



# SMART \*STOP

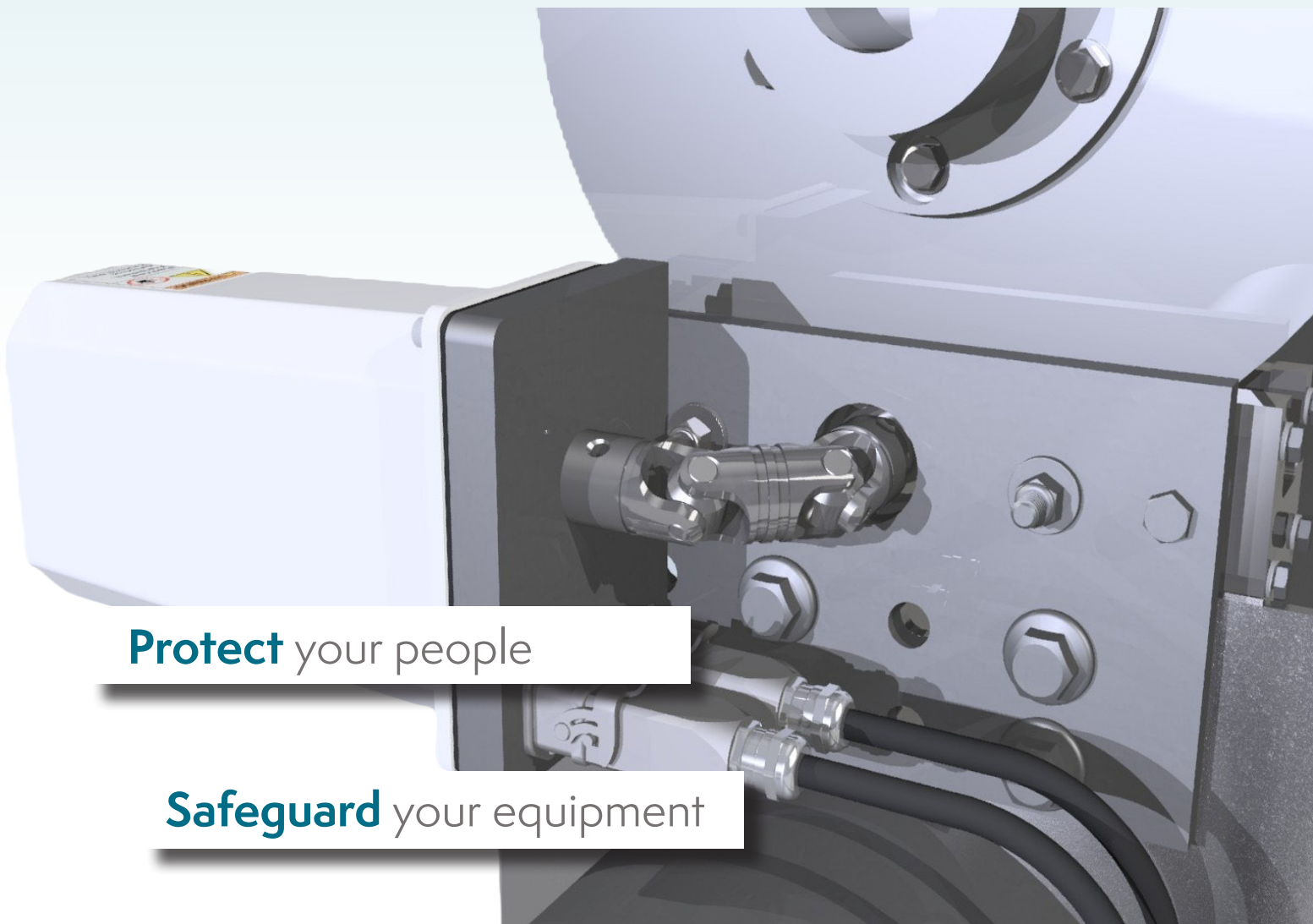
Patented Technology

## Fan Brake Automation

Cooling Towers

Air Cooled Condensers

A Solution from EvapTech



**Protect** your people

**Safeguard** your equipment



**TECHNOLOGY FOR THE FUTURE, AVAILABLE TODAY!**

# Product Overview



## What is Smart Stop?

Smart Stop is a fan brake automation technology designed to automate manual disc brakes. When installed, the system allows for discrete, intelligent electrical actuation of the Brake. The brake actuation is governed by proprietary control logic, allowing facilities to isolate fans safely and efficiently. The standard Smart Stop kit includes an electronic brake actuator ("Electric Actuator"), a local control panel ("Control Panel") and cabling between the electric brake actuator and control panel ("Cabling").

## What are the Benefits?

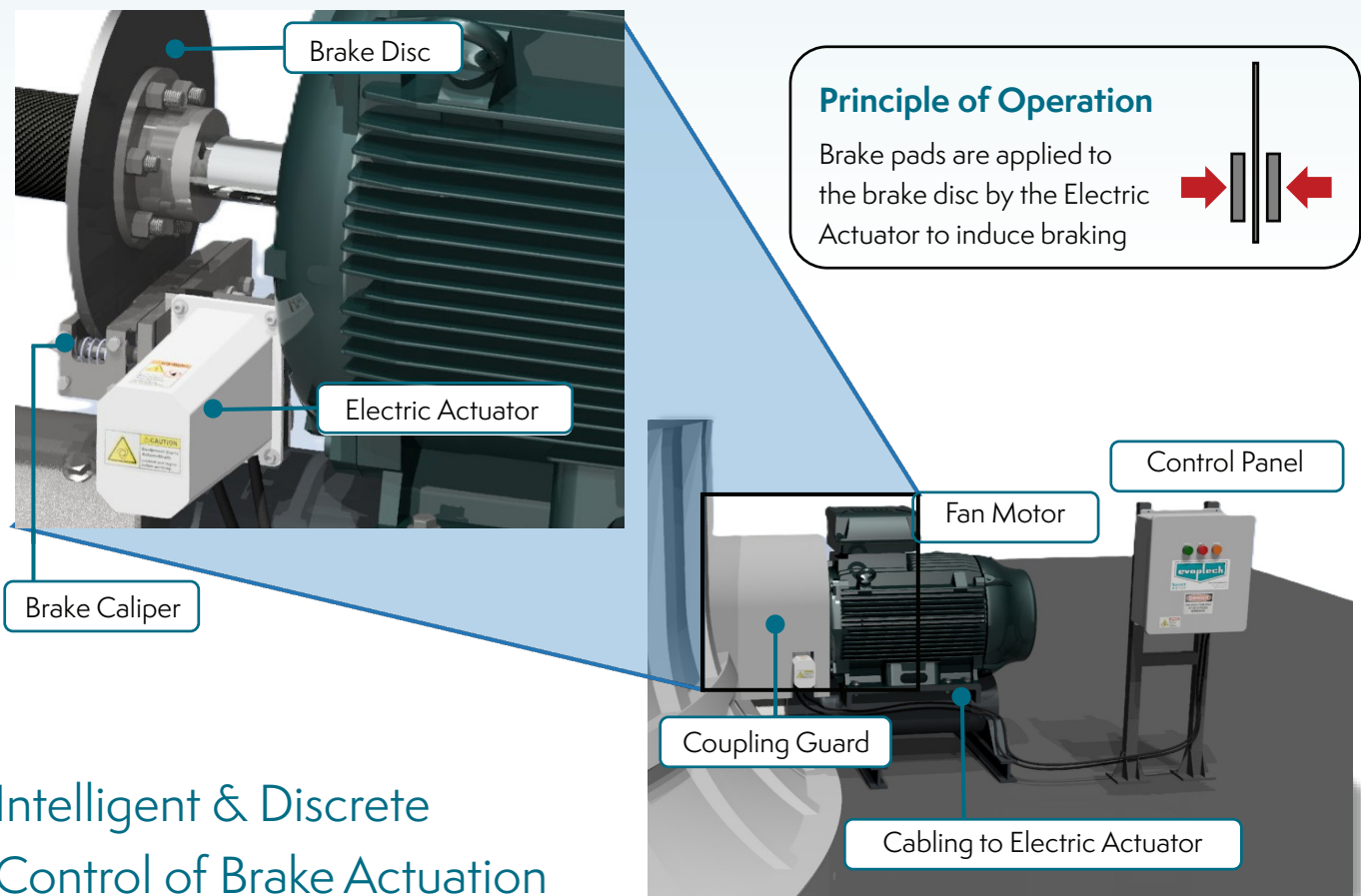
### *Personnel Safety*

Smart Stop provides personnel with the means to brake and isolate fans in order to reliably control hazardous potential energy before making entry into the fan stack area, eliminating the largest fatality threat for this type of rotating equipment.

### *Equipment Protection*

During high wind events, fans can freewheel at unsafe speeds, potentially damaging equipment. With Smart Stop, the fans can be isolated rapidly either locally or from the safety of a remote location.

## Smart Stop Installation

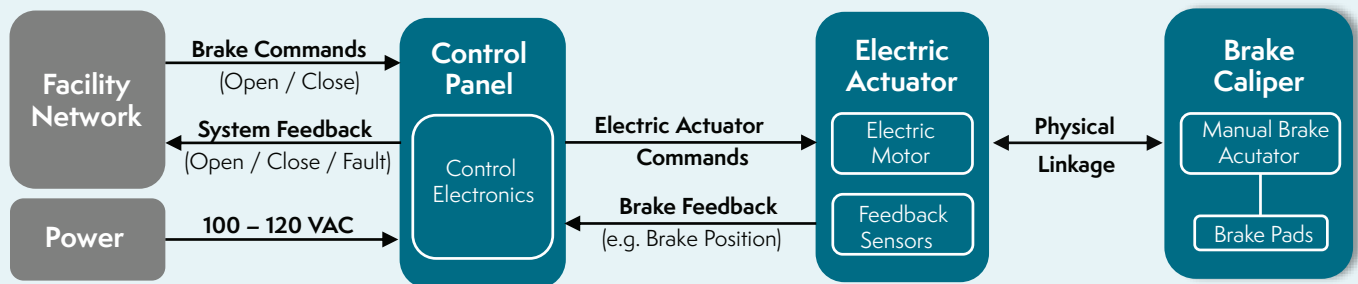


Intelligent & Discrete  
Control of Brake Actuation

# Features & Functionality



## Smart Stop System Diagram



## Primary Automation Features



### Remote Operation & Networking

Operate the System remotely through Digital I / O or Modbus TCP



### Active Fault Monitoring

The System continuously monitors for fault conditions that could impede operation



### Safe Braking Technology

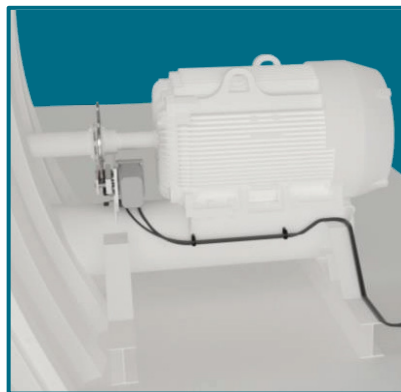
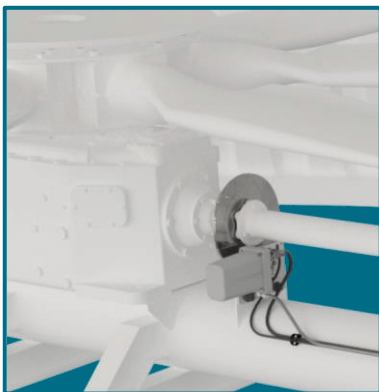
Proprietary, patented control logic regulates braking torque in real time



### Fan Motor Protection

The System can be installed to prohibit brake closure during fan motor operation

## Installation Flexibility: Mount Inside or Outside of Fan Stack



Smart Stop has been designed and tested for use in harsh cooling tower environments.

Facilities can mount the Electric Actuator inside or outside of the fan stack.

## Designed for Harsh Conditions

# Smart Stop Components



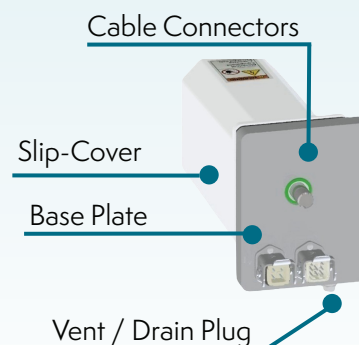
## What is Included?

The standard Smart Stop kit includes an electronic brake actuator, a local control panel, and all cabling required between the actuator and control panel for a complete, integrated control solution. Designed for reliable operation and straightforward installation, Smart Stop provides a safe and effective means of remotely actuating a mechanical brake system while giving operators convenient local control.

For applications requiring a complete braking package, Smart Stop is commonly paired with a driveshaft-mounted brake disc and caliper assembly. This combination provides a robust braking solution that can be readily integrated into new equipment or retrofit applications, delivering dependable stopping performance and enhanced operational safety.

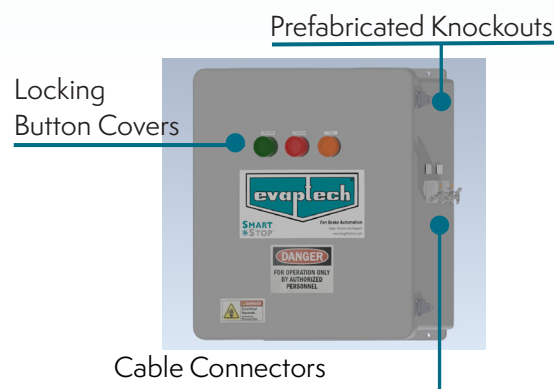
## Electric Actuator

|                                     |                     |
|-------------------------------------|---------------------|
| Overall Dimensions (H x W x D)..... | 6.5" x 4.7" x 10.8" |
| SlipCover Material.....             | Power Coated        |
| Base Plate Material.....            | Stainless Steel     |
| External Hardware.....              | Stainless Steel     |
| Operating Temperature Range .....   | 10°F - 150°F        |



## Control Panel

|                                     |                             |
|-------------------------------------|-----------------------------|
| Overall Dimensions (H x W x D)..... | 19.6" x 16.0" x 9.0"        |
| Enclosure Rating.....               | NEMA 4X, IP66               |
| Certifications.....                 | UL508A                      |
| Enclosure Material.....             | Fiberglass                  |
| External Hardware.....              | Stainless Steel             |
| Power Supply.....                   | 100 to 120 VAC, 50 or 60 Hz |
| Buttons w/ Indicator Light.....     | Close Button, Open Button   |
| Indicator Light.....                | Fault Light                 |
| Operating Temperature Range.....    | 0°F - 105°F*                |



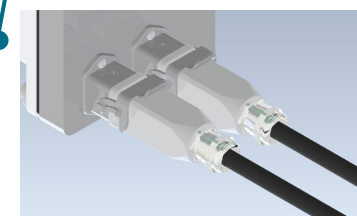
## Power & Signal Cables

|                                           |                             |
|-------------------------------------------|-----------------------------|
| Length Options Available.....             | 5', 10', 20', 25,m', custom |
| Connector Rating.....                     | IP67                        |
| Electric Actuator Connector Material..... | Stainless Steel             |
| Control Panel Connector Material.....     | Powder Coated Zinc          |
| Outer Cable Material.....                 | UV Resistant PVC Jacket     |

\*Longer Cables Available Upon Request

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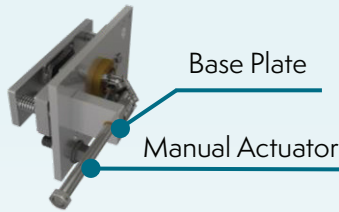
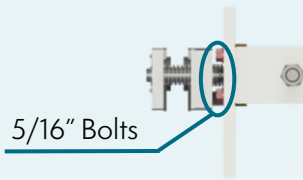
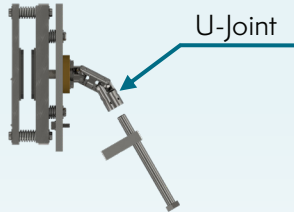
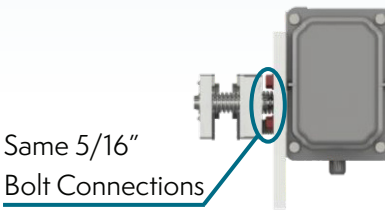
Locking, Industrial Grade  
Plug-In Connections



# Electric Actuator Installation Detail



## Retrofit of Brake with Electric Actuator

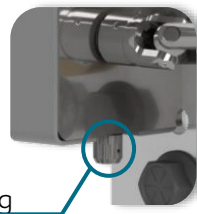
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|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>1 Brake Caliper</b></p>  <p>The Electric Actuator can be retrofit onto the most commonly used existing Brake or a new Brake.</p> | <p><b>2 Loosen 5/16" Bolts</b></p>  <p>Without disassembling the Brake, loosen the 5/16" bolts that secure the current base plate.</p>   | <p><b>3 Remove Manual Actuator</b></p>  <p>With the bolts loosened, the Manual Actuator can be detached from the U-Joint.</p>                            |
| <p><b>4 Align Electric Actuator</b></p>  <p>Align the Electric Actuator with the original UJoint and 5/16" bolt connections.</p>     | <p><b>5 Secure Electric Actuator</b></p>  <p>Using the same 5/16" bolts that have remained in place, secure the Electric Actuator.</p> | <p><b>6 Retrofit of Brake Complete</b></p>  <p>Ensure the Electric Actuator is aligned properly so that it turns freely. Retrofit is now complete.</p> |

## Vent / Drain Requirements

The Electric Actuator is fitted with a vent / drain port on the bottom of its base plate. This port must be vented outside of the fan stack for proper operation. For installations inside of the fan stack, a dedicated vent / drain line is required.

### Outside of Fan Stack

Standard Vent / Drain Plug



### Inside of Fan Stack

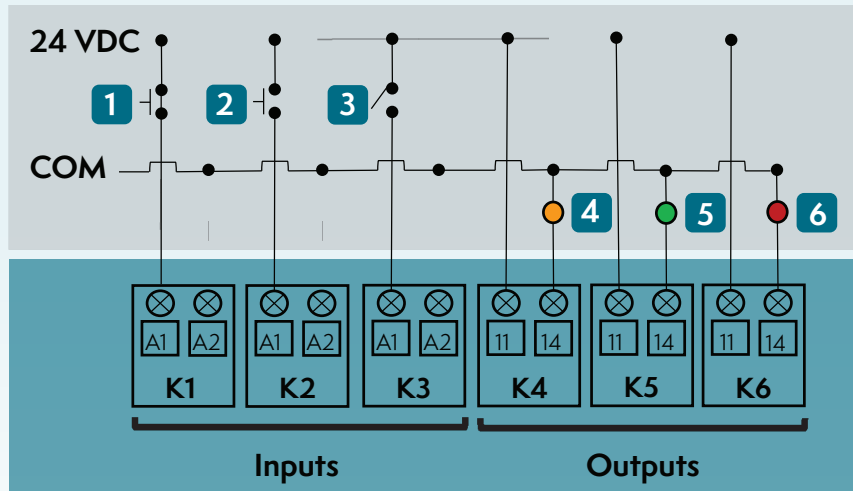
1/4" Dedicated Vent / Drain Line



# Control Panel Wiring & Electrical Detail

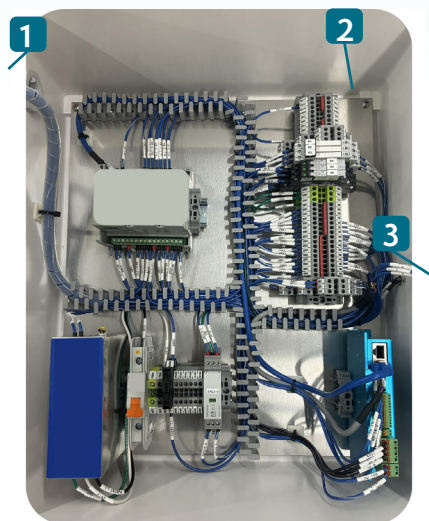


## 24 VDC Digital Input / Output Wiring



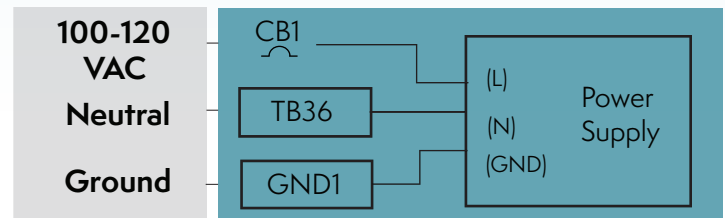
- Facility**
- Control Panel**
- 1** Brake Close Button
- 2** Brake Open Button
- 3** Fan Motor Switch
- 4** Fault Status Indicator
- 5** Open Status Indicator
- 6** Close Status Indicator

## Control Panel Interior



- 1** Ethernet Connection for Modbus TCP
- 2** 24 VDC Digital I / O Connections
- 3** Cable Connectors

## Power Supply Wiring



## Current Draw Information

**Inrush Current**.....8.2 A  
Occurring for approximately four (4) microseconds when voltage is first supplied to control panel.

**Standby**.....0.3 A  
Amp consumption during standby operation. This is the current draw even when the Brake is being held closed.

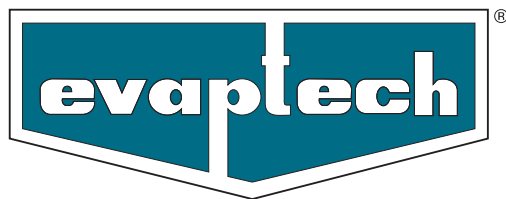
**Active Braking**.....1.3 A  
Amp consumption during active braking events which will typically last less than one (1) minute.



# Take a Modern Approach to Fan Safety

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How Does Your Team Isolate Fans Prior to Entering the Fan Stack Area?



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