



# High Speed Fuses

## British Style - BS 88

**British Style - 240V**

All Bussmann British style fuses are tested to IEC 60269 Part 4. This standard requires a test voltage which is 5% higher than the rated voltage. In the North America fuses are required to clear only their rated voltage.

**LCT, LET, LMT & LMMT**

**Voltage Rating:** 240Vac/150Vdc

**Current Rating:** 6 - 900 Amps

**Interrupting Rating:** 200kA RMS Symmetrical

**Agency Information**

Designed & Tested to BS88: Part 4, IEC 60269 Part 4

UL Recognized, Std. 248-13, **CE**

Watt loss provided at rated current

**Electrical Characteristics**

| Size | Rated Current<br>RMS-Amps | $I^2t$ (A <sup>2</sup> SEC) |                     |                     | Watts<br>Loss | Part Number | Carton Qty. | Carton Weight | Figure |
|------|---------------------------|-----------------------------|---------------------|---------------------|---------------|-------------|-------------|---------------|--------|
|      |                           | Pre-arc                     | Clearing<br>at 120V | Clearing<br>at 240V |               |             |             |               |        |
| LCT  | 6                         | 2                           | 6                   | 9                   | 1.0           | 6LCT        | 20          | 0.110         | Fig 1  |
|      | 10                        | 3.8                         | 12                  | 22                  | 2.5           | 10LCT       | 20          | 0.110         |        |
|      | 12                        | 7                           | 22                  | 32                  | 2.5           | 12LCT       | 20          | 0.110         |        |
|      | 16                        | 20                          | 50                  | 100                 | 2.5           | 16LCT       | 20          | 0.110         |        |
|      | 20                        | 25                          | 80                  | 160                 | 4.0           | 20LCT       | 20          | 0.110         |        |
| LET  | 25                        | 18                          | 120                 | 250                 | 4.0           | 25LET       | 10          | 0.310         | Fig 2  |
|      | 32                        | 32                          | 200                 | 450                 | 5.0           | 32LET       | 10          | 0.310         |        |
|      | 35                        | 50                          | 320                 | 600                 | 5.0           | 35LET       | 10          | 0.310         |        |
|      | 50                        | 100                         | 500                 | 1400                | 7.0           | 50LET       | 10          | 0.310         |        |
|      | 63                        | 180                         | 1100                | 2200                | 9.0           | 63LET       | 10          | 0.310         |        |
|      | 80                        | 300                         | 1900                | 3800                | 10.0          | 80LET       | 10          | 0.310         |        |
|      | 100                       | 600                         | 3800                | 7500                | 10.0          | 100LET      | 10          | 0.310         |        |
|      | 125                       | 600                         | 3800                | 7500                | 16.0          | 125LET      | 10          | 0.310         |        |
|      | 160                       | 1100                        | 7000                | 16000               | 20.0          | 160LET      | 10          | 0.310         |        |
|      | 180                       | 1600                        | 12000               | 29000               | 21.0          | 180LET      | 10          | 0.310         |        |
| LMT  | 160                       | 1100                        | 7000                | 16000               | 17.0          | 160LMT      | 1           | 0.180         | Fig 3  |
|      | 200                       | 1500                        | 10000               | 20000               | 28.0          | 200LMT      | 1           | 0.180         |        |
|      | 250                       | 3200                        | 20000               | 40000               | 28.0          | 250LMT      | 1           | 0.180         |        |
|      | 315                       | 6000                        | 35000               | 75000               | 35.0          | 315LMT      | 1           | 0.180         |        |
|      | 355                       | 8000                        | 50000               | 100000              | 35.0          | 355LMT      | 1           | 0.180         |        |
|      | 400                       | 14000                       | 70000               | 160000              | 40.0          | 400LMT      | 1           | 0.180         |        |
| LMMT | 450                       | 18000                       | 100000              | 220000              | 42.0          | 450LMT      | 1           | 0.180         | Fig 4  |
|      | 400                       | 6000                        | 35000               | 80000               | 60.0          | 400LMMT     | 1           | 0.370         |        |
|      | 500                       | 14000                       | 80000               | 170000              | 64.0          | 500LMMT     | 1           | 0.370         |        |
|      | 630                       | 24000                       | 150000              | 300000              | 75.0          | 630LMMT     | 1           | 0.370         |        |
|      | 710                       | 32000                       | 200000              | 460000              | 77.0          | 710LMMT     | 1           | 0.370         |        |
|      | 800                       | 52000                       | 300000              | 600000              | 82.0          | 800LMMT     | 1           | 0.370         |        |
|      | 900                       | 75000                       | 400000              | 800000              | 97.0          | 900LMMT     | 1           | 0.370         |        |

Note: 7LET, 10LET, 12LET and 16LET are available for replacement purposes on existing equipment (not UL recognized) till stocks last

BIF Document : 720004

**CE** CE logo denotes compliance with European Union Low Voltage Directive (50-1000V AC, 75-1500V DC). Refer to BIF document #8002.

# High Speed Fuse - BS 88



## British Style - 690V

**CT, ET, FE, EET, FEE, FM, FMM,  
MT†, MMT†**

**Voltage Rating:** 690Vac/500Vdc

**Current Rating:** 6 - 710 Amps

**Interrupting Rating:** 200kA RMS Symmetrical

### Agency Information

Designed & Tested to BS88: Part 4, IEC 60269 Part 4

UL Recognized, Std. 248-13, **CE**

Watt loss provided at rated current

MT, MMT and additional ratings of ET and EET are available for replacement purposes on existing equipment and are BS 88: Part 4 approved



### Electrical Characteristics

| Size | Rated Current<br>RMS-Amps | $I^2t$ (A <sup>2</sup> SEC) |                     |                     | Watts<br>Loss | Part Number | Carton Qty. | Carton Weight | Figure |
|------|---------------------------|-----------------------------|---------------------|---------------------|---------------|-------------|-------------|---------------|--------|
|      |                           | Pre-arc                     | Clearing<br>at 415V | Clearing<br>at 660V |               |             |             |               |        |
| CT   | 6                         | 1.8                         | 8.5                 | 12                  | 2             | 6CT         | 20          | 0.16          | Fig 5  |
|      | 10                        | 7                           | 30                  | 48                  | 3             | 10CT        | 20          | 0.160         |        |
|      | 12                        | 10                          | 40                  | 65                  | 3             | 12CT        | 20          | 0.160         |        |
|      | 16                        | 16                          | 66                  | 110                 | 7             | 16CT        | 20          | 0.160         |        |
|      | 20                        | 32                          | 150                 | 220                 | 7             | 20CT        | 20          | 0.160         |        |
| ET   | 25                        | 25                          | 150                 | 250                 | 7             | 25ET        | 10          | 0.420         | Fig 6  |
|      | 32                        | 32                          | 190                 | 350                 | 11            | 32ET        | 10          | 0.420         |        |
|      | 35                        | 52                          | 310                 | 500                 | 11            | 35ET        | 10          | 0.420         |        |
|      | 40                        | 103                         | 600                 | 900                 | 9             | 40ET        | 10          | 0.420         |        |
|      | 45                        | 103                         | 680                 | 1100                | 11            | 45ET        | 10          | 0.420         |        |
|      | 56                        | 135                         | 950                 | 1500                | 14            | 56ET        | 10          | 0.420         |        |
|      | 63                        | 171                         | 1200                | 2000                | 16            | 63ET        | 10          | 0.420         |        |
|      | 80                        | 360                         | 2500                | 4000                | 18            | 80ET        | 10          | 0.420         |        |
|      | 35                        | 33                          | 130                 | 200                 | 9             | 35FE        | 10          | 0.420         |        |
|      | 40                        | 52                          | 180                 | 300                 | 9             | 40FE        | 10          | 0.420         |        |
| FE   | 45                        | 76                          | 270                 | 450                 | 11            | 45FE        | 10          | 0.420         | Fig 6  |
|      | 50                        | 103                         | 380                 | 600                 | 11            | 50FE        | 10          | 0.420         |        |
|      | 63                        | 135                         | 480                 | 750                 | 12            | 63FE        | 10          | 0.420         |        |
|      | 71                        | 210                         | 600                 | 950                 | 17            | 71FE        | 10          | 0.420         |        |
|      | 80                        | 250                         | 900                 | 1500                | 20            | 80FE        | 10          | 0.420         |        |
|      | 90                        | 360                         | 1300                | 2100                | 20            | 90FE        | 10          | 0.420         |        |
| EET  | 100                       | 470                         | 1800                | 2800                | 23            | 100FE       | 10          | 0.420         | Fig 7  |
|      | 90                        | 490                         | 3000                | 4500                | 19            | 90EET       | 5           | 0.450         |        |
|      | 110                       | 600                         | 4000                | 6500                | 27            | 110EET      | 5           | 0.450         |        |
|      | 140                       | 1050                        | 7000                | 12000               | 35            | 140EET      | 5           | 0.450         |        |
|      | 160                       | 1500                        | 10000               | 17000               | 39            | 160EET      | 5           | 0.450         |        |
| FEE  | 100                       | 400                         | 1600                | 2400                | 24            | 100FEE      | 5           | 0.450         | Fig 7  |
|      | 120                       | 540                         | 1900                | 3100                | 32            | 120FEE      | 5           | 0.450         |        |
|      | 140                       | 850                         | 2500                | 3800                | 36            | 140FEE      | 5           | 0.450         |        |
|      | 160                       | 1000                        | 3700                | 5700                | 46            | 160FEE      | 5           | 0.450         |        |
|      | 180                       | 1400                        | 5300                | 8400                | 46            | 180FEE      | 5           | 0.450         |        |
|      | 200                       | 1900                        | 7100                | 11400               | 52            | 200FEE      | 5           | 0.450         |        |
| FM   | 180                       | 1400                        | 7500                | 13500               | 40            | 180FM       | 1           | 0.240         | Fig 8  |
|      | 200                       | 2600                        | 10500               | 18500               | 40            | 200FM       | 1           | 0.240         |        |
|      | 225                       | 3700                        | 14500               | 26500               | 44            | 225FM       | 1           | 0.240         |        |
|      | 250                       | 5200                        | 20500               | 37500               | 48            | 250FM       | 1           | 0.240         |        |
|      | 280                       | 7000                        | 30500               | 55000               | 48            | 280FM       | 1           | 0.240         |        |
|      | 315                       | 10000                       | 40000               | 77000               | 55            | 315FM       | 1           | 0.240         |        |
|      | 350                       | 15000                       | 60000               | 105000              | 55            | 350FM       | 1           | 0.240         |        |
| FMM  | 400                       | 10000                       | 40000               | 72500               | 85            | 400FMM      | 1           | 0.450         | Fig 9  |
|      | 450                       | 15000                       | 60000               | 105000              | 90            | 450FMM      | 1           | 0.450         |        |
|      | 500                       | 20000                       | 82000               | 150000              | 100           | 500FMM      | 1           | 0.450         |        |
|      | 550                       | 30000                       | 120000              | 215000              | 100           | 550FMM      | 1           | 0.450         |        |
|      | 630                       | 45000                       | 180000              | 310000              | 100           | 630FMM      | 1           | 0.450         |        |
|      | 700                       | 60000                       | 245000              | 420000              | 120           | 700FMM      | 1           | 0.450         |        |
|      | 160                       | 2400                        | 15000               | 25000               | 26            | 160MT       | 1           | 0.260         | Fig 8  |
| MT†  | 180                       | 3800                        | 25000               | 38000               | 26            | 180MT       | 1           | 0.260         |        |
|      | 200                       | 6000                        | 40000               | 58000               | 27            | 200MT       | 1           | 0.260         |        |
|      | 250                       | 11500                       | 80000               | 110000              | 32            | 250MT       | 1           | 0.260         |        |
|      | 280                       | 16500                       | 100000              | 150000              | 35            | 280MT       | 1           | 0.260         |        |
|      | 315                       | 19000                       | 125000              | 180000              | 42            | 315MT       | 1           | 0.260         |        |
|      | 355                       | 22000                       | 160000              | 200000              | 51            | 355MT       | 1           | 0.260         |        |
|      | 180                       | 1650                        | 12000               | 18000               | 42            | 180MMT      | 1           | .0470         | Fig 9  |
| MMT† | 200                       | 2200                        | 16000               | 23000               | 42            | 200MMT      | 1           | .0470         |        |
|      | 225                       | 3700                        | 26000               | 40000               | 42            | 225MMT      | 1           | .0470         |        |
|      | 280                       | 6600                        | 47000               | 70000               | 47            | 280MMT      | 1           | .0470         |        |
|      | 315                       | 8600                        | 62000               | 91000               | 51            | 315MMT      | 1           | .0470         |        |
|      | 355                       | 13500                       | 97000               | 140000              | 54            | 355MMT      | 1           | .0470         |        |
|      | 400                       | 21000                       | 150000              | 220000              | 60            | 400MMT      | 1           | .0470         |        |
|      | 450                       | 30000                       | 220000              | 320000              | 57            | 450MMT      | 1           | .0470         |        |
|      | 500                       | 42000                       | 300000              | 450000              | 64            | 500MMT      | 1           | .0470         |        |
|      | 560                       | 60000                       | 430000              | 640000              | 64            | 560MMT      | 1           | .0470         |        |
|      | 630                       | 68500                       | 500000              | 720000              | 86            | 630MMT      | 1           | .0470         |        |
|      | 710                       | 78000                       | 600000              | 850000              | 105           | 710MMT      | 1           | .0470         |        |

**CE** CE logo denotes compliance with European Union Low Voltage Directive (50-1000V AC, 75-1500V DC). Refer to BIF document #8002.

Note: 8ET, 12ET, 15ET, 20ET, 65EET and 75EET are available for replacement purposes on existing equipment (not UL recognized) till stocks last

† 350V DC (IEC) rating. No UL Recognition.

BIF Document : 720024

Trip-indicator fuselinks are available for use in parallel with the main fuselinks. They can either be attached to the associated fuselink or mounted separately in panel mounted fuse clips, Part No. CL1. A push-on adaptor and microswitch attachment is available for use with the trip indicator to give the facility of remote indication, reference MAI or MBI.

Fuse ratings of 20A and below cannot usually accommodate a trip fuselink in parallel.

## Trip-indicator Fuselink Data

| Type  | Dim. 'A'<br>Max. | Voltage<br>Rating | Type   | Dim. 'A'<br>Max. | Voltage<br>Rating |
|-------|------------------|-------------------|--------|------------------|-------------------|
| TI250 | 37.6             | 250               | TI1100 | 98.4             | 1100              |
| TI500 | 47.5             | 500               | TI1500 | 120.8            | 1500              |
| TI600 | 55.7             | 600               | TI2000 | 147.5            | 2000              |
| TI700 | 61.8             | 700               | TI2500 | 198.3            | 2500              |

## Microswitch and Adaptor Type MAI

### Current Rating:

|                                      |    |
|--------------------------------------|----|
| AC 50/60Hz resistive load @ 250 VRMS | 4A |
| AC 50/60Hz resistive load @ 127 VRMS | 6A |

|                              |     |
|------------------------------|-----|
| DC, resistive load @ 110 Vdc | 0.7 |
| DC, resistive load @ 30 Vdc  | 2   |

### Maximum Working Voltage:

|                          |       |
|--------------------------|-------|
| Contact-to-contact (RMS) | 1000V |
| Contact-to-contact (RMS) | 1500V |

Where trip indicator fuselinks are to be attached to the main fuselink, an accessory pack comprising a pair of mounting clips and an appropriate trip indicator fuselink will be required.

The ordering code references for these packs are listed below:

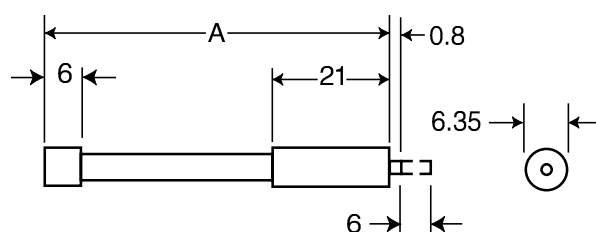
| Fuse Type | Order Ref. | Fuse Type | Order Ref. |
|-----------|------------|-----------|------------|
| ET        | EC-600     | FM        | MC-600     |
| EET       | EC-600     | FMM       | MC-600     |
| FE        | EC-600     | LMT       | MC-250     |
| FEE       | EC-600     | LMMT      | MC-250     |
| LET       | EC-250     |           |            |

## Stud Fuseblocks

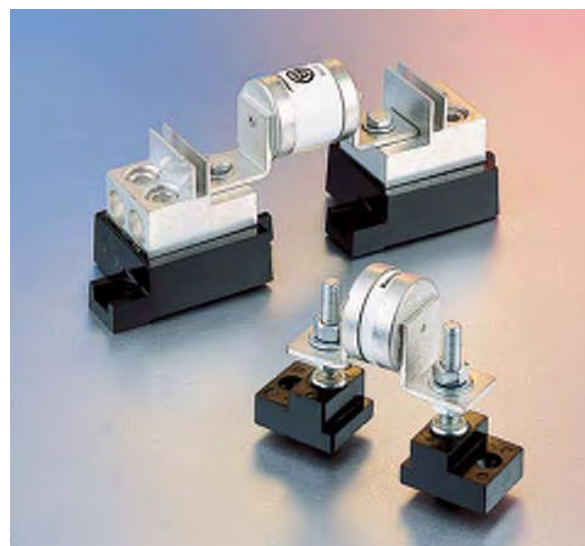
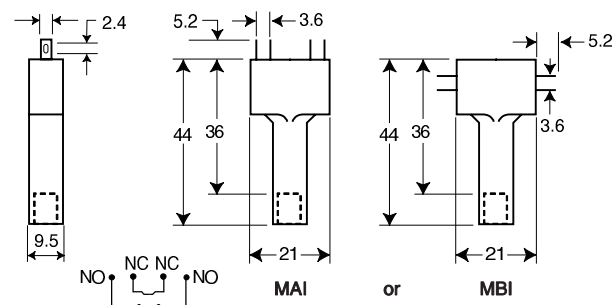
| Part No. | Stud Height | Stud Dia & Threads |
|----------|-------------|--------------------|
| C5268-1  | 1.00"       | 5/16-18            |
| C5268-2  | 1.75"       | 5/16-18            |
| C5268-3  | 0.75"       | 5/16-18            |
| C5268-4  | 1.00"       | 1/4-20             |
| C5268-5  | 1.75"       | 1/4-20             |

## Universal Fuseblocks

| Modular Base | Max. Voltage | Max. Fuse Current Rating | BIF Document |
|--------------|--------------|--------------------------|--------------|
| 1BS101       | 600V         | 100A                     | 1206         |
| 1BS102       | 600V         | 400A                     | 1207         |
| 1BS103       | 600V         | 400A                     | 1208         |
| 1BS104       | 600V         | 600A                     | 1209         |



Dimensions in mm.  
1mm = 0.0394" 1" = 25.4mm



# High Speed Fuse - Dimensions

## British Style - 240 Volts

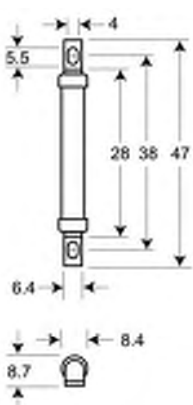


Fig 1

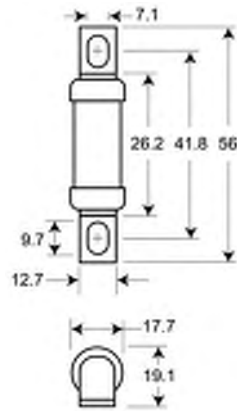


Fig 2

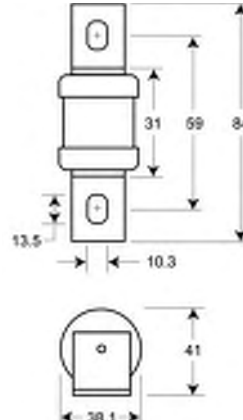


Fig 3

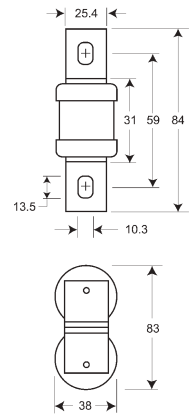


Fig 4

## British Style - 690 Volts

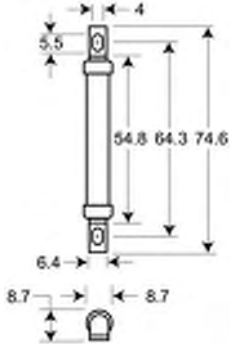


Fig 5

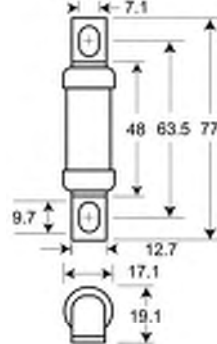


Fig 6

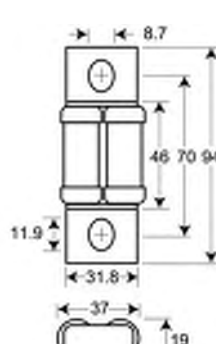


Fig 7

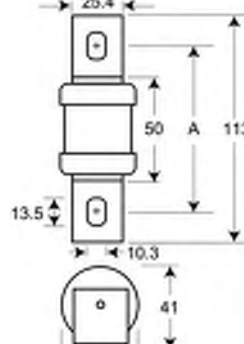


Fig 8

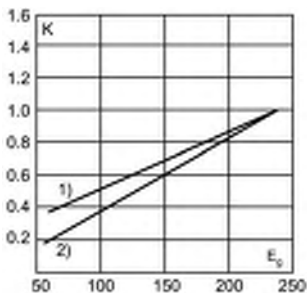
|          |         |         |       |
|----------|---------|---------|-------|
| Dim. 'A' | FM      | 80 - 85 | Fig 9 |
|          | MT      | 85      |       |
|          | MMT/FMM | 85      |       |

## Electrical Characteristics

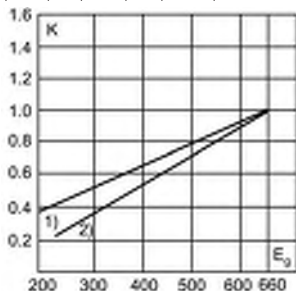
### Total Clearing $I^2t$

The total clearing  $I^2t$  at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the electrical  $I^2t$  is found by multiplying by correction factor K, given as a function of applied working voltage  $E_g$  (RMS).

Curves below : 1) - LCT  
2) - LET, LMT & LMMT



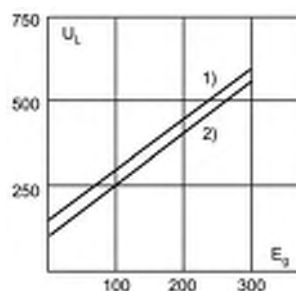
Curves below : 1) - CT  
2) - ET, EET, FE, FEE, MT, MMT, FM & FMM



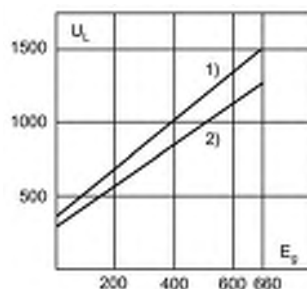
### Arc Voltage

This curve gives the peak arc voltage  $U_L$ , which may appear across the fuse during its operation as function of the applied working voltage  $E_g$  (RMS) at a power factor of 15%.

Curves below : 1) - LCT  
2) - LET, LMT & LMMT

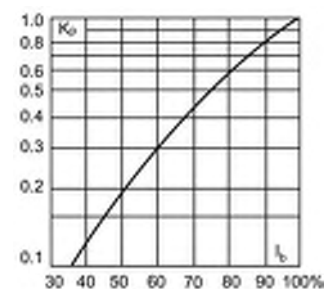
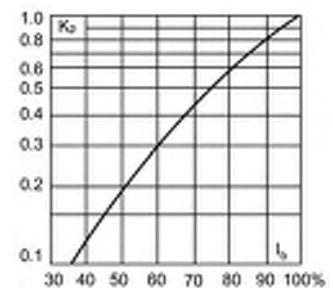


Curves below : 1) - CT  
2) - ET, EET, FE, FEE, MT, MMT, FM & FMM



### Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor  $K_p$ , is given as a function of the RMS load current  $I_b$ , in % of the rated current.



# Cooper Bussmann Products And Technical Expertise Delivered Worldwide

## Customer Assistance

### Customer Satisfaction Team

Cooper Bussmann India Customer Satisfaction Team is available in Pondicherry to answer questions regarding Cooper Bussmann products Sales, Supply and Services. Calls should be made between 9.00 am - 5.00pm IST.

- Phone : +91 413 267 2015
- Fax : +91 413 267 8182
- E-mail : [sales@cooperbussmann.co.in](mailto:sales@cooperbussmann.co.in)

### Application Engineering

Application Engineering and selection assistance is available to all customers. This team is staffed by subject matter expert, electrical application engineers and available Monday - Friday 9.00am - 5.00pm IST. Application Engineering can be reached via

- Phone : +91 413 220 5512
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### Regional Contacts

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### Regional E-mails

For E-mail, prefix cityname to [sales@cooperbussmann.co.in](mailto:sales@cooperbussmann.co.in)  
Example, for Delhi, write - [delhisales@cooperbussmann.co.in](mailto:delhisales@cooperbussmann.co.in)

### Web services

[www.cooperbussmann.com/1/technicalinformation.html](http://www.cooperbussmann.com/1/technicalinformation.html)

Cooper Bussmann website offers free information & resources that include:

- Products data sheets and complete technical information.
- Latest European & US Catalogues.
- Safety BaSICs™ for the essentials of electrical safety.
- Training modules for increasing skill levels of customers and end users.
- Cross referencing to find the correct Cooper Bussmann replacement for a competitor's fuse.

### Your Authorised Cooper Bussmann Distributor is :



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