Document for example file in easySoft-Safety

Function name: **EN – Enable switch**

Example

Monitoring of an enable switch with cross-circuit monitoring of the external wiring. Activation coil EN01SA is triggered by a key switch. The enable switch must only be active at reduced speed. This condition is scanned with the OM (overspeed monitoring) function block.

Moving the switch from position 0 to 1 triggers the enable. The enable contact EN01QS of the function block closes and the signal is assigned to the safety marker MS05 for further processing.

The enable is removed if the switch is held down to position 2 or is released so that it returns to position 0. During the return from position 2 to position 0 over position 1 the enable is not activated.
The guard can only be bridged for up to 3 minutes.

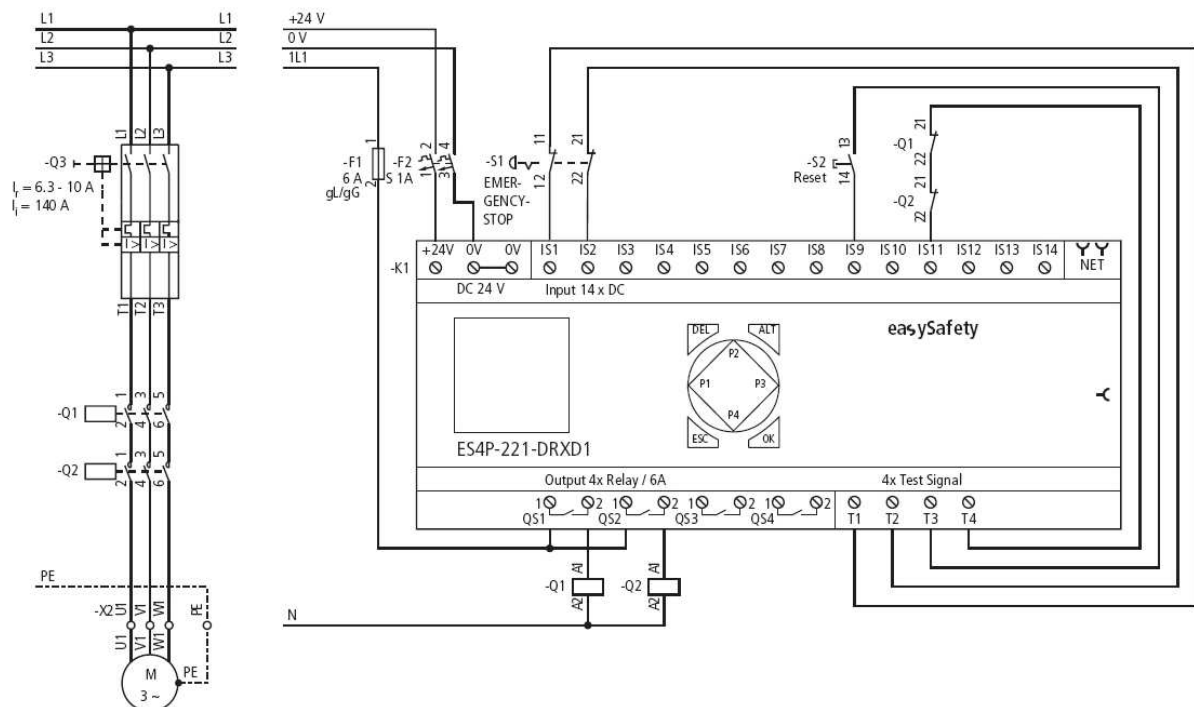This looks as follows in the electrical circuit diagram:

Figure 1: Electrical circuit diagram

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The signal diagram of the function block for this application shows:

• the dependence of the enable contact of EM01QS on the state of coils EM01OC and EM01FL.
• the relationship between exceeded monitoring time EM01DT and the error output EM01ER.
• the error acknowledgement with coil EM01RE.
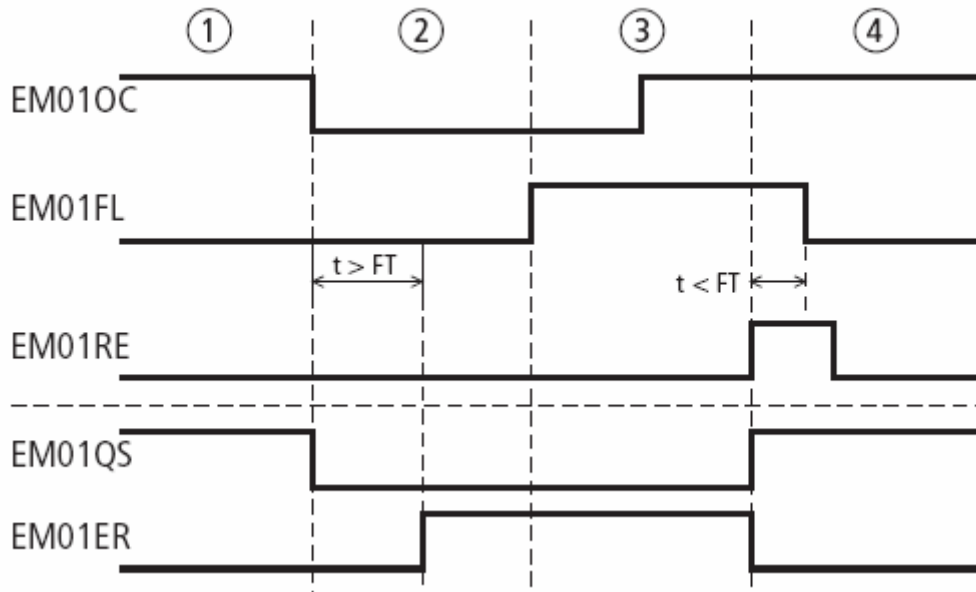• the re-enabling when the EM01RE reset coil picks up.

Figure 2: Signal diagram

1   Normal operation, emergency-stop not actuated
2   Emergency-stop actuated -> 0 signal at EM01OC -> EM01QS switches off the device outputs -> Feedback loop not active within the monitoring time (contactor stuck) -> EM01ER error output active.
3   Fault in feedback loop rectified, emergency-stop released, resulting in a 1 signal at EM01OC.
4   Actuating the Reset button clears the error status, the device outputs are switched on and the feedback loop opens within the monitoring time.

Please note: The master-password for the example file is: "111111".

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