

We touch your **electricity** everyday!



## HRC Fuse Links & Bases

# Introduction

## Application

C&S HRC/HBC Fuselinks are designed to meet the requirements of modern Industrial installations. Selected HRC Fuse links should have current rating not less than the normal full load current of the circuit. Class "gG" provides complete protection of cables.

Breaking capacity of the Fuse links is 80kA at 415/500V AC.

## Salient Features

### Fuse links

- Conforms to IEC 60269 / IS 13703/ BS 88
- Rated Voltage 415 - 500V AC
- Rated current : 2 - 800A
- Low power loss & low temperature rise ensure cool running of equipment & longer life
- High breaking capacity up to 80kA
- Low cut off current & low let through energy
- Operating class gG
- Ideally suitable for back up protection to motor starters for short circuit faults.

### Fuse Base

- Conforms to IEC 60269/ IS 13703
- Rated Voltage : 500V, AC, 50Hz
- Rated Current: up to 630A
- Size : Size 00, 1, 2 & 3

### Fuse Holder :

- Conforms to IEC 60269/IS 13703
- Rated Voltage : 415V AC
- Rated Current : up to 100A
- Size : for F1 , A2, A3 & A4 type Fuse links

## Mechanical Strength

- Body of high grade flame retardant non - hygroscopic phenolic moulding with a hard gloss surface in off white finish - having high electrical properties with high tracking resistance.
- Contact material is ETP grade copper which is silver plated and hence ensures low temperature rise.

## Longer Electrical Life

- Sufficient contact pressure is maintained by ring springs throughout life of the base which also does not allow temperature rise to exceed.





## Ratings

- Fuse bases are available for all rating of fuse links upto 630A & for voltages upto 500V, 50 Hz
- Fuse bases have been tested for compliance to IEC 60269/IS : 13703.
- Fuse Holders have been tested at 415V to compliance IEC 269 / IS 13703 and also available in Busbar mounting Type.




# Selection Table


## Fuse Links with Blade Contacts (DIN Type)

|   | Type | IEC Size | Rating (A) | Product Reference |
|---|------|----------|------------|-------------------|
|    | DIN  | 00       | 6          | CDFL 00 6         |
|   |      |          | 10         | CDFL 00 10        |
|   |      |          | 16         | CDFL 00 16        |
|   |      |          | 20         | CDFL 00 20        |
|   |      |          | 25         | CDFL 00 25        |
|   |      |          | 32         | CDFL 00 32        |
|   |      |          | 35         | CDFL 00 35        |
|   |      |          | 40         | CDFL 00 40        |
|   |      |          | 50         | CDFL 00 50        |
|   |      |          | 63         | CDFL 00 63        |
|   |      |          | 80         | CDFL 00 80        |
|   |      |          | 100        | CDFL 00 100       |
|   |      |          | 125        | CDFL 00 125       |
|   |      |          | 160        | CDFL 00 160       |
|   | DIN  | 1        | 32         | CDFL01 32         |
|   |      |          | 35         | CDFL01 35         |
|   |      |          | 50         | CDFL01 50         |
|   |      |          | 63         | CDFL01 63         |
|   |      |          | 80         | CDFL01 80         |
|   |      |          | 100        | CDFL01 100        |
|   |      |          | 125        | CDFL01 125        |
|   |      |          | 160        | CDFL01 160        |
|   |      |          | 200        | CDFL1 200         |
|   |      |          | 250        | CDFL1 250         |
|  | DIN  | 2        | 100        | CDFL02 100        |
|   |      |          | 125        | CDFL02 125        |
|   |      |          | 160        | CDFL02 160        |
|   |      |          | 200        | CDFL02 200        |
|   |      |          | 250        | CDFL02 250        |
|   |      |          | 315        | CDFL2 315         |
|  | DIN  | 3        | 315        | CDFL03 315        |
|   |      |          | 400        | CDFL03 400        |
|   |      |          | 500        | CDFL3 500         |
|   |      |          | 630        | CDFL3 630         |

## Solid Links (DIN Type)


|   | Type | IEC Size | Rating (A) | Product Reference |
|---|------|----------|------------|-------------------|
|  |      | 00       | -          | CDSL 00           |
|   |      | 1        | -          | CDSL 1            |
|   |      | 2        | -          | CDSL 2            |
|   |      | 3        | -          | CDSL 3            |

## Fuse Puller


|   | Type   | Product Reference |
|---|--|-------------------|
|  | suitable for all sizes of fuse-links & solid links | CDFH003           |

# Selection Table

## Fuse Bases for DIN Type Fuse Links

|   | Type | IEC Size | Rating (A) | Product Reference       |
|---|------|----------|------------|-------------------------|
|  | DIN  | 00       | 160        | CDFB 00-1-160 / CSDFB00 |
|   |      | 1        | 250        | CDFB1 / CSDFB1          |
|   |      | 2        | 400        | CDFB2 / CSDFB2          |
|   |      | 3        | 630        | CDFB3                   |

## Off Set (Clip in Type)

|   | IEC Size | Rating (A)                          | Product Reference |
|---|----------|-------------------------------------|-------------------|
|  | F1       | 2, 4, 6, 8, 10, 12, 16, 20, 25 & 32 | CNS*              |


## Off Set TAG Type

|  | IEC Size | Rating (A)                           | Product Reference |
|--|----------|--------------------------------------|-------------------|
|   | A1       | 2, 4, 6, 8, 10, 12, 16, 20, 25, & 32 | CNIT*             |
|  | A2       | 4, 6, 10, 16, 20, 25 & 32            | CTIA*             |
|  | A3       | 32, 35, 40, 50 & 63                  | CTIS*             |
|  | A4       | 50                                   | CTCP 50           |
|  |          | 63                                   | CTCP 63           |
|  |          | 80                                   | CTCP 80           |
|  |          | 100                                  | CTCP 100          |
|  |          | 125                                  | CTCP 125          |
|  |          | 125                                  | CTFP 125          |
|  |          | 160                                  | CTFP 160          |
|  |          | 200                                  | CTFP 200          |

## Fuse Holders for British Pattern Fuses Links

|   | IEC Size | Rating (A) | Product Reference    |
|---|----------|------------|----------------------|
|  | F1       | 20         | CNS20H               |
|   | A2       | 32         | CSM32H               |
|   | A3       | 63         | CSM63H               |
|   | A4       | 100        | CSM100H              |
|   | A4       | 100        | CSM100B <sup>#</sup> |


## Fuse Holders for Cylindrical HRC Fuse Links

|   | IEC Size | Rating (A) | Product Reference |
|---|----------|------------|-------------------|
|  | 14 x 51  | 32         | CHO32R            |
|   | 14 x 51  | 63         | CHC63R            |


**Note:** Replace\* by required rated current. # for busbar connection

# Selection Table

## Cylindrical Type Fuse Links

|   | IEC Size | Rating (A)          | Product Reference |
|---|----------|---------------------|-------------------|
|  | (14*51)  | 2, 4, 6, 8 & 10     | CHF*              |
|   |          | 16, 20 & 25         |                   |
|   |          | 32 & 40             |                   |
|   |          | 50                  |                   |
|   |          | 63                  |                   |
|   | (10*38)  | 2, 4, 6, 8, 10 & 16 | CGF*              |
|   |          | 20 & 25             |                   |
|   |          | 32                  |                   |

## Central TAG ( 2 hole fixing ) Type

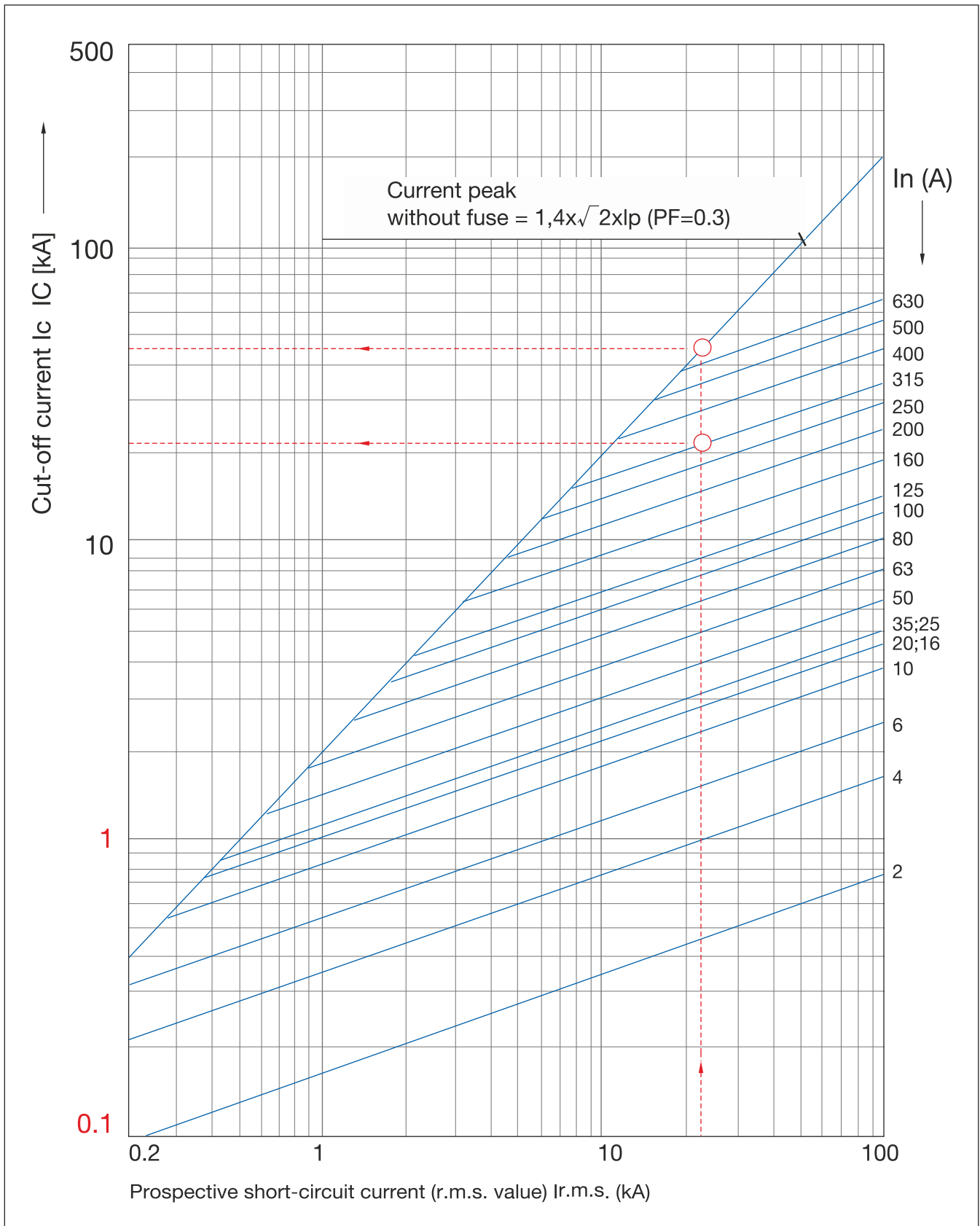
|   | IEC Size | Rating (A) | Product Reference |
|---|----------|------------|-------------------|
|  | B1       | 80         | CTC 80            |
|   |          | 100        | CTC 100           |
|   |          | 125        | CTC 125           |
|   | B2       | 125        | CTF 125           |
|   |          | 160        | CTF 160           |
|   |          | 200        | CTF 200           |
|   | B3       | 250        | CTKF 250          |
|   |          | 300        | CTKF 300          |
|   |          | 315        | CTKF 315          |
|   | B4       | 355        | CTMF 355          |
| 400   |          | CTMF 400   |                   |

## Central TAG ( 4 hole fixing ) Type

|   | IEC Size | Rating (A) | Product Reference |
|---|----------|------------|-------------------|
|  | C1       | 355        | CTM 355           |
|   |          | 400        | CTM 400           |
|   | C2       | 450        | CTTM 450          |
|   |          | 500        | CTTM 500          |
|   |          | 630        | CTTM 630          |
|   | C3       | 670        | CTLM 670          |
|   |          | 710        | CTLM 710          |
|   |          | 750        | CTLM 750          |
|   |          | 800        | CTLM 800          |

**Note:** Replace\* by required rated current.

# Cut-off Characteristics

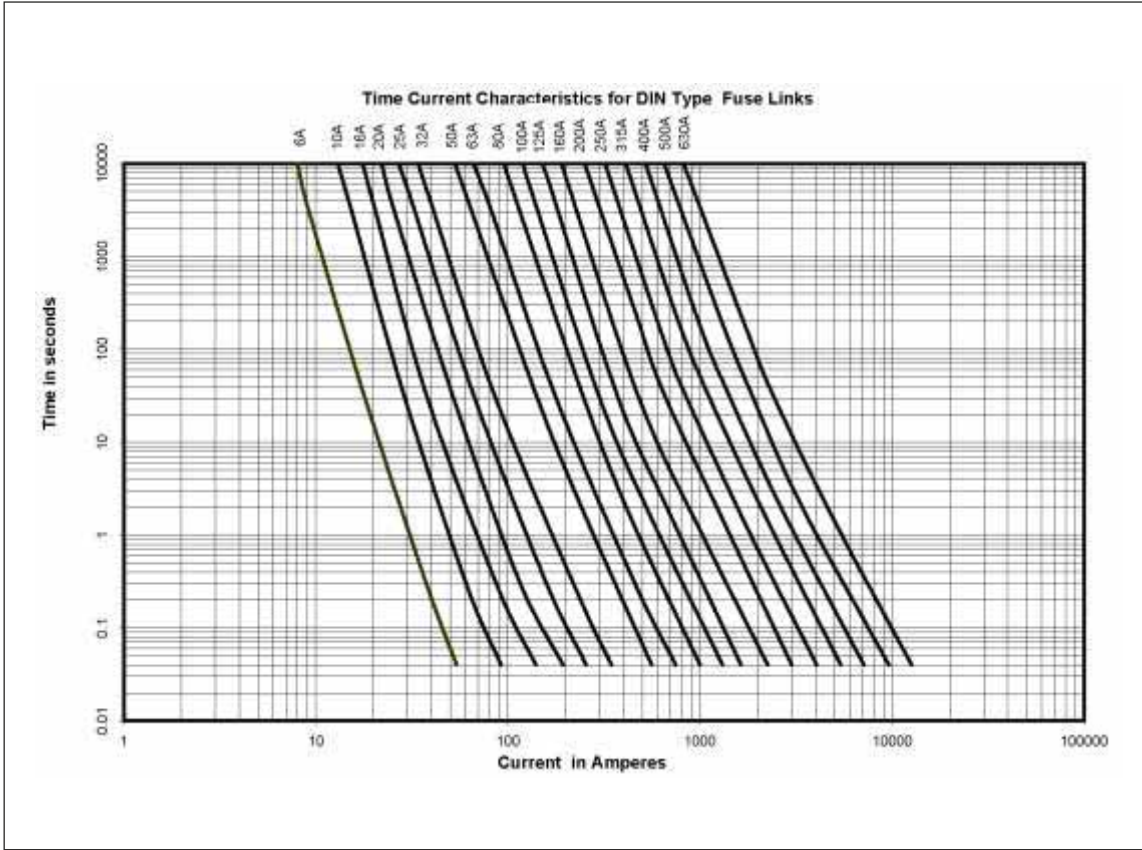


# Recommended Fuse rating for 3 phase, 415V Induction Motors

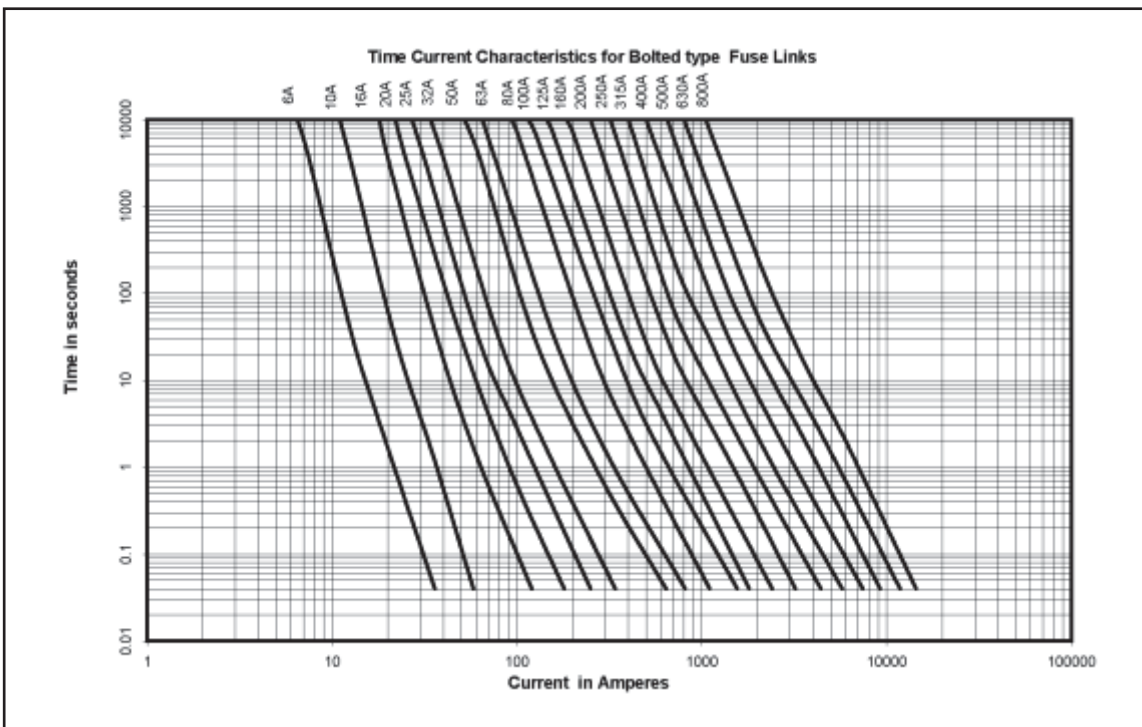
| Sl. No | Direct on line Starters |      |                       | Star Delta Starters |      |                       |
|--------|-------------------------|------|-----------------------|---------------------|------|-----------------------|
|        | KW                      | HP   | Fuse Rating (A)<br>gG | KW                  | HP   | Fuse Rating (A)<br>gG |
| 1      | 0.37                    | 0.50 | 4                     | 0.37                | 0.50 | 2                     |
| 2      | 0.55                    | 0.75 | 6                     | 0.55                | 0.75 | 4                     |
| 3      | 0.75                    | 1    | 6                     | 0.75                | 1    | 4                     |
| 4      | 1.1                     | 1.5  | 10                    | 1.1                 | 1.5  | 6                     |
| 5      | 1.5                     | 2    | 10                    | 1.5                 | 2    | 6                     |
| 6      | 2.2                     | 3    | 16                    | 2.2                 | 3    | 10                    |
| 7      | 3.0                     | 4    | 20                    | 3.0                 | 4    | 10                    |
| 8      | 3.7                     | 5    | 20                    | 3.7                 | 5    | 10                    |
| 9      | 4                       | 5.5  | 20                    | 4                   | 5.5  | 16                    |
| 10     | 5.5                     | 7.5  | 25                    | 5.5                 | 7.5  | 16                    |
| 11     | 7.5                     | 10   | 32                    | 7.5                 | 10   | 20                    |
| 12     | 11                      | 15   | 50                    | 11                  | 15   | 32                    |
| 13     | 15                      | 20   | 63                    | 15                  | 20   | 32                    |
| 14     | 19                      | 25   | 80                    | 19                  | 25   | 40                    |
| 15     | 22                      | 30   | 80                    | 22                  | 30   | 50                    |
| 16     | 30                      | 40   | 100                   | 30                  | 40   | 63                    |
| 17     | 37                      | 50   | 125                   | 37                  | 50   | 80                    |
| 18     | 45                      | 60   | 160                   | 55                  | 75   | 100                   |
| 19     | 55                      | 75   | 200                   | 75                  | 100  | 160                   |
| 20     | 75                      | 100  | 250                   | 100                 | 135  | 200                   |
| 21     | 90                      | 125  | 250                   | 110                 | 150  | 200                   |
| 22     | 100                     | 135  | 315                   | 132                 | 175  | 250                   |
| 23     | 110                     | 150  | 315                   | 150                 | 200  | 315                   |
| 24     | 132                     | 175  | 355                   | 160                 | 215  | 315                   |
| 25     | 150                     | 200  | 400                   | 185                 | 250  | 355                   |
| 26     | 160                     | 215  | 400                   | 200                 | 270  | 355                   |
| 27     | 185                     | 250  | 450                   | 220                 | 300  | 400                   |
| 28     | 200                     | 270  | 450                   | 250                 | 335  | 450                   |
| 29     | 220                     | 300  | 500                   | 300                 | 400  | 560                   |
| 30     | 250                     | 335  | 560                   | 375                 | 500  | 630                   |

# Time Current Characteristics

## DIN type Fuse Links



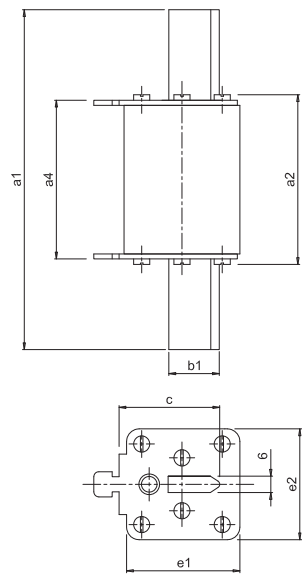
## Bolted type Fuse Links





# Dimensions

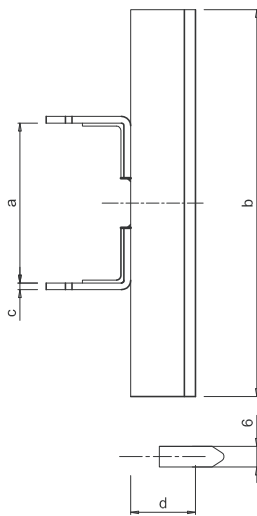
## DIN (Blade Type) Fuse Links



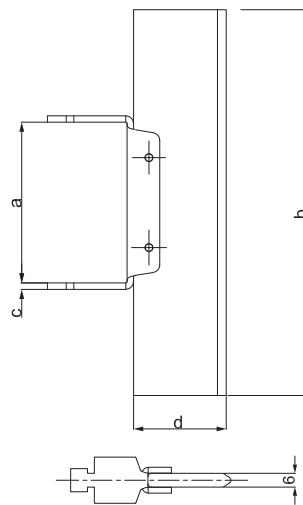
| Type   | a1   | a2 | a4 | b1 | c  | e1 | e2 |
|--------|------|----|----|----|----|----|----|
| CDFL00 | 78.5 | 53 | 49 | 15 | 35 | 43 | 29 |
| CDFL01 | 135  | 70 | 67 | 15 | 40 | 43 | 29 |
| CDFL1  | 135  | 70 | 67 | 20 | 40 | 46 | 46 |
| CDFL02 | 150  | 70 | 67 | 20 | 48 | 46 | 46 |
| CDFL2  | 150  | 71 | 67 | 25 | 48 | 57 | 57 |
| CDFL03 | 150  | 72 | 67 | 25 | 60 | 57 | 57 |
| CDFL3  | 150  | 72 | 68 | 36 | 60 | 72 | 72 |

## Solid Links

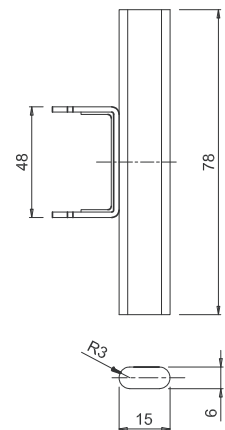
### CDSL-1



### CDSL-2&3



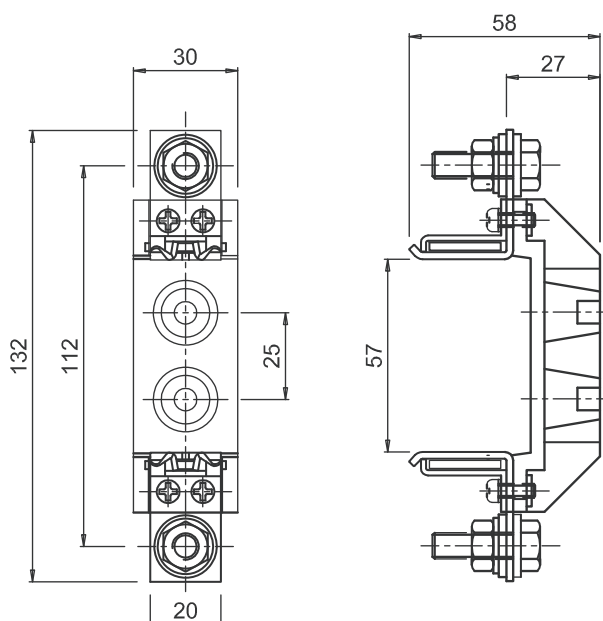
### CDSL-00



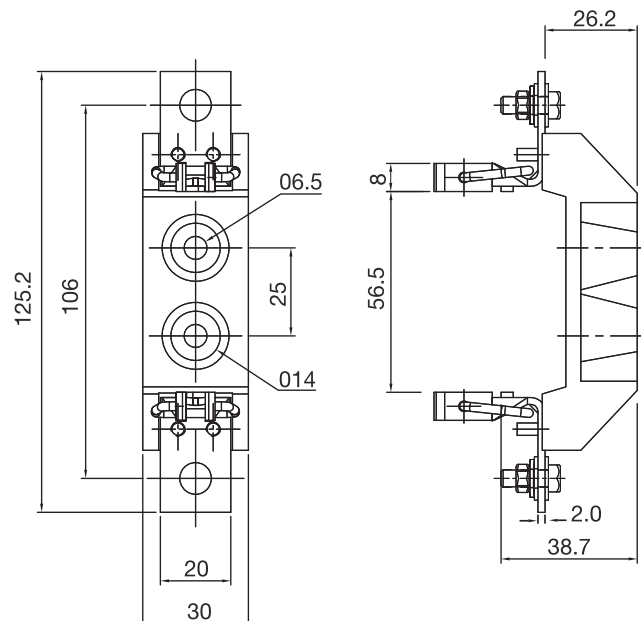
| Type  | a  | b   | c   | d  |
|-------|----|-----|-----|----|
| CDSL1 | 62 | 135 | 2.6 | 20 |
| CDSL2 | 62 | 150 | 2.6 | 25 |
| CDSL3 | 62 | 150 | 2.6 | 36 |

## Fuse Bases

### CDFB00-1

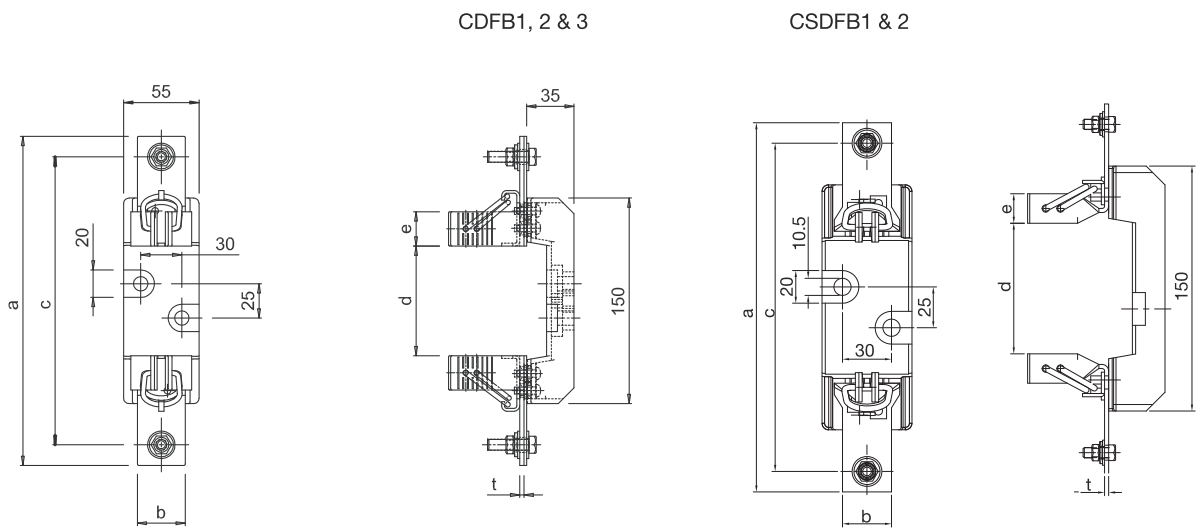


### CSDFB00



# Dimensions

## Fuse Bases

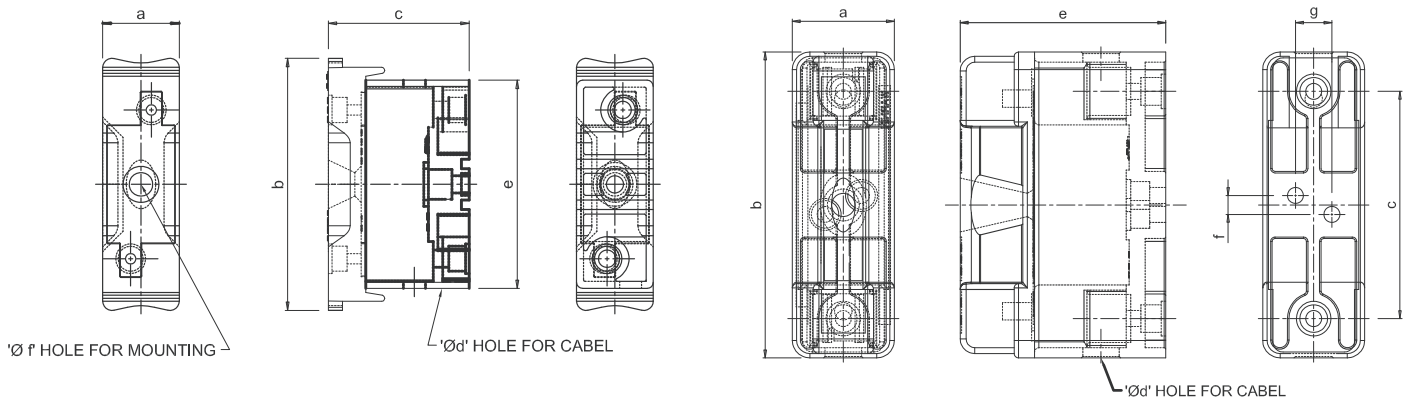


| Type   | a   | b  | c   | d  | e  | t   |
|--------|-----|----|-----|----|----|-----|
| CDFB1  | 200 | 25 | 175 | 80 | 15 | 2   |
| CDFB2  | 225 | 30 | 200 | 80 | 18 | 2.5 |
| CDFB3  | 240 | 35 | 210 | 80 | 25 | 3.2 |
| CSDFB1 | 200 | 28 | 175 | 80 | 12 | 2   |
| CSDFB2 | 225 | 30 | 200 | 80 | 18 | 2.5 |

## Fuse Holder

CNS 20H

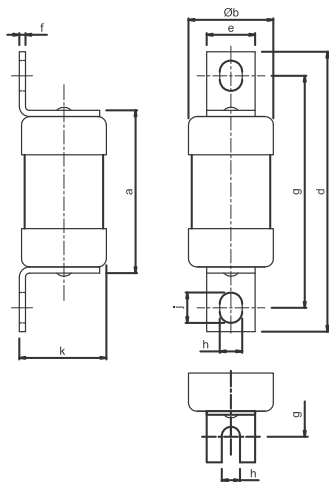
CSM 32~100H



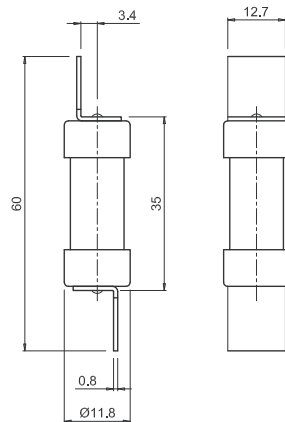
| Type    | Rating (A) | a    | b    | c  | Ød   | e    | Øf   | g    |
|---------|------------|------|------|----|------|------|------|------|
| CNS20H  | 20         | 24.5 | 80.5 | 44 | 7    | 66.5 | 5    | -    |
| CSM32H  | 32         | 32   | 98   | 73 | 10   | 66   | 6.5  | 12.5 |
| CSM63H  | 63         | 35   | 105  | 73 | 12.5 | 72   | 6.5  | 12.5 |
| CSM100H | 100        | 47   | 130  | 94 | 16   | 91   | 22.5 | 21   |

# Dimensions

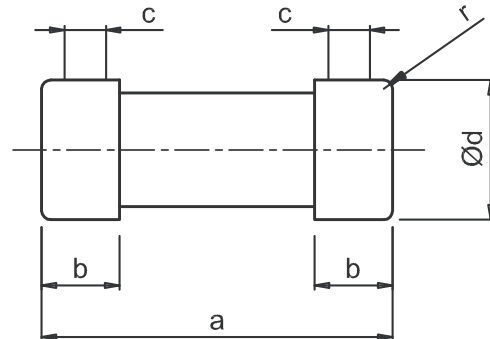
## Off Set Tag



## Off Set Tag (Clip in type)



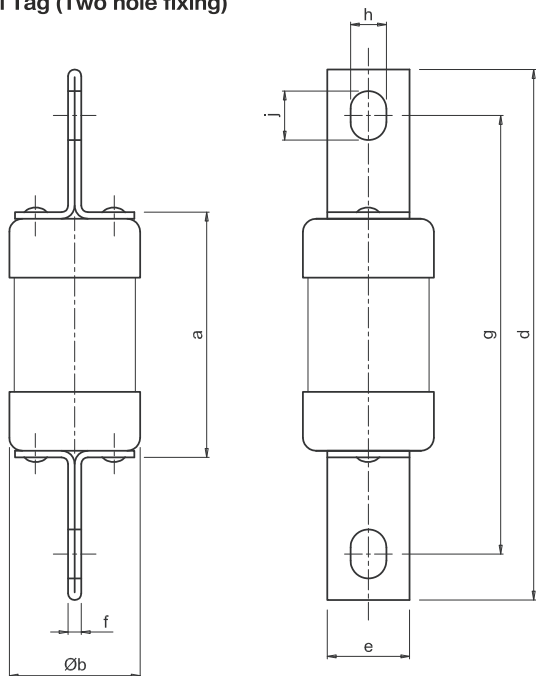
## Cylindrical HRC Fuse Links



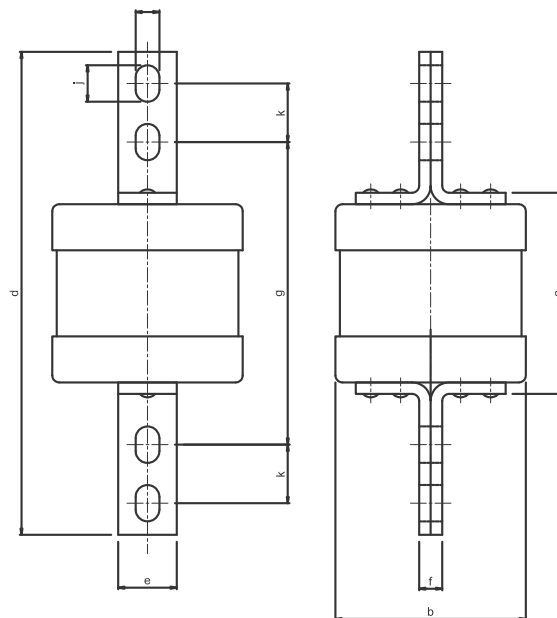
| Type | Ref. | a    | Øb   | d   | e    | f   | g    | h   | j    | k    |
|------|------|------|------|-----|------|-----|------|-----|------|------|
| CNIT | A1   | 33.2 | 14.4 | 55  | 11.2 | 0.8 | 44.5 | 4.2 | 8.2  | 15.2 |
| CTIA | A2   | 55   | 21.7 | 84  | 8.8  | 1.2 | 73   | 5.6 | 8    | 23.5 |
| CTIS | A3   | 55   | 21.7 | 84  | 8.8  | 1.2 | 73   | 5.6 | 8    | 23.5 |
| CTCP | A4   | 63.8 | 26   | 110 | 17   | 2.4 | 94   | 8.7 | 11.2 | 27   |
| CTFP | -    | 75.5 | 39.8 | 111 | 20   | 2.4 | 94   | 8.7 | 11.9 | 42   |

| Type | Ref.    | a  | Øb  | c   | d    | r   |
|------|---------|----|-----|-----|------|-----|
| CGF  | 10 X 38 | 38 | 9.6 | 6.5 | 10.3 | 1.2 |
| CHF  | 14 X 51 | 51 | 9.8 | 8   | 14.3 | 1.5 |

## Central Tag (Two hole fixing)



## Central Tag (Four hole fixing)



| Type | Ref. | a    | Øb   | d     | e    | f   | g   | h   | j    |
|------|------|------|------|-------|------|-----|-----|-----|------|
| CTC  | B1   | 62.2 | 26   | 135   | 17   | 3.2 | 111 | 8.7 | 11.2 |
| CTF  | B2   | 73.2 | 39.8 | 136.5 | 20   | 3.2 | 111 | 8.7 | 11.9 |
| CTKF | B3   | 73.2 | 52.6 | 136   | 25.4 | 3.2 | 111 | 8.7 | 11.9 |
| CTMF | B4   | 79   | 60.3 | 132.5 | 25.4 | 6.4 | 111 | 8.7 | 11.9 |

| Type | Ref. | a    | Øb   | d   | e    | f   | g   | h    | j    | k    |
|------|------|------|------|-----|------|-----|-----|------|------|------|
| CTM  | C1   | 84.5 | 60.3 | 210 | 25.4 | 4.8 | 133 | 10.3 | 15.8 | 25.4 |
| CTTM | C2   | 84.5 | 75.1 | 210 | 25.4 | 6.4 | 133 | 10.3 | 15.8 | 25.4 |
| CTLM | C3   | 89.4 | 82.7 | 210 | 25.4 | 10  | 133 | 10.3 | 15.8 | 25.4 |

Product innovation is a continuous process, hence data given is subject to change without prior notice



## Marketing Offices spread all over India

### CENTRAL MARKETING OFFICE

222, Okhla Industrial Estate, Phase - III, New Delhi - 110 020

Ph. : (+91 11) 3384 9000 - 09 • Fax : (+91 11) 26847342 • E-Mail : cmo@cselectric.co.in

### CUSTOMER CARE

Toll Free Number: 1800 3010 2012

#### NORTHERN REGION

##### DELHI

Ph. : (+91 11) 3384 9000 - 09

Fax : (+91 11) 26847342

E-Mail : cmo@cselectric.co.in

##### CHANDIGARH

Ph. : (+91 172) 3021144

Fax : (+91 172) 2631059-3201144

E-Mail : chandigarh@cselectric.co.in

##### LUDHIANA

Ph. : (+91 161) 2541900, 2541800

Fax : (+91 161) 2541900, 2541800

E-Mail : ludhiana@cselectric.co.in

##### LUCKNOW

Ph. : (+91 522) 3917843, 4102044

E-Mail : lucknow@cselectric.co.in

##### KANPUR

Ph. : (+91 522) 3917843, 4102044

E-Mail : kanpur@cselectric.co.in

##### INDORE

Ph. : (+91 731) 4035761, 3918020

E-Mail : indore@cselectric.co.in

##### RAIPUR

Ph. : (+91 771) 4061404

E-Mail : raipur@cselectric.co.in

##### NAGPUR

Ph. : (+91 712) 2565215 , 2547295

Fax : (+91 712) 2528923

E-Mail : nagpur@cselectric.co.in

#### EASTERN REGION

##### KOLKATA

Ph. : (+91 33) 39212100-01

Fax : (+91 33) 22275849

E-Mail : kolkata@cselectric.co.in

##### GUWAHATI

Ph. : (+91 361) 2469950

E-Mail : guwahati@cselectric.co.in

##### RANCHI

Ph. : (+91 651) 2242202, 2242224

E-Mail : ranchi@cselectric.co.in

##### BHUBANESWAR

Ph. : (+91 674) 2580788, 9778070465

E-Mail : bhubaneswar@cselectric.co.in

#### WESTERN REGION

##### MUMBAI

Ph. : (+91 22) 24114727-28, 30484071-73

Fax : (+91 22) 24126631

E-Mail : mumbai@cselectric.co.in

##### AHMEDABAD

Ph. : (+91 79) 30653015

Fax : (+91 79) 30074519

E-Mail : ahmedabad@cselectric.co.in

##### BARODA

Ph. : (+91 265) 2339479, 2356293

Fax : (+91 265) 2338754

E-Mail : baroda@cselectric.co.in

##### PUNE

Ph. : (+91 20) 30283239 - 40

Fax : (+91 20) 30283239

E-Mail : pune@cselectric.co.in

##### SURAT

Ph. : (+91 261) 6544024-28

E-Mail : surat@cselectric.co.in

##### JAIPUR

Ph. : (+91 141) 4037651

Fax : (+91 141) 4033954

E-Mail : jaipur@cselectric.co.in

#### SOUTHERN REGION

##### CHENNAI

Ph. : (+91 44) 33534500-01

Fax : (+91 44) 39180514

E-Mail : chennai@cselectric.co.in

##### COIMBATORE

Ph. : (+91 422) 3048406 - 20

Fax : (+91 422) 3048412

E-Mail : coimbatore@cselectric.co.in

##### KOCHI

Ph. : (+91 484) 3071715 (10 LINES)

Fax : (+91 484) 3071716

E-Mail : cochin@cselectric.co.in

##### MADURAI

E-Mail : commercial.madurai@cselectric.co.in

##### BENGALURU

Ph. : (+91 80) 3065 9400

Fax : (+91 80) 25594939

E-Mail : bangalore@cselectric.co.in

##### SECUNDERABAD

Ph. : (+91 40) 48534080

Fax : (+91 40) 27812987

E-Mail : hyderabad@cselectric.co.in

##### VIJAYAWADA

Ph. : (+91 866) 2496265 / 67

E-Mail : vijayawada@cselectric.co.in

### RESIDENT ENGINEERS

Agra | Allahabad | Aurangabad | Bareilly | Bhopal | Dehradun | Goa | Gorakhpur | Haridwar | Hubli | Jabalpur | Jammu | Kolhapur | Kollam | Mangalore | Mehsana | Nashik | Patna | Rajkot | Rourkela | Siliguri | Srinagar | Tirupathi | Trichey | Udaipur | Una | Vapi | Visakhapatnam

### WAREHOUSES

#### NATIONAL WAREHOUSE

NOIDA - A-7 & 8, Sector-VIII, Noida -201 301, Distt. Gautam Budh Nagar, (UP) Ph.: (+91 120) 3914301-02 Fax: (+ 91 120) 3914303

#### REGIONAL WAREHOUSES

|             |   |
|-------------|---|
| DELHI       | Khasra No. 915 & 916, 2nd Floor, Near Rice Mill, Village Rithala, Delhi-85 Ph.: (+91 11) 27049211                                       |
| LUCKNOW     | 3rd Floor, E-143, Phase-I, Transport Nagar, Kanpur Road, Lucknow - 17 Ph.: (+91 522) 4103460  |
| INDORE      | Liberty Agencies 53, Udyog Nagar, Near Musakhedi Square, Ring Road, Indore-452001 Ph.: (+91) 88780-62000 / 64000                        |
| KOLKATA     | 113, Chetla Road, New Alipur, Kolkata - 700 053, Ph.: (+91 33) 22275849 - 51  |
| RANCHI      | Plot No. 145/C, Mandir Marg-D, Road No. 4, Ashok Nagar, Distt. Ranchi, Jharkhand - 834002 Ph.: (91 651) 2242202, 2242224                |
| BHUBANESWAR | Rasharaj Geetikunj, Plot No. 224/A, Sec-A, Zone-B, Mancheswar Industrial Estate, Bhubaneswar-751 010 Ph.: (+91 674) 2580788             |
| MUMBAI      | E-5, Parasnath Complex. Gala No.8, Village 'VAL' Dapode Road, Taluka Bhiwandi, District, Thane - 421302 Ph.: (+91 2522) 314830          |
| AHMEDABAD   | B-25-B/C Meldi Industrial Estate, Opp. West Coast Pharmaceutical, Nr. Gota Over Bridge, Gota, Ahmedabad - 382481 Ph.: (+91 79) 65453044 |
| BENGALURU   | No. 17, 1st Main Road, Sampangiram Nagar, Bengaluru - 560 027 Ph.: (+91 80) 41125467  |

