develop a working understanding of the complete list of criteria prior to initiating the design of the sprinkler system.

Questions concerning sprinkler installation and usage criteria, which are not coverage by the following instructions, should be submitted to contact company. Include sketches and technical details as appropriate.

In some instances, the requirements of this document may concern specifications which are more stringent and which take precedence over those specified in NFPA 13, NFPA 13D, NFPA 13R, or by the authority having jurisdiction.

The spray from the sprinkler is distributed radially outward and downward from the sprinkler deflector. Consequently, the sprinklers must be located such that there will not be any blind spaces shielded from spray by partitions, room dividers, overhangs or other parts of the dwelling structure.

The number of sprinklers within each compartment (as defined by NFPA 13, 13D, or 13R) must be kept as few as possible.

Do NOT use more sprinklers than necessary to cover a particular space.

Use only the escutcheon provided with the Model FL100F and FL200F.

The sprinkler must be secured in position by firmly fastening the sprinkler system piping to the structure. If the sprinkler is not properly secured in position, reaction forces resulting from sprinkler operation could alter its orientation and its water distribution pattern.

The sprinkler escutcheon cannot be used to hold the sprinkler in position.

1) The Flameguard Flush type sprinkler is to be installed in accordance with the latest edition of Flameguard technical data, and the applicable installation standards such as the National Fire Protection Association 13(NFPA 13).

2) The Flameguard Flush type sprinkler must be installed after the piping is in place to prevent mechanical damage. Before installation, be sure the sprinkler has the appropriate temperature rating. Keep the flush type sprinkler within the protective caps during installation and testing, and any time the sprinkler is shipped or handled. Apply a small amount of pipe-joint compound to the male threads only, taking care not to allow a build-up of compound inside the orifice.

NOTE: Flush type sprinkler must be contained within the protective caps when applying pipe-joint compound or tape. Install the sprinklers on the piping using the special wrench only, while taking care not to damage the operating parts of the sprinkler.

3) Flush type sprinklers must be handled with care. Never install flush type sprinklers that have been dropped or damaged in any way.

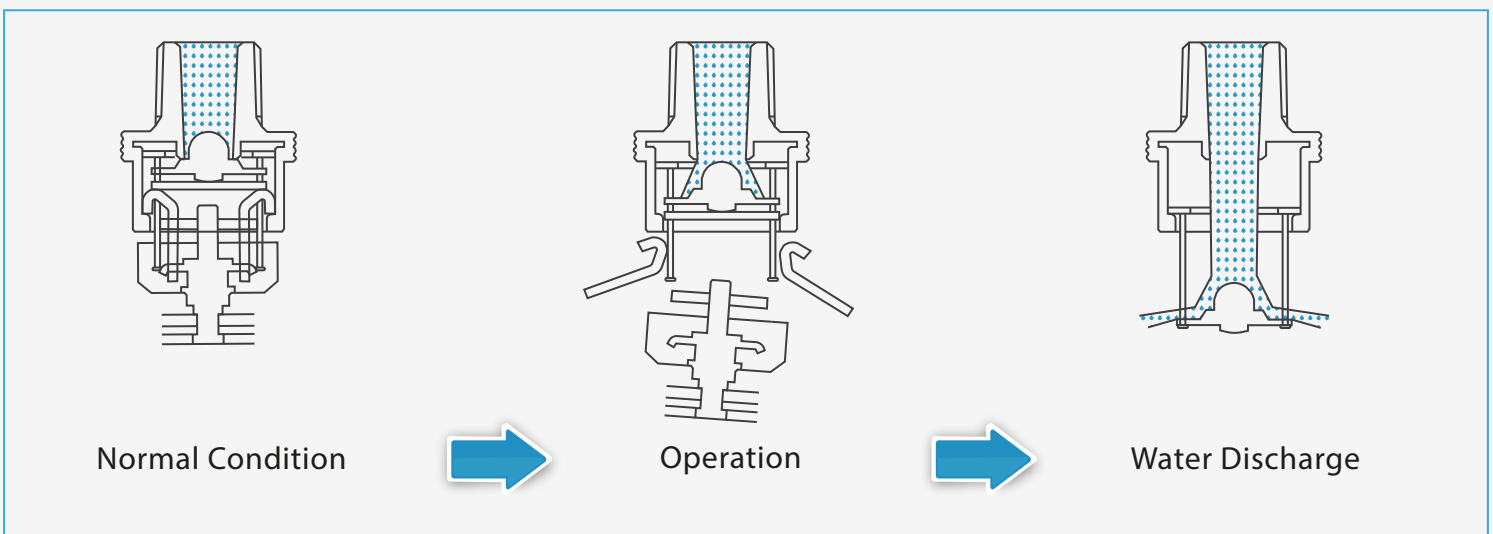
4) A leak tight 1/2" pipe thread sprinkler joint should be obtained with a torque of 7 to 14 ft.lbs.(9.5 to 19.0 Nm). A maximum of 21 ft.lbs. (28.5 Nm) of torque is to be used to install the sprinkler. Higher levels of torque may distort the sprinkler inlet with consequent leakage or impairment of the sprinkler.

5) After installation, the entire sprinkler system must be tested. The test must be conducted to comply with the installation standards.

Make sure the sprinkler has been properly tightened. If a thread leak occurs, normally the sprinkler must be removed, new pipe-joint compound or tape applied, and then reinstalled. This is due to the fact that when the joint seal is damaged, the sealing compound or tape is washed out of the joint. Remove the plastic protective caps AFTER there no longer is a potential for mechanical damage to the operating elements of the sprinkler.

THE CAPS MUST BE REMOVED FROM THE FIXED SPRINKLER BEFORE PLACING THE SYSTEM IN SERVICE!

Figure 1



Inspection, Test and Maintenance

NOTICE: The owner is responsible for maintaining the fire-protection system and devices in proper operating condition. For minimum maintenance and inspection requirements, refer to NFPA 25 standard that describes care and maintenance of sprinkler systems. In addition, the Authority Having Jurisdiction may have additional maintenance, testing, and inspection requirements that must be followed.

- 1) Flush type sprinkler must be inspected on a regular basis for corrosion, mechanical damage, obstructions, paint, etc. The frequency of inspections may vary due to corrosive atmospheres, water supplies, and activity around the device. Adequate heat must be maintained around the flush type sprinkler and release piping system.
- 2) Flush type sprinkler that have been field painted, caulked, or mechanically damaged must be replaced immediately. Any Flush type sprinkler showing signs of corrosion shall be tested and/or replaced immediately as required. Flush type sprinkler that are 20 years old shall be tested and/or replaced immediately as required. Consult accepted installation standards (e.g., NFPA 25), approving agencies, and Authorities Having Jurisdiction, as different minimum testing periods may be required. Flush type sprinkler that have operated cannot be reassembled or re-used, but must be replaced. When replacing flush type sprinkler, always use new units.
- 3) Nothing should be hung from, attached to, or otherwise obstruct the travel of heat to the flush type sprinkler from any point within its listed area of coverage. Immediately remove all obstructions or, if necessary, install additional flush type sprinkler.
- 4) When replacing existing flush type sprinkler, the system must be removed from service. Refer to the appropriate system description and/or valve instructions. Prior to removing the system from service, notify all Authorities Having Jurisdiction. Consideration should be given to employment of a fire patrol in the affected area.
 - A. Remove the system from service, relieving all pressure (air, nitrogen, or water) on the sprinkler line piping.
 - B. Drain water from hydraulic sprinkler lines and remove any moisture present in pneumatic sprinkler lines.
 - C. Using the special wrench, remove the old flush type sprinkler, and install the new unit. Care must be taken to ensure that the replacement unit has the proper temperature rating. A fully stocked sprinkler equipment cabinet should be provided for this purpose.
 - D. Place the system back in service and secure all valves. Check for and repair all leaks.
- 5) Sprinkler systems that have been subject to fire must be returned to service as soon as possible. The entire system must be inspected for damage and repaired or replaced as necessary. Sprinklers that

have been exposed to corrosive products of combustion or high ambient temperatures, but have not operated, should be replaced. Refer to the Authority Having Jurisdiction for minimum replacement requirements.

6) Absence of an escutcheon, which is used to cover a clearance hole, may delay the time to sprinkler operation in a fire situation.

7) Before closing a fire protection system control valve for maintenance work on the fire protection system, which 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.

8) It is recommended that automatic sprinkler systems be inspected quarterly by a qualified Inspection Service.

Operation

The Sprinkler assembly contains a small fusible solder element. When exposed to sufficient heat from a fire, the solder melts and enables the internal components of the sprinkler to fall away. At this point the sprinkler activates with the deflector dropping into its operated position (Reference Figure 1), permitting water to flow.

TABLE 1

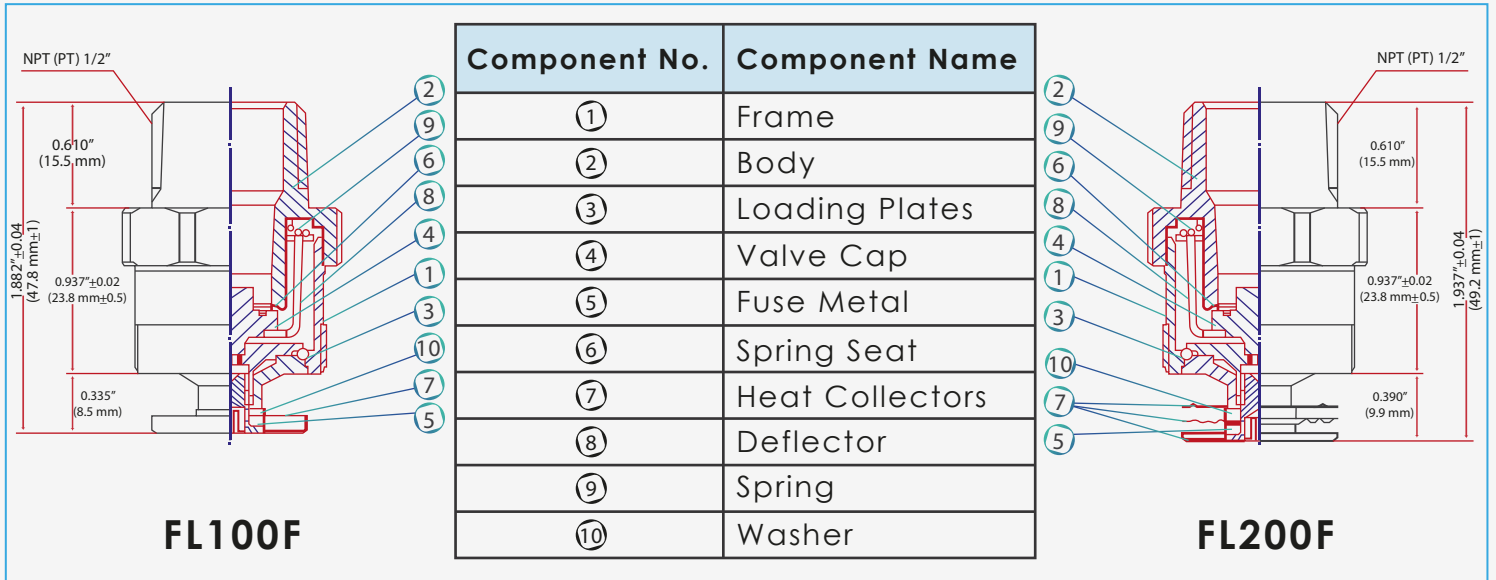
AVAILABLE SPRINKLER TEMPERATURE RATINGS AND FINISH-			
Sprinkler Temperature	Sprinkler Nominal Temperature Rating¹	Maximum Ambient Ceiling Temperature	Sprinkler(Body) Color
Ordinary	165 °F (74 °C)	100 °F (38 °C)	Colorless
Intermediate	205 °F (96 °C)	150 °F (65 °C)	White
Intermediate	220 °F (105 °C)	150 °F (65 °C)	White

Cover Plate Finishes: Natural, Polished Chrome, Nickel Chrome

Footnotes

1- The sprinkler temperature rating is stamped on the deflector.

Figure 2



Standard (FL100F) & Quick (FL200F) Flush Type Sprinkler Dimensions K-Factor: 5.6 1/2" NPT

TABLE 2

Sprinkler I.D. No. & Model									
I.D. No. & Model	Style	Response	Thread Size	Element	Nominal K - Factor		Max. Working Pressure		Approved Temperature Ratings
					U.S.	METRIC	PSI	BAR	
FL100F	Pendent	Standard	NPT 1/2"	Fuse Metal	5.6 (U.S.)	80 (metric)	175 psi	12.1 bar	165°F (74 °C), 205 °F (96 °C), 220 °F (105 °C)
FL200F	Pendent	Quick	NPT 1/2"	Fuse Metal	5.6 (U.S.)	80 (metric)	175 psi	12.1 bar	165 °F (74 °C), 205 °F (96 °C), 220 °F (105 °C)

TABLE 3

Series (FL100F) Standard and (FL200F) Quick Part Number Selection

FL X00X-X-XXX



1	NATURAL
2	CHROME
3	NICKEL CHROME

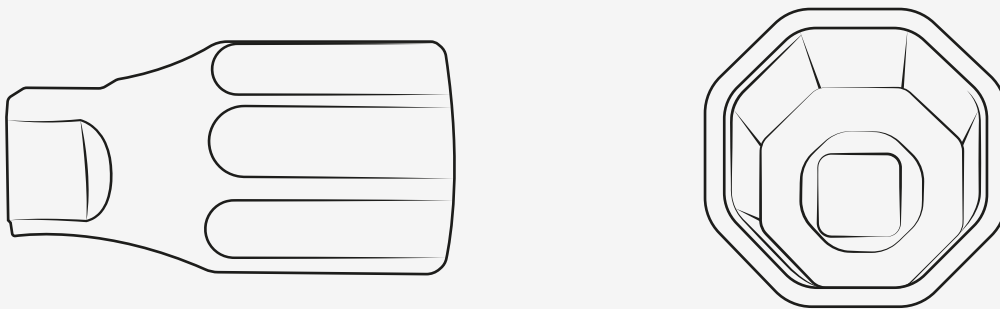
165	165 °F(74 °C)
205	205 °F(96 °C)
175	175 °F(105 °C)

Please Refer to Table 2 for I.D. No. & Model.

ACCESSORIES

Installation Wrench Type F-2

Figure 3



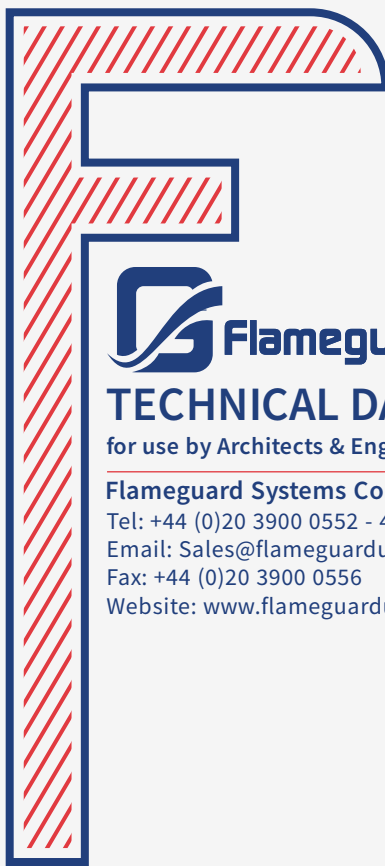
Flush Type Sprinkler Wrench Type F2

AVAILABILITY

Flameguard products are available through a network of domestic and international distributors. See the Flameguard Web site for your closest distributor or contact The Flameguard.

GUARANTEE

For details of warranty, refer to Flameguard’s current list price schedule or contact Flameguard directly.



TECHNICAL DATA

for use by Architects & Engineers

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