

## Square Pipe Fuse Links With Knife Contacts



### ► Applications

Protection against overload and short-circuit in electric lines (type gG), also available for protection of semiconductor parts and equipments against short-circuit (type aR) and protection of motors (type aM).

Rated voltage up to 1140V; Rated current up to 1250A; Working frequency 50Hz AC; Rated breaking capacity up to 120KA. Compliant with GB13539 and IEC269.

### ► Basic Data

The models, dimensions, ratings are shown in Figures 4.1~4.13 and Tables 4 .

### ► Design Features

Variable cross-section fuse element made from pure copper or silver sealed in cartridge made from high-duty ceramic. Fuse tube filled with chemically treated high-purity quartz sand as arc-extinguishing medium. Dot-welding of fuse element ends to the terminals ensures reliable electric connection and forms insert knife type contacts. Indicator or striker may be attached to the fuse link to show cutout of fuse or to give various signals and to cut the circuit automatically.

Table 4

| Cat. No. | Models | Cross-reference     | Rated voltage (V) | Rated current (A) | Dimensions/size (mm) Sizes Fig. | Weight (g) |
|----------|--------|---------------------|-------------------|-------------------|---------------------------------|------------|
|          | MIRO   | gG(Normal) aR(Fast) |                   |                   |                                 |            |
| 0401     | NH00C  | -                   | 500/660           | 10~100            | 000 See figure 4.1              | 138        |

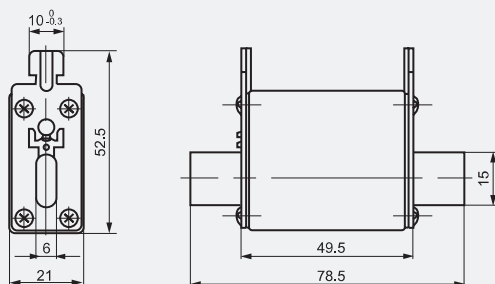


Figure 4.1

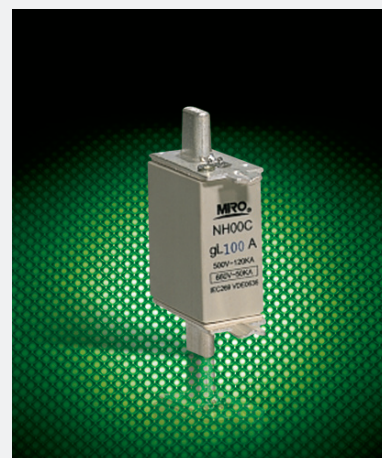


Table 4 (cont.)

| Cat.<br>No. | Models     |          |                 |          | Rated<br>voltage<br>(V) | Rated<br>current<br>(A) | Dimensions/size (mm) |     |     |      |    |    |    | Weight<br>(g) |
|-------------|------------|----------|-----------------|----------|-------------------------|-------------------------|----------------------|-----|-----|------|----|----|----|---------------|
|             | MIRO       |          | Cross-reference |          |                         |                         | Sizes Fig.           | A   | B   | C    | D  | H  |    |               |
|             | gG(Normal) | aR(Fast) | gG(Normal)      | aR(Fast) |                         |                         |                      |     |     |      |    |    |    |               |
| 0402        | NH00       | RS31     | -               | -        | 500/660                 | 10~160                  | 00                   | 4.2 | 78  | 50.5 | 15 | 30 | 60 | 201           |
| 0403        | NH0        | -        | -               | -        | 500/660                 | 6~160                   | 0                    | 4.2 | 125 | 67   | 15 | 30 | 60 | 267           |

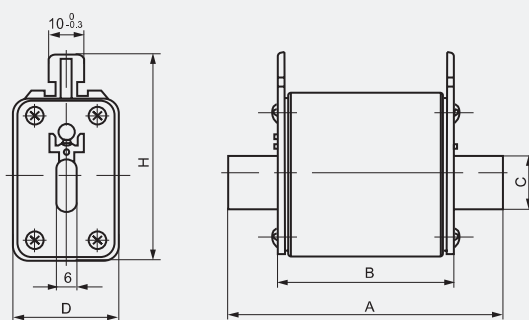


Figure 4.2



Table 4 (cont.)

| Cat. No. | Models          |          | Cross-reference |          | Rated voltage (V) | Rated current (A) | Dimensions/size (mm) |     |     |    |    |      |      | Weight (g) |
|----------|-----------------|----------|-----------------|----------|-------------------|-------------------|----------------------|-----|-----|----|----|------|------|------------|
|          | MIRO gG(Normal) | aR(Fast) | gG(Normal)      | aR(Fast) |                   |                   | Sizes Fig.           | A   | B   | C  | D  | H    |      |            |
| 0404     | NH1             | RS32     | -               | -        | 500/660           | 32~250            | 1                    | 4.3 | 135 | 67 | 20 | 46   | 58.5 | 447        |
| 0405     | NH2             | RS33     | -               | -        | 500/660           | 80~400            | 2                    | 4.3 | 150 | 68 | 30 | 58.5 | 68.5 | 727        |
| 0406     | NH3             | RS34     | -               | -        | 500/660           | 160~630           | 3                    | 4.3 | 150 | 68 | 36 | 70   | 82   | 975        |

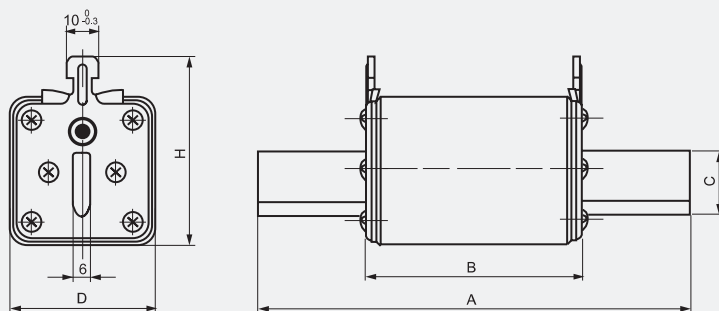


Figure 4.3



Table 4 (cont.)

| Cat. No. | Models                |                 | Rated voltage (V) | Rated current (A) | Dimensions/size (mm) |                | Weight (g) |
|----------|-----------------------|-----------------|-------------------|-------------------|----------------------|----------------|------------|
|          | MIRO                  | Cross-reference |                   |                   | Sizes                | Fig.           |            |
|          |                       |                 |                   |                   |                      |                |            |
| 0407     | NH1<br>(Small volume) | -               | 500/660           | 16~160            | 1                    | See figure 4.4 | 312        |

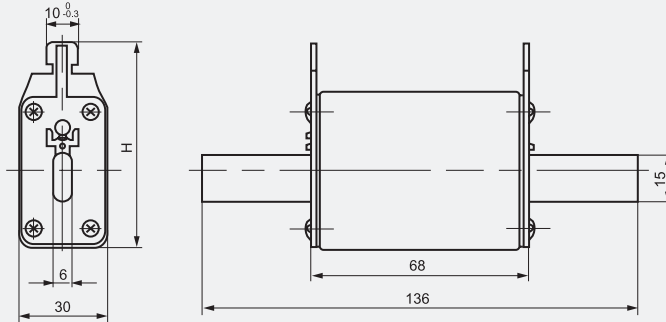


Figure 4.4

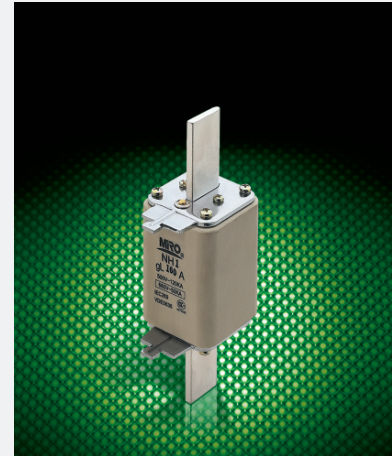


Table 4 (cont.)

| Cat. No. | Models                |          |                 |          | Rated voltage (V) | Rated current (A) | Dimensions/size (mm) |     |     |    |    |      |      | Weight (g) |
|----------|-----------------------|----------|-----------------|----------|-------------------|-------------------|----------------------|-----|-----|----|----|------|------|------------|
|          | MIRO                  |          | Cross-reference |          |                   |                   | Sizes Fig.           | A   | B   | C  | D  | H    |      |            |
|          | gG(Normal)            | aR(Fast) | gG(Normal)      | aR(Fast) |                   |                   |                      |     |     |    |    |      |      |            |
| 0408     | NH2<br>(Small volume) | -        | -               | -        | 500/660           | 35-250            | 2                    | 4.5 | 150 | 67 | 20 | 46   | 67   | 458        |
| 0409     | NH3<br>(Small volume) | -        | -               | -        | 500/660           | 200~400           | 3                    | 4.5 | 151 | 67 | 30 | 58.5 | 81.5 | 727        |

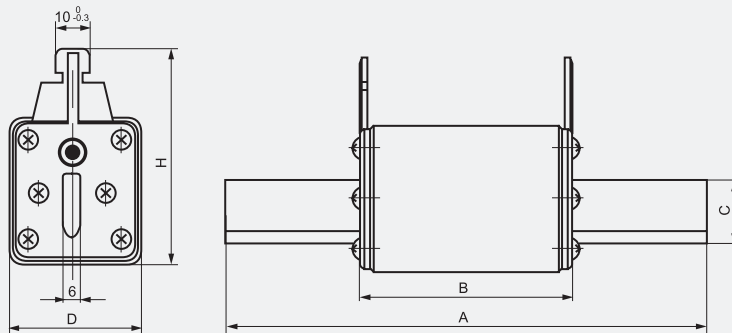


Figure 4.5



Table 4 (cont.)

| Cat. No. | Models     |          |                 |          | Rated voltage (V) | Rated current (A) | Dimensions/size (mm) |     |     |    |    |    | Weight (g) |       |
|----------|------------|----------|-----------------|----------|-------------------|-------------------|----------------------|-----|-----|----|----|----|------------|-------|
|          | MIRO       |          | Cross-reference |          |                   |                   | Sizes Fig.           | A   | B   | C  | D  | H  |            |       |
|          | gG(Normal) | aR(Fast) | gG(Normal)      | aR(Fast) |                   |                   |                      |     |     |    |    |    |            |       |
| 0410     | RO30A      | RS30A    | NT00C           | -        | 500/660           | 4~100             | 000                  | 4.6 | 78  | 49 | 15 | 21 | 48         | 123   |
| 0411     | RO30B      | RS30B    | NT00C           | -        | 500/660           | 4~100             | 000                  | 4.6 | 78  | 49 | 15 | 21 | 48         | 117   |
| 0412     | RO30C      | RS30C    | 3NA3            | 3NE18..  | 500/660           | 10~100            | 000                  | 4.6 | 78  | 49 | 15 | 21 | 52.5       | 132   |
| 0413     | RO31A      | RS31A    | PH00            | -        | 500/660           | 10~160            | 00                   | 4.6 | 78  | 49 | 15 | 30 | 53         | 178.5 |
| 0414     | RO31B      | RS31B    | NT0             | 3NE41..  | 500/1140          | 6~160             | 0                    | 4.6 | 125 | 68 | 15 | 29 | 61.5       | 278   |
| 0415     | RO31C      | RS31C    | NT1             | -        | 500               | 32~200            | 1                    | 4.6 | 135 | 68 | 15 | 29 | 61.5       | 293.5 |

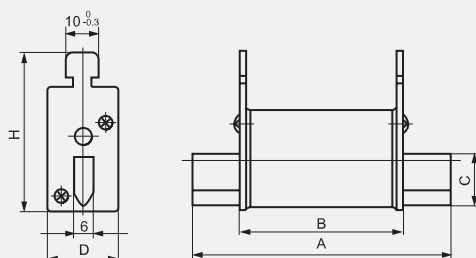


Figure 4.6



Table 4 (cont.)

| Cat. No. | Models     |          |                 |          | Rated voltage (V) | Rated current (A) | Dimensions/size (mm) |     |     |    |    |    |    |     | Weight (g) |
|----------|------------|----------|-----------------|----------|-------------------|-------------------|----------------------|-----|-----|----|----|----|----|-----|------------|
|          | MIRO       |          | Cross-reference |          |                   |                   | Sizes Fig.           | A   | B   | C  | D  | H  |    |     |            |
|          | gG(Normal) | aR(Fast) | gG(Normal)      | aR(Fast) |                   |                   |                      |     |     |    |    |    |    |     |            |
| 0416     | NT00       | RS31     | RT16-00         | 3NE80..  | 500/660           | 6~160             | 00                   | 4.7 | 78  | 49 | 15 | 29 | 56 | 175 |            |
| 0417     | NT0        | -        | RT16-0          | -        | 500/660           | 6~160             | 0                    | 4.7 | 125 | 68 | 15 | 29 | 56 | 252 |            |

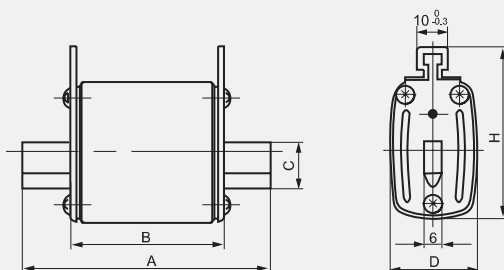


Figure 4.7



Table 4 (cont.)

| Cat. No. | Models |          | Cross-reference           |          | Rated voltage (V) | Rated current (A) | Sizes | Dimensions/size (mm) |     |     |      |    |     | Weight (g) |
|----------|--------|----------|---------------------------|----------|-------------------|-------------------|-------|----------------------|-----|-----|------|----|-----|------------|
|          | MIRO   | aR(Fast) | gG(Normal)                | aR(Fast) |                   |                   |       | Fig.                 | A   | B   | C    | D  | H   |            |
| 0418     | RO32   | RS32     | NT1 RT16-1<br>3NA1 RT20-1 | 3NE12..  | 500/660           | 32-250            | 1     | 4.8                  | 135 | 68  | 20   | 48 | 60  | 455        |
| 0419     | RO32A  | RS32A    | -                         | -        | 1140              | 200               |       | 4.8                  | 172 | 110 | 19.5 | 44 | 58  | 570        |
| 0420     | RO32B  | RS32B    | NT1 RT16-1                | -        | 500               | 250               | 1     | 4.8                  | 135 | 68  | 20   | 40 | 68  | 393        |
| 0421     | RO33   | RS33     | NT2 RT16-2<br>3NA1 RT20-2 | 3NE13..  | 500/660           | 80-400            | 2     | 4.8                  | 150 | 68  | 25   | 58 | 70  | 650        |
| 0422     | RO33B  | RS33B    | RT16-2                    | -        | 500               | 400               | 2     | 4.8                  | 150 | 68  | 25   | 52 | 71  | 580        |
| 0423     | RO34   | RS34     | NT3 RT16-3<br>NH3 RT20-3  | 3NE14..  | 500/660           | 160-630           | 3     | 4.8                  | 150 | 68  | 32   | 67 | 80  | 880        |
| 0424     | RO35   | RS35     | -                         | -        | 500               | 6-160             |       | 4.8                  | 135 | 68  | 20   | 30 | 53  | 249        |
| 0425     | RO36   | RS36     | EAPO                      | -        | 500               | 32-200            | 1     | 4.8                  | 135 | 68  | 20   | 40 | 59  | 356        |
| 0426     | RO39A  | RS39A    | NT4a                      | -        | 380/500           | 500-1250          | 4a    | 4.8                  | 200 | 90  | 50   | 97 | 113 | 2140       |

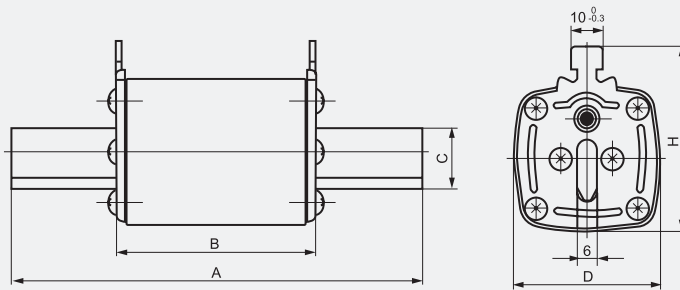


Figure 4.8



Table 4 (cont.)

| Cat. No. | Models     |          |                 |          | Rated voltage (V) | Rated current (A) | Dimensions/size (mm) |     |     |    |    |      |     |      |      |       | Weight (g) |
|----------|------------|----------|-----------------|----------|-------------------|-------------------|----------------------|-----|-----|----|----|------|-----|------|------|-------|------------|
|          | MIRO       |          | Cross-reference |          |                   |                   | Fig.                 | A   | B   | C  | D  | G    | E   | F    | H    |       |            |
|          | gG(Normal) | aR(Fast) | gG(Normal)      | aR(Fast) |                   |                   |                      |     |     |    |    |      |     |      |      |       |            |
| 0427     | RO34K      | RS34K    | -               | 3NC8     | 500/660           | 150~630           | 4.9                  | 140 | 68  | 32 | 70 | 6    | 108 | 10.5 | 85   | 810   |            |
| 0428     | RO38       | RS38     | -               | 3NE3626  | -                 | 200~630           | 4.9                  | 160 | 86  | 32 | 70 | 6    | 126 | 11   | 81.5 | 1050  |            |
| 0429     | RO39       | RS39     | NT4 RT17        | -        | 500               | 500~1250          | 4                    | 4.9 | 200 | 90 | 50 | 97   | 8   | 150  | 16.5 | 113   | 2470       |
| 0430     | RO39B      | RS39B    | NT4B RT17       | -        | 500               | 500~1000          | 4                    | 4.9 | 200 | 79 | 50 | 87.5 | 8   | 150  | 17   | 114.5 | 2100       |

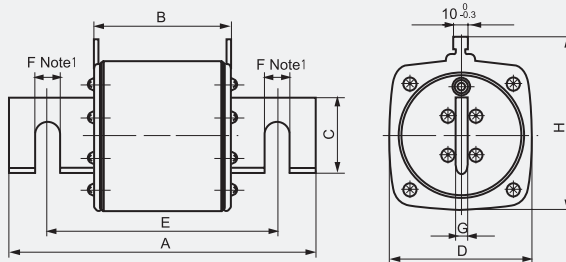


Figure 4.9

Note: The joint holes of two-horizontal type is allowed to be changed to one horizontal one straight type or two straight type.



Table 4 (cont.)

| Cat. No. | Models |       | Cross-reference |          | Rated voltage (V) | Rated current (A) | Dimensions/size (mm)<br>Sizes Fig. | Weight (g) |
|----------|--------|-------|-----------------|----------|-------------------|-------------------|------------------------------------|------------|
|          | MIRO   |       | gG(Normal)      | aR(Fast) |                   |                   |                                    |            |
| 0431     | RO34A  | RS34A | 8SY5023         | -        | 1140              | 450               | - See figure 4.10                  | 1066       |

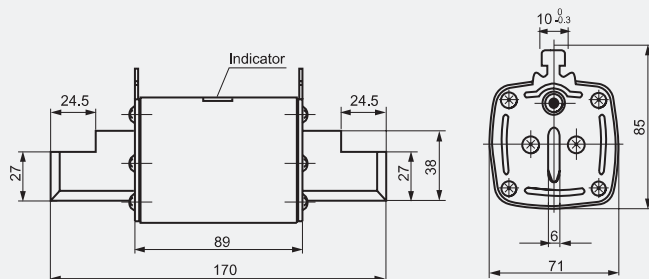


Figure 4.10

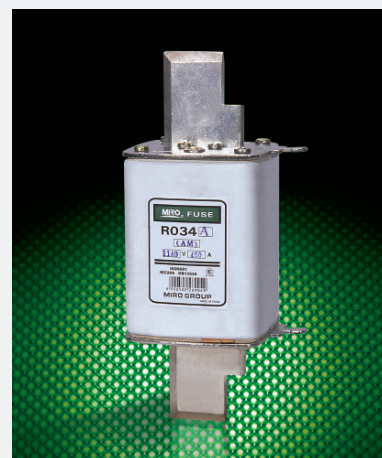


Table 4 (cont.)

| Cat. No. | Models |       | Cross-reference |          | Rated voltage (V) | Rated current (A) | Dimensions/size (mm)<br>Sizes Fig. A B C D E F G H |      |     |    |    |    |    |      |      |      | Weight (g) |
|----------|--------|-------|-----------------|----------|-------------------|-------------------|----------------------------------------------------|------|-----|----|----|----|----|------|------|------|------------|
|          | MIRO   |       | gG(Normal)      | aR(Fast) |                   |                   |                                                    |      |     |    |    |    |    |      |      |      |            |
| 0432     | RO31Z  | RS31Z | RT16A-00        | -        | 500/660           | 35~125            | 00                                                 | 4.11 | 78  | 49 | 15 | 29 | 15 | 22.5 | -    | 59.5 | 183        |
| 0433     | RO32Z  | RS32Z | RT16A-1         | -        | 500/660           | 200~250           | 1                                                  | 4.11 | 135 | 68 | 20 | 48 | 25 | 14.5 | 16   | 60   | 390        |
| 0434     | RO33Z  | RS33Z | RT16A-2         | -        | 500/660           | 315~400           | 2                                                  | 4.11 | 150 | 68 | 25 | 58 | 30 | 14.5 | 19   | 70   | 683        |
| 0435     | RO34Z  | RS34Z | RT16A-3         | -        | 500/660           | 500~630           | 3                                                  | 4.11 | 150 | 68 | 32 | 67 | 30 | 14.5 | 19   | 82   | 880        |
| 0436     | NTA-1  | -     | -               | -        | 500/660           | 200~250           | 1                                                  | 4.11 | 135 | 68 | 20 | 48 | 8  | 26.5 | -    | 60   | 380        |
| 0437     | NTA-2  | -     | -               | -        | 500/660           | 315~400           | 2                                                  | 4.11 | 150 | 68 | 25 | 58 | 8  | 32   | -    | 70   | 673        |
| 0438     | NTA-3  | -     | -               | -        | 500/660           | 500~630           | 3                                                  | 4.11 | 150 | 68 | 32 | 67 | 8  | 40   | -    | 82   | 870        |
| 0439     | RO36Z  | RS36Z | -               | -        | 500/660           | 125~160           |                                                    | 4.11 | 135 | 68 | 20 | 40 | 25 | 20   | 11.5 | 61   | 369        |

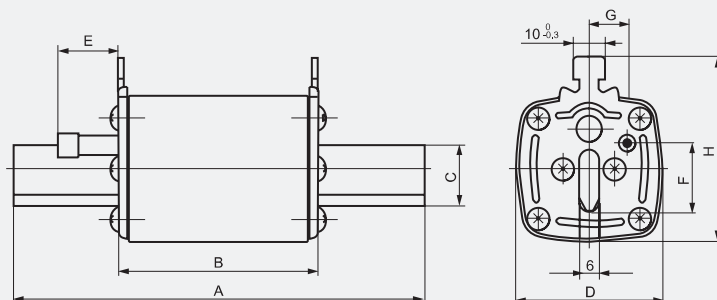


Figure 4.11



Table 4 (cont.)

| Cat. No. | Models        |   | Cross-reference |          | Rated voltage (V) | Rated current (A) | Dimensions/size (mm) | Weight (g)                           |
|----------|---------------|---|-----------------|----------|-------------------|-------------------|----------------------|--------------------------------------|
|          | MIRO          |   | gG(Normal)      | aR(Fast) |                   |                   |                      |                                      |
| 0440     | RO32BZ RS32BZ | - | HLS1            |          | 500               | 125-250           | 1                    | 4.12 135 68 20 50.5 9 24.5 26 68 380 |
| 0441     | RO33BZ RS33BZ | - | HLS2            |          | 500               | 250-400           | 2                    | 4.12 150 68 25 66.5 9 29 35 71 675   |

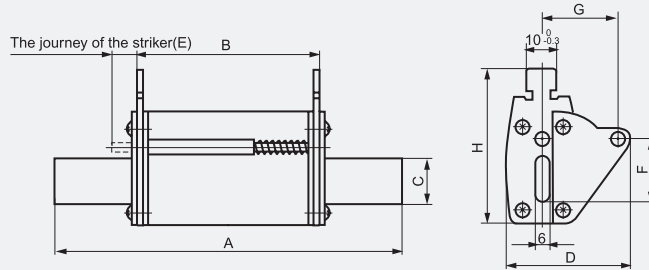


Figure 4.12



Table 4 (cont.)

| Cat. No. | Models   |   | Cross-reference |          | Rated voltage (V) | Rated current (A) | Dimensions/size (mm) | Weight (g)                   |
|----------|----------|---|-----------------|----------|-------------------|-------------------|----------------------|------------------------------|
|          | MIRO     |   | gG(Normal)      | aR(Fast) |                   |                   |                      |                              |
| 0442     | RTO-50   | - | -               | -        | 380               | 10-50             | -                    | 4.13 103 66 10.3 25 52 189.5 |
| 0443     | RTO-100  | - | -               | -        | 380               | 20-100            | -                    | 4.13 125 67 18 40 52 313     |
| 0444     | RTO-200  | - | -               | -        | 380               | 50-200            | -                    | 4.13 135 67 23 46 58 404.5   |
| 0445     | RTO-400  | - | -               | -        | 380               | 160-400           | -                    | 4.13 145 67 30 55 66 601     |
| 0446     | RTO-600  | - | -               | -        | 380               | 250-600           | -                    | 4.13 165 67 36 66 77 855     |
| 0447     | RTO-1000 | - | -               | -        | 380               | 500-1000          | -                    | 4.13 280 90 50 85 100 2050   |

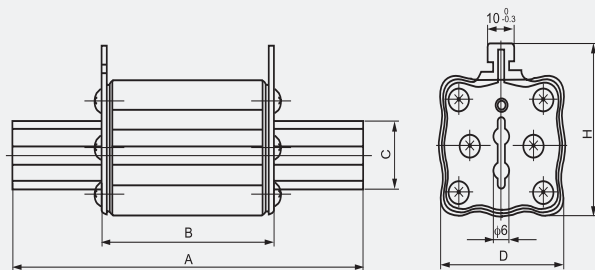
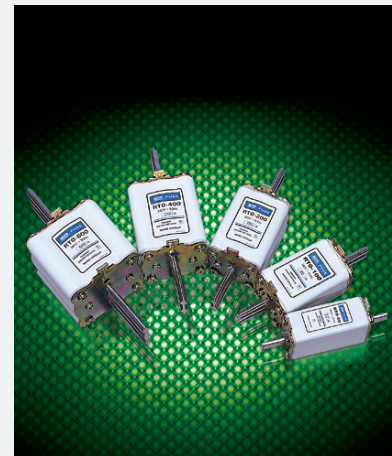
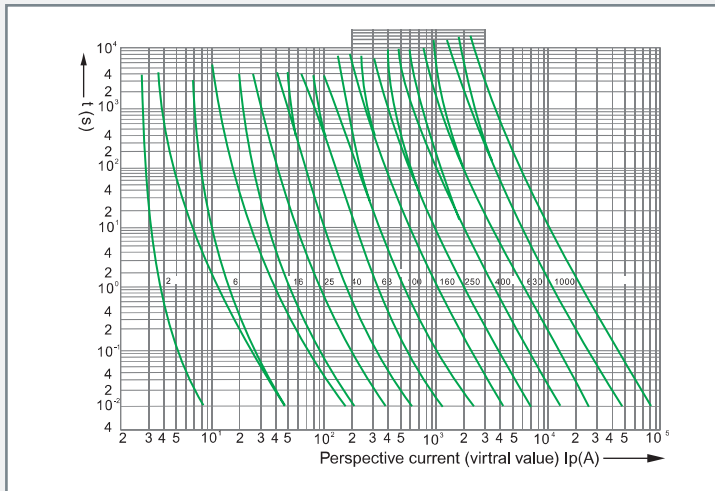
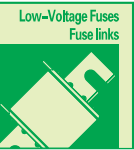


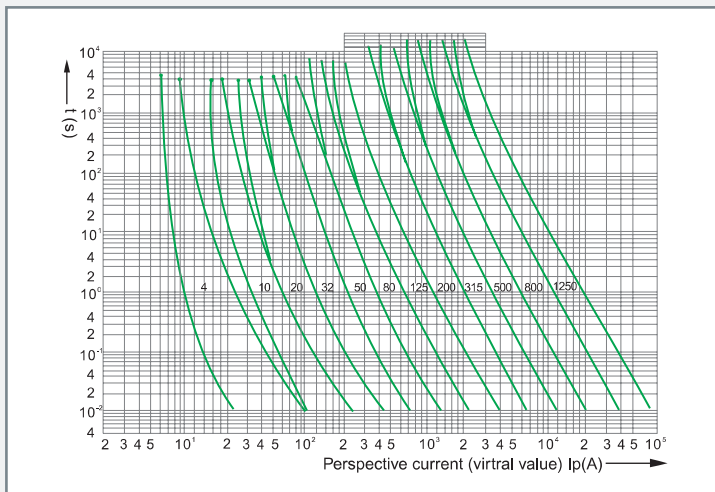
Figure 4.13



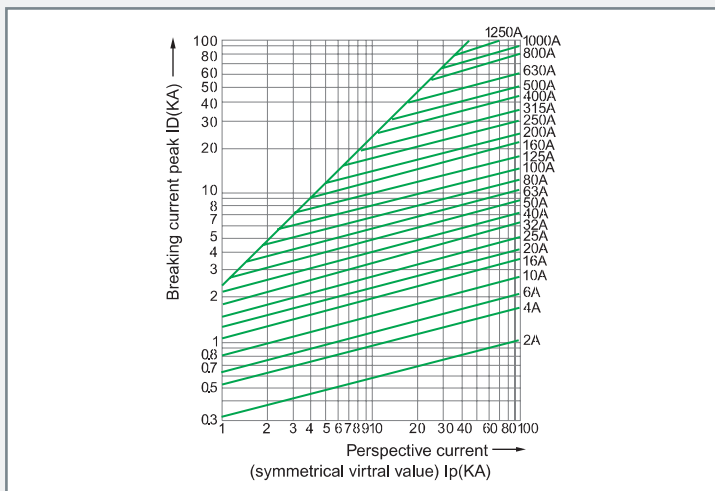
► **Characteristics Curve**



Time-current range of "gG" fuse links



Time-current range of "gG" fuse links



Breaking current characteristics curve of "gG" fuse links