Appleton®

CONTENDER™ 4/4X SERIES

CONTROL STATIONS & TUMBLER SWITCHES

Replacing or Specifying Controls in Hazardous Locations?

Most Class I hazardous locations are rated Division 2, but many facilities still use Division 1 rated controls in these environments. Explosion-proof, Division 1 controls do not provide suitable environmental protection for these demanding environments, subjecting them to ingress, moisture, and corrosion that lead to device inoperability and replacement. The added benefits of using Division 2 rated, factory sealed controls make a compelling case for retrofit when replacing corroded explosion-proof Division 1 controls or specification on greenfield projects because they are more durable and longer lasting, providing a lower total cost of ownership.

The Appleton™ Contender™ 4/4X Series by Emerson is the ideal control solution for a wide range of outdoor and indoor environments subject to wet and corrosive elements or dust, fibers, and flyings typical of Class II and III locations.

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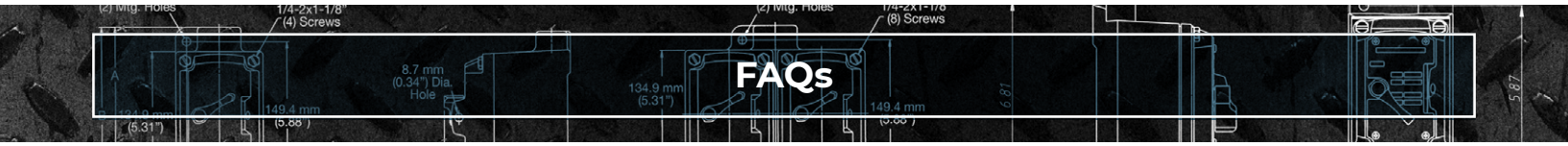


FAQs

Q: What are the advantages of Division 2 designs over Division 1 designs?

A: Explosion-proof, Division 1 control stations commonly use the ground joint construction method which requires an unobstructed flame-path that allows pressure from explosions inside the unit to safely exit between the cover and back box flanges. Appleton Division 2 control stations by Emerson rely on component level protection, for example, the factory sealed control device's contact block instead of the cover and back box flanges. This allows the use of a gasket on the cover to prevent water, dust, and other foreign materials from entering the unit and eliminates the need to apply grease on the cover and back box flanges that is often overlooked and not as robust.

Q: How does the Contender 4/4X Series better protect against harsh environments?

A: In addition to a cover gasket, each control device utilizes a gasket underneath the operator head, plus O-rings underneath the cover screws to effectively seal the unit from all possible ingress points. Hex-head cover screws made from stainless steel withstand prolonged exposure to corrosive environments ensuring future maintenance is easier. For added corrosion protection, control covers use an epoxy powder coat finish as standard, also available on optional aluminum back boxes to achieve a Type 4X rating. This durable coating is also an effective barrier against mechanical damage, heat, and most chemicals. The standard malleable iron back boxes feature our exclusive triple coat finish for similar long lasting performance in harsh and corrosive environments.

Q: What kind of savings are realized by upgrading to the Contender 4/4X Series?

A: Over time, insufficient ingress and corrosion protection degrades equipment, leading to regular maintenance and early replacement. Corroded cover screws are difficult to remove and slow down cover replacement, taking up to an hour after device installation and turning power off and on again. During this process stubborn screws can strip inside the back box, or the back box flanges may be compromised due to severe corrosion leading to more costly full unit replacement that can take up to three hours. Many facilities consider installing more expensive non-metallic units or cover accessories. However, with the design features of the Contender 4/4X Series, that expense is unnecessary. The higher quality materials and overall design of the Contender 4/4X Series provides best-in-class ingress and corrosion protection maximizing the product's life-span while reducing the number of replacements. The Contender 4/4X Series improves operational excellence so that maintenance personnel are less consumed with frequent repairs and can focus on more vital tasks.

Q: Are Contender 4/4X Series covers permitted to be installed on Crouse-Hinds Series EDS back boxes?

A: Contender 4/4X Series control device covers are UL Classified for use with Crouse-Hinds EDS Series back boxes.

Q: How does the Contender 4/4X Series perform in demanding environments?

A: There are rigorous tests the Contender 4/4X Series had to pass to carry these protection ratings:

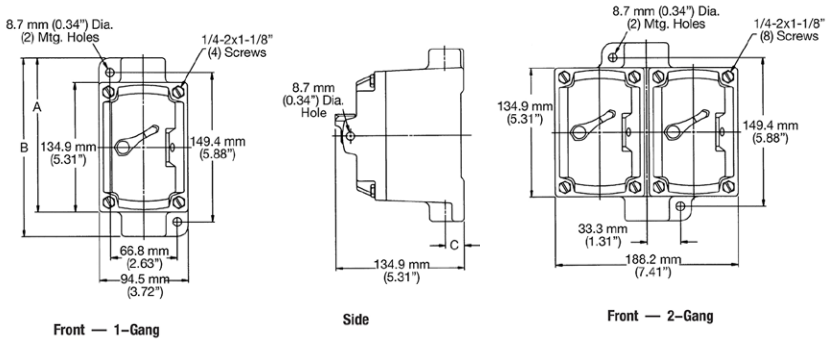
• Type 4 and IPX6: All joints were subjected to a stream of water from a nozzle having I.D. of 1" and 0.5" that delivered 65 and 26 gallons of water per minute from the distance of 10-12 feet and 8-10 feet respectively.

• IP6X: Unit kept in dust chamber and subjected to 2kg/m3 dense talcum powder at maximum depression of 2kPa for 8 hours.

• Type 4X: Aluminum back box subjected to a 200-hour salt spray test, without signs of pitting, cracking, or other deterioration.

• Type 12: Gaskets immersed in immersion oil No. 903 for 70 hours at room temperature without swelling more than 25 percent or shrinking more than 1 percent.

Appleton™ Contender™ 4/4X Series factory sealed control stations and tumbler switches are for use in wash-down areas and other damp, wet and highly corrosive or dusty areas where ignitable vapors, gases or highly combustible dusts are abnormally present. Push buttons and selector switches are used in conjunction with contactors or magnetic starters for remote control of motors. Pilot lights provide visual assurance that an electrical function is being performed at a remote or local hazardous location. Tumbler switches are designed to prevent arcing of enclosed switches in ignitable atmospheres during connect and disconnect operation of lighting and small motor loads.



Contender™ Series Features

- Covers are UL Classified for use with Crouse-Hinds EDS series back boxes; Factory sealed, no external seals required
- Silicone cover gasket ensures high degree of water and dust ingress protection
- Selector switch knob and momentary push button guard accepts 1/4" padlocks to prevent unauthorized startup or turnoff
- Corrosion resistant captive stainless steel screws holds cover to back box
- Epoxy powder coat finish standard on covers for enhanced corrosion resistance
- The Labyrinth switch used in push buttons and selector switches is rated A600 (Vac) heavy pilot duty and P150 (Vdc)
- Pilot light employs LED cluster with lifetime of 100,000 hours that can be used at either 120 Vac or 240 Vac and optional 12/24 Vdc ratings
- Tumbler switch has lockout provision for 1/4-inch locks to prevent unauthorized startup or turn off
- 20 Amp 1-Pole, 2-Pole, and 3-Way tumbler switches available for use with 120-277 Vac and are rated 1 HP at 120 Vac and 2 HP at 240 Vac
- Back box furnished with internal ground screw
- Back box has external mounting lugs for ease of mounting
- Smooth, rounded integral bushing in each hub protects conductor insulation

Contender™ Series Applications

- Designed to prevent arcing of enclosed switches in ignitable atmospheres during connect and disconnect operation of lighting and small motor loads.
- For use in wash-down and other damp, wet and highly corrosive or dusty areas where ignitable vapors, gases or highly combustible dusts are abnormally present.
- For installation in:
  - Chemical plants
  - Petrochemical plants
  - Refineries
  - Wastewater treatment plants
  - Milling and grain processing facilities
  - Anywhere corrosive elements are present.

Specifications

NEC and CEC Certifications and Compliances	Class I, Division 2, Groups B, C, D; Zone 2, Group IIB+H2; Class II, Division 1 and 2, Groups E, F, G; Class III; Type 3, 3R, 4, 4X, 12; IP66
Standard Materials and Finishes	Back box is malleable iron with triple-coat finish (1) zinc electroplate, (2) chromate, and (3) epoxy powder coat or copper-free (4/10 of 1% max.) aluminum with epoxy powder coat finish. Cover is copper-free aluminum with epoxy powder coat finish.
Temperature Rating	-25 °C to +40 °C (-13 °F to -104 °F)
Available Options	Aluminum back box for Type 4X rating. Green, amber, blue, and white pilot light colors with or without 12/24 Vdc rating. Spring return selector switches. Mushroom head push button guard. See catalog pages for more detailed options.

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