

# Formula AIR Specification

## Common data

|  |      |                      |
|--|------|----------------------|
| Rated service voltage U <sub>e</sub>             | [V]  | 690                  |
| Rated insulation voltage U <sub>i</sub>          | [V]  | 1000                 |
| Rated impulse withstand voltage U <sub>imp</sub> | [kV] | 12                   |
| Frequency  | [Hz] | 50-60                |
| Number of poles                                  |      | 3-4                  |
| Version  |      | Fixed - Withdrawable |
| Operating temperature                            |      | -25°C...+70°C        |



| Formula AIR  |  | FA2  | FA4     |
|--|--|------|---------|
| Performance levels   |  | C    | C       |
| Max rated uninterrupted current at 40°C - I <sub>u</sub>                 | [A]                                      | 800  | 2500    |
|  | [A]                                      | 1000 | 3200    |
|  | [A]                                      | 1250 | 4000    |
|  | [A]                                      | 1600 |         |
|  | [A]                                      | 2000 |         |
| Neutral pole current-carrying capacity for 4 poles breakers              | [%I <sub>u</sub> ]                       | 100  | 100     |
| Rated ultimate breaking capacity under short circuit - I <sub>cu</sub>   | @400-415V                                | [kA] | 50      |
|  | @440V                                    | [kA] | 50      |
|  | @500-525V                                | [kA] | 42      |
|  | @690V                                    | [kA] | 42      |
| Rated service breaking capacity under short-circuit - I <sub>cs</sub>    | [%I <sub>cu</sub> ]                      | 100  | 100     |
| Rated short time withstand current - I <sub>cw</sub>                     | (1s) @440V                               | [kA] | 50      |
|  | (1s) @690V                               | [kA] | 42      |
|  | (3s)                                     | [kA] | 25      |
| Rated making capacity under short-circuit (peak value) - I <sub>cm</sub> | 440 V                                    | [kA] | 105     |
|  | 690 V                                    | [kA] | 88      |
| Utilization category (according to IEC 60947-2)                          |  | B    | B       |
| Operating times  | [ms]                                     | 40   | 40      |
| Dimensions   | H - Fixed/Withdrawable                   | [mm] | 371/425 |
|  | D - Fixed/Withdrawable                   | [mm] | 270/383 |
|  | W - Fixed 3p/4p                          | [mm] | 276/317 |
|  | W - Withdrawable 3p/4p                   | [mm] | 317/407 |
| Weights (CB with trip unit and current sensor)                           | Fixed 3p/4p                              | kg   | 41/53   |
|  | Withdrawable 3p/4p (fixed part included) | kg   | 54/99   |

| Formula AIR                                       |                     | FA2                 | FA4   |
|---|---------------------|---------------------|-------|
| Mechanical life with regular ordinary maintenance | [I <sub>u</sub> ]   | ≤2000               | ≤3200 |
|   | [No. cycles x 1000] | 20                  | 20    |
| Electrical life with regular ordinary maintenance | Frequency           | [Oper./Hour]        | 60    |
|   | 440 V               | [No. cycles x 1000] | 6     |
|   | 690 V               | [No. cycles x 1000] | 4     |
|   | Frequency           | [Cycles/Hour]       | 30    |

# Formula AIR Price List



| Formula AIR   |                             | FA2     |         |         |         |         | FA4     |         |         |
|---|-----------------------------|---------|---------|---------|---------|---------|---------|---------|---------|
| Performance level   |                             | C       | C       | C       | C       | C       | C       | C       |         |
| Max rated uninterrupted current - I <sub>u</sub>  | [A]                         | 800     | 1000    | 1250    | 1600    | 2000    | 2500    | 3200    |         |
| Rated ultimate breaking capacity under short circuit - I <sub>cu</sub>                    | @400-415V [kA]              | 50      | 50      | 50      | 50      | 50      | 50      | 50      |         |
| Rated service breaking capacity under short-circuit - I <sub>cs</sub> [%I <sub>cu</sub> ] |                             | 100     | 100     | 100     | 100     | 100     | 100     | 100     |         |
| Rated short time withstand current - I <sub>cw</sub>                                      | (1s) @440V [kA]             | 50      | 50      | 50      | 50      | 50      | 50      | 50      |         |
|   | (3s) [kA]                   | 25      | 25      | 25      | 25      | 25      | 25      | 25      |         |
| Utilization category (according to IEC 60947-2)   |                             | B       | B       | B       | B       | B       | B       | B       |         |
| Dimensions  | H - Fixed/Withdrawable [mm] |         |         |         |         |         | 371/425 | 371/425 |         |
|   | D - Fixed/Withdrawable [mm] |         |         |         |         |         | 270/383 | 270/383 |         |
|   | W - Fixed 3p/4p [mm]        |         |         |         |         |         | 276/317 | 384/510 |         |
|   | W - Withdrawable 3p/4p [mm] |         |         |         |         |         | 317/407 | 425/551 |         |
| <b>ราคาต่อหน่วย (3 Poles Fixed version)</b>   |                             |         |         |         |         |         |         |         |         |
| EK1 LI  |                             | 118,870 | 124,570 | 129,270 | 150,770 | 166,370 | 218,070 | 271,870 | 406,370 |
| EK1 LSIG  |                             | 180,570 | 186,270 | 190,970 | 212,470 | 228,070 | 283,870 | 337,670 | 473,970 |
| <b>ราคาต่อหน่วย (3 Poles Draw-Out version)</b>  |                             |         |         |         |         |         |         |         |         |
| EK1 LI  |                             | 179,670 | 186,070 | 200,470 | 216,470 | 250,070 | 318,670 | 392,270 | 575,070 |
| EK1 LSIG  |                             | 241,370 | 247,770 | 262,170 | 278,170 | 311,770 | 384,470 | 458,070 | 642,670 |
| <b>Accessories</b>  |                             |         |         |         |         |         |         |         |         |
| Geared motor charging spring with shunt closing release set FA2 FA4                       |                             | 47,580  | 47,580  | 47,580  | 47,580  | 47,580  | 47,580  | 47,580  | 47,580  |
| Electronic time delay device with Undervoltage release set                                |                             | 22,830  | 22,830  | 22,830  | 22,830  | 22,830  | 22,830  | 22,830  | 22,830  |
| Shunt Opening release YO 220-240 VAC/DC   |                             | 6,980   | 6,980   | 6,980   | 6,980   | 6,980   | 6,980   | 6,980   | 6,980   |
| Shunt Closing release - YC 220-240 VAC/DC   |                             | 6,980   | 6,980   | 6,980   | 6,980   | 6,980   | 6,980   | 6,980   | 6,980   |
| Geared motor charging spring M 220-250 VAC/DC   |                             | 40,600  | 40,600  | 40,600  | 40,600  | 40,600  | 40,600  | 40,600  | 40,600  |
| Undervoltage release - YU 220 -240 VAC/DC   |                             | 8,930   | 8,930   | 8,930   | 8,930   | 8,930   | 8,930   | 8,930   | 8,930   |
| Electronic time-delay for Undervoltage UVD 220...250V AC/DC                               |                             | 13,900  | 13,900  | 13,900  | 13,900  | 13,900  | 13,900  | 13,900  | 13,900  |
| Auxiliary contact - AUX 6Q 400VAC   |                             | 10,100  | 10,100  | 10,100  | 10,100  | 10,100  | 10,100  | 10,100  | 10,100  |
| Rack in-out Aux 5 contacts 400 Vac FA2-Fa4 (Left set)                                     |                             | 10,600  | 10,600  | 10,600  | 10,600  | 10,600  | 10,600  | 10,600  | 10,600  |
| Key lock in open position   |                             | 3,520   | 3,520   | 3,520   | 3,520   | 3,520   | 3,520   | 3,520   | 3,520   |
| Mechanical interlocks FA2-FA2 Type A  |                             | 60,990  | 60,990  | 60,990  | 60,990  | 60,990  | 60,990  | 60,990  | 60,990  |
| Mechanical interlocks FA4-FA4 Type A  |                             | 60,990  | 60,990  | 60,990  | 60,990  | 60,990  | 60,990  | 60,990  | 60,990  |
| Mechanical interlocks FA2-FA2 Type C  |                             | 92,410  | 92,410  | 92,410  | 92,410  | 92,410  | 92,410  | 92,410  | 92,410  |
| Mechanical interlocks FA4-FA4 Type C  |                             | 92,410  | 92,410  | 92,410  | 92,410  | 92,410  | 92,410  | 92,410  | 92,410  |

หมายเหตุ: ใน set ประกอบด้วย

- Door Flange
- 4 Auxiliary Contact (Change over)
- Mechanical Tripping Indicator
- Electrical Tripping Indicator
- External Current Transformer สำหรับ รุ่น (LSIG)
- สำหรับรุ่น Draw-out version ใน set จะไม่รวม Rack in-out Aux 5 contacts 400 Vac