

200 A and 600 A, 15 and 25 kV Class Variable Junctions



Table of contents

- General 3**
- Engineered solutions 3**
- Interchangeability 3**
- Installation 3**
- Production tests 3**
- Voltage ratings and characteristics 4**
- Current rating and characteristics 4**
- Dimensional information 4**
- Ordering Information 6**

General

Eaton designs Cooper Power series junction bars for vault or apparatus applications and can be used for looping, tapping and sectionalizing. They are fully shielded, submersible, and are designed and manufactured in accordance with IEEE Std 386-2016™ standard – “Seperable Insulated Connector Systems”

These junctions provide 2 to 6, 15 or 25 kV mixed inline 200 A loadbreak, 600 A deadbreak or 600 A loadbreak Cleer interfaces bussted together and encapsulated in a precision-molded, peroxide-cured EPDM insulated rubber body.

Junction bars come standard with a stainless steel mounting bracket.

Eaton Cooper Power series Variable Junctions provide endless opportunities to establish loops, taps, splices, and facilitate apparatus changeouts. Sectionalizing a cable run to find and isolate a cable fault is made easy when a loadbreak junction is used with a loadbreak elbow on a 200 A interface. Additionally, Eaton Cooper Power series offers the only 600 A loadbreak interface, Cleer, in the industry bringing all of the advantages of 200 A junction bars into the 600 A world.

Engineered solutions

While many configurations are included in this section, modifications to these designs – including solutions grouping junction bars with Cleer C connectors across junctions – can be developed. Contact your Eaton representative to discuss additional configurations.

An example of a switching configuration using 600 A Cleer loadbreak C connectors and a 5 way junction is shown below in Figure 1.



Figure 1 – 600 A source on a 5 way junction bar with (4) 600 A Cleer interfaces and (4) 2 way Cleer and 600 A deadbreak junctions allowing loadbreak switching across a 600 A system.

Interchangeability

The IEEE Std 386-2016™ standard 200 A loadbreak and 600 A deadbreak interfaces are interchangeable with 200 A loadbreak and 600 A deadbreak terminations currently available from all other manufacturers that also comply with IEEE Std 386-2016™ standard.

Installation

No special tools are required for installation. Junctions are bolted to the mounting surface.

200 A and 600 A connectors are assembled onto the junctions as described in the appropriate installation instructions for those connectors.

Cleer must use two engineered solutions for spacing junction to junction.

Production tests

Tests conducted in accordance with IEEE Std 386-2016™:

- 200 A 15 kV Class
 - 1 minute AC 60 Hz withstand
 - 34 kV
 - Minimum partial discharge extinction voltage level
 - 11 kV
- 200 A 25 kV Class
 - 1 minute AC 60 Hz withstand
 - 45 kV
 - Minimum partial discharge extinction voltage level
 - 21.5 kV
- 600 A 25 kV Class
 - 1 minute AC 60 Hz withstand
 - 45 kV
 - Minimum partial discharge extinction voltage level
 - 21.5 kV
- Cleer 15 kV Class
 - 1 minute AC 60 Hz withstand
 - 34 kV
 - Minimum partial discharge extinction voltage
 - 11 kV
- Cleer 25 kV Class
 - 1 minute AC 60 Hz withstand
 - 45 kV
 - Minimum partial discharge extinction voltage
 - 21.5 kV

Tests conducted in accordance with Eaton requirements:

- Physical inspection
- Physical dissection
- Periodic fluoroscopic analysis

Voltage ratings and characteristics

Description	200 A Loadbreak kV ratings		600 A Deadbreak kV ratings	600 A Cleer Loadbreak kV ratings	
Standard voltage class	15	25	25	15	25
Maximum rating phase to phase	14.4	28	28	14.4	28
Maximum rating phase to ground	8.3	16.2	16.2	8.3	16.2
ac 60 Hz 1 Minute withstand	34	45	45	34	45
dc 15 Minute withstand	53	100	100	53	100
BIL and full wave crest	95	125	125	95	125
Minimum partial discharge extinction voltage	11	21.5	21.5	11	21.5

Voltage ratings and characteristics are in accordance with IEEE Std 386-2016™

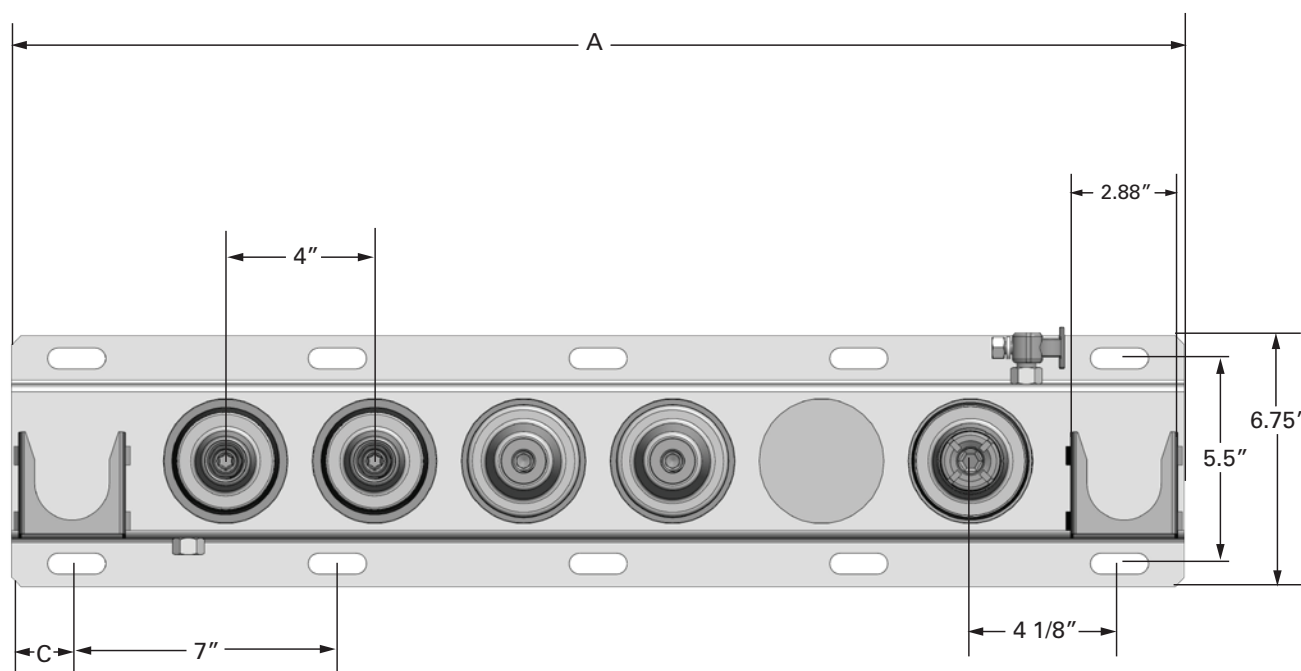
Current rating and characteristics

Voltage class	200 A Class product		600 A Class deadbreak	600 A Class Cleer loadbreak	
Description	15 kV	25 kV	25 kV	15 kV	25 kV
Continuous	200 A rms	200 A rms	600 A rms	600 A rms	600 A rms
Switching	10 operations at 200 A rms at 14.4 kV phase to phase	10 operations at 200 A rms at 26.3 kV phase to phase	NA	10 operations at 600 A at 14.4 kV phase to phase	5 operations at 600 A at 26.3 kV phase to phase
Fault closure	10,000 A rms symmetrical at 14.4 kV for 0.17 s after 10 switching operations phase to phase	10,000 A rms symmetrical at 26.3 kV for 0.17 s after 10 switching operations phase to phase	NA	16,000 A rms symmetrical at 14.4 kV after ten 600 A operations for 0.17 s phase to phase	10,000 A rms symmetrical at 26.3 kV after five 600 A operations for 0.17 s phase to phase
4 Hour overload			900 A rms	900 A rms	900 A rms
Short time	10,000 A rms symmetrical for 0.17 s	10,000 A rms symmetrical for 0.17 s	25,000 A * rms symmetrical for 0.17 s	25,000 A * rms symmetrical for 0.17 s	25,000 A * rms symmetrical for 0.17 s
	3,500 A rms symmetrical for 3.0 s	3,500 A rms symmetrical for 3.0 s	10,000 A rms symmetrical for 3.0 s	10,000 A rms symmetrical for 3.0 s	10,000 A rms symmetrical for 3.0 s

Current ratings and characteristics are in accordance with IEEE Std 386-2016™

* 600 A loadbreak connectors are generally capable of short-time current ratings well in excess of those listed (25 kA to 40 kA ratings for 0.17s are typical). However, ratings are limited in the current rating table by the fault-closure rating. Contact your Eaton representative for maximum short-time current ratings if fault-closure operations are infeasible in your application.

Dimensional information



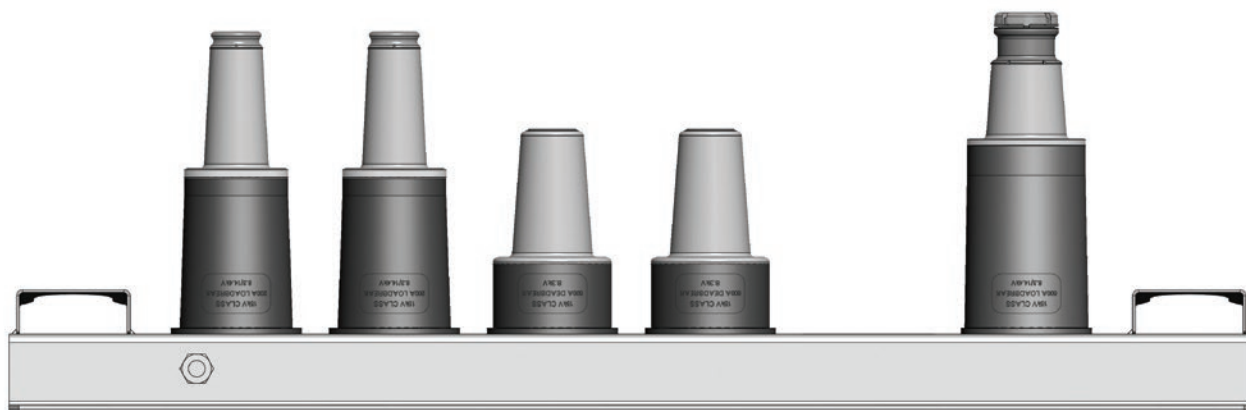


Figure 2 – Front and Top views

Interfaces	Number of mounting holes per side	A (Overall junction length with parking stands)	A (Overall junction length without parking stands)	C Mounting Hole offset no parking stands (Bracket Start to slot center)	C Mounting Hole Offset, 2 parking stands (Bracket start to slot center)
2	2	15-1/2	9	1	4-1/4
3	3	19-1/2	13	3	2-3/4
4	4	23-1/2	17	1-1/2	1-1/4
5	4	27-1/2	21	3-1/2	3-1/4
6	5	31-1/2	25	2	1-3/4

All dimensions are in inches.

Table 1 – Length and Width Dimensions – dependent on interface count.

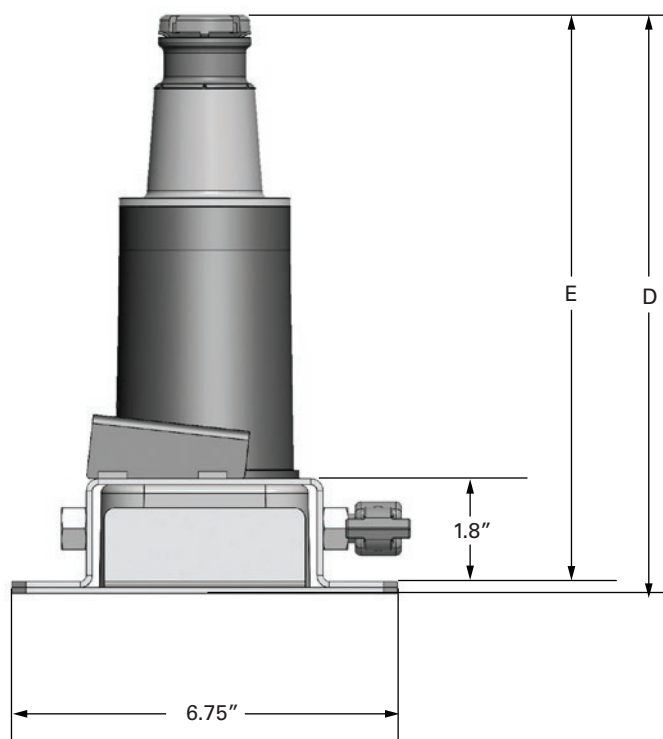


Figure 3 – Side view

kV	Interface	D (Height - bottom of bracket to top of interface)	E (Height - bottom of junction to top of interface)
15	200 A	9-3/4	9-5/8
25	200 A	10-1/4	10-1/8
15/25	600 A	7-1/4	7-1/8
15/25	600 A Cleer	10-1/4	10-1/8

All dimensions are in inches.

Table 2 – Height dimensions – dependent on interface type.

All interfaces are 4.0" center to center.

Parking stand center to interface center is 4.125"

All mounting slots are 0.563" x 1.563"

Ordering Information

To order a variable junction reference Figure 4 for catalog number configuration.

Each kit contains:

- Molded rubber variable junction
- Bracket (Stainless steel bracket with ground lug)
- Shipping caps
- Installation instruction sheet

The number of interfaces in character 5 will specify the number of digits in the interface configuration field. The interface configuration field will read left to right across the junction.

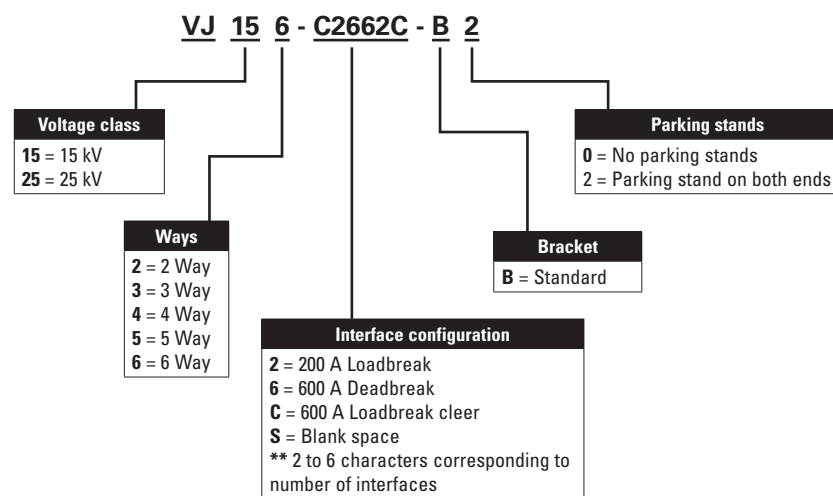


Figure 4 – Catalog number configurator

Examples:

- Vault mounted, 15kv, 5 position with 600A interface in position 1, 200A interface in positions 2, 3 and 4, and a 600 A Cleer loadbreak interface in position 5. Including parking stands on both ends. Catalog number would be VJ155-6222C-B2.
- Sectionalizing cabinet, 25kv, 4 positions with 600A in position 1, 200A interface in positions 2, 3 and 4. Catalog number would be VJ254-6222-B0.

For further installation information reference "MN650065EN - 200 A and 600 A Variable Junction 15 & 25 kV Class installation and operation instructions"

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