

## ROTARY SWITCH DISCONNECTORS

## ROTARY SWITCH DISCONNECTORS - MSS

## Technical data

| TYPE                                                                                          |                                | MSS 125                                                                           |                                         |                                         | MSS 160                                                                           | MSS 250                                                                            | MSS 630                                                                             |                                         | MSS 125<br>(Three-way switch)                                                       | MSS<br>ATS 160                                                                      |    |
|-----------------------------------------------------------------------------------------------|--------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------|-----------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----|
|                                                                                               |                                |  |                                         |                                         |  |  |  |                                         |  |  |    |
| Reference Standard:                                                                           |                                | EN 60947-3                                                                        |                                         |                                         |                                                                                   |                                                                                    |                                                                                     |                                         |                                                                                     | EN 60947-3<br>EN 60947-6-1                                                          |    |
| Rated current (In): (A)                                                                       |                                | 63                                                                                | 100                                     | 125                                     | 160                                                                               | 250                                                                                | 400                                                                                 | 630                                     | 125                                                                                 | 160                                                                                 |    |
| No. poles:                                                                                    |                                | 3-4                                                                               | 3-4                                     | 3-4                                     | 3-4                                                                               | 3-4                                                                                | 3-4                                                                                 | 3-4                                     | 4                                                                                   | 4                                                                                   |    |
| Rated operational voltage (Ue):                                                               |                                | AC (V)                                                                            | 400                                     | 400                                     | 400                                                                               | 400                                                                                | 400                                                                                 | 400                                     | 400                                                                                 | 400                                                                                 |    |
|                                                                                               |                                | DC (V)                                                                            | 220                                     | 220                                     | 220                                                                               | 220                                                                                | 220                                                                                 | 220                                     | -                                                                                   | 230                                                                                 |    |
| Maximum operating voltage (max Ue):                                                           |                                | AC (V)                                                                            | 690                                     | 690                                     | 690                                                                               | 690                                                                                | 690                                                                                 | 690                                     | 690                                                                                 | 690                                                                                 |    |
|                                                                                               |                                | DC (V)                                                                            | 440                                     | 440                                     | 440                                                                               | 440                                                                                | 500                                                                                 | 500                                     | 500                                                                                 | 220                                                                                 | -  |
| Rated insulation voltage (Ui): AC (V)                                                         |                                | 800                                                                               | 800                                     | 800                                     | 800                                                                               | 800                                                                                | 1000                                                                                | 1000                                    | 800                                                                                 | 800                                                                                 |    |
| Rated impulse withstand voltage (Uimp): (kV)                                                  |                                | 8                                                                                 | 8                                       | 8                                       | 8                                                                                 | 8                                                                                  | 12                                                                                  | 12                                      | 8                                                                                   | 6                                                                                   |    |
| Voltage                                                                                       | Category of use <sup>(1)</sup> | Operating currents Ie (A)                                                         |                                         |                                         |                                                                                   |                                                                                    |                                                                                     |                                         |                                                                                     |                                                                                     |    |
| 400V AC                                                                                       | AC-21 A / AC-21 B              | 63 / 63                                                                           | 100 / 100                               | 125 / 125                               | 160 / 160                                                                         | 250 / 250                                                                          | 400 / 400                                                                           | 630 / 630                               | 125 / 125                                                                           | 160 / 160                                                                           |    |
|                                                                                               | AC-22 A / AC-22 B              | 63 / 63                                                                           | 100 / 100                               | 125 / 125                               | 160 / 160                                                                         | 250 / 250                                                                          | 400 / 400                                                                           | 630 / 630                               | 125 / 125                                                                           | 160 / 160                                                                           |    |
|                                                                                               | AC-23 A / AC-23 B              | 63 / 63                                                                           | 63 / 63                                 | 63 / 63                                 | 160 / 160                                                                         | 250 / 250                                                                          | 400 / 400                                                                           | 500 / 500                               | 63 / 63                                                                             | 125 / 160                                                                           |    |
| 415V AC                                                                                       | AC-31 A / AC-31 B              | -                                                                                 | -                                       | -                                       | -                                                                                 | -                                                                                  | -                                                                                   | -                                       | -                                                                                   | 100 / 160                                                                           |    |
|                                                                                               | AC-32 A / AC-32 B              | -                                                                                 | -                                       | -                                       | -                                                                                 | -                                                                                  | -                                                                                   | -                                       | -                                                                                   | 100 / 160                                                                           |    |
|                                                                                               | AC-33 A / AC-33 B              | -                                                                                 | -                                       | -                                       | -                                                                                 | -                                                                                  | -                                                                                   | -                                       | -                                                                                   | - / 80                                                                              |    |
| 500V AC                                                                                       | AC-21 A / AC-21 B              | 63 / 63                                                                           | 100 / 100                               | 125 / 125                               | 160 / 160                                                                         | 250 / 250                                                                          | 400 / 400                                                                           | 630 / 630                               | -                                                                                   | -                                                                                   |    |
|                                                                                               | AC-22 A / AC-22 B              | 63 / 63                                                                           | 100 / 100                               | 100 / 100                               | 160 / 160                                                                         | 250 / 250                                                                          | 400 / 400                                                                           | 500 / 500                               | -                                                                                   | -                                                                                   |    |
|                                                                                               | AC-23 A / AC-23 B              | 50 / 50                                                                           | 50 / 50                                 | 50 / 50                                 | 160 / 160                                                                         | 250 / 250                                                                          | 315 / 315                                                                           | 315 / 315                               | -                                                                                   | -                                                                                   |    |
| 690V AC <sup>(2)</sup>                                                                        | AC-20 A / AC-20 B              | 63 / 63                                                                           | 100 / 100                               | 125 / 125                               | 160 / 160                                                                         | 250 / 250                                                                          | 400 / 400                                                                           | 630 / 630                               | 125 / 125                                                                           | -                                                                                   |    |
|                                                                                               | AC-21 A / AC-21 B              | 63 / 63                                                                           | 80 / 80                                 | 80 / 80                                 | 160 / 160                                                                         | 250 / 250                                                                          | 400 / 400                                                                           | 500 / 500                               | 80 / 80                                                                             | 160 / 160                                                                           |    |
|                                                                                               | AC-22 A / AC-22 B              | 40 / 40                                                                           | 40 / 40                                 | 40 / 40                                 | 160 / 160                                                                         | 125 / 160                                                                          | 250 / 315                                                                           | 315 / 315                               | 40 / 40                                                                             | 100 / 125                                                                           |    |
|                                                                                               | AC-23 A / AC-23 B              | 25 / 25                                                                           | 25 / 25                                 | 25 / 25                                 | 63 / 80                                                                           | 100 / 125                                                                          | 160 / 200                                                                           | 160 / 200                               | 25 / 25                                                                             | 80 / 80                                                                             |    |
| 220V DC                                                                                       | DC-20 A / DC-20 B              | 63 / 63                                                                           | 100 / 100                               | 125 / 125                               | 160 / 160                                                                         | 250 / 250                                                                          | 400 / 400                                                                           | 630 / 630                               | 125 <sup>(3)</sup> / 125 <sup>(3)</sup>                                             | -                                                                                   |    |
|                                                                                               | DC-21 A / DC-21 B              | 63 <sup>(3)</sup> / 63 <sup>(3)</sup>                                             | 100 <sup>(3)</sup> / 100 <sup>(3)</sup> | 125 <sup>(3)</sup> / 125 <sup>(3)</sup> | 160 <sup>(3)</sup> / 160 <sup>(3)</sup>                                           | 250 / 250                                                                          | 400 / 400                                                                           | 630 / 630                               | 125 <sup>(3)</sup> / 125 <sup>(3)</sup>                                             | -                                                                                   |    |
|                                                                                               | DC-22 A / DC-22 B              | 63 <sup>(3)</sup> / 63 <sup>(3)</sup>                                             | 100 <sup>(3)</sup> / 100 <sup>(3)</sup> | 100 <sup>(3)</sup> / 100 <sup>(3)</sup> | 160 <sup>(3)</sup> / 160 <sup>(3)</sup>                                           | 250 / 250                                                                          | 400 / 400                                                                           | 500 / 500                               | 100 <sup>(3)</sup> / 100 <sup>(3)</sup>                                             | -                                                                                   |    |
|                                                                                               | DC-23 A / DC-23 B              | 63 <sup>(3)</sup> / 63 <sup>(3)</sup>                                             | 63 <sup>(3)</sup> / 63 <sup>(3)</sup>   | 63 <sup>(3)</sup> / 63 <sup>(3)</sup>   | 160 <sup>(3)</sup> / 160 <sup>(3)</sup>                                           | 200 / 200                                                                          | 400 / 400                                                                           | 500 / 500                               | 63 <sup>(3)</sup> / 63 <sup>(3)</sup>                                               | -                                                                                   |    |
| 400V DC                                                                                       | DC-20 A / DC-20 B              | -                                                                                 | -                                       | -                                       | -                                                                                 | 250 / 250                                                                          | 400 / 400                                                                           | 630 / 630                               | -                                                                                   | -                                                                                   |    |
|                                                                                               | DC-21 A / DC-21 B              | -                                                                                 | -                                       | -                                       | -                                                                                 | 200 <sup>(4)</sup> / 200 <sup>(4)</sup>                                            | 400 <sup>(4)</sup> / 400 <sup>(4)</sup>                                             | 500 <sup>(4)</sup> / 500 <sup>(4)</sup> | -                                                                                   | -                                                                                   |    |
|                                                                                               | DC-22 A / DC-22 B              | -                                                                                 | -                                       | -                                       | -                                                                                 | 200 <sup>(4)</sup> / 200 <sup>(4)</sup>                                            | 400 <sup>(4)</sup> / 400 <sup>(4)</sup>                                             | 500 <sup>(4)</sup> / 500 <sup>(4)</sup> | -                                                                                   | -                                                                                   |    |
|                                                                                               | DC-23 A / DC-23 B              | -                                                                                 | -                                       | -                                       | -                                                                                 | 200 <sup>(3)</sup> / 200 <sup>(3)</sup>                                            | 400 <sup>(3)</sup> / 400 <sup>(3)</sup>                                             | 500 <sup>(3)</sup> / 500 <sup>(3)</sup> | -                                                                                   | -                                                                                   |    |
| 440V DC                                                                                       | DC-20 A / DC-20 B              | 63 <sup>(3)</sup> / 63 <sup>(3)</sup>                                             | 100 <sup>(3)</sup> / 100 <sup>(3)</sup> | 125 <sup>(3)</sup> / 125 <sup>(3)</sup> | 160 <sup>(3)</sup> / 160 <sup>(3)</sup>                                           | -                                                                                  | -                                                                                   | -                                       | -                                                                                   | -                                                                                   |    |
|                                                                                               | DC-21 A / DC-21 B              | 40 <sup>(3)</sup> / 40 <sup>(3)</sup>                                             | 40 <sup>(3)</sup> / 40 <sup>(3)</sup>   | 40 <sup>(3)</sup> / 40 <sup>(3)</sup>   | 160 <sup>(3)</sup> / 160 <sup>(3)</sup>                                           | -                                                                                  | -                                                                                   | -                                       | -                                                                                   | -                                                                                   |    |
|                                                                                               | DC-22 A / DC-22 B              | 32 <sup>(3)</sup> / 32 <sup>(3)</sup>                                             | 32 <sup>(3)</sup> / 32 <sup>(3)</sup>   | 32 <sup>(3)</sup> / 32 <sup>(3)</sup>   | 100 <sup>(3)</sup> / 100 <sup>(3)</sup>                                           | -                                                                                  | -                                                                                   | -                                       | -                                                                                   | -                                                                                   |    |
|                                                                                               | DC-23 A / DC-23 B              | 32 <sup>(3)</sup> / 32 <sup>(3)</sup>                                             | 32 <sup>(3)</sup> / 32 <sup>(3)</sup>   | 32 <sup>(3)</sup> / 32 <sup>(3)</sup>   | 63 <sup>(3)</sup> / 63 <sup>(3)</sup>                                             | -                                                                                  | -                                                                                   | -                                       | -                                                                                   | -                                                                                   |    |
| 500V DC                                                                                       | DC-20 A / DC-20 B              | -                                                                                 | -                                       | -                                       | -                                                                                 | 250 / 250                                                                          | 400 / 400                                                                           | 630 / 630                               | -                                                                                   | -                                                                                   |    |
|                                                                                               | DC-21 A / DC-21 B              | -                                                                                 | -                                       | -                                       | -                                                                                 | 200 <sup>(4)</sup> / 200 <sup>(4)</sup>                                            | 400 <sup>(4)</sup> / 400 <sup>(4)</sup>                                             | 500 <sup>(4)</sup> / 500 <sup>(4)</sup> | -                                                                                   | -                                                                                   |    |
|                                                                                               | DC-22 A / DC-22 B              | -                                                                                 | -                                       | -                                       | -                                                                                 | 200 <sup>(3)</sup> / 200 <sup>(3)</sup>                                            | 315 <sup>(3)</sup> / 400 <sup>(3)</sup>                                             | 500 <sup>(3)</sup> / 500 <sup>(3)</sup> | -                                                                                   | -                                                                                   |    |
|                                                                                               | DC-23 A / DC-23 B              | -                                                                                 | -                                       | -                                       | -                                                                                 | 200 <sup>(3)</sup> / 200 <sup>(3)</sup>                                            | 315 <sup>(3)</sup> / 400 <sup>(3)</sup>                                             | 500 <sup>(3)</sup> / 500 <sup>(3)</sup> | -                                                                                   | -                                                                                   |    |
| Rated short-time withstand current (Icw): (kA)                                                |                                | 2.5                                                                               | 2.5                                     | 2.5                                     | 4                                                                                 | 9                                                                                  | 13                                                                                  | 13                                      | 2.5                                                                                 | 4                                                                                   |    |
| Rated short-circuit making capacity (Icm) <sup>(5)</sup> : (kA)                               |                                | 12                                                                                | 12                                      | 12                                      | 16                                                                                | 30                                                                                 | 45                                                                                  | 45                                      | 12                                                                                  | 17                                                                                  |    |
| Conditional short-circuit current with fuse (Icc) <sup>(6)</sup> : (kA)                       |                                | 100 (gG 63)                                                                       | 100 (gG 100)                            | 50 (gG 125)                             | 50 (gG 160)                                                                       | 50 (gG 250)                                                                        | 100 (gG 400)                                                                        | 70 (gG 630)                             | 50 (gG 125)                                                                         | 50 (gG 160)                                                                         |    |
| Conditional short-circuit current with miniature circuit breakers (Icc) <sup>(6)</sup> : (kA) |                                |                                                                                   |                                         |                                         |                                                                                   |                                                                                    |                                                                                     |                                         |                                                                                     |                                                                                     |    |
| MT 60                                                                                         |                                | 6                                                                                 | 6                                       | 6                                       | -                                                                                 | -                                                                                  | -                                                                                   | -                                       | 6                                                                                   | -                                                                                   |    |
| MT 100                                                                                        |                                | 10                                                                                | 10                                      | 10                                      | -                                                                                 | -                                                                                  | -                                                                                   | -                                       | 10                                                                                  | -                                                                                   |    |
| MTHP 160                                                                                      |                                | 16                                                                                | 16                                      | 16                                      | 16                                                                                | -                                                                                  | -                                                                                   | -                                       | 16                                                                                  | 16                                                                                  |    |
| MTHP 250                                                                                      |                                | 25                                                                                | 25                                      | 25                                      | -                                                                                 | -                                                                                  | -                                                                                   | -                                       | 25                                                                                  | -                                                                                   |    |
| MTX 160c                                                                                      |                                | B / C                                                                             | 12                                      | 11                                      | 11                                                                                | 16                                                                                 | 16                                                                                  | -                                       | -                                                                                   | 11                                                                                  | 16 |
|                                                                                               |                                | N                                                                                 | 12                                      | 11                                      | 11                                                                                | 20                                                                                 | 36                                                                                  | -                                       | -                                                                                   | 11                                                                                  | 20 |
| MTX/E 160                                                                                     |                                | N / S / H                                                                         | 10                                      | 10                                      | 10                                                                                | 16                                                                                 | 36                                                                                  | -                                       | -                                                                                   | 10                                                                                  | 16 |
| MTX 250 / MTX/E 320                                                                           |                                | N / S / H / L                                                                     | 8                                       | 8                                       | 8                                                                                 | 10                                                                                 | 28                                                                                  | -                                       | -                                                                                   | 8                                                                                   | 10 |
| MTX/E 630                                                                                     |                                | N                                                                                 | -                                       | -                                       | -                                                                                 | -                                                                                  | 22                                                                                  | 36                                      | 36                                                                                  | -                                                                                   | -  |
|                                                                                               |                                | S / H / L                                                                         | -                                       | -                                       | -                                                                                 | -                                                                                  | 22                                                                                  | 55                                      | 55                                                                                  | -                                                                                   | -  |
| MTX/E 1000                                                                                    |                                | N                                                                                 | -                                       | -                                       | -                                                                                 | -                                                                                  | -                                                                                   | 36                                      | 36                                                                                  | -                                                                                   | -  |
|                                                                                               |                                | S / H / L                                                                         | -                                       | -                                       | -                                                                                 | -                                                                                  | -                                                                                   | 40                                      | 40                                                                                  | -                                                                                   | -  |
| Pre-arrangement for lock in OFF position:                                                     |                                | yes (ø 6mm max)                                                                   | yes (ø 6mm max)                         | yes (ø 6mm max)                         | yes (ø 6mm max)                                                                   | yes (ø 8mm max)                                                                    | yes (ø 8mm max)                                                                     | yes (ø 8mm max)                         | yes (ø 6mm max)                                                                     | yes (ø 8mm max)*                                                                    |    |
| Mechanical endurance: (n. of manoeuvre cycles)                                                |                                | 20,000                                                                            | 20,000                                  | 20,000                                  | 10,000                                                                            | 10,000                                                                             | 5,000                                                                               | 5,000                                   | 10,000                                                                              | 10,000                                                                              |    |
| Maximum no. of auxiliary contacts that can be installed:                                      |                                | 2                                                                                 | 2                                       | 2                                       | 2                                                                                 | 1                                                                                  | 1                                                                                   | 1                                       | 1                                                                                   | 2                                                                                   |    |
| Power loss at In: (W/pole)                                                                    |                                | 1,2                                                                               | 3,1                                     | 5,7                                     | 3,3                                                                               | 5,8                                                                                | 10,8                                                                                | 30,9                                    | 5,7                                                                                 | 7,5                                                                                 |    |
| Minimum cable section: (mm²)                                                                  |                                | 4                                                                                 | 4                                       | 4                                       | 10                                                                                | 95                                                                                 | 185                                                                                 | 2 x 150                                 | 4                                                                                   | 6                                                                                   |    |
| Maximum cable section: rigid / flexible (mm²)                                                 |                                | 50 / 35 <sup>(7)</sup>                                                            | 50 / 35 <sup>(7)</sup>                  | 50 / 35 <sup>(7)</sup>                  | 95 / 70 <sup>(8)</sup>                                                            | 150 / 70 <sup>(8)</sup>                                                            | 240                                                                                 | 2x300                                   | 50 / 35 <sup>(7)</sup>                                                              | 70                                                                                  |    |
| Maximum busbar width: (mm)                                                                    |                                | -                                                                                 | -                                       | -                                       | 20                                                                                | 32                                                                                 | 40                                                                                  | 50                                      | -                                                                                   | -                                                                                   |    |
| Rated tightening torque: (Nm)                                                                 |                                | 6                                                                                 | 6                                       | 6                                       | 9                                                                                 | 20                                                                                 | 20                                                                                  | 20                                      | 6                                                                                   | 5                                                                                   |    |

<sup>(1)</sup> category with index A = frequent manoeuvres/category with index B = non-frequent manoeuvres; <sup>(2)</sup> with terminal covers or pole separation shield; <sup>(3)</sup> 4-pole device with 2 poles in series for each polarity; <sup>(4)</sup> 3-pole device with 2 poles in series for "+" and 1 pole for "-"; <sup>(5)</sup> indicates the peak current value for an operating voltage Ue = 400V AC; <sup>(6)</sup> for an operating voltage Ue = 400V AC; <sup>(7)</sup> connected directly on the frame; <sup>(8)</sup> also with terminals.

\*In the case of special needs the locking function can be set also in position I or II.

For technical information contact the Technical Assistance Service or visit [gewiss.com](http://gewiss.com)

## ROTARY SWITCH DISCONNECTORS

## MSS ATS - AUTOMATIC TRANSFER SWITCH

| TECHNICAL DATA                                                        |                                     |           |
|-----------------------------------------------------------------------|-------------------------------------|-----------|
| Thermal current I <sub>th</sub> at 40°C                               | (A)                                 | 160       |
| Insulating voltage (U <sub>i</sub> ) - Power circuit                  | (V)                                 | 800       |
| Shock withstand voltage (U <sub>imp</sub> ) - Power circuit           | (kV)                                | 6         |
| Insulating voltage (U <sub>i</sub> ) - Command circuit                | (V)                                 | 300       |
| Shock withstand voltage (U <sub>imp</sub> ) - Command circuit         | (kV)                                | 4         |
| Operational currents (I <sub>e</sub> ) (A) according to IEC 60947-3   |                                     |           |
| Voltage                                                               | Utilisation category <sup>(1)</sup> |           |
| 415V AC                                                               | AC-21A / AC-21B                     | 160 / 160 |
| 415V AC                                                               | AC-22A / AC-22B                     | 160 / 160 |
| 415V AC                                                               | AC-23A / AC-23B                     | 125 / 160 |
| 690V AC                                                               | AC-21A / AC-21B                     | 160 / 160 |
| 690V AC                                                               | AC-22A / AC-22B                     | 100 / 125 |
| 690V AC                                                               | AC-23A / AC-23B                     | 80 / 80   |
| Operational currents (I <sub>e</sub> ) (A) according to IEC 60947-6-1 |                                     |           |
| Voltage                                                               | Utilisation category                |           |
| 415V AC                                                               | AC-31A / AC-31B                     | 100 / 160 |
| 415V AC                                                               | AC-32A / AC-32B                     | 100 / 160 |
| 415V AC                                                               | AC-33A / AC-33B                     | - / 80    |
| Rated short-time withstand current 1s (I <sub>cw</sub> )              | (real kA)                           | 4         |
| Dynamic seal in short-circuit <sup>(2)</sup>                          | (peak kA)                           | 17        |
| Presumed short-circuit current <sup>(2)</sup>                         | (real kA)                           | 50        |
| Associated fuse gauge <sup>(2)</sup>                                  | (A)                                 | 160       |
| Connection                                                            |                                     |           |
| Min/MAX cable section                                                 | (mm <sup>2</sup> )                  | 6 / 70    |
| Min/MAX tightening torque                                             | (Nm)                                | 4 / 6     |
| Switching duration                                                    |                                     |           |
| I - 0 or II - 0 <sup>(3)</sup>                                        | (ms)                                | 50        |
| I - II or II - I <sup>(3)</sup>                                       | (ms)                                | 180       |
| Blackout I - II (minimum time)                                        | (ms)                                | 90        |
| MAX number of switching operations in 1 minute                        |                                     | 12        |
| Power supply                                                          |                                     |           |
| 230V AC min / MAX                                                     | (V)                                 | 176 / 288 |
| Electric command consumption during switching                         |                                     |           |
| MAX consumption at 230V AC                                            | (A)                                 | 30        |
| Rated power                                                           | (VA)                                | 6         |
| Mechanical characteristics                                            |                                     |           |
| Duration (number of operation cycles)                                 |                                     | 10'000    |
| Weight                                                                | (kg)                                | 3.5       |

<sup>(1)</sup> A = frequent operations / B = infrequent operations; <sup>(2)</sup> For an operating voltage = 400V AC; <sup>(3)</sup> Total time from position I to II



## ROTARY SWITCH DISCONNECTORS

### Description

This device ensures the automatic switching (while live) of two low voltage networks (network-emergency power unit or network-network).

Its extremely compact size means it can be installed even in 46QP range boards and CVX630K / CVX630M structures, by assembling on a standard DIN rail (EN50022).

The simple product set-up, various operating logics (with excludable automatic return to a priority line) and self-powering system (taking L-N directly from the priority line) make this a highly practical, competitive product.



### Product set-up

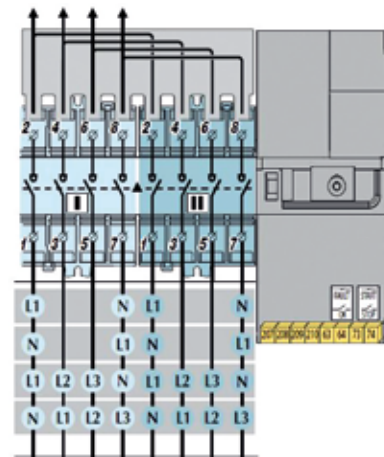
#### Wiring the two input lines

The wiring must be carried out in compliance with the instruction leaflet. In the case of network-emergency power unit switching, the priority line (I) must be wired on the left.

The neutral wire can be connected to either the right or left terminal, but not the central terminals.

The sequence of the 3 phases + neutral in the terminals must be respected for both lines.

The switching automatism and the electronic part take their power supply directly from terminals L1-N / N-L1 / N-L3 (depending on the wiring).



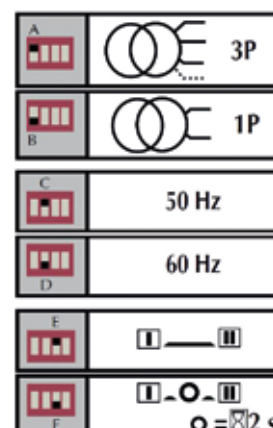
### Preliminary operations

#### Operation 1

Open the cover. The automatic transfer switch will transfer from Manual mode to Programming mode.

#### Operation 2

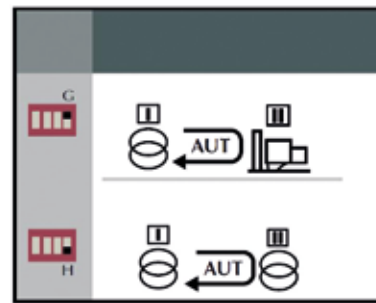
- Set the first switch on A if you want to obtain switching between two three-phase lines, or on B if the lines are single-phase.
- Set the second switch on C if the frequency is 50Hz, or on D if it is 60Hz.
- The third switch sets direct switching I - II (position E) or with a 2s stop in the central position I - 0 - II (position F) - (used when you want to be sure there is no residual voltage on the lines).



## ROTARY SWITCH DISCONNECTORS

### Operation 3

Use the fourth switch to select the switching mode: G for network-emergency power unit , H for network-network.



### Programming thresholds and times



### Trimmer key

- **Un** Rated voltage setting (there are 2 scales: PN for single-phase and PP for three-phase)
- **ΔU / ΔF** Setting of the percentage tolerance value for voltage and frequency fluctuations on the priority line. The setting of this trimmer identifies a range (for example  $\pm 10\%$ ) that the Voltage and Frequency parameters must remain in. If one of the two parameters on the priority line emerges from this range, the device switches to line II.
- **MFT** (Main Failure Time) Regulates the time between priority line blackout (or the emergence of the Voltage and Frequency parameters from the set thresholds) and generator start-up.
- **MRT** (Main Return Time) Regulates the delay time before the switching from line II to line I.

Note: by regulating these trimmers, you can obtain a control plan based on the line characteristics.

If the main line is very stable or the connected loads are sensitive to Voltage or Frequency variations, the  $\Delta U / \Delta F$  sensitivity must be set at low values. Otherwise, it is a good idea to set a high value because untimely switching operations may result from the scanty line stability.

In the same way, you must evaluate the need for quick switching operations, or envisage a switching delay, depending on the need for continuity on the priority line.

### LED signal table

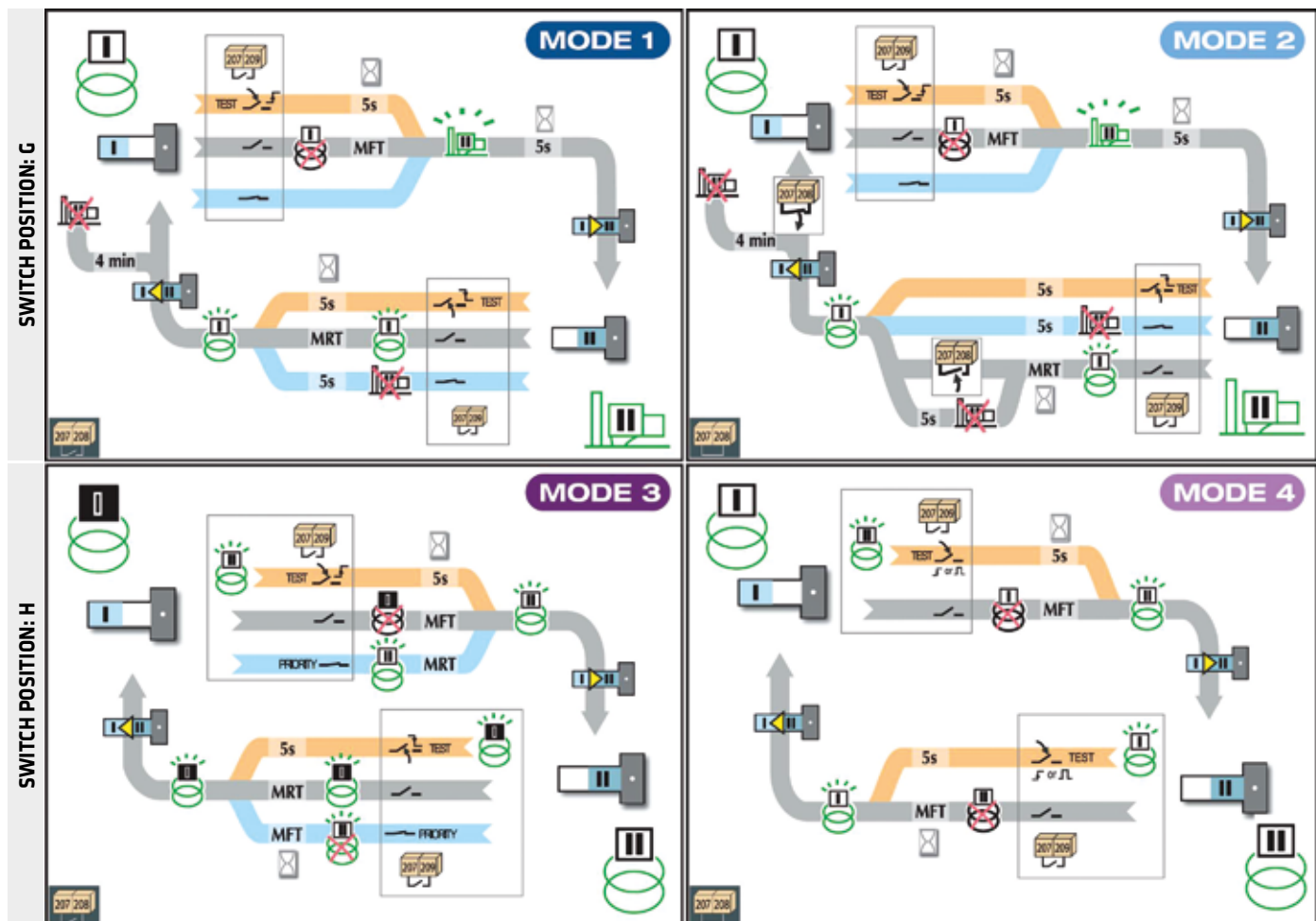
|  | ON                                  | OFF                | Flashing                                           |
|--|-------------------------------------|--------------------|----------------------------------------------------|
|  | Line I active                       | Line I not active  | TEST phase / Standby                               |
|  | Line II active                      | Line II not active | Standby                                            |
|  | FAULT (call the assistance service) | OK                 | Internal set-up procedure                          |
|  | Automatic mode                      | Manual mode        | Priority line ready, waiting for external command. |

## ROTARY SWITCH DISCONNECTORS

### Wiring the terminal block

| Terminals | Application                    | Contact status                                                                    | Description                              |
|-----------|--------------------------------|-----------------------------------------------------------------------------------|------------------------------------------|
| 207 / 208 | Network - Emergency power unit |  | Automatic return to network I            |
|           |                                |  | Without automatic return                 |
|           | Network - Network              |  | Operation with priority network          |
|           |                                |  | Operation without priority network       |
| 207 / 209 | Network - Emergency power unit |  | TEST function stop                       |
|           |                                |  | TEST function start                      |
|           | Network - Network              |  | Priority line I                          |
|           |                                |  | Priority line II                         |
| 207 / 210 | Network - Emergency power unit |  | Automatic mode                           |
|           | Network - Network              |  | Automatic mode inhibition                |
| 63 / 64   | Network - Emergency power unit |  | Correct product operation                |
|           | Network - Network              |  | Indicates Manual mode or Product anomaly |
| 73 / 74   | Network - Emergency power unit |  | No function                              |
|           |                                |  | Emergency power unit start-up consent    |

### Choosing the operating logic



For technical information contact the Technical Assistance Service or visit [gewiss.com](http://gewiss.com)

## ROTARY SWITCH DISCONNECTORS

**MODE 1: Network - emergency power unit switching, with automatic return to priority line** 

**MODE 2: Network - emergency power unit switching, without automatic return to priority line** 

In this case, the emergency power unit must be connected to line II.

Following a blackout or instability of priority line I, the MFT time count begins; at the end, the start-up command is sent to the emergency power unit. When the generator is at full speed, the device waits 5s and then switches to line II.

MODE 1: If priority line I returns to full speed, the MRT time count begins, followed by II – I switching.

MODE 2: If priority line I returns to full speed, the MRT time count begins; authorise II – I switching via terminals 207/208.

If the 2s stop is set in position 0, the sequence becomes I – 0 – II or II – 0 – I.

After the return to priority line I, the generator shifts to cooling mode for 4 min.

**MODE 3: Network - network switching, with automatic return to priority line** 

**MODE 4: Network - network switching, without automatic return to priority line** 

If the active line (or the priority line if the operating mode is MODE 3) suffers a blackout or loses stability, the MFT time count begins and then the device switches to the other network.

MODE 3: If the operating logic includes a priority line, and this line returns within the parameters, the device counts the MRT time and then switches.

MODE 4: If there is no priority line, the device counts the MRT time. External consent (via the opening of contact 207/208) is then needed for switching onto the other line.

If the 2s stop is set in position 0, the sequence becomes I – 0 – II or II – 0 – I.

### TEST: for checking correct system operation

The TEST function is used in particular to check the correct operation of the emergency power unit connected to line II.

In MODE 1 or MODE 2, when contact 207/209 is closed the device counts 5 sec before sending emergency power unit start-up consent.

When the emergency power unit is active and its supply is stable, the device counts a further 5 sec and then switches to line II.

After making sure the emergency power unit is operating correctly, you must open contact 207/209 to return to the priority line.

If the emergency power unit suffers a blackout during this phase, or it does not operate correctly, the device counts 5 sec before autonomously switching to the priority line. If the emergency power unit is still active, cooling mode begins and then the emergency power unit is switched off after 4 min.

In MODE 3 and MODE 4, contact 207/209 is used to establish the priority line. By opening and closing this contact, the TEST is simulated and, in this case, it checks the correct operation of the switching between the two transformers.

### Inhibition of automatic switching

In the case of maintenance or specific needs, automatic switching can be inhibited:

- Via remote implementation, closing contact 207 / 210
- By opening the cover (in this case, the system passes to manual mode and, if necessary, you can take out the block and insert a padlock (see the figure below).

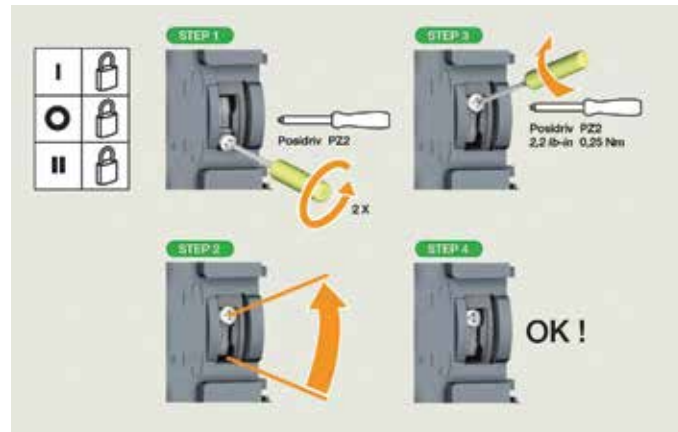
 min. 4mm (3/16")  
max. 8mm (5/16")

## ROTARY SWITCH DISCONNECTORS

### Locking function - Choosing the positions

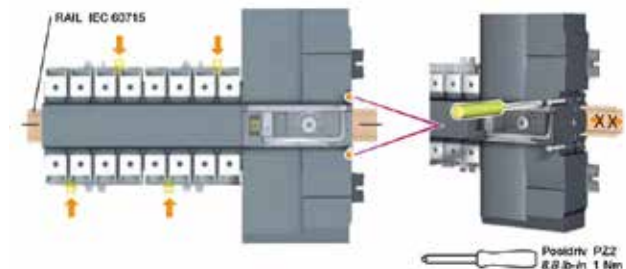
The locking function is only possible in position 0 or, in the case of special needs, also in position I or II.

The device is designed so that the padlock can only be fitted in position 0. To change this setting, adjust the screw on the back of the automatic transfer switch:



### Assembly on DIN rail (IEC 60715)

The device can be assembled on a normal DIN rail. To ensure the stability of the product and prevent it sliding on the rail, position it and then tighten the screws on its right side.

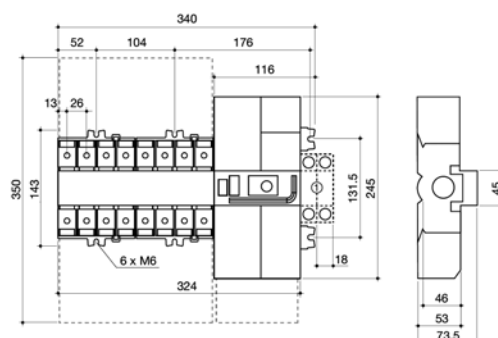


### Further information

- Switching takes place very quickly, as it is enabled by electromagnetic coils. To prevent the coils from overheating and thereby damaging the product, make sure there is an internal system that inhibits switching (until the coils are cool) if more than 8 switching operations occur in the space of 1 minute.
- If both lines suffer a blackout, the device automatically positions itself on the line that returns to full speed first (even if this is not the priority line). If both lines return to full speed simultaneously after a blackout of this type, the device automatically positions itself on the priority line; if there is no priority line, it will position itself on line I.
- A maximum of two auxiliary contacts (code GW 97 774) can be fitted, on the right side. Each contact has 3 NO/NC terminals, and each terminal is dedicated to a single position (I - 0 - II).  
Example: terminals 11/12/14 indicate that the 3-way switch is in position I.

### Dimension tables

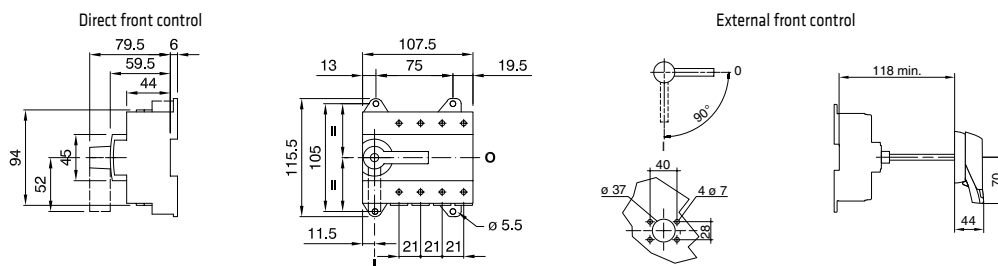
#### MSS 160 ATS - AUTOMATIC TRANSFER SWITCH



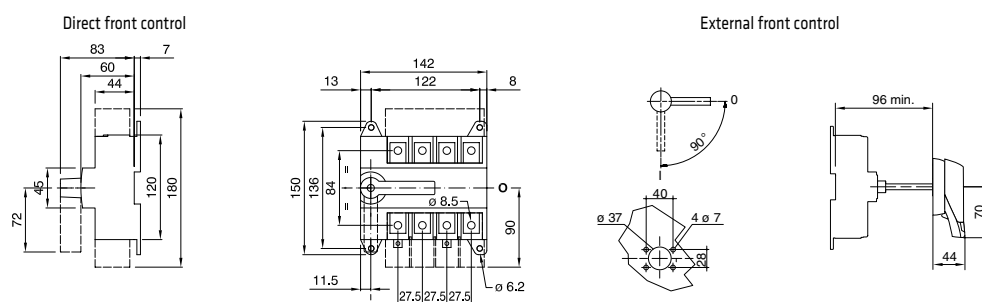
## ROTARY SWITCH DISCONNECTORS

### Dimension tables

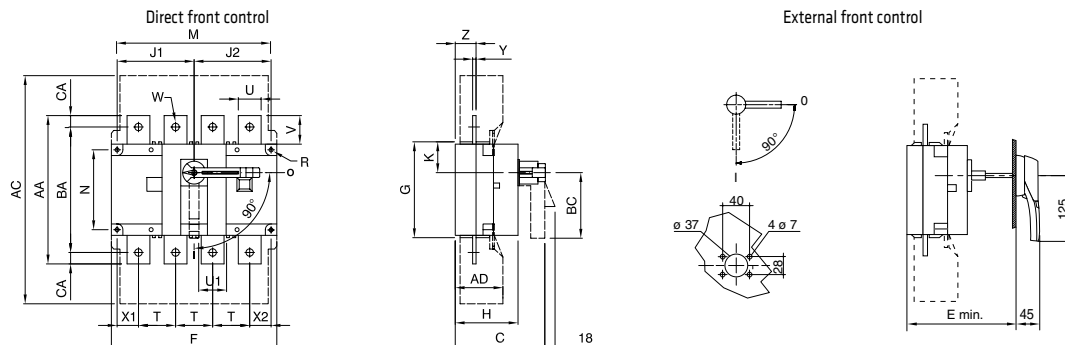
#### MSS 125



#### MSS 160



#### MSS 250-630



| In (A) | External |        | Terminal covers |    | Casing |      |     |     |       |       |     |    |     | Fixing |      |     |     |    | Connection |      |      |    |       |       |      |     |      |     |     |    |
|--------|----------|--------|-----------------|----|--------|------|-----|-----|-------|-------|-----|----|-----|--------|------|-----|-----|----|------------|------|------|----|-------|-------|------|-----|------|-----|-----|----|
|        | C        | E min. | AC              | AD | F3p.   | F4p. | G   | H   | J13p. | J14p. | J2  | K  | BC  | M3p.   | M4p. | N   | R   | T  | U          | U1   | V    | W  | X13p. | X14p. | X2   | Y   | Z    | AA  | BA  | CA |
| 250    | 130      | 135    | 290             | 60 | 180    | 230  | 108 | 75  | 55    | 105   | 105 | 34 | 115 | 160    | 210  | 80  | 5.5 | 50 | 25         | 25.5 | 30   | 11 | 33    | 33    | 27   | 3.5 | 22.5 | 160 | 130 | 15 |
| 400    | 160      | 165    | 401             | 89 | 230    | 290  | 170 | 110 | 75    | 135   | 135 | 55 | 115 | 210    | 270  | 140 | 7   | 65 | 32         | 45.5 | 37.5 | 11 | 42.5  | 37.5  | 37.5 | 5   | 36   | 235 | 305 | 15 |
| 630    | 160      | 165    | 401             | 89 | 230    | 290  | 170 | 110 | 75    | 135   | 135 | 55 | 115 | 210    | 270  | 140 | 7   | 65 | 45         | 45.5 | 37.5 | 13 | 42.5  | 37.5  | 37.5 | 5   | 36   | 260 | 220 | 20 |

#### MSS 125 - THREE-WAY SWITCH I O II

