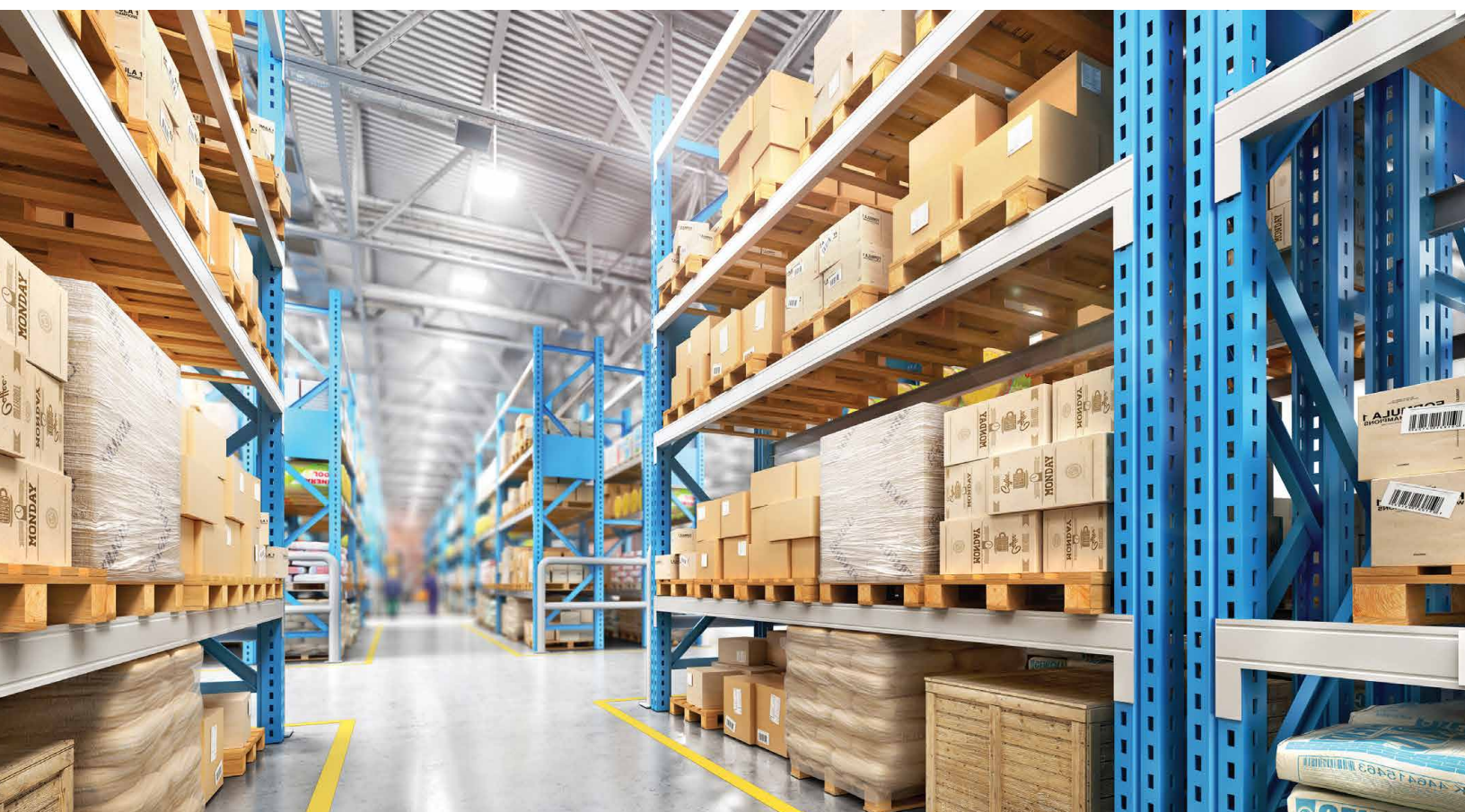




# Fire sprinkler solutions for storage applications



The full spectrum of Fire Suppression

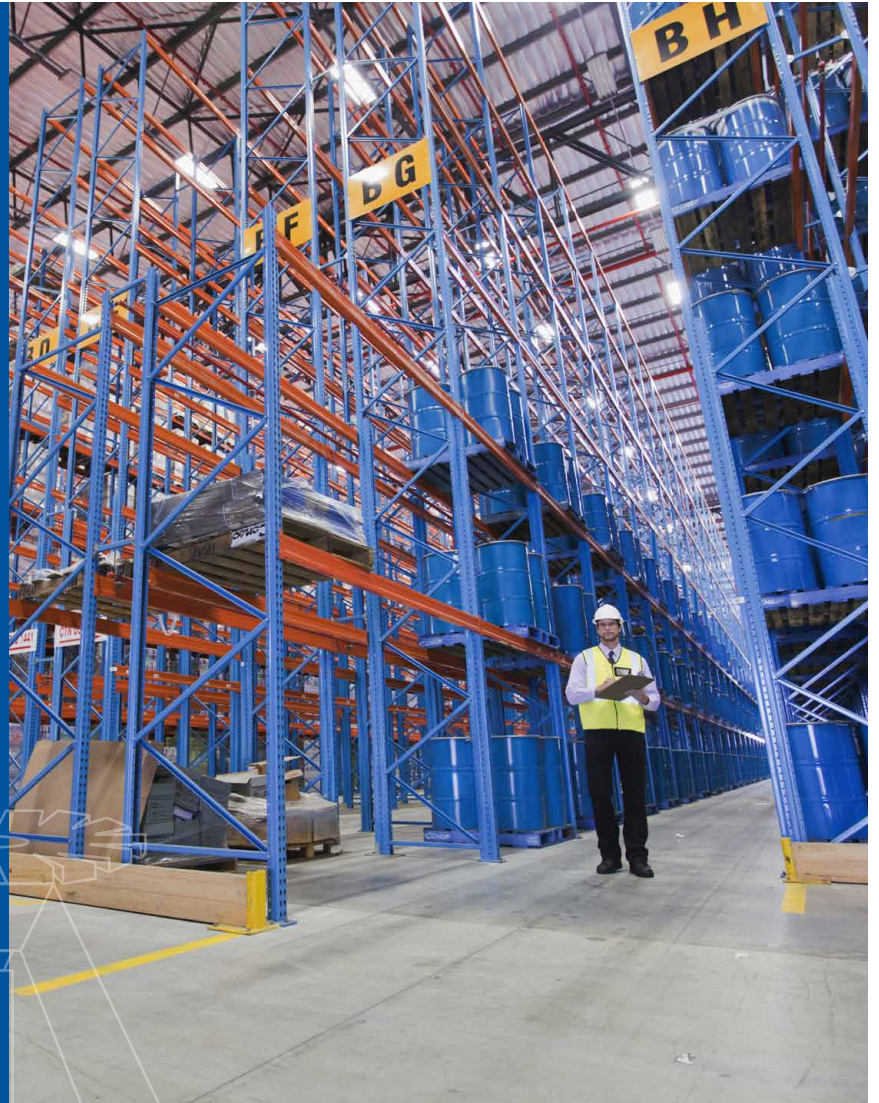
The power behind **your mission**



# Get it all from one trusted partner

Coverage for the tallest ceilings and narrowest aisles. Compliance with the highest safety standards and regulations. Designs that consider the future requirements of your facility. Meet all your fire suppression needs with comprehensive storage protection solutions from the Tyco® brand by Johnson Controls.

As e-commerce has drastically changed the way we store and distribute products, modern warehousing and logistics have been pressured to keep pace with the rapidly evolving expectations of their customers. At the same time, a shift toward different packaging materials can create increased challenges that call for innovative, forward-thinking protection solutions.



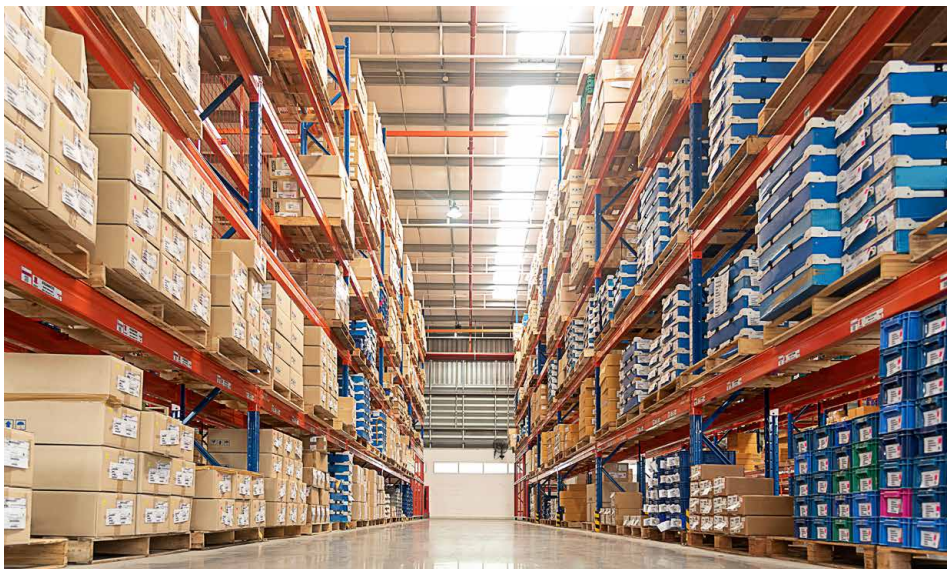
# Ceiling-only protection

Tyco sprinklers are designed and tested to provide complete ceiling-only protection, meaning they can be used in system designs that eliminate in-rack sprinklers. This reduces the risk of damaged sprinkler heads and accidental activations that can lead to damaged commodities and costly downtime.

With the highest coverage available, Tyco sprinklers can help maximize vertical storage with ceiling heights up to 55 feet (16.8m) for both conditioned and cold storage applications.

Johnson Controls has expertise in helping protect the unique needs of various facility types, including:

- Warehouses
- Distribution and fulfillment centers
- Automated facilities
- Box-in-box cold storage
- Fully refrigerated warehouses



## What about in-rack sprinklers?

As the warehouse industry continues to push commodity storage to new heights, ceiling-only protection remains the preferred design solution. However, it is important to understand current industry limitations. When in-rack sprinklers are required, Johnson Controls has you covered with a wide array of standard and fast-response sprinklers equipped with guards or shields to help you design systems that allow optimal storage with efficient water delivery closer to the fire.

ESFR Sprinkler Shields are available in two sizes: ES-1 compatible with ESFR-14 and ESFR-17 sprinklers, and the ES-2 compatible with the ESFR-22 and the ESFR-25 sprinklers. FM Approved for in-rack storage solutions, these metal shields protect sprinkler elements from cold soldering, which occurs when cascading water from sprinklers above cool down and inhibit the operation of in-rack ESFR sprinkler mounted below.

For designs using the Model ESFR-25, the Tyco EG-25 Sprinkler Guard is the first FM Approved guard for in-rack applications and for use with the FM Alternative In-Rack scheme.

Options include: TY-L, TY-B, TY-FRL, TY-FRB with guards and shields available; ESFR-25, EG-25 guard; Flat Spray.

# A broad fire sprinkler portfolio

### ESFR Sprinklers

Early Suppression, Fast Response (ESFR) sprinklers provide protection for a wide range of commodities and storage arrangements, making them a versatile, long-term choice to meet changing needs over the lifetime of a storage space.

Options include: ESFR-14, ESFR-17 pendent and upright, ESFR-17 dry type, ESFR-22, ESFR-25, and ESFR-34.



### Extended Coverage Sprinklers

Increase the maximum coverage area per sprinkler with extended coverage sprinklers, which reduces the overall number of required sprinklers in a system design.

Options include: EC-25.



### ESFR Rapid Install Sprinklers (RIS)

The ESFR Rapid Install Sprinklers with custom welded outlet fittings (in 2", 2.5" and 3" sizes) are installed with simple tool-free hand-tightening. A pre-installed rubber gasket, which sits outside the waterway and away from the heat sensor, eliminates the need to apply sealant or tape.

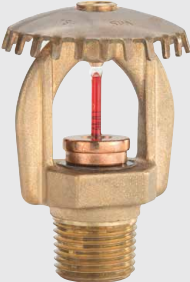
(Available models: ESFR-22, ESFR-25)



### ELO Sprinklers

Extra Large Orifice (ELO) sprinklers are designed to control high-challenge fires with relatively low required pressures. These sprinklers have proven performance in storage applications backed by full-scale fire testing.

Options include: ELO-231, ELO-231B, and ELO-231FRB.



# Specialty systems

## EAS-1 Electronically Activated Sprinkler System

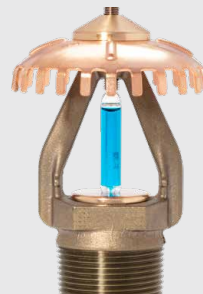
The Tyco EAS-1 system features electronically activated sprinklers designed to be the most efficient and effective storage fire protection available today. The EAS-1 system detects and begins suppressing the source of a fire sooner than traditional sprinklers, resulting in reduced commodity damage and downtime.



## QUELL Cold Storage Fire Protection System

QUELL systems help maximize storage within an existing footprint, while also providing greater flexibility and dependable performance. With ceiling-only protection up to 55 feet (16.8m) using the Ultra K-34 sprinkler, QUELL protection offers the highest ceiling-only protection available on the market.

Note: Available as the vanQuish system in New Zealand and Australia.



# Completing your fire sprinkler system

## Fire Protection Valves

Tyco offers a range of dependable and trusted valves designed for easy installation, testing, and maintenance.

Options include: DPV-1, PRV-1A, CV-1, and DV-5A.

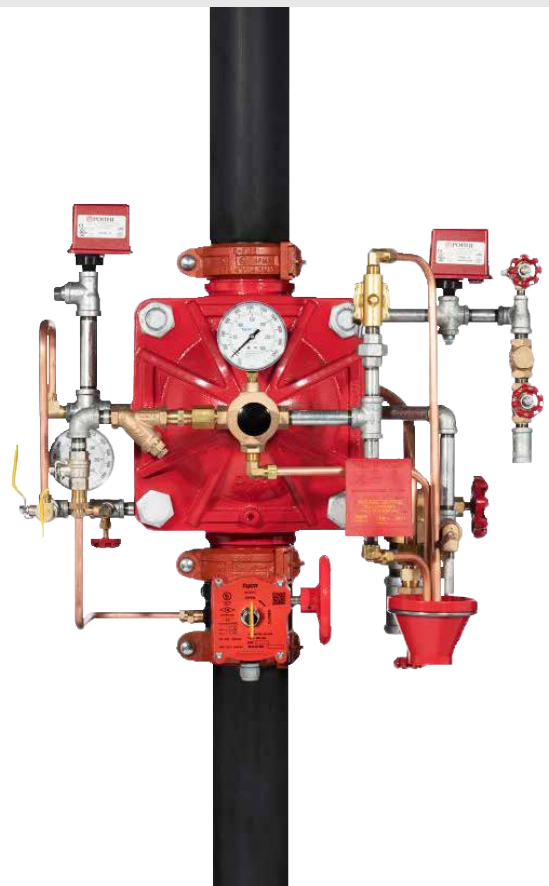


## Electronic Dry Pipe Accelerators

With electronic quick-opening devices, Tyco provides a solution for reducing the operating time of dry pipe valves with improved performance over mechanical alternatives.

Options include: QRS and VIZOR.

Note: VIZOR is available in the U.S. and Canada.

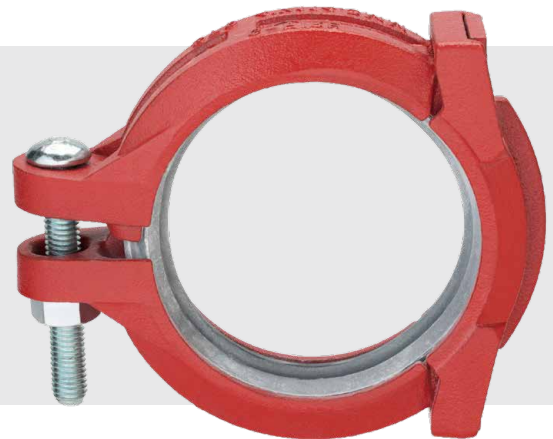


## Couplings

The Grinnell® G-Fire One-Bolt Coupling makes joining grooved pipe faster and easier than ever before.

Arriving pre-assembled and pre-lubricated, the G-Fire Figure 579 Coupling is ready to install right out of the box.

Available in sizes: 1¼" – 4"



## Corrosion solutions

Corrosion in fire sprinkler systems leads to plugging problems, diminished sprinkler performance, water leak damage and reduced service life – this translates to significant risks to life safety, structural integrity and business continuity.

The Model NG-1 nitrogen generator is at the heart of the Tyco® corrosion solutions portfolio. These generators offer unique benefits that fight corrosion while also reducing installation and maintenance labor.





## About Johnson Controls

At Johnson Controls, we transform the environments where people live, work, learn and play. From optimizing building performance to improving safety and enhancing comfort, we drive the outcomes that matter most. We deliver our promise in industries such as healthcare, education, data centers and manufacturing. With a global team of 105,000 experts in more than 150 countries and over 130 years of innovation, we are the power behind our customers' mission. Our leading portfolio of building technology and solutions includes some of the most trusted names in the industry, such as Tyco®, York®, Metasys®, Ruskin®, Titus®, Frick®, Penn®, Sabroe®, Simplex®, Ansul® and Grinnell®.

For more information, visit [www.johnsoncontrols.com](http://www.johnsoncontrols.com) or follow [@johnsoncontrols](https://twitter.com/johnsoncontrols) on Twitter

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