

Analytical Plan of a Single Phase Motor

Description of the Control Circuit Operation

Starting the engine clockwise is achieved by activating the S1 (START) button, followed by the following functions.

The contact (13-14) of the S1 button closes.

The relay K1M is supplied with voltage through the normally closed contact (21-22) of the relay K2M (electric locking) and the normally closed contact (21-22).

By activating the relay K2M the following functions are performed:

- The motor windings are connected to a star.
- The normally open contact (13-14) of the K2M relay closes and supplies the main K2M relay.
- The normally closed contact (21-22) of the relay K1M (electric locking) opens and thus excludes the operation of the K1M in any case while the K2M is operating.

By activating the main relay K1M the following functions are performed:

- The motor is powered and starts clockwise with a star winding.
- The normally open contact (13-14) of the relay K1M closes and its feedback is ensured (self-holding contact).

By activating the main relay K2M the following functions are performed:

- The motor is powered and starts in a counterclockwise motion with star windings.
- Normally closed contact (11-12) (STOP) is opened to prevent the simultaneous operation of both main relays at the same time, due to electrical locking.

The engine shuts down if any of the following operations occur:

- Due to short circuit fuses.
- From the thermal elements due to overload.
- From the activation of the button (STOP).