

# Overview of Low voltage equipment - Moulded-case & Air circuit-breakers

1SDC001001B0203



**ABB**

# ABB SACE.

## At the forefront of Low voltage.

Once again ABB SACE is a synonym for quality and innovation in the Low voltage sector, with products, which, by being perfectly integrated, adapt to different service and installation requirements. The range of SACE Emax air circuit-breakers covers all user needs with sizes from 800 up to 6300 A, whereas the moulded-case circuit-breakers have sizes from 160 to 3200 A, with a complete offer which includes the two Tmax and Isomax families and provides considerable application advantages. Perfect integration between the two series, higher performances in circuit-breakers with even more limited dimensions, a range of standardised accessories which considerably simplifies selection of the apparatus ... today all this is possible thanks to the six sizes of the new Tmax moulded-case circuit-breaker which runs alongside the Isomax series. Tmax is the first circuit-breaker compared to any other similar apparatus to reach 630 A with such limited overall dimensions: a depth of just 70 millimetres for T1 T2 and T3, and 103.5 millimetres for T4, T5 and T6 circuit-breakers. Furthermore it is designed respecting the strictest environmental sustainability criteria:





Tmax T1 was the first product in Italy to receive official validation for the Environmental Product Declaration (EPD) from the National Agency for Protection of the Environment (ANPA). In accordance with the commitment and awareness of the group towards the environment, ABB

SACE has always paid great attention to achieving the objectives of sustainable development and environmental protection. All the company production sites have obtained ISO 9001 quality certification, and most



of these also have ISO 14001 environmental management system certification. All the factories of ABB SACE have also obtained certification for integrated management of their Quality Assurance, Environmental and Safety systems in compliance with the ISO 9001-2000, ISO 14001-96 and OHSAS 18001-99 Standards.



From the safety viewpoint, ABB SACE is, once again, a guarantee of compliance with the electrical safety regulations, in accordance with the international Standards. In the ABB laboratories – accredited by the major national and International organisations (SINAL, ACAE and LOVAG) – our products are subjected to the most severe tests of compliance with the Standards as well as to the required type tests.

# Moulded-case circuit-breakers for distribution



|   |                                      | Tmax T1 1P          |                          |           |                    | Tmax T1                            |           |           |                                   | Tmax T2    |                    |          |  | Tmax T3    |     |  |
|---|--------------------------------------|---------------------|--------------------------|-----------|--------------------|------------------------------------|-----------|-----------|-----------------------------------|------------|--------------------|----------|--|------------|-----|--|
| Rated uninterrupted current, <b>I<sub>u</sub></b> (A)                 | [I <sub>u</sub> ]                    | <b>160</b>          |                          |           |                    | <b>160</b>                         |           |           |                                   | <b>160</b> |                    |          |  | <b>250</b> |     |  |
| Poles   | [Nr]                                 | 1                   |                          |           |                    | 3 - 4                              |           |           |                                   | 3 - 4      |                    |          |  | 3 - 4      |     |  |
| Rated service voltage, <b>U<sub>e</sub></b>                           | (AC) 50-60 Hz                        | [V]                 | 240                      |           |                    |                                    | 690       |           |                                   |            | 690                |          |  |            | 690 |  |
|   | (DC)                                 | [V]                 | 125                      |           |                    |                                    | 500       |           |                                   |            | 500                |          |  |            | 500 |  |
| Rated impulse withstand voltage, <b>U<sub>imp</sub></b>               | [kV]                                 | 8                   |                          |           |                    | 8                                  |           |           |                                   | 8          |                    |          |  | 8          |     |  |
| Rated insulation voltage, <b>U<sub>i</sub></b>                        | [V]                                  | 500                 |                          |           |                    | 800                                |           |           |                                   | 800        |                    |          |  | 800        |     |  |
| Test voltage at industrial frequency for 1 min.                       | [V]                                  | 3000                |                          |           |                    | 3000                               |           |           |                                   | 3000       |                    |          |  | 3000       |     |  |
| Rated ultimate short-circuit breaking capacity, <b>I<sub>cu</sub></b> |                                      | <b>B</b>            | <b>B</b>                 |           |                    | <b>C</b>                           |           |           | <b>N</b>                          |            |                    | <b>N</b> |  | <b>S</b>   |     |  |
|   | (AC) 50-60 Hz 220/230 V              | [kA]                | 25 <sup>(1)</sup>        | 25        | 40                 | 50                                 | 65        | 85        | 100                               | 120        | 50                 | 85       |  |            |     |  |
| <b>(AC) 50-60 Hz 380/415 V</b>  | <b>[kA]</b>                          | <b>16</b>           | <b>25</b>                | <b>36</b> | <b>36</b>          | <b>50</b>                          | <b>70</b> | <b>85</b> | <b>36</b>                         | <b>50</b>  |                    |          |  |            |     |  |
| (AC) 50-60 Hz 440 V   | [kA]                                 | 10                  | 15                       | 22        | 30                 | 45                                 | 55        | 75        | 25                                | 40         |                    |          |  |            |     |  |
| (AC) 50-60 Hz 500 V   | [kA]                                 | 8                   | 10                       | 15        | 25                 | 30                                 | 36        | 50        | 20                                | 30         |                    |          |  |            |     |  |
| (AC) 50-60 Hz 690 V   | [kA]                                 | 3                   | 4                        | 6         | 6                  | 7                                  | 8         | 10        | 5                                 | 8          |                    |          |  |            |     |  |
| (DC) 250 V - 2 poles in series  | [kA]                                 | 25 (at 125 V)       | 16                       | 25        | 36                 | 36                                 | 50        | 70        | 85                                | 36         | 50                 |          |  |            |     |  |
| (DC) 250 V - 3 poles in series  | [kA]                                 |                     | 20                       | 30        | 40                 | 40                                 | 55        | 85        | 100                               | 40         | 55                 |          |  |            |     |  |
| (DC) 500 V - 2 poles in series  | [kA]                                 |                     |                          |           |                    |                                    |           |           |                                   |            |                    |          |  |            |     |  |
| (DC) 500 V - 3 poles in series  | [kA]                                 |                     | 16                       | 25        | 36                 | 36                                 | 50        | 70        | 85                                | 36         | 50                 |          |  |            |     |  |
| (DC) 750 V - 3 poles in series  | [kA]                                 |                     |                          |           |                    |                                    |           |           |                                   |            |                    |          |  |            |     |  |
| Rated short-circuit service breaking capacity, <b>I<sub>cs</sub></b>  | [%I <sub>cu</sub> ]                  | 75%                 | 100%                     | 75%       | 50% <sup>(3)</sup> | 100%                               | 100%      | 100%      | 75% <sup>(4)</sup>                | 75%        | 50% <sup>(5)</sup> |          |  |            |     |  |
| Rated short-circuit making capacity (415 V)                           | [kA]                                 | 52.5 (at 220/230 V) | 32                       | 52.5      | 75.6               | 75.6                               | 105       | 154       | 187                               | 75.6       | 105                |          |  |            |     |  |
| Opening time (415 V)  | [ms]                                 | 7                   | 7                        | 6         | 5                  | 3                                  | 3         | 3         | 3                                 | 7          | 6                  |          |  |            |     |  |
| Rated short-time withstand current for 1 s, <b>I<sub>cw</sub></b>     | [kA]                                 |                     |                          |           |                    |                                    |           |           |                                   |            |                    |          |  |            |     |  |
| Utilisation category (IEC 60947-2, EN 60947-2)                        |                                      | A                   | A                        |           |                    | A                                  |           |           | A                                 |            |                    |          |  |            |     |  |
| Isolation behaviour (IEC 60947-2, EN 60947-2)                         |                                      | ■                   | ■                        |           |                    | ■                                  |           |           | ■                                 |            |                    |          |  |            |     |  |
| Reference Standard IEC 60947-2, EN 60947-2                            |                                      | ■                   | ■                        |           |                    | ■                                  |           |           | ■                                 |            |                    |          |  |            |     |  |
| Releases:   |                                      |                     |                          |           |                    |                                    |           |           |                                   |            |                    |          |  |            |     |  |
| thermomagnetic  |                                      |                     |                          |           |                    |                                    |           |           |                                   |            |                    |          |  |            |     |  |
| T fixed, M fixed (10xIn)  | TMF                                  | ■                   |                          |           |                    |                                    |           |           |                                   |            |                    |          |  |            |     |  |
| T adjustable, M fixed (10xIn)   | TMD                                  |                     | ■                        |           |                    | ■                                  |           |           | ■                                 |            |                    |          |  |            |     |  |
| T adjustable, M adjustable (5...10xIn)                                | TMA                                  |                     |                          |           |                    |                                    |           |           |                                   |            |                    |          |  |            |     |  |
| T adjustable, M fixed (3xIn)  | TMG                                  |                     |                          |           |                    |                                    |           |           | ■                                 |            |                    |          |  |            |     |  |
| T adjustable, M adjustable (2.5...5xIn)                               | TMG                                  |                     |                          |           |                    |                                    |           |           |                                   |            |                    |          |  |            |     |  |
| magnetic only   |                                      |                     |                          |           |                    |                                    |           |           |                                   |            |                    |          |  |            |     |  |
| M adjustable (6...12xIn)  | MA                                   |                     |                          |           |                    | ■ (MF up to I <sub>n</sub> 12.5 A) |           |           | ■                                 |            |                    |          |  |            |     |  |
| electronic  |                                      |                     |                          |           |                    |                                    |           |           |                                   |            |                    |          |  |            |     |  |
|   | PR221DS (I-LS/I)                     |                     |                          |           |                    | ■                                  |           |           |                                   |            |                    |          |  |            |     |  |
|   | PR222DS/P (LSI-LSIG)                 |                     |                          |           |                    |                                    |           |           |                                   |            |                    |          |  |            |     |  |
|   | PR223DS/P                            |                     |                          |           |                    |                                    |           |           |                                   |            |                    |          |  |            |     |  |
|   | PR223EF                              |                     |                          |           |                    |                                    |           |           |                                   |            |                    |          |  |            |     |  |
|   | PR211/P (I-LI)                       |                     |                          |           |                    |                                    |           |           |                                   |            |                    |          |  |            |     |  |
|   | PR212/P (LSI-LSIG)                   |                     |                          |           |                    |                                    |           |           |                                   |            |                    |          |  |            |     |  |
|   | PR222 MP                             |                     |                          |           |                    |                                    |           |           |                                   |            |                    |          |  |            |     |  |
|   | PR212/MP                             |                     |                          |           |                    |                                    |           |           |                                   |            |                    |          |  |            |     |  |
| Interchangeability (for T4, T5 and T6 only)                           |                                      |                     |                          |           |                    |                                    |           |           |                                   |            |                    |          |  |            |     |  |
| Versions  |                                      | F                   | F                        |           |                    | F-P                                |           |           | F-P                               |            |                    |          |  |            |     |  |
| Terminals   | Fixed (F)                            | FC Cu               | FC Cu - EF - FC CuAl -HR |           |                    | F - FC Cu - FC CuAl - EF - ES - R  |           |           | F - FC Cu - FC CuAl - EF - ES - R |            |                    |          |  |            |     |  |
|   | Plug-in (P)                          |                     |                          |           |                    | F - FC Cu - FC CuAl - EF - ES - R  |           |           | F - FC Cu - FC CuAl - EF - ES - R |            |                    |          |  |            |     |  |
|   | Withdrawable (W)                     |                     |                          |           |                    |                                    |           |           |                                   |            |                    |          |  |            |     |  |
| Fixing on DIN rail  |                                      |                     | DIN EN 50022             |           |                    | DIN EN 50022                       |           |           | DIN EN 50022                      |            |                    |          |  |            |     |  |
| Mechanical life   | [No. operations / hourly operations] | 25000 / 240         | 25000 / 240              |           |                    | 25000 / 240                        |           |           | 25000 / 240                       |            |                    |          |  |            |     |  |
| Electrical life (at 415 V)  | [No. operations / hourly operations] | 8000 / 120          | 8000 / 120               |           |                    | 8000 / 120                         |           |           | 8000 / 120                        |            |                    |          |  |            |     |  |
| Basic dimensions, fixed   | 3/4 poles                            | W [mm]              | 25.4 (1 pole)            |           |                    | 76 / 102                           |           |           | 90 / 120                          |            | 105 / 140          |          |  |            |     |  |
|   |                                      | D [mm]              | 70                       |           |                    | 70                                 |           |           | 70                                |            | 70                 |          |  |            |     |  |
|   |                                      | H [mm]              | 130                      |           |                    | 130                                |           |           | 130                               |            | 150                |          |  |            |     |  |
| Weights   | fixed                                | 3/4 poles           | [kg]                     |           | 0.4 (1 pole)       |                                    | 0.9 / 1.2 |           | 1.1 / 1.5                         |            | 1.5 / 2            |          |  |            |     |  |
|   |                                      |                     | plug-in                  | 3/4 poles | [kg]               |                                    |           |           | 1.5 / 1.9                         |            | 2.7 / 3.7          |          |  |            |     |  |
|   |                                      |                     |                          |           | withdrawable       | 3/4 poles                          | [kg]      |           |                                   |            |                    |          |  |            |     |  |

<sup>(1)</sup> R16 and R20 I<sub>cu</sub> = 16 kA @ 220/230 V

<sup>(2)</sup> All the versions with I<sub>cu</sub> = 35 kA are certified at 36 kA

<sup>(3)</sup> 25 kA

<sup>(4)</sup> 70 kA

<sup>(5)</sup> 27 kA

<sup>(6)</sup> Only 630 and 800 A

#### KEY TO TERMINALS

F = Front  
EF = Extended front  
ES = Extended spreaded front

FC = Front for copper cables  
FC CuAl = Front for copper or aluminium cables  
R = Rear  
RC = Rear for copper or aluminium cables

HR = Rear horizontal flat bar  
VR = Rear vertical flat bar



# Moulded-case circuit-breakers for specific applications



Tmax T1

Tmax T2

Tmax T3



## Current-limiting circuit-breakers

T2L

|                 |        |             |
|-----------------|--------|-------------|
| Poles           |        | 3 - 4       |
| Iu              | [A]    | 160         |
| Ue              | [V]    | 690         |
| Icu @ 380/415 V | [kA]   | 85          |
| Icu @ 440 V     | [kA]   | 75          |
| Icu @ 690 V     | [kA]   | 10          |
| Ics/Icu %       |        | 75% (70 kA) |
| Dimensions      | W [mm] | 90 / 120    |
|                 | H [mm] | 130         |
|                 | D [mm] | 70          |



## Advanced zone selectivity

|                            |                   |  |
|----------------------------|-------------------|--|
| Iu                         | [A]               |  |
| Poles                      | [Nr]              |  |
| Ue                         | (AC) 50-60 Hz [V] |  |
| Electronic release PR223EF |                   |  |



## Motor protection

T2

T3

|   |     |                   |           |
|---|-----|-------------------|-----------|
| Poles                                     |     | 3                 | 3         |
| Iu  | [A] | 160               | 250       |
| In  | [A] | 1 - 100           | 100 - 200 |
| Ue  | [V] | 690               | 690       |
| Release magnetic only, M fixed            |     | ■ (up to In 12.5) | -         |
| Release magnetic only, M adjustable       |     | ■ (from In 20)    | ■         |
| Electronic release PR221DS-I              |     | ■                 | -         |
| Electronic release PR 212/P I             |     | -                 | -         |
| Electronic release PR222MP, IEC 60947-4-1 |     | -                 | -         |
| Electronic release PR212MP, IEC 60947-4-1 |     | -                 | -         |



## Range at 1000 V AC-DC

|                 |                        |  |
|-----------------|------------------------|--|
| Poles           |                        |  |
| Iu              | [A]                    |  |
| Ue              | [V]                    |  |
| Icu @ 1000 V AC | [kA]                   |  |
| Icu @ 1000 V DC | 4 poles in series [kA] |  |



## Switch-disconnectors according to IEC 60947-3 Standards

T1D

T3D

|       |      |       |       |
|-------|------|-------|-------|
| Poles |      | 3 - 4 | 3 - 4 |
| Ith   | [A]  | 160   | 250   |
| Ie    | [A]  | 125   | 200   |
| Ue    | [V]  | 690   | 690   |
| Uimp  | [kV] | 8     | 8     |
| Ui    | [V]  | 800   | 800   |
| Icm   | [kA] | 2.8   | 5.3   |
| Icw   | [kA] | 2     | 3.6   |



## UL/CSA (UL 489 and CSA C22.2)

T1

T2

T3

|  |      |           |         |         |
|--|------|-----------|---------|---------|
| Poles  |      | 1 - 3 - 4 | 3 - 4   | 3 - 4   |
| Maximum continuous current @ 40 °C           | [A]  | 100       | 100     | 225     |
| Maximum Ampere Interrupting Capacity @ 480 V | [kA] | 22        | 35 - 65 | 25 - 35 |
| Maximum Ampere Interrupting Capacity @ 600 V | [kA] | -         | -       | -       |
| Thermal-magnetic trip unit                   |      | ■         | ■       | ■       |
| Magnetic only                                |      | -         | ■       | ■       |
| Electronic trip unit                         |      | -         | ■       | -       |
| MCCB   |      | ■         | ■       | ■       |
| MCP  |      | -         | ■       | ■       |
| MCS  |      | ■         | -       | ■       |



| Tmax T4    | Tmax T5    | Tmax T6 | Isomax S7 | Isomax S8 |
|------------|------------|---------|-----------|-----------|
| <b>T4V</b> | <b>T5V</b> |         |           |           |
| 3 - 4      | 3 - 4      |         |           |           |
| 250 / 320  | 400 / 630  |         |           |           |
| 690        | 690        |         |           |           |
| 200        | 200        |         |           |           |
| 180        | 180        |         |           |           |
| 80         | 80         |         |           |           |
| 100%       | 100%       |         |           |           |
| 105 / 140  | 140 / 184  |         |           |           |
| 205        | 205        |         |           |           |
| 103.5      | 103.5      |         |           |           |

| T4        | T5        | T6               |
|-----------|-----------|------------------|
| 250 / 320 | 400 / 630 | 630 / 800 / 1000 |
| 3 - 4     | 3 - 4     | 3 - 4            |
| 690       | 690       | 690              |
| ■         | ■         | ■                |

| T4        | T5              | T6        | S7          |
|-----------|-----------------|-----------|-------------|
| 3         | 3               | 3         | 3           |
| 250 - 320 | 400 - 630       | 800       | 1250 - 1600 |
| 10...320  | 320 - 400 - 630 | 630 - 800 | 1000...1600 |
| 690       | 690             | 690       | 690         |
| -         | -               | -         | -           |
| ■         | -               | -         | -           |
| ■         | ■               | ■         | -           |
| -         | -               | -         | ■           |
| ■         | ■               | ■         | -           |
| -         | -               | -         | ■           |

| T4         | T5         | T6              |
|------------|------------|-----------------|
| 3 (AC) - 4 | 3 (AC) - 4 | 3 (AC) - 4 (DC) |
| 250        | 400 - 630  | 630 - 800       |
| 1000       | 1000       | 1000            |
| 12 - 20    | 12 - 20    | 12 / 30         |
| 40         | 40         | 40 - 50         |

| T4D   | T5D       | T6D             | S7D                | S8D                |
|-------|-----------|-----------------|--------------------|--------------------|
| 3 - 4 | 3 - 4     | 3 - 4           | 3 - 4              | 3 - 4              |
| 320   | 400 / 630 | 400 - 630 - 800 | 1000 - 1250 - 1600 | 2000 - 2500 - 3200 |
| 320   | 400 / 630 | -               | -                  | -                  |
| 690   | 690       | 690             | 690                | 690                |
| 8     | 8         | 8               | 8                  | 8                  |
| 800   | 800       | 800             | 800                | 800                |
| 5.3   | 11        | 30              | 52.5               | 85                 |
| 3.6   | 6         | 15              | 25                 | 40                 |

| T4       | T5        | T6        | S7        | S8                 |
|----------|-----------|-----------|-----------|--------------------|
| 3 - 4    | 3 - 4     | 2 - 3 - 4 | 2 - 3 - 4 | 3                  |
| 250      | 400 - 600 | 800       | 1200      | 1600 - 2000 - 2500 |
| 25 - 150 | 25 - 150  | 50 - 100  | 65        | 100                |
| 18 - 85  | 18 - 85   | 25 - 42   | 50        | 85                 |
| ■        | ■         | ■         | -         | -                  |
| -        | -         | -         | -         | -                  |
| ■        | ■         | ■         | ■         | ■                  |
| ■        | ■         | ■         | ■         | ■                  |
| ■        | ■         | ■         | ■         | ■                  |

# Accessories for Moulded-case circuit-breakers



|  | Tmax T1 | Tmax T2 | Tmax T3 |
|--|---------|---------|---------|
|--|---------|---------|---------|

## Service releases

|                                   |   |   |   |
|-----------------------------------|---|---|---|
| Shunt opening release             | ■ | ■ | ■ |
| Shunt closing release             |   |   |   |
| Undervoltage release              | ■ | ■ | ■ |
| Time-delayed undervoltage release | ■ | ■ | ■ |

## Electric signals

|  |         |                  |         |
|--|---------|------------------|---------|
| Contacts:  |         |                  |         |
| 2 open/closed change over contacts   |         |                  |         |
| 1 open/closed change over contact and 1 release tripped change over                        | ■       | ■                | ■       |
| 3 open/closed change over contact and 1 release tripped change over                        | ■       |                  | ■       |
| 1 open change over contact, 1 closed change over contact and 1 release tripped change over |         | ■ <sup>(1)</sup> |         |
| Early making contact for undervoltage release  | ■ (n°2) | ■ (n°2)          | ■ (n°2) |
| Contacts for signalling circuit-breaker racked in-out                                      |         | ■                | ■       |

## Remote controls

|  |   |   |   |
|--|---|---|---|
| Solenoid operating mechanism                                   | ■ | ■ | ■ |
| Stored energy motor operator                                   |   |   |   |
| Geared motor for automatically charging of the closing springs |   |   |   |

## Operating mechanisms and locks

|   |   |   |   |
|---|---|---|---|
| Rotary handle operating mechanism (direct or transmitted version) | ■ | ■ | ■ |
| IP54 protection for rotary handle operating mechanism             | ■ | ■ | ■ |
| Front flange for lever operating mechanism                        |   |   |   |
| Key lock in open position   |   |   |   |
| Padlock for operating lever                                       | ■ | ■ | ■ |
| Anti-tampering lock of the thermomagnetic release                 | ■ | ■ | ■ |
| Compartment door lock   | ■ | ■ | ■ |
| Mechanical interlock between two circuit-breakers                 | ■ | ■ | ■ |

## Electronic residual current releases

|   |                   |                   |                   |
|---|-------------------|-------------------|-------------------|
| Residual current release beside the circuit-breaker | RC221/1 - RC222/1 | RC221/2 - RC222/2 | RC221/3 - RC222/3 |
| SACE RCQ switchboard residual-current relays        | ■                 | ■                 | ■                 |

## Accessories for electronic releases

|  |  |   |  |
|--|--|---|--|
| Front display unit - FDU   |  |   |  |
| SACE TT1 Test unit   |  | ■ |  |
| SACE PR212/K signalling unit                                     |  |   |  |
| SACE PR010/K signalling unit                                     |  |   |  |
| PR021/K signalling unit  |  | ■ |  |
| SACE PR010/T Test and Configuration Unit                         |  |   |  |
| SACE PR212/CI contactor control unit                             |  |   |  |
| SACE PR212/D-M Modbus dialogue unit + SACE PR212/T actuator unit |  |   |  |
| SACE PR212/D-L Lon dialogue unit + SACE PR212/T actuator unit    |  |   |  |

## Automatic transfer switch

|        |  |  |  |
|--------|--|--|--|
| ATS010 |  |  |  |
|--------|--|--|--|

<sup>(1)</sup> Pre-cabled version for PR221DS electronic release only



Tmax T4

Tmax T5

Tmax T6

Isomax S7

Isomax S8

RC222/4-RC223/4

|   |   |   |   |   |
|---|---|---|---|---|
| ■ | ■ | ■ | ■ | ■ |
| ■ | ■ | ■ | ■ | ■ |
| ■ | ■ | ■ | ■ | ■ |

RC222/5

|   |   |   |   |   |
|---|---|---|---|---|
| ■ | ■ | ■ | ■ | ■ |
| ■ | ■ | ■ | ■ | ■ |
| ■ | ■ | ■ | ■ | ■ |
| ■ | ■ | ■ | ■ | ■ |
| ■ | ■ | ■ | ■ | ■ |

RC222/4-RC223/4

|   |   |   |   |   |
|---|---|---|---|---|
| ■ | ■ | ■ | ■ | ■ |
| ■ | ■ | ■ | ■ | ■ |

RC222/5

|   |   |   |   |   |
|---|---|---|---|---|
| ■ | ■ | ■ | ■ | ■ |
| ■ | ■ | ■ | ■ | ■ |
| ■ | ■ | ■ | ■ | ■ |
| ■ | ■ | ■ | ■ | ■ |
| ■ | ■ | ■ | ■ | ■ |
| ■ | ■ | ■ | ■ | ■ |
| ■ | ■ | ■ | ■ | ■ |
| ■ | ■ | ■ | ■ | ■ |

■ (supplied with front flange)

■ (supplied with front flange)

RC222/4-RC223/4

|   |   |   |   |   |
|---|---|---|---|---|
| ■ | ■ | ■ | ■ | ■ |
|---|---|---|---|---|

RC222/5

|   |   |   |   |   |
|---|---|---|---|---|
| ■ | ■ | ■ | ■ | ■ |
| ■ | ■ | ■ | ■ | ■ |
| ■ | ■ | ■ | ■ | ■ |
| ■ | ■ | ■ | ■ | ■ |
| ■ | ■ | ■ | ■ | ■ |
| ■ | ■ | ■ | ■ | ■ |
| ■ | ■ | ■ | ■ | ■ |
| ■ | ■ | ■ | ■ | ■ |

RC222/4-RC223/4

|   |   |   |   |   |
|---|---|---|---|---|
| ■ | ■ | ■ | ■ | ■ |
|---|---|---|---|---|

# Emax air circuit-breakers for distribution

## Common data

| Voltages                        |                  |      |                      |
|---------------------------------|------------------|------|----------------------|
| 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                   |
| Service temperature             |                  |      |                      |
|                                 |                  | [°C] | -25...+70            |
| Storage temperature             |                  |      |                      |
|                                 |                  | [°C] | -40...+70            |
| Frequency                       | f                | [Hz] | 50 - 60              |
| Number of poles                 |                  |      | 3 - 4                |
| Versions                        |                  |      | Fixed - Withdrawable |



## E1

### Performance level

|  |                               |                         |                    | B       | N     |
|--|-------------------------------|-------------------------|--------------------|---------|-------|
| <b>Currents: Rated uninterrupted current (at 40 °C)</b>                                |                               |                         |                    |         |       |
|  | I <sub>u</sub>                |                         | [A]                | 800     | 800   |
|  |                               |                         | [A]                | 1000    | 1000  |
|  |                               |                         | [A]                | 1250    | 1250  |
|  |                               |                         | [A]                | 1600    | 1600  |
|  |                               |                         | [A]                |         |       |
|  |                               |                         | [A]                |         |       |
| Neutral pole current-carrying capacity for 4-pole CBs                                  |                               |                         | [%I <sub>u</sub> ] | 100     | 100   |
| Rated ultimate breaking capacity under short-circuit                                   | I <sub>cu</sub>               | 220/230/380/400/415 V ~ | [kA]               | 42      | 50    |
|  |                               | 440 V ~                 | [kA]               | 42      | 50    |
|  |                               | 500/525 V ~             | [kA]               | 42      | 50    |
|  |                               | 660/690 V ~             | [kA]               | 42      | 50    |
|  |                               | 220/230/380/400/415 V ~ | [kA]               | 42      | 50    |
| Rated service breaking capacity under short-circuit                                    | I <sub>cs</sub>               | 440 V ~                 | [kA]               | 42      | 50    |
|  |                               | 500/525 V ~             | [kA]               | 42      | 50    |
|  |                               | 660/690 V ~             | [kA]               | 42      | 50    |
|  |                               | 220/230/380/400/415 V ~ | [kA]               | 42      | 50    |
|  |                               | 440 V ~                 | [kA]               | 42      | 50    |
| Rated short-time withstand current   | I <sub>cw</sub>               | (1s)                    | [kA]               | 42      | 50    |
|  |                               | (3s)                    |                    | 36      | 36    |
|  |                               | 220/230/380/400/415 V ~ | [kA]               | 88.2    | 105   |
| Rated making capacity under short-circuit (peak value)                                 | I <sub>cm</sub>               | 440 V ~                 | [kA]               | 88.2    | 105   |
|  |                               | 500/525 V ~             | [kA]               | 75.6    | 75.6  |
|  |                               | 660/690 V ~             | [kA]               | 75.6    | 75.6  |
|  |                               | 220/230/380/400/415 V ~ | [kA]               | 75.6    | 75.6  |
|  |                               | 440 V ~                 | [kA]               | 75.6    | 75.6  |
| <b>Utilisation category</b>  | (according to CEI EN 60947-2) |                         |                    | B       | B     |
| <b>Isolation behaviour</b>   | (according to CEI EN 60947-2) |                         |                    | ■       | ■     |
| <b>Overcurrent protection</b>  |                               |                         |                    |         |       |
| Electronic releases for AC applications  |                               |                         |                    |         |       |
|  |                               |                         |                    | ■       | ■     |
| <b>Operating times</b>   |                               |                         |                    |         |       |
| Closing time (max)   |                               |                         | [ms]               | 80      | 80    |
| Break time for I < I <sub>cw</sub> (max) <sup>(1)</sup>                                |                               |                         | [ms]               | 70      | 70    |
| Break time for I > I <sub>cw</sub> (max)   |                               |                         | [ms]               | 30      | 30    |
| <b>Overall dimensions</b>  |                               |                         |                    |         |       |
| Fixed: H = 418 mm - D = 302 mm   | W                             | (3/4 poles)             | [mm]               | 296/386 |       |
| Withdrawable: H = 461 mm - D = 396.5 mm  | W                             | (3/4 poles)             | [mm]               | 324/414 |       |
| <b>Weights</b> (circuit-breaker complete with releases and CTs, excluding accessories) |                               |                         |                    |         |       |
| Fixed 3/4 Poles  |                               |                         | [kg]               | 45/54   | 45/54 |
| Withdrawable 3/4 Poles (including fixed part)  |                               |                         | [kg]               | 70/82   | 70/82 |

<sup>(1)</sup> Without intentional delays

<sup>(2)</sup> The performance at 600 V is 100 kA

|   |                |                         |  | E1 B-N |           |      | E2 B-N-S |           |      |      |
|---|----------------|-------------------------|--|--------|-----------|------|----------|-----------|------|------|
| <b>Rated uninterrupted current (at 40 °C)</b>           | I <sub>u</sub> | [A]                     |  | 800    | 1000-1250 | 1600 | 800      | 1000-1250 | 1600 | 2000 |
| <b>Mechanical life</b> with regular routine maintenance |                | [No. operations x 1000] |  | 25     | 25        | 25   | 25       | 25        | 25   | 25   |
| Frequency   |                | [Operations / hour]     |  | 60     | 60        | 60   | 60       | 60        | 60   | 60   |
| Electrical life   | (440 V ~)      | [No. operations x 1000] |  | 10     | 10        | 10   | 15       | 15        | 12   | 10   |
|   | (690 V ~)      | [No. operations x 1000] |  | 10     | 8         | 8    | 15       | 15        | 10   | 8    |
| Frequency   |                | [Operations / hour]     |  | 30     | 30        | 30   | 30       | 30        | 30   | 30   |



| E2    |       |         |       | E3      |         |         |         |         | E4      |         |         | E6      |         |
|-------|-------|---------|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| B     | N     | S       | L     | N       | S       | H       | V       | L       | S       | H       | V       | H       | V       |
| 1600  | 1000  | 800     | 1250  | 2500    | 1000    | 800     | 800     | 2000    | 4000    | 3200    | 3200    | 4000    | 3200    |
| 2000  | 1250  | 1000    | 1600  | 3200    | 1250    | 1000    | 1250    | 2500    |         | 4000    | 4000    | 5000    | 4000    |
|       | 1600  | 1250    |       |         | 1600    | 1250    | 1600    |         |         |         |         | 6300    | 5000    |
|       | 2000  | 1600    |       |         | 2000    | 1600    | 2000    |         |         |         |         |         | 6300    |
|       |       | 2000    |       |         | 2500    | 2000    | 2500    |         |         |         |         |         |         |
|       |       |         |       |         | 3200    | 2500    | 3200    |         |         |         |         |         |         |
|       |       |         |       |         | 3200    |         |         |         |         |         |         |         |         |
| 100   | 100   | 100     | 100   | 100     | 100     | 100     | 100     | 100     | 50      | 50      | 50      | 50      | 50      |
| 42    | 65    | 85      | 130   | 65      | 75      | 100     | 130     | 130     | 75      | 100     | 150     | 100     | 150     |
| 42    | 65    | 85      | 110   | 65      | 75      | 100     | 130     | 110     | 75      | 100     | 150     | 100     | 150     |
| 42    | 55    | 65      | 85    | 65      | 75      | 85      | 100     | 85      | 75      | 100     | 130     | 100     | 130     |
| 42    | 55    | 65      | 85    | 65      | 75      | 85      | 100     | 85      | 75      | 85      | 100     | 100     | 100     |
| 42    | 65    | 85      | 130   | 65      | 75      | 85      | 100     | 130     | 75      | 100     | 125     | 100     | 125     |
| 42    | 65    | 85      | 110   | 65      | 75      | 85      | 100     | 110     | 75      | 100     | 125     | 100     | 125     |
| 42    | 55    | 65      | 65    | 65      | 75      | 85      | 85      | 65      | 75      | 100     | 130     | 100     | 100     |
| 42    | 55    | 65      | 65    | 65      | 75      | 85      | 85      | 65      | 75      | 85      | 100     | 100     | 100     |
| 42    | 55    | 65      | 10    | 65      | 75      | 75      | 85      | 15      | 75      | 100     | 100     | 100     | 100     |
| 42    | 42    | 42      | -     | 65      | 65      | 65      | 65      | -       | 75      | 75      | 75      | 85      | 85      |
| 88.2  | 143   | 187     | 286   | 143     | 165     | 220     | 286     | 286     | 165     | 220     | 330     | 220     | 330     |
| 88.2  | 143   | 187     | 242   | 143     | 165     | 220     | 286     | 286     | 165     | 220     | 330     | 220     | 330     |
| 88.2  | 121   | 143     | 187   | 143     | 165     | 187     | 220     | 187     | 165     | 220     | 286     | 220     | 286     |
| 88.2  | 121   | 143     | 187   | 143     | 165     | 187     | 220     | 187     | 165     | 187     | 220     | 220     | 220     |
| B     | B     | B       | A     | B       | B       | B       | B       | A       | B       | B       | B       | B       | B       |
| ■     | ■     | ■       | ■     | ■       | ■       | ■       | ■       | ■       | ■       | ■       | ■       | ■       | ■       |
| ■     | ■     | ■       | ■     | ■       | ■       | ■       | ■       | ■       | ■       | ■       | ■       | ■       | ■       |
| 80    | 80    | 80      | 80    | 80      | 80      | 80      | 80      | 80      | 80      | 80      | 80      | 80      | 80      |
| 70    | 70    | 70      | 70    | 70      | 70      | 70      | 70      | 70      | 70      | 70      | 70      | 70      | 70      |
| 30    | 30    | 30      | 12    | 30      | 30      | 30      | 30      | 12      | 30      | 30      | 30      | 30      | 30      |
|       |       | 296/386 |       |         |         | 404/530 |         |         |         | 566/656 |         | 782/908 |         |
|       |       | 324/414 |       |         |         | 432/558 |         |         |         | 594/684 |         | 810/936 |         |
| 50/61 | 50/61 | 50/61   | 52/63 | 66/80   | 66/80   | 66/80   | 66/80   | 72/83   | 97/117  | 97/117  | 97/117  | 140/160 | 140/160 |
| 78/93 | 78/93 | 78/93   | 80/95 | 104/125 | 104/125 | 104/125 | 104/125 | 110/127 | 147/165 | 147/165 | 147/165 | 210/240 | 210/240 |

| E2 L |      | E3 N-S-H-V |           |      |      | E3 L |      | E4 S-H-V |      | E6 H-V |      |      |      |      |      |      |
|------|------|------------|-----------|------|------|------|------|----------|------|--------|------|------|------|------|------|------|
| 1250 | 1600 | 800        | 1000-1250 | 1600 | 2000 | 2500 | 3200 | 3200     | 2000 | 2500   | 3200 | 4000 | 3200 | 4000 | 5000 | 6300 |
| 20   | 20   | 20         | 20        | 20   | 20   | 20   | 20   | 20       | 15   | 15     | 15   | 15   | 12   | 12   | 12   | 12   |
| 60   | 60   | 60         | 60        | 60   | 60   | 60   | 60   | 60       | 60   | 60     | 60   | 60   | 60   | 60   | 60   | 60   |
| 4    | 3    | 12         | 12        | 10   | 9    | 8    | 6    | 6        | 2    | 1.8    | 7    | 5    | 5    | 4    | 3    | 2    |
| 3    | 2    | 12         | 12        | 10   | 9    | 7    | 5    | 5        | 1.5  | 1.3    | 7    | 4    | 5    | 4    | 2    | 1.5  |
| 20   | 20   | 20         | 20        | 20   | 20   | 20   | 20   | 20       | 20   | 20     | 10   | 10   | 10   | 10   | 10   | 10   |

# Emax Air circuit-breakers for specific applications



|   |                | E1         |                                | E2                             |                  |                                 |  |                  |
|---|----------------|------------|--------------------------------|--------------------------------|------------------|---------------------------------|--|------------------|
| <b>Automatic circuit-breakers</b>         |                | E1B        | E1N                            | E2B                            | E2N              | E2S                             | E2L                                      |                  |
| Poles                                     | [nr.]          | 3 - 4      |                                | 3 - 4                          |                  |                                 |  |                  |
| 4p c.-b neutral current-carrying capacity | [% lu]         | 100        |                                | 100                            |                  |                                 |  |                  |
| <b>Iu</b>                                 | <b>(40 °C)</b> | <b>[A]</b> | <b>800-1000-<br/>1250-1600</b> | <b>800-1000-<br/>1250-1600</b> | <b>1600-2000</b> | <b>1000-1250-<br/>1600-2000</b> | <b>800-1000-<br/>1250-1600-<br/>2000</b> | <b>1250-1600</b> |
| Ue  | [V~]           |            | 690                            | 690                            | 690              | 690                             | 690                                      |                  |
| Icu                                       | (220...415 V)  | [kA]       | 42                             | 50                             | 42               | 65                              | 85                                       | 130              |
| Ics                                       | (220...415 V)  | [kA]       | 42                             | 50                             | 42               | 65                              | 85                                       | 130              |
| Icw                                       | (1s)           | [kA]       | 42                             | 50                             | 42               | 55                              | 65                                       | 10               |
|   | (3s)           | [kA]       | 36                             | 36                             | 42               | 42                              | 42                                       | -                |

### Automatic circuit-breakers with full-size neutral conductor

|   |               | Standard version |  | Standard version |  |
|---|---------------|------------------|--|------------------|--|
| Poles                                     | [nr.]         | Standard version |  | Standard version |  |
| 4p c.-b neutral current-carrying capacity | [% lu]        |                  |  |                  |  |
| Iu  | (40 °C)       | [A]              |  |                  |  |
| Ue  | [V~]          |                  |  |                  |  |
| Icu                                       | (220...415 V) | [kA]             |  |                  |  |
| Ics                                       | (220...415 V) | [kA]             |  |                  |  |
| Icw                                       | (1s)          | [kA]             |  |                  |  |
|   | (3s)          | [kA]             |  |                  |  |



| <b>Switch-disconnectors</b> |               | E1B/MS | E1N/MS                 | E2B/MS                 | E2N/MS    | E2S/MS                  |
|-----------------------------|---------------|--------|------------------------|------------------------|-----------|-------------------------|
| Poles                       | [nr.]         | 3 - 4  | 3 - 4                  | 3 - 4                  | 3 - 4     | 3 - 4                   |
| Iu                          | (40 °C)       | [A]    | 800-1000-<br>1250-1600 | 800-1000-<br>1250-1600 | 1600-2000 | 1000-1250-<br>1600-2000 |
| Ue                          | [V~]          |        | 690                    | 690                    | 690       | 690                     |
| Icw                         | (1s)          | [kA]   | 42                     | 50                     | 42        | 55                      |
|                             | (3s)          | [kA]   | 36                     | 36                     | 42        | 42                      |
| Icm                         | (220...440 V) | [kA]   | 88.2                   | 105                    | 88.2      | 121                     |
|                             |               |        |                        |                        |           | 143                     |



| <b>Automatic circuit-breakers for applications up to 1150 V AC</b> |          | E2B/E | E2N/E     |
|--|----------|-------|-----------|
| Poles  | [nr.]    | 3 - 4 | 3 - 4     |
| Iu   | (40 °C)  | [A]   | 1600-2000 |
| Ue   | [V~]     |       | 1150      |
| Icu  | (1000 V) | [kA]  | 20        |
| Ics  | (1000 V) | [kA]  | 20        |
| Icw  | (1s)     | [kA]  | 20        |
|  |          |       | 30        |

| <b>Switch-disconnectors for applications up to 1150 V AC</b> |          | E2B/E MS | E2N/E MS  |
|--|----------|----------|-----------|
| Poles  | [nr.]    | 3 - 4    | 3 - 4     |
| Iu   | (40 °C)  | [A]      | 1600-2000 |
| Ue   | [V~]     |          | 1150      |
| Icw  | (1s)     | [kA]     | 20        |
| Icm  | (1000 V) | [kA]     | 40        |
|  |          |          | 63        |

| <b>Switch-disconnectors for ap. up to 1000 V DC</b> |          | E1B/E MS           | E2N/E MS           |
|---|----------|--------------------|--------------------|
| Poles   | [nr.]    | 3 - 4              | 3 - 4              |
| Iu  | (40 °C)  | [A]                | 800-1250           |
| Ue  | [V~]     | 750 (3p) 1000 (4p) | 750 (3p) 1000 (4p) |
| Icw   | (1s)     | [kA]               | 20                 |
| Icm   | (750 V)  | [kA]               | 42                 |
|   | (1000 V) | [kA]               | 42                 |
|   |          |                    | 25                 |
|   |          |                    | 52.5               |
|   |          |                    | 52.5               |

| <b>Sectionalizing truck</b> |         | E1 CS | E2 CS |
|-----------------------------|---------|-------|-------|
| Iu                          | (40 °C) | [A]   | 1250  |
|                             |         |       | 2000  |

| <b>Earthing switch with making capacity</b> |         | E1 MTP | E2 MTP |
|---|---------|--------|--------|
| Iu  | (40 °C) | [A]    | 1250   |
|   |         |        | 2000   |

| <b>Earthing truck</b> |         | E1 MT | E2 MT |
|-----------------------|---------|-------|-------|
| Iu                    | (40 °C) | [A]   | 1250  |
|                       |         |       | 2000  |

<sup>1)</sup> The performance at 1000 V is 50 kA



| E3                        |                                       |   |                                      |           | E4    |                    |                | E6                 |                         |
|---------------------------|---------------------------------------|---|--------------------------------------|-----------|-------|--------------------|----------------|--------------------|-------------------------|
| E3N                       | E3S                                   | E3H   | E3V                                  | E3L       | E4S   | E4H                | E4V            | E6H                | E6V                     |
|                           |                                       | 3 - 4   |                                      |           |       | 3 - 4              |                |                    | 3 - 4                   |
|                           |                                       | 100   |                                      |           |       | 50                 |                |                    | 50                      |
| 2500-3200                 | 1000-1250-<br>1600-2000-<br>2500-3200 | 800-1000-<br>1250-1600-<br>2000-2500-<br>3200 | 800-1250-<br>1600-2000-<br>2500-3200 | 2000-2500 | 4000  | 3200-4000          | 3200-4000      | 4000-5000-<br>6300 | 3200-4000-<br>5000-6300 |
| 690                       | 690                                   | 690   | 690                                  | 690       | 690   | 690                | 690            | 690                | 690                     |
| 65                        | 75                                    | 100   | 130                                  | 130       | 75    | 100                | 150            | 100                | 150                     |
| 65                        | 75                                    | 85  | 100                                  | 130       | 75    | 100                | 150            | 100                | 125                     |
| 65                        | 75                                    | 75  | 85                                   | 15        | 75    | 100                | 100            | 100                | 100                     |
| 65                        | 65                                    | 65  | 65                                   | -         | 75    | 75                 | 75             | 85                 | 85                      |
|                           |                                       |   |                                      |           | E4S/f | E4H/f              | E6H/f          |                    |                         |
| Standard version          |                                       |   |                                      |           | 4     | 4                  | 4              |                    |                         |
|                           |                                       |   |                                      |           | 100   | 100                | 100            |                    |                         |
|                           |                                       |   |                                      |           | 4000  | 3200-4000          | 4000-5000-6300 |                    |                         |
|                           |                                       |   |                                      |           | 690   | 690                | 690            |                    |                         |
|                           |                                       |   |                                      |           | 80    | 100                | 100            |                    |                         |
|                           |                                       |   |                                      |           | 80    | 100                | 100            |                    |                         |
|                           |                                       |   |                                      |           | 80    | 85                 | 100            |                    |                         |
|                           |                                       |   |                                      |           | 75    | 75                 | 100            |                    |                         |
| E3N/MS                    | E3S/MS                                | E3V/MS  | E4S/MS                               |           |       | E4H/MS             | E4H/f MS       | E6H/MS             | E6H/f MS                |
| 3 - 4                     | 3 - 4                                 | 3 - 4   | 3 - 4                                |           |       | 3 - 4              | 4              | 3 - 4              | 4                       |
| 2500-3200                 | 1000-1250-1600-<br>2000-2500-3200     | 800-1250-1600-<br>2000-2500-3200              | 4000                                 |           |       | 3200-4000          | 3200-4000      | 4000-5000-<br>6300 | 4000-5000-<br>6300      |
| 690                       | 690                                   | 690   | 690                                  |           |       | 690                | 690            | 690                | 690                     |
| 65                        | 75                                    | 85  | 75                                   |           |       | 100                | 85             | 100                | 100                     |
| 65                        | 65                                    | 65  | 75                                   |           |       | 75                 | 75             | 85                 | 85                      |
| 143                       | 165                                   | 286   | 165                                  |           |       | 220                | 220            | 220                | 220                     |
| E3H/E                     |                                       |   | E4H/E                                |           |       | E6H/E              |                |                    |                         |
| 3 - 4                     |                                       |   | 3 - 4                                |           |       | 3 - 4              |                |                    |                         |
| 1250-1600-2000-2500-3200  |                                       |   | 3200-4000                            |           |       | 4000-5000-6300     |                |                    |                         |
| 1150                      |                                       |   | 1150                                 |           |       | 1150               |                |                    |                         |
| 30(*)                     |                                       |   | 65                                   |           |       | 65                 |                |                    |                         |
| 30(*)                     |                                       |   | 65                                   |           |       | 65                 |                |                    |                         |
| 30(*)                     |                                       |   | 65                                   |           |       | 65                 |                |                    |                         |
| E3H/E MS                  |                                       |   | E4H/E MS                             |           |       | E6H/E MS           |                |                    |                         |
| 3 - 4                     |                                       |   | 3 - 4                                |           |       | 3 - 4              |                |                    |                         |
| 1250-1600-2000- 2500-3200 |                                       |   | 3200-4000                            |           |       | 4000-5000-6300     |                |                    |                         |
| 1150                      |                                       |   | 1150                                 |           |       | 1150               |                |                    |                         |
| 50                        |                                       |   | 65                                   |           |       | 65                 |                |                    |                         |
| 105                       |                                       |   | 143                                  |           |       | 143                |                |                    |                         |
| E3H/E MS                  |                                       |   | E4H/E MS                             |           |       | E6H/E MS           |                |                    |                         |
| 3 - 4                     |                                       |   | 3 - 4                                |           |       | 3 - 4              |                |                    |                         |
| 1250-1600-2000-2500-3200  |                                       |   | 3200-4000                            |           |       | 4000-5000-6300     |                |                    |                         |
| 750 (3p) 1000 (4p)        |                                       |   | 750 (3p) 1000 (4p)                   |           |       | 750 (3p) 1000 (4p) |                |                    |                         |
| 40                        |                                       |   | 65                                   |           |       | 65                 |                |                    |                         |
| 105                       |                                       |   | 143                                  |           |       | 143                |                |                    |                         |
| 105                       |                                       |   | 143                                  |           |       | 143                |                |                    |                         |
| E3 CS                     |                                       |   | E4 CS                                |           |       | E6 CS              |                |                    |                         |
| 3200                      |                                       |   | 4000                                 |           |       | 6300               |                |                    |                         |
| E3 MTP                    |                                       |   | E4 MTP                               |           |       | E6 MTP             |                |                    |                         |
| 3200                      |                                       |   | 4000                                 |           |       | 6300               |                |                    |                         |
| E3 MT                     |                                       |   | E4 MT                                |           |       | E6 MT              |                |                    |                         |
| 3200                      |                                       |   | 4000                                 |           |       | 6300               |                |                    |                         |

# Accessories for Emax Air circuit-breakers



## Circuit-breaker version

| Circuit-breaker version  | Circuit-breaker   |              |
|--|---|--------------|
|  | Circuit-breakers with neutral conductor with full cross-section |              |
|  | Circuit-breakers for applications up to 1000 V AC               |              |
|  | Fixed   | Withdrawable |
| 1a) Shunt opening/closing release (YO/YC) and second opening release (YO2)                     | ■   | ■            |
| 1b) SOR test unit  | ■   | ■            |
| 2a) Undervoltage release (YU)  | ■   | ■            |
| 2b) Time-delay device for undervoltage release (D)   | ■   | ■            |
| 3) Geared motor for automatic charging of closing springs (M)                                  | ■   | ■            |
| 4a) Electrical signalling of electronic releases tripped                                       | ■   | ■            |
| 4b) Electrical signalling of electronic releases tripped with remote reset command             | ■   | ■            |
| 5a) Electrical signalling of circuit-breaker open/closed <sup>(1)</sup>                        | ■   | ■            |
| 5b) External supplementary electrical signalling of circuit-breakers open/closed               | ■   | ■            |
| 5c) Electrical signalling of circuit-breaker racked-in/test isolated/racked-out                | ■   | ■            |
| 5d) Contact signalling closing springs charged   | ■   | ■            |
| 5e) Contact signalling undervoltage release de-energised (C. Aux YU)                           | ■   | ■            |
| 6a) Current transformer for neutral conductor outside circuit-breaker                          | ■   | ■            |
| 6b) Homopolar toroid for main power supply earthing conductor (star center of the transformer) | ■   | ■            |
| 7) Mechanical operation counter  | ■   | ■            |
| 8a) Lock in open position: key   | ■   | ■            |
| 8b) Lock in open position: padlocks  | ■   | ■            |
| 8c) Circuit-breakers lock in racked-in/racked-out/test isolated position                       | ■   | ■            |
| 8d) Accessory for lock in racked-out/test isolated position                                    | ■   | ■            |
| 8e) Accessory for shutter padlock device   | ■   | ■            |
| 8f) Mechanical lock for compartment door   | ■   | ■            |
| 9a) Protection for opening and closing pushbuttons   | ■   | ■            |
| 9b) IP54 door protection   | ■   | ■            |
| 10) Interlocks between circuit-breakers <sup>(2)</sup>   | ■   | ■            |
| 11) Automatic transfer switch - ATSO10 <sup>(3)</sup>  | ■   | ■            |

### CAPTION

- Accessory on request on fixed or on moving part
- Accessory on request for fixed part
- Accessory on request for moving part

<sup>(1)</sup> For automatic circuit-breakers four auxiliary contacts for electrical signalling of circuit-breaker open/closed is included in the supply as standard

<sup>(2)</sup> Incompatible with the E6/f versions with full cross-section neutral

<sup>(3)</sup> Incompatible with the range of circuit-breakers for applications up to 1150V AC



Switch-disconnector (MS)

Sectionalizing truck (CS)

Earthing switch with making capacity (MPT)

Earthing truck (MT)

Switch-disconnectors for applications up to 1000 V AC

Switch-disconnectors for applications up to 1000 V DC

Fixed

Withdrawable

Withdrawable

Withdrawable

Withdrawable



