



**Merlin Gerin**

**Evolis 24kV**

*withdrawable,  
frontal version*

# Vacuum Circuit Breaker

## Medium Voltage Distribution

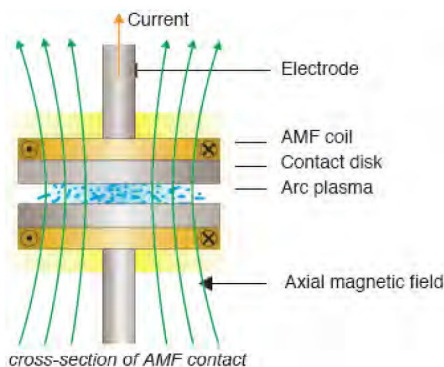
**Ready to install withdrawable circuit breaker in all type of cubicle for a complete safe to operate.**



### Withdrawable vacuum circuit breaker

- **Vacuum breaking technique**
  - Evolis circuit-breakers use AMF (Axial Magnetic Field) type vacuum interrupters.
  - AMF enables a high level of vacuum to be maintained inside the interrupter (less than  $10^{-7}$  bar).
- **3 separated poles**
- **Electrical/manual operation mechanism including:**
  - electrical/manual “closing” & “opening” system;
  - electrical/manual spring charging device;
  - operations counter.
- **Easy-pull-out truck fitted with:**
  - an earthing bus;
  - a mechanical system securing the unit being withdrawn only possible in “open” state;
  - a mechanical system securing the unit’s operations (closing/opening) only possible in “service” or “test” position.
- **Fixed portion fitted with:**
  - vacuum tube: partially sealed with mold-cased epoxy resin;
  - FRP safety shutters: automatically blank off the fixed contacts and manually be pad-lockable in “test” position;
  - a guide rail at the bottom.

The LV plug of the unit, which is used to connect the auxiliary circuits, cannot be accessed in “service” position but in “test” position.



## A complete safe to operate

- **Epoxy sealing with FRP shutters**
- **Operating and testing positions**
- **Interlocking and padlocking**
- **Conformity standard:**
- **Evolis complies with IEC 62271-100**

# Performance Tables

## Common Characteristics according to IEC 62271-100

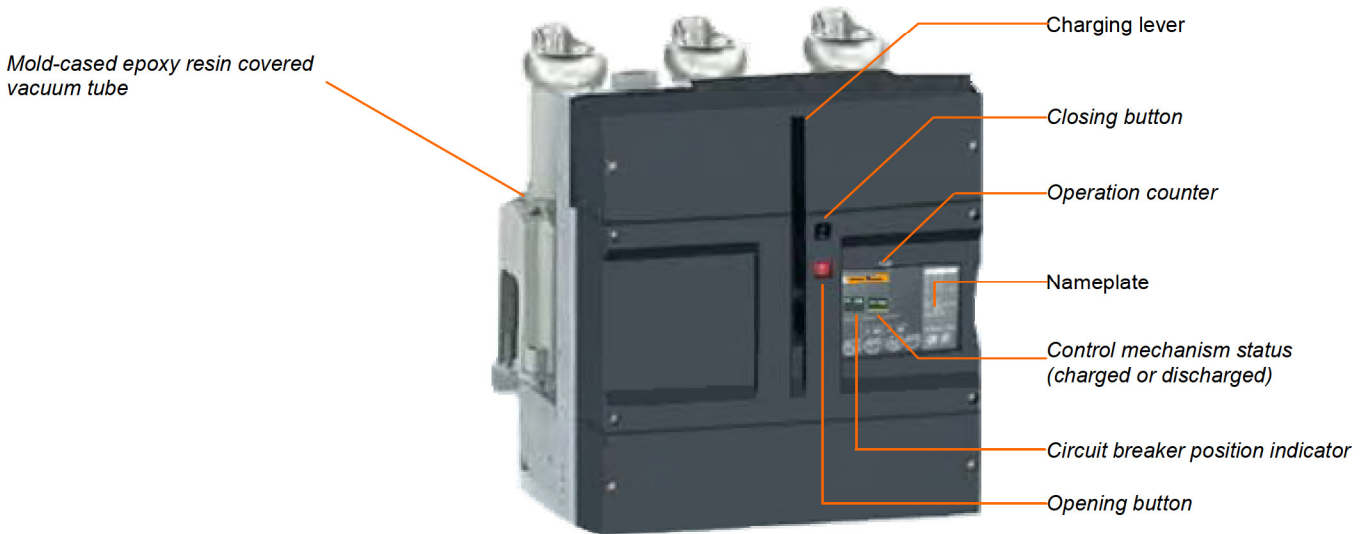
|                                        |                      |           |                                                         |
|----------------------------------------|----------------------|-----------|---------------------------------------------------------|
| rated frequency                        | fr                   | (Hz)      | 50 & 60                                                 |
| short-time withstand current           | Ik for tk = 3s       | (kA) rms  | Ik = Isc                                                |
| rated peak withstand current           | Ip                   | peak (kA) | Ip = 2.5 & 2.6 Ik                                       |
| rated short circuit making current     |                      | peak (kA) | = 2.5 & 2.6 Isc                                         |
| operating sequence                     |                      |           | O-3mn-CO-3mn-CO<br>O-0.3s-CO-3mn-CO<br>O-0.3s-CO-15s-CO |
| operating times                        | opening              | ms        | < 50                                                    |
|                                        | breaking             | ms        | < 60                                                    |
|                                        | closing              | ms        | < 65                                                    |
| mechanical endurance                   | class                |           | M2                                                      |
|                                        | number of operations |           | 10000 ( 30000 upon request )                            |
| electrical endurance                   | class                |           | E2                                                      |
|                                        | number of operations | 25 kA     | 100                                                     |
|                                        |                      | 31.5 kA   | 100                                                     |
|                                        | 40 kA                | 100       |                                                         |
| capacitive current breaking            |                      |           | class C1-C2 ( for some applications )                   |
| Humidity:<br>average relative humidity | 24-hours period      |           | < 95%                                                   |
|                                        | 1 month              |           | < 90%                                                   |

## Electrical characteristics according to IEC 62271-100

|                                      |                   |        |            |
|--------------------------------------|-------------------|--------|------------|
| circuit breaker                      |                   | Evolis | Evolis     |
|                                      |                   | 630    | 630 / 1250 |
| rated voltage                        | Ur (kV) rms       | 24     | 24         |
| rated insulation voltage             | Ud (kV) rms       | 50     | 50         |
| rated insulation voltage             | Up (kV) peak      | 125    | 125        |
| rated short-circuit breaking current | Isc (kA) rms / 3s | 16     | 25         |
| rated normal current (-25°C +40°C)   | Ir (A) rms        | 630    | 630 / 1250 |
| climatic version                     | -25°C +40°C       | ■      | ■          |

## Installation and connections

|                                       |            |      |      |
|---------------------------------------|------------|------|------|
| phase distance:<br>between poles (mm) |            | 250  | 250  |
| dimensions C.B. with cradle (mm)      | width (W)  | 930  | 930  |
|                                       | depth (D)  | 845  | 845  |
|                                       | height (H) | 1034 | 1034 |
| mass C.B. with cradle                 | (kg)       | 210  | 210  |



## Function Description

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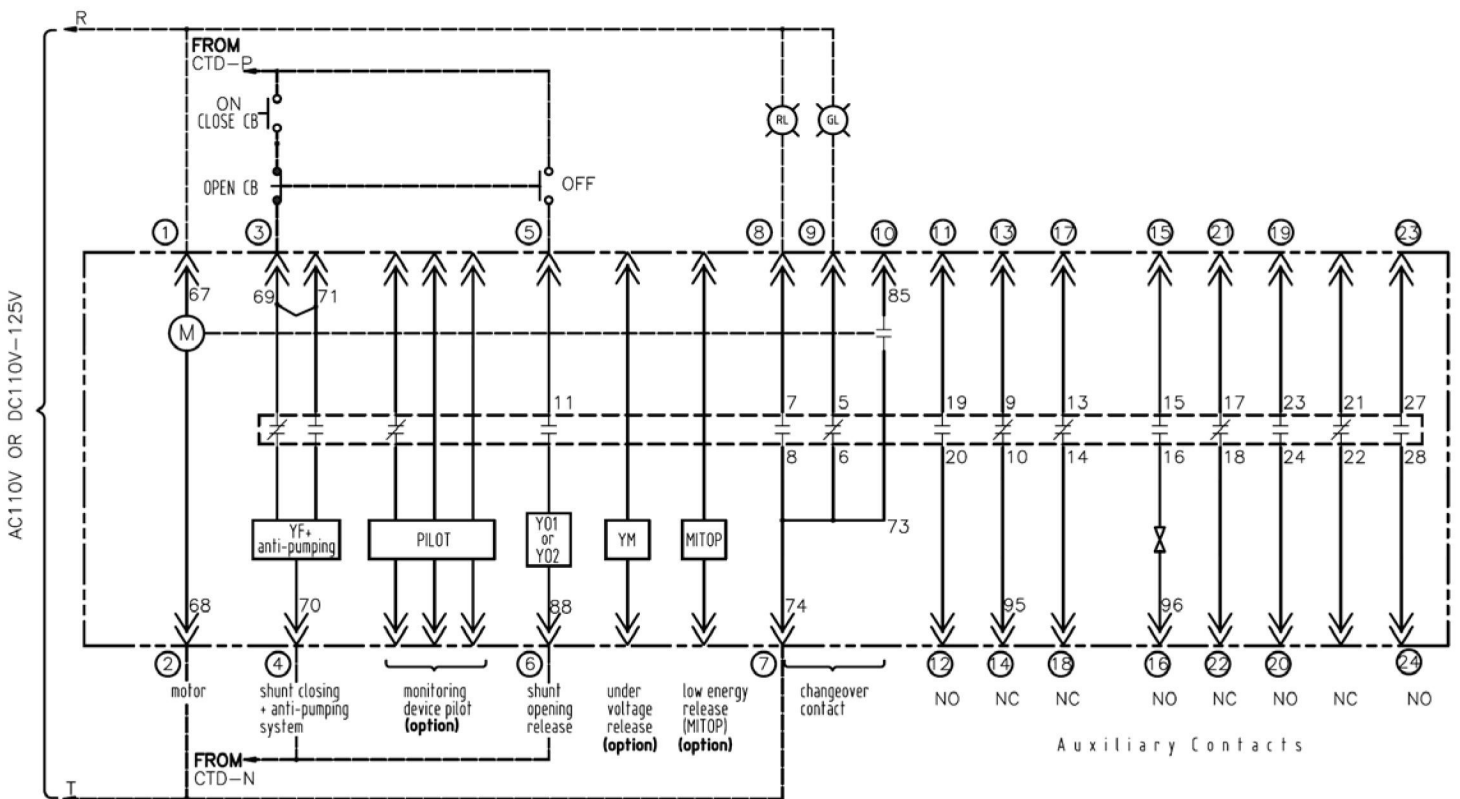
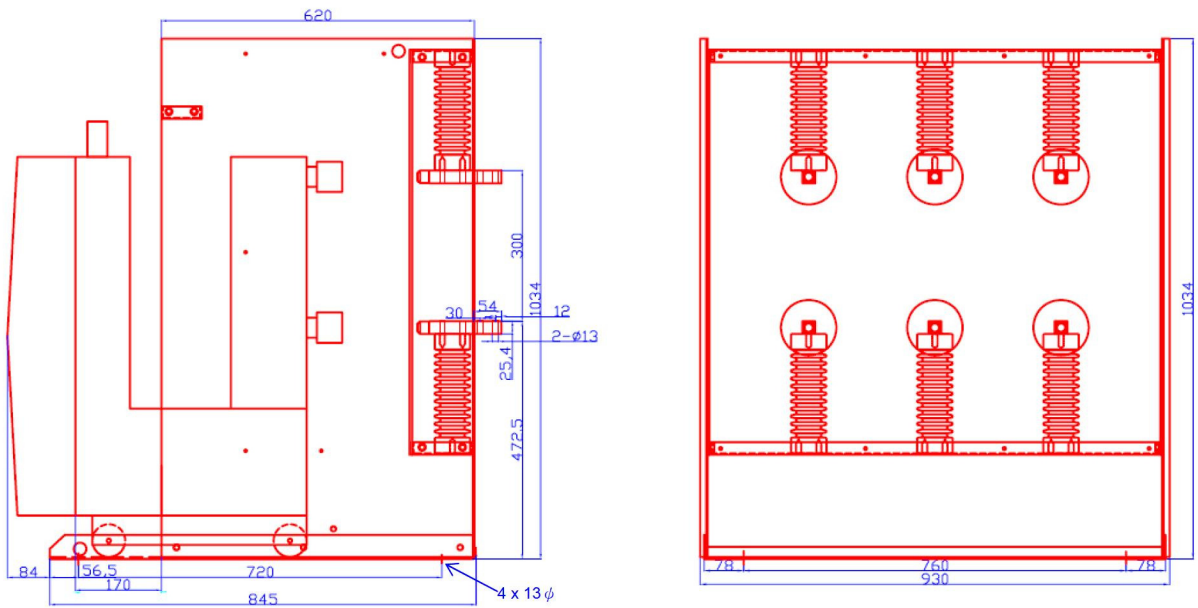
- The allowable voltage range for all electrical operations of the unit is within 85%~110%Un.
- With a condenser tripping device (CTD, 2000 $\mu$ F) providing DC power for the unit to trip when encountering power failure.
- The unit can be withdrawn or led-in only when the main contacts are in “open” state.
- With a mechanical interlocking mechanism ensuring that when the main contacts are in “closed” position the unit CANNOT be withdrawn.
- The main contacts of the unit are forbidden to be closed when:
  - a. the unit is in the process of being withdrawn or led-in;
  - b. the unit is between the “test” and “service” positions;
  - c. the unit is between the “test” and “closed” positions.
- Auxiliary contacts 5NO+5NC (4NO+4NC+1CHG)
- Antipumping relay
- Operation counter

## Optional Parts

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- Under voltage release
- Key locking device
- The “Pilot” circuit-breaker monitoring device
  - monitoring operating conditions
  - recording circuit-breaker operating data
- Earthing switch
- 4 racked in / racked out position contacts.
- Interlocking and padlocking device.

# Dimensions & Wiring



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