

# Technical Data Sheet: MX8462-MRI (K5.6) and MX8464-MRI (K8.0) Quick Response Concealed Pendent Sprinklers

## 1. DESCRIPTION

Quick Response Concealed MRI Sprinklers are intended for use inside an MRI environment, such as the MR system room. They are not intended to be used within the bore of the MR scanner itself. This sprinkler has been independently tested for use with a 3-Tesla MR system in accordance with ASTM F2502-15 criteria. The results of this test demonstrate that this product is acceptable for use in an environment with a static magnetic field of 3-Tesla or less and the highest spatial gradient magnetic field of 330-Gauss/cm or less.

The sprinkler is pre-assembled with a threaded adapter for installation with a low-profile cover assembly that provides up to 1/2" (13 mm) of vertical adjustment. The two-piece design allows installation and testing of the sprinkler prior to installation of the cover plate. The "push-on", "thread-off" design of the concealed cover plate assembly allows easy installation of the cover plate after the system has been tested and the ceiling finish has been applied. The cover assembly can be removed and reinstalled, allowing temporary removal of ceiling panels without taking the sprinkler system out of service or removing the sprinkler.

## 2. LISTINGS AND APPROVALS

**cULus Listed:** Category VNIV

\* Refer the Approval Chart and Design Criteria for cULus Listing requirements that must be followed.

## 3. TECHNICAL DATA

### Specifications:

- Minimum Operating Pressure: 7 psi (0.5 bar)
- Maximum Working Pressure: 175 psi (12 bar) wwp
- Factory tested hydrostatically to 500 psi (34.5 bar)
- Thread size: 1/2" (15 mm) NPT or 3/4" (20 mm) NPT
- Nominal K-Factor: 5.6 U.S. (80.6 metric\*\*) or 8.0 U.S. (115.2 metric\*)
- Glass-bulb fluid temperature rated to -65 °F (-55 °C)
- Overall Length: 2-1/4" (58 mm)

\*\*Metric K-factor measurement shown is when pressure is measured in Bar. When pressure is measured in kPa, divide the metric K-factor shown by 10.0.

### Material Standards - Sprinkler:

- Sprinkler Body: Brass UNS-C84400
- Deflector: Phosphor Bronze UNS-C51000
- Deflector Pins: Stainless Steel Alloy
- Bulb: Glass, nominal 3 mm diameter
- Pip Cap and Insert Assembly: Copper UNS-C11000 and Stainless Steel UNS-S30400
- Button: Brass UNS-C36000
- Screws: 18-8 Stainless Steel
- Belleville Spring Sealing Assembly: Nickel Alloy, coated on both sides with Teflon Tape
- Yoke: Phosphor Bronze UNS-C51000
- Cover Adapter: Brass UNS-C26800

### Material Standards - Cover

- Cover: Copper UNS-C11000
- Base: Brass UNS-C26800 or UNS-C26000
- Springs: Nickel Alloy
- Solder: Eutectic

### Available Temperature Ratings:

Temperature	155 °F (68 °C)	175 °F (79 °C)	200 °F (93 °C)
Suffix	B	D	E

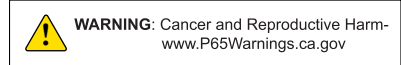
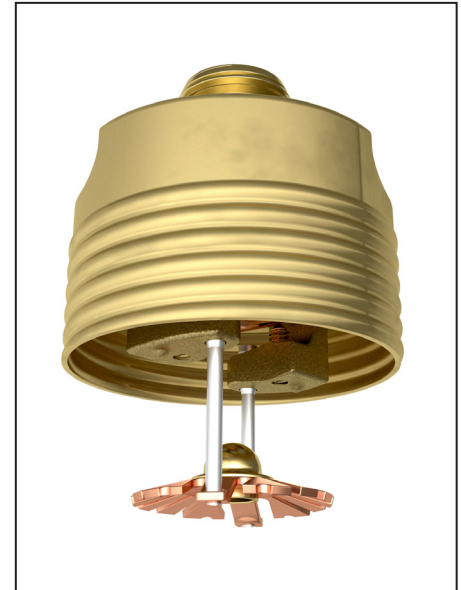
**Ordering Information:** Sprinkler Assembly and Cover Plate must be ordered separately. Refer to Tables 1 and 2.

## 4. INSTALLATION

Refer to appropriate NFPA Installation Standards.

## 5. OPERATION

During fire conditions, the heat-sensitive liquid in the glass bulb expands, causing the glass to shatter, releasing the pip cap and sealing spring assembly. Water flowing through the sprinkler orifice strikes the sprinkler deflector, forming a uniform spray pattern to extinguish or control the fire.



**6. INSPECTIONS, TESTS, AND MAINTENANCE**

Refer to NFPA 25 for Inspection, Testing and Maintenance requirements.

**7. AVAILABILITY**

The Model MX8462-MRI and MX8464-MRI Sprinklers are available through a network of domestic and international distributors. See the web site for the closest distributor or contact us.

**8. GUARANTEE**

For details of warranty, refer to the current list price schedule or contact us directly.

**TABLE 1: SPRINKLER ORDERING INFORMATION**

Instructions: Using the sprinkler base part number,  
(1) add the suffix for the desired Temperature Rating.  
The cover plate must be ordered separately - see Table 2.

SIN	Sprinkler Base Part No.	Size NPT Inch	Temperature Classification	1: Temperature Ratings			
				Nominal Rating	Bulb Color	Max. Ambient Ceiling Temperature <sup>2</sup>	Suffix
MX8462	61286A	1/2	Ordinary	155 °F (68 °C)	Red	100 °F (38 °C)	B
MX8464	61288A	3/4	Intermediate	175 °F (79 °C)	Yellow	150 °F (65 °C)	D
			Intermediate	200 °F (93 °C)	Green	150 °F (65 °C)	E
Example: 61286AE = MX8462-MRI, 200 °F (93 °C) Temperature Rated Sprinkler.							

**Accessories**

**Sprinkler Wrenches (see Figure 1):**

- A. Heavy Duty Wrench Part Number: 14047WB<sup>3</sup>
- B. Head Cabinet Wrench Part Number: 14031

**Sprinkler Cabinet:**

Part number 61414.

**Footnotes**

1. Where a dash (-) is shown in the Finish suffix designation, insert the desired Temperature Rating suffix. See example above.
2. Based on NFPA 13, NFPA 13R, and NFPA 13D. Other limits may apply, depending on fire loading, sprinkler location, and other requirements of the Authority Having Jurisdiction. Refer to specific installation standards.
3. Requires a 1/2" ratchet which is not available from us.

**TABLE 2: COVER PLATE ORDERING INFORMATION**

Instructions: Using the cover plate base part number,  
(1) add the suffix for the desired Finish  
(2) add the suffix for the required Cover Plate Nominal Rating.

Cover Plate Base Part Number <sup>4</sup>	Size Inch (mm)	Style	1: Finishes		Temperature Rating Matrix <sup>1,2</sup>			
			Description	Suffix <sup>5</sup>	Cover Plate Nominal Rating (Required)	Sprinkler Nominal Rating	Sprinkler Max. Ambient Ceiling Temperature <sup>2,3</sup>	Suffix
62018	2-3/4 (70)	Round	Polished Chrome	F	135 °F (57 °C)	155 °F (68 °C)	100 °F (38 °C)	A
62013	3-5/16 (84)	Round	Painted White	M-W	165 °F (74 °C)	175 °F (79 °C)	150 °F (65 °C)	C
			Painted Ivory	M-I	165 °F (74 °C)	200 °F (93 °C)	150 °F (65 °C)	C
			Painted Black	M-B				
Example: 62018MCW = 165 °F (74 °C) Temperature Rated 2-3/4" (70 mm) Diameter Round Cover Plate with a Painted White Finish.								

**Footnotes**

1. The sprinkler temperature rating is stamped on the deflector.
2. Based on NFPA-13, NFPA 13R, and NFPA 13D. Other limits may apply, depending on fire loading, sprinkler location, and other requirements of the Authority Having Jurisdiction. Refer to specific installation standards.
3. Maximum ambient temperature for cover assembly is 150 °F (65 °C).
4. Part number shown is the base part number. For complete part number, refer to current our price list schedule.
5. Where a dash (-) is shown in the Finish suffix designation, insert the desired Temperature Rating suffix. See example above.

# Approval Chart

## Quick Response Concealed Pendent MRI Sprinklers



Sprinkler Base Part Number <sup>1</sup>	SIN	Thread Size	Nominal K-Factor		Maximum Water Working Pressure	Listings and Approvals <sup>3</sup> (Refer also to Design Criteria)
		NPT Inch	U.S.	metric <sup>2</sup>		cULus <sup>4</sup>
61286A	MX8462	1/2	5.6	80.6	175 psi (12 bar)	AW1, BX1
61288A	MX8464	3/4	8.0	115.2	175 psi (12 bar)	AW1, BX1

<b>Sprinkler Temperature Ratings</b> A - 155°F (68°C) B - 175°F (79°C) and 200°F (93°C)	<b>Cover Plate Assembly Temperature Ratings<sup>5</sup></b> W - 135°F (57°C) cover 62018 <sup>1</sup> or 62013 <sup>1</sup> (large diameter) X - 165°F (74°C) cover 62018 <sup>1</sup> or 62013 <sup>1</sup> (large diameter)	<b>Cover Plate Assembly Finishes<sup>6</sup></b> 1 - Polished Chrome, Brushed Chrome, Bright Brass, Antique Brass, Brushed Brass, Brushed Copper, Painted White, Painted Ivory, or Painted Black
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### Footnotes

- <sup>1</sup> Part number shown is the base part number. For complete part number, refer to current price list schedule.
  - <sup>2</sup> Metric K-factor measurement shown is when pressure is measured in Bar. When pressure is measured in kPa, divide the metric K-factor shown by 10.0.
  - <sup>3</sup> This chart shows the listings and approvals available at the time of printing. Other approvals may be in process. Check with the manufacturer for any additional approvals.
  - <sup>4</sup> Listed by Underwriter's Laboratories for use in the U.S. and Canada.
  - <sup>5</sup> The 135°F cover has an orange label. The 165°F cover has a white label.
  - <sup>6</sup> Painted finish consists of Polyester Baked Enamel. Other paint colors are available on request with the same listings as the standard paint colors. Listings and approvals apply for any paint manufacturer. Contact Minimax Fire Protection for additional information.
- NOTE:** Custom colors are indicated on a label inside the cover assembly. Refer to Figure 1.

## Design Criteria

(Also refer to the Approval Chart.)

### **cULus Listing Requirements:**

Concealed Pendent MRI Sprinklers were subjected to magnetic field interaction testing and determined to be MRI conditional according to the terminology specified in ASTM International, Designation F2502-15. These sprinklers are intended for use in a high magnetic field environment according to the following conditions:

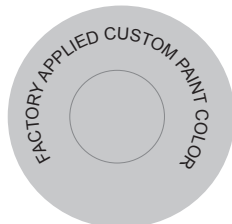
1. Static magnetic field of 3-Tesla or less
2. Highest spatial gradient magnetic field of 330-Gauss/cm or less

Sprinklers MX8462 and MX8464 are cULus Listed for installation in accordance with the latest edition of NFPA 13 for standard coverage pendent spray sprinklers as indicated below.

- For hazard occupancies up to and including Ordinary Hazard, Group II.
- Protection areas and maximum spacing shall be in accordance with the tables provided in NFPA 13. Maximum spacing allowed is 15 ft. (4.6 m).
- Minimum spacing allowed is 6 ft. (1.8 m) unless baffles are installed in accordance with NFPA 13.
- Minimum distance from walls is 4 in. (102 mm).
- Maximum distance from walls shall be no more than one-half of the allowable distance between sprinklers. The distance shall be measured perpendicular to the wall.
- The sprinkler obstruction rules contained in NFPA 13 for standard coverage pendent spray sprinklers must be followed.

**NOTE: Concealed sprinklers must be installed in neutral or negative pressure plenums only.**

**IMPORTANT: Always refer to Form No. FX\_091699 - Care and Handling of Sprinklers. Also refer to Form No. FX\_080614 for general care, installation, and maintenance information. Minimax Fire Protection sprinklers are to be installed in accordance with the latest edition of Minimax Fire Protection technical data, the appropriate standards of NFPA or other similar organizations, and also with the provisions of governmental codes, ordinances, and standards, whenever applicable.**

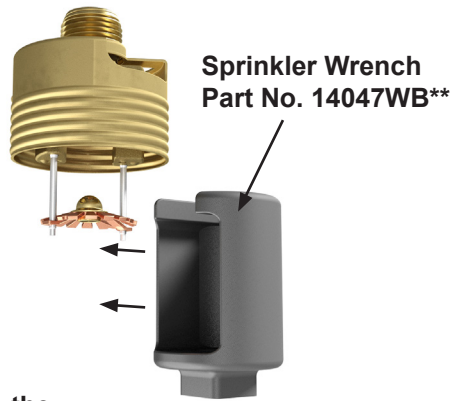


All custom color painted cover plates will have an identifying label affixed to the inside of the cover that indicates the custom color and will have a representative sample (a paint dot) of the paint on the label.

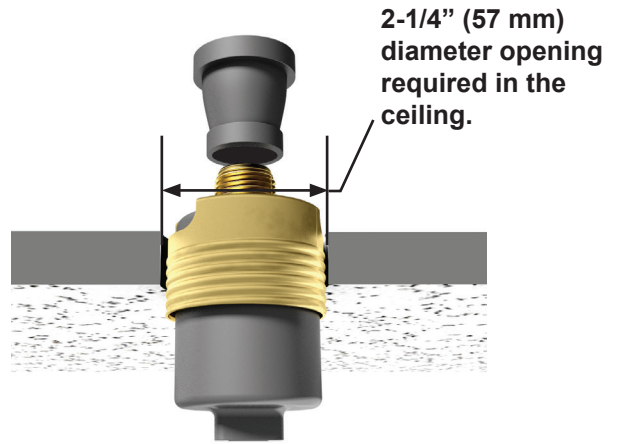
**Figure 1: Identification of Custom Paint for Concealed Covers**

**Sprinkler and Adapter Assembly**

- Protective cap removed
- Use wrench 14031\*\*



**Step 1:**  
Carefully slide the wrench sideways around the deflector and pins



**Step 2:**  
Carefully press the wrench upward and turn slightly to ensure engagement with the sprinkler wrench flats.

- NEVER install the sprinkler by applying the installation wrench across the frame arms.
- DO NOT overtighten.
- Use only the designated sprinkler wrenches, Minimax Fire Protection Part Numbers 14047WB or 14031\*\*.
- A leak tight seal should be achieved by turning the sprinkler clockwise 1 to 1-1/2 turns beyond finger tight.

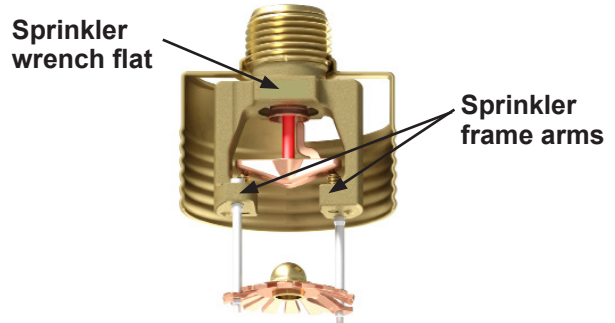


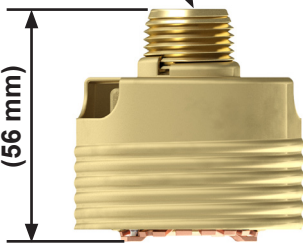
Figure 2: Sprinkler Installation and Proper Wrench Usage (Sprinkler MX8462 Shown)

\*\* A 1/2" ratchet is required (Not available from us.)

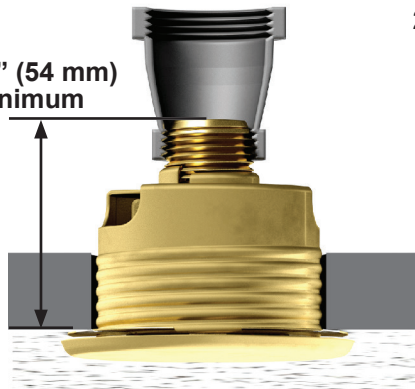
Form No. FX\_062908 20.01.13 Rev 20.1

1/2" (15mm) NPT (MX8462)  
or  
3/4" (20mm) NPT (MX8464)

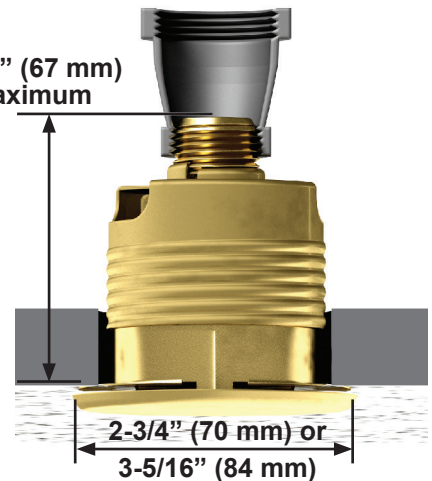
2-3/16" (56 mm)



2-1/8" (54 mm)  
Minimum



2-5/8" (67 mm)  
Maximum



**NOTE:** Upon sprinkler activation, the deflector descends to approximately 13/16" (21 mm) below the sprinkler body.

Figure 3: Sprinkler Dimensions and Cover Installation (Sprinkler MX8462 Shown)