

## Electric Fire Protective Device, Arc Fault Protection AFDD<sup>+</sup>, 2-pole

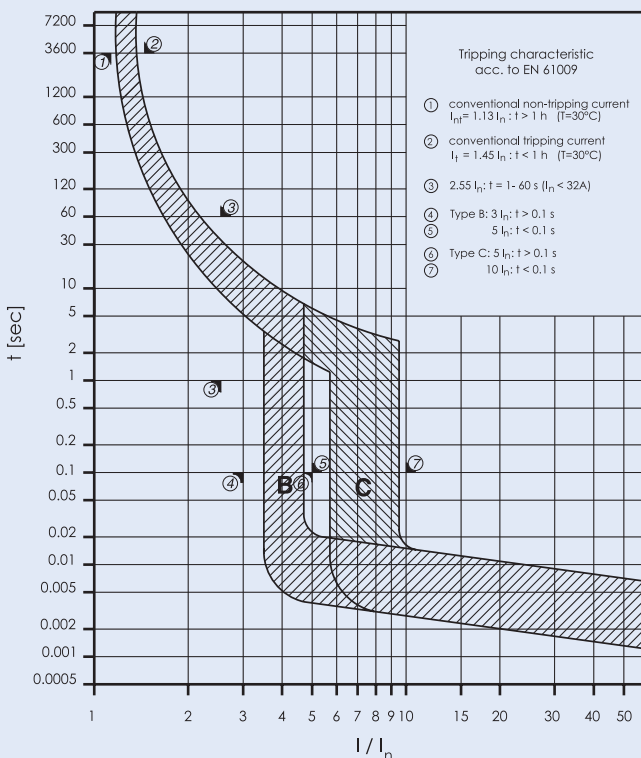
Detects and quenches arc faults in final circuits

- Fully combined with residual current circuit breaker (RCCB) and miniature circuit breaker (MCB)
- Safely detects arcs in cable length up to 70 meter
- Variable installation of N either left or right
- Rated currents from 10 to 40 A
- Tripped indication: MCB, RCCB or AFDD
- LED indication for arc faults
- Permanent self-monitoring
- Overvoltage and overheat monitoring
- 3-position DIN rail clip, permits removal from existing busbar system
- Comprehensive range of accessories suitable for subsequent installation
- 10 and 30 mA rated residual currents
- Tripping characteristics B, C
- Rated breaking capacity up to 10 kA

### Accessories:

|                                                  |            |                |
|--------------------------------------------------|------------|----------------|
| Auxiliary switch for subsequent installation     | ZP-IHK     | 286052         |
| Auxiliary switch                                 | ZP-NHK     | 248437         |
| Shunt trip release                               | ZP-ASA/..  | 248438, 248439 |
| Switching interlock                              | IS/SPE-1TE | 101911         |
| Busbars: ZV-SS; ZV-L1/N; ZV-L2/L3; ZV-ADP; ZV-AE |            |                |

### Tripping Characteristic AFDD<sup>+</sup>, Characteristics B and C



## Technical Data

### Electrical

|                                               |                                 |
|-----------------------------------------------|---------------------------------|
| Design according to                           | IEC/EN 62606, IEC/EN 61009      |
| Current test marks as printed onto the device |                                 |
| Tripping                                      |                                 |
| Line-voltage-independent (8/20μs)             | instantaneous 250A              |
|                                               | surge-current-proof             |
| Rated voltage $U_n$                           | 240 V AC; 50 Hz                 |
| Operational voltage range                     | 170-264 V                       |
| Rated tripping current $I_{\Delta n}$         | 10, 30 mA                       |
| Rated non-tripping current $I_{\Delta no}$    | $0.5 I_{\Delta n}$              |
| Sensitivity                                   | AC and pulsating DC             |
| Selectivity class                             | 3                               |
| Rated breaking capacity                       |                                 |
| AFDD 10-25A                                   | 10 kA                           |
| AFDD 32-40A                                   | 6 kA                            |
| Rated current                                 | 10 - 40 A                       |
| Rated peak withstand voltage $U_{imp}$        | 4 kV (1.2/50μs)                 |
| Rated fault breaking capacity $I_{\Delta m}$  |                                 |
| EN 61009                                      | 3 kA                            |
| IEC 61009                                     | 10-16 A: 3 kA<br>20-40 A: 500 A |

### Arc fault tripping times after load current

(acc. to IEC/EN62606):

| Load current (A) | Tripping time (s) |
|------------------|-------------------|
| $\leq 2.5$       | <1                |
| 5                | <0.5              |
| 10               | <0.25             |
| 16               | <0.15             |
| 32               | <0.12             |
| 40               | <0.12             |

### Characteristic

B, C

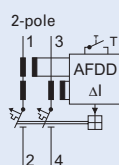
Maximum back-up fuse (short circuit) 100 A gL (>10 kA)

|           |                  |                                    |
|-----------|------------------|------------------------------------|
| Endurance | electrical comp. | $\geq 4,000$ switching operations  |
|           | mechanical comp. | $\geq 20,000$ switching operations |

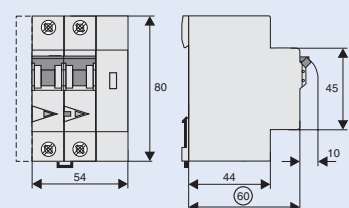
### Mechanical

|                                    |                                                                       |
|------------------------------------|-----------------------------------------------------------------------|
| Frame size                         | 45 mm                                                                 |
| Device height                      | 80 mm                                                                 |
| Device width                       | 54 mm (3MU)                                                           |
| Mounting                           | 3-position DIN rail clip, permits removal from existing busbar system |
| Upper and lower terminals          | open mouthed/lift terminals                                           |
| Terminal protection                | finger and hand touch safe, DGUV VS3, EN 50274                        |
| Terminal capacity                  | 1 - 25 mm <sup>2</sup>                                                |
| Busbar thickness                   | 0.8 - 2 mm                                                            |
| Degree of protection switch        | IP20                                                                  |
| Degree of protection, built-in     | IP40                                                                  |
| Tripping temperature               | -25°C to +40°C                                                        |
| Storage- and transport temperature | -35°C to +60°C                                                        |
| Resistance to climatic conditions  | acc. to IEC/EN 61009                                                  |

### Connection diagram



### Dimensions (mm)



## Short Circuit Selectivity AFDD+ 10-20A towards Neozed<sup>1)</sup> / Diazed<sup>2)</sup> / NH00<sup>3)</sup>

Short circuit currents in kA, Rated currents of fuses in A

Short circuit selectivity **AFDD+** towards fuse link **Neozed**<sup>1)</sup>

| AFDD+      | Neozed <sup>1)</sup> |      |     |     |     |     |     |     |     |     |
|------------|----------------------|------|-----|-----|-----|-----|-----|-----|-----|-----|
|            | 16                   | 20   | 25  | 32  | 35  | 40  | 50  | 63  | 80  | 100 |
| <b>B10</b> | <0,5                 | 0,5  | 0,9 | 2   | 2,3 | 3,7 | 8   | 10  | 10  | 10  |
| <b>B13</b> | <0,5                 | 0,5  | 0,8 | 1,7 | 1,9 | 3   | 6   | 10  | 10  | 10  |
| <b>B16</b> |                      | 0,5  | 0,7 | 1,5 | 1,7 | 2,4 | 4,4 | 6,8 | 10  | 10  |
| <b>B20</b> |                      |      | 0,7 | 1,4 | 1,5 | 2,2 | 3,9 | 6   | 9,2 | 10  |
| <b>C10</b> | <0,5                 | 0,5  | 0,8 | 1,7 | 1,9 | 3   | 6,1 | 10  | 10  | 10  |
| <b>C13</b> | <0,5                 | 0,5  | 0,7 | 1,6 | 1,8 | 2,8 | 5,5 | 9,5 | 10  | 10  |
| <b>C16</b> |                      | <0,5 | 0,7 | 1,3 | 1,5 | 2,2 | 4   | 6,2 | 10  | 10  |
| <b>C20</b> |                      |      | 0,6 | 1,3 | 1,4 | 2,1 | 3,7 | 5,6 | 8,5 | 10  |

Short circuit selectivity **AFDD+** towards fuse link **NH00**<sup>3)</sup>

| AFDD+ | NH00 <sup>3)</sup> |      |     |     |     |     |     |     |     |     |     |     |  |
|-------|--------------------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
|       | 16                 | 20   | 25  | 32  | 35  | 40  | 50  | 63  | 80  | 100 | 125 | 160 |  |
| B10   | <0,5               | <0,5 | 0,8 | 1,5 | 2,3 | 3,2 | 5,7 | 9,1 | 10  | 10  | 10  | 10  |  |
| B13   | <0,5               | <0,5 | 0,8 | 1,3 | 1,9 | 2,7 | 4,4 | 6,5 | 10  | 10  | 10  | 10  |  |
| B16   |                    | <0,5 | 0,7 | 1,1 | 1,6 | 2,2 | 3,4 | 4,8 | 8   | 10  | 10  | 10  |  |
| B20   |                    |      | 0,6 | 1   | 1,4 | 2   | 3,1 | 4,3 | 7   | 10  | 10  | 10  |  |
| C10   | <0,5               | <0,5 | 0,7 | 1,3 | 1,9 | 2,7 | 4,5 | 6,9 | 10  | 10  | 10  | 10  |  |
| C13   | <0,5               | <0,5 | 0,7 | 1,2 | 1,8 | 2,5 | 4,1 | 6,1 | 10  | 10  | 10  | 10  |  |
| C16   |                    | <0,5 | 0,6 | 1   | 1,5 | 2   | 3,1 | 4,4 | 7,5 | 10  | 10  | 10  |  |
| C20   |                    |      | 0,6 | 0,9 | 1,4 | 1,9 | 2,9 | 4,1 | 6,5 | 10  | 10  | 10  |  |

 no selectivity

<sup>1)</sup> Type 5SE2; Size: D01, D02, D03; Operating class gG; Rated voltage: AC 400 V/DC 250 V

<sup>2)</sup> Type 5SB2, 5SB4, 5SC2; Size: DII, DIII, DIV; Operating class gG; Rated voltage: AC 500 V/DC 500 V

<sup>3)</sup> Type 3NA3 8, 3NA6 8, 3NA7 8; Size: 000, 00; Operating class gG; Rated voltage: AC 500 V/DC 250 V

Short circuit selectivity **AFDD+** towards fuse link **Diazed**<sup>2)</sup>

| AFDD+ | Diazed <sup>2)</sup> |      |     |     |     |     |     |     |     |
|-------|----------------------|------|-----|-----|-----|-----|-----|-----|-----|
|       | 16                   | 20   | 25  | 32  | 35  | 50  | 63  | 80  | 100 |
| B10   | <0,5                 | 0,5  | 0,9 | 1,8 | 2,9 | 5,6 | 10  | 10  | 10  |
| B13   | <0,5                 | 0,5  | 0,8 | 1,5 | 2,4 | 4,5 | 10  | 10  | 10  |
| B16   |                      | 0,5  | 0,8 | 1,3 | 2   | 3,4 | 8   | 10  | 10  |
| B20   |                      |      | 0,7 | 1,3 | 1,9 | 3,1 | 7,1 | 10  | 10  |
| C10   | <0,5                 | 0,5  | 0,8 | 1,5 | 2,4 | 4,4 | 10  | 10  | 10  |
| C13   | <0,5                 | 0,5  | 0,8 | 1,4 | 2,3 | 4,2 | 10  | 10  | 10  |
| C16   |                      | <0,5 | 0,7 | 1,2 | 1,9 | 3,2 | 7,6 | 10  | 10  |
| C20   |                      |      | 0,7 | 1,2 | 1,8 | 2,9 | 6,5 | 9,7 | 10  |

## Short Circuit Selectivity AFDD+ 25-40A towards Neozed<sup>1)</sup> / Diazed<sup>2)</sup> / NH00<sup>3)</sup>

Short circuit currents in kA, Rated currents of fuses in A

Short circuit selectivity **AFDD+** towards fuse link **Neozed**<sup>1)</sup>

| AFDD+      | Neozed <sup>1)</sup> |    |    |     |     |     |     |     |     |     |
|------------|----------------------|----|----|-----|-----|-----|-----|-----|-----|-----|
|            | 16                   | 20 | 25 | 32  | 35  | 40  | 50  | 63  | 80  | 100 |
| <b>B25</b> |                      |    |    | 1,2 | 1,3 | 1,8 | 3,1 | 4,7 | 6   | 6   |
| <b>B32</b> |                      |    |    |     | 1,2 | 1,7 | 2,7 | 3,8 | 5,5 | 6   |
| <b>B40</b> |                      |    |    |     |     | 1,3 | 1,7 | 2,2 | 2,7 | 4,2 |
| <b>C25</b> |                      |    |    | 1,1 | 1,3 | 1,8 | 2,8 | 3,9 | 5,6 | 6   |
| <b>C32</b> |                      |    |    |     | 1,2 | 1,7 | 2,6 | 3,6 | 5,1 | 6   |
| <b>C40</b> |                      |    |    |     |     | 1,3 | 1,9 | 3,3 | 3,2 | 5,8 |

Short circuit selectivity **AFDD+** towards fuse link **NH00**<sup>3)</sup>

| AFDD+ | NH00 <sup>3)</sup> |    |    |     |     |     |     |     |     |     |     |     |  |
|-------|--------------------|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
|       | 16                 | 20 | 25 | 32  | 35  | 40  | 50  | 63  | 80  | 100 | 125 | 160 |  |
| B25   |                    |    |    | 0,9 | 1,2 | 1,6 | 2,4 | 3,4 | 5,5 | 6   | 6   | 6   |  |
| B32   |                    |    |    |     | 1,1 | 1,4 | 2,1 | 2,9 | 4,3 | 6   | 6   | 6   |  |
| B40   |                    |    |    |     |     |     | 1,4 | 1,9 | 2,8 | 4,1 | 6   | 6   |  |
| C25   |                    |    |    | 0,9 | 1,2 | 1,6 | 2,3 | 3   | 4,6 | 6   | 6   | 6   |  |
| C32   |                    |    |    |     | 1,1 | 1,5 | 2,1 | 2,8 | 4,3 | 6   | 6   | 6   |  |
| C40   |                    |    |    |     |     |     | 1,5 | 2,1 | 3,1 | 5,4 | 6   | 6   |  |

 no selectivity

<sup>1)</sup> Type 5SE2; Size: D01, D02, D03; Operating class gG; Rated voltage: AC 400 V/DC 250 V

<sup>2)</sup> Type 5SB2, 5SB4, 5SC2; Size: DII, DIII, DIV; Operating class gG; Rated voltage: AC 500 V/DC 500 V

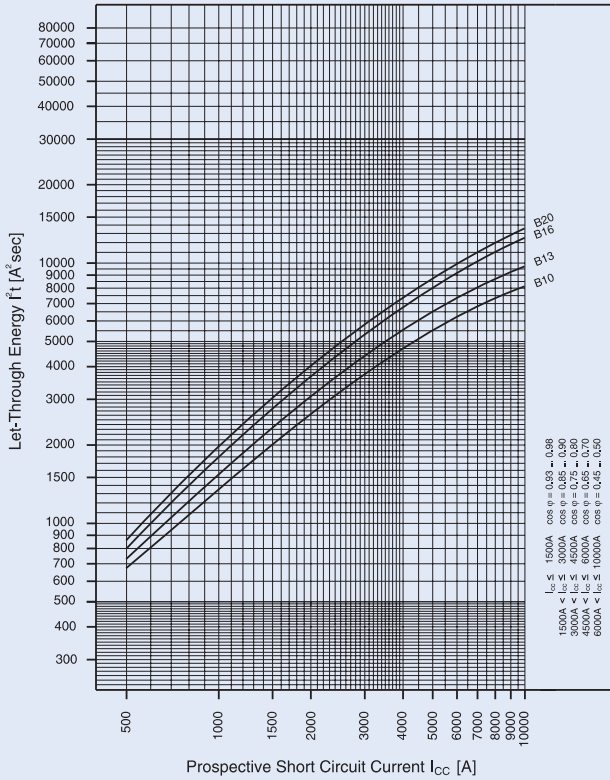
<sup>3)</sup> Type 3NA3 8, 3NA6 8, 3NA7 8; Size: 000, 00; Operating class gG; Rated voltage: AC 500 V/DC 250 V

Short circuit selectivity **AFDD+** towards fuse link **Diazed**<sup>2)</sup>

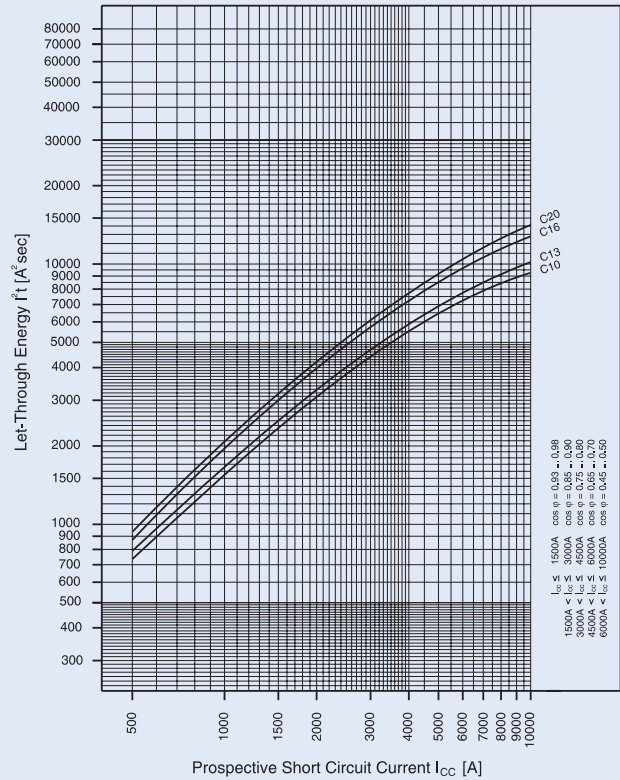
| AFDD+ | Diazed <sup>2)</sup> |    |    |     |     |     |     |     |     |
|-------|----------------------|----|----|-----|-----|-----|-----|-----|-----|
|       | 16                   | 20 | 25 | 32  | 35  | 50  | 63  | 80  | 100 |
| B25   |                      |    |    | 1,1 | 1,5 | 2,4 | 5,5 | 6   | 6   |
| B32   |                      |    |    |     | 1,4 | 2,1 | 4,3 | 6   | 6   |
| B40   |                      |    |    |     |     | 1,4 | 2,4 | 2,9 | 5,1 |
| C25   |                      |    |    | 1,1 | 1,5 | 2,3 | 4,4 | 6   | 6   |
| C32   |                      |    |    |     | 1,4 | 2,2 | 4,1 | 5,6 | 6   |
| C40   |                      |    |    |     |     | 1,6 | 2,8 | 3,6 | 6   |

## Let-through Energy AFDD+

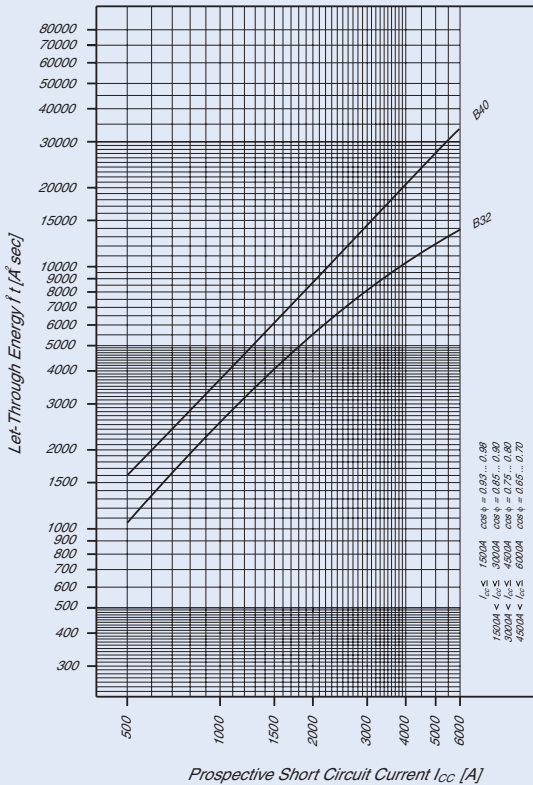
Let-through energy AFDD+, characteristic B, 2-pole, 10-20 A



Let-through energy AFDD+, characteristic C, 2-pole, 10-20 A



Let-through energy AFDD+, characteristic B, 2-pole, 32-40 A



Let-through energy AFDD+, characteristic C, 2-pole, 32-40 A

