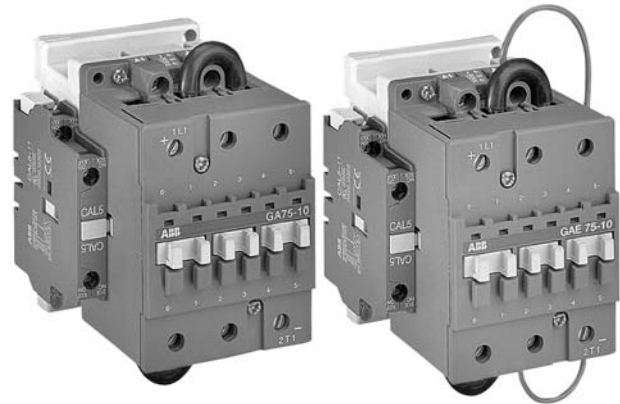


DC Circuit switching Contactors



DC Circuit switching contactors Type GA75 & GAE75

1



General

Arc suppression is more difficult in DC than in AC. To choose a contactor, it is necessary to know the current and voltage to be broken as well as the L/R time constant of the power circuit to be controlled.

Here are some typical time constant values:

- Non inductive loads such as resistance furnaces: $L/R \approx 1$ ms.
- Shunt motors: $L/R \approx 2$ ms.
- Series motors: $L/R \approx 7.5$ ms.

Remark: the addition of a resistor in parallel with an inductive winding makes arc suppression easier.

Types

GA75-10-... AC operated contactor
GAE75-10-... DC operated contactor

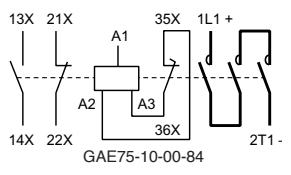
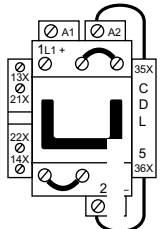
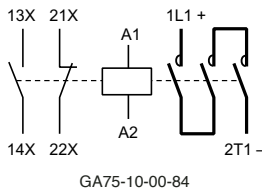
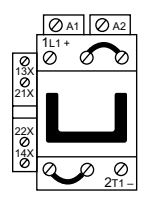
Description

GA and **GAE** contactors are mounted with arc chutes with permanent magnets specially designed for DC breaking.

The three contactor paths are arranged in series via two supplied and mounted insulated connections (25 mm²).

The **GA75** and **GAE75** are "single-pole" devices for which the connection polarities, indicated next to the connection terminals, must be respected. See wiring diagram information on next page.

DC circuit switching



| Maximum rated operational current | | | | | Mounted auxiliary contacts | | Catalog number | List price |
|-----------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------------|---|----------------|------------|
| DC-1 | DC-3 | DC-5 | | N.O. | N.C. | | | |
| $U_e \leq 440V$ A | $U_e \leq 600V$ A | $U_e \leq 440V$ A | $U_e \leq 220V$ A | $U_e \leq 440V$ A | | | | |
| 100 | 75 | 85 | 85 | 35 | - | - | GA75-10-00-84 | \$ 570 |
| 100 | 75 | 85 | 85 | 35 | - | - | GAE75-10-00-81 | 675 |
| | | | | | 1 | 1 | GAE75-10-11-81 | 705 |

Rated insulation voltage $U_i = 1000V$ d.c. according to IEC 947-4-1.
Maximum switching frequencies: 300 operating cycles/h

Coil voltage selection

All AC operated catalog numbers include a 120VAC coil. All DC operated catalog numbers include a 24VDC coil. To select other coil voltages, substitute the code from the Coil Voltage Selection Chart for the two digits after the last dash in the catalog number.

Ex.: A 240VAC coil is required for a GA75 contactor: GA75-10-00-80
A 110VDC coil is required for a GAE75 contactor: GAE75-10-00-86

Coil voltage selection chart

| Hz | Cntr type | Volts | | | | | | | | | | | | | | | |
|----|-----------|-------|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | | 12 | 24 | 48 | 110 | 120 | 125 | 208 | 220 | 240 | 277 | 380 | 415 | 440 | 480 | 500 | 600 |
| 60 | GA | | 81 | 83 | 84 | 84 | | 34 | 75 | 80 | 42 | 48 | 86 | 86 | 51 | 53 | 55 |
| 50 | GA | | 81 | 83 | 84 | | | | 80 | | | 85 | 86 | | | 55 | |
| DC | GAE | 80 | 81 | 83 | 86 | | 87 | | 88 | 89 | | | | | | | |

For other voltages, see page 1.26.

Accessories

Standard **A** and **AE 40 - 75** contactor accessories are suitable for **GA75** and **GAE75** contactors. Coils are the standard coils for **A** and **AE50 - 75** contactors. Contacts cannot be changed.

Wiring diagrams

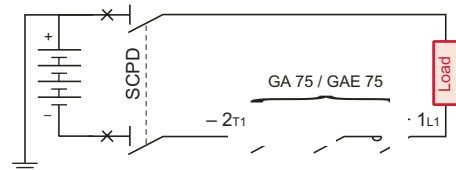
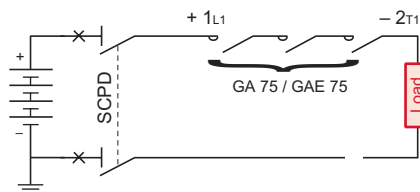
In D.C. circuits, the source to earth (or frame) connection mode is an important element.

Three modes are mainly used:

- A** – insulated source, i.e. unearthed (or not connected to the frame).
- B** – source earthed via its central point.
- C** – source earthed via one of its outer poles.

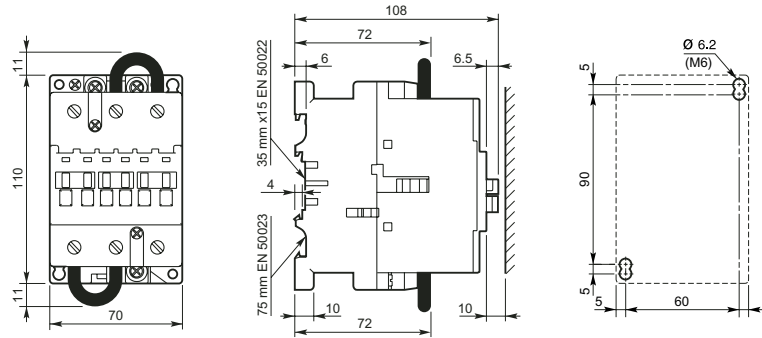
Modes **A** and **B** do not impose any constraints with regard to the distribution of the contactor poles between the two source/load connecting branches. Mode **C** requirements are therefore suitable for modes **A** and **B**. For mode **C**, all the poles necessary for breaking must be installed in series between the load and the ungrounded source polarity. We recommend this solution for all connection modes.

The above provisions relate to power circuit switching, the SCPD (Short-Circuit Protection Device) must comply with protection rules.

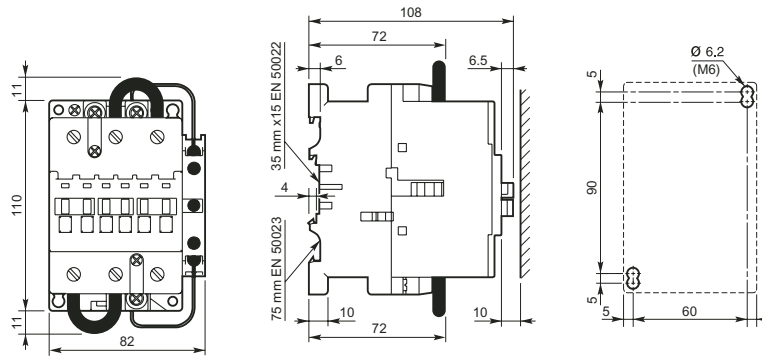


Approximate dimensions (mm)

GA75



GAE75



Notes