Design solutions for wind farm applications

Look to Eaton's Cooper Power™ series 600 A 35 kV class DirectConnect elbow arrester to offer wind farm customers significant cost savings and ease of installation. This new deadbreak design replaces three components: bushing extender, loadbreak reducing tap plug and the traditional 200 A elbow arrester. The DirectConnect elbow arrester is available in two design options: VariGAP and M.O.V.E. Eaton values your trust in our experience to engineer products that save you money.

Reliability, cost savings and ease of installation

Eaton is now combining their 40+ year track record in separable connectors and 27 years in underground arresters to introduce the 600 A DirectConnect elbow arrester. Eaton offers a cost-effective design with a shorter stacking height. With this design, you no longer have to worry about clutter or not being able to fit your cable accessories into smaller enclosures. The DirectConnect elbow arrester replaces three components with one and is over 50% smaller in size than the traditional offering, cutting installation time by 80%. Not only does this design save you money on direct material costs, but it also reduces overall labor expenses.

The DirectConnect elbow arrester utilizes the design expertise and manufacturing know-how that contractors, developers and owners alike have come to rely on from Eaton. Specific for 35 kV wind farm applications, the VariGAP design option provides enhanced temporary overvoltage (TOV) characteristics for superior MCOV performance over time. The VariGAP design is available in 27 kV and the standard M.O.V.E. design is available in 27 kV and 30 kV ratings.

Installation is easy. Simply thread the adapter into a standard 600 A bushing and install the DirectConnect elbow arrester onto the bushing. The probe inside the arrester latches into the adapter.

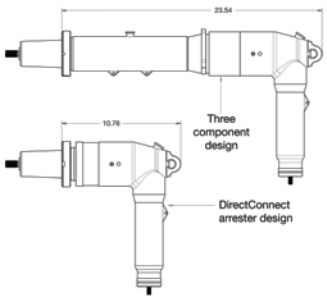
DirectConnect elbow arrester

Standard 600 A bushing

Powering Business Worldwide

Design features and benefits

- Replace three components with one DirectConnect elbow arrester
  - Save material costs with the DirectConnect arrester over bushing extender, loadbreak reducing tap plug, and 200 A elbow arrester
  - Reduce stocking requirements
- Shorter stacking height
  - Decrease stacking height more than 50%
  - Fits into smaller enclosures
  - Reduces pulling force due to elimination of cantilever effect



- Easily retrofittable to existing 600 A installations
  - Simply replace the bushing extender, loadbreak reducing tap plug and 200 A elbow arrester with an adapter and a DirectConnect elbow arrester
- TOV performance
  - Enhanced temporary overvoltage characteristics
  - 36 kV—highest TOV in the industry
  - Arresters that will survive higher AC overvoltages, reducing downtime
  - Increased system reliability
- EPDM molded rubber deadfront construction
  - 40+ years of experience in EPDM rubber cable accessories and 27+ years of elbow arrester technology
  - Eaton is the only separable connector manufacturer that mixes and blends its own insulation in-house
  - Eaton's chemists maintain control of the formulation at all times
- Ease of installation
  - Cuts installation time by 80% versus installing three components
  - Visually can verify contact with threads, which reduces chance of cross threading
  - No special training required for linemen or contractors

Standard design tests

- IEEE Std 386™ separable insulated connector systems
- IEEE Std C62.11 metal oxide surge arresters for AC power circuits

DirectConnect elbow arrester production tests

IEEE Std 386 standard testing

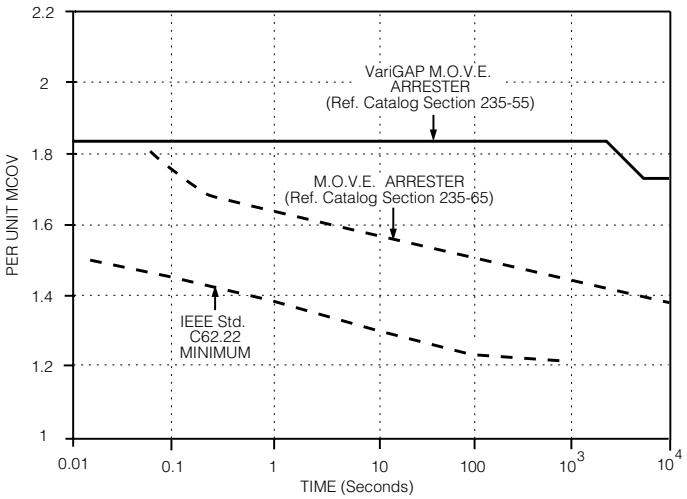
- Corona extinction voltage level
- AC, 60 Hz, 1 minute withstand

Tested according to Eaton's requirements:

- 100% physical inspection
- Periodic dissection
- Varistor disks
  - Voltage at 1 mA
  - Batch life test
- Watts loss at MCOV
- 100% corona test
- 100% sparkover level test
- Periodic x-ray analysis

Performance test characteristics

- Duty cycle
  - 22 current surges of 5 kA crest 8/20 µs waveshape
- High-current, short-duration discharge
  - 2 current surges of 40 kA crest 4/10 µs waveshape
- Low-current, long-duration discharge
  - 20 current surges of 75 A crest 2000 µs rectangular wave duration



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