

Function name: LC – Light curtain

Example - architecture of category 4 to EN 954-1 and ISO 13849-1

Monitoring of a 2-channel light curtain and cross-circuit monitoring of its external wiring.

The interruption of the light curtain triggers the protective function. After the area monitored by the light curtain is vacated, the controlled reenabling is completed by actuating the Reset key switch.

The discrepancy time is set to 0.5 seconds.

The make contacts of the light curtain B1 are connected to the device terminals IS2 and IS3 and are provided with the test signals T3 and T4.

Test signal T2 supplies the connected Reset button S1 connected to IS6.

The safety device outputs QS2 and QS4 switch the contactors Q1 and Q2 directly.

This looks as follows in the electrical circuit diagram:

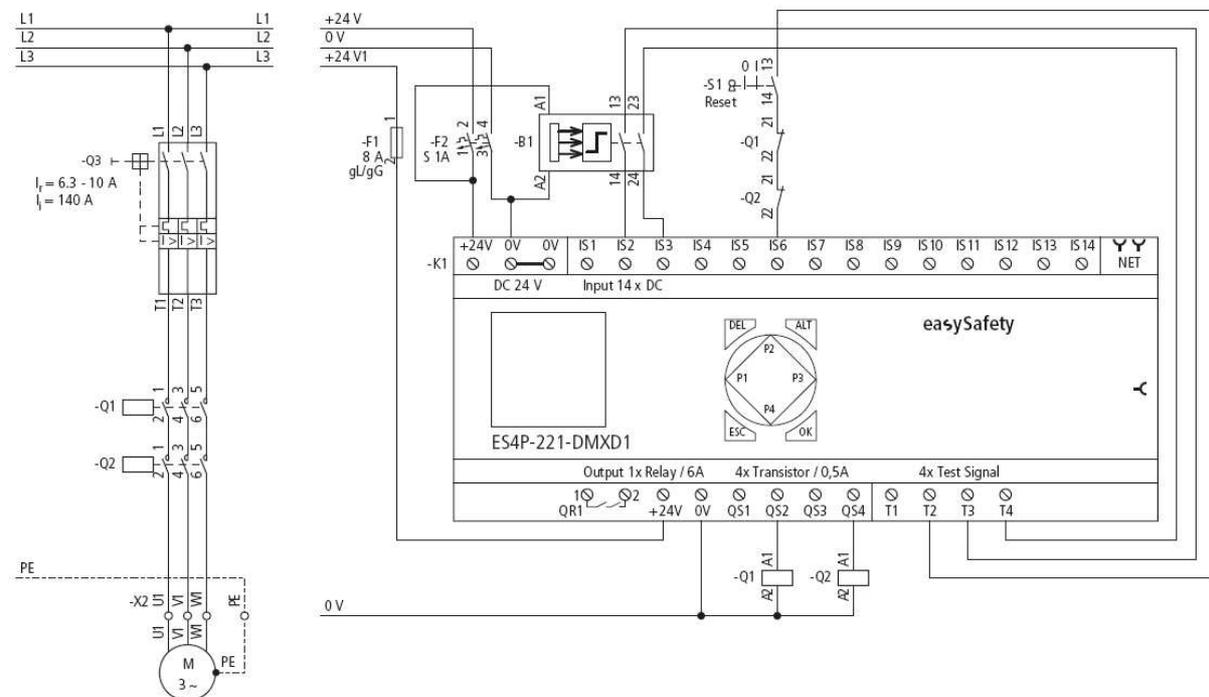


Figure 1: Electrical circuit diagram

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

- the dependence of the enable contact of LC01QS on the state of coils LC01I1 and LC01I2.
- the relationship between elapsed discrepancy time LC01DT and the error output LC01ER.
- the error acknowledgement with coils LC01I1 and LC01I2.
- the controlled re-enabling after the Reset coil LC01RE has dropped out.

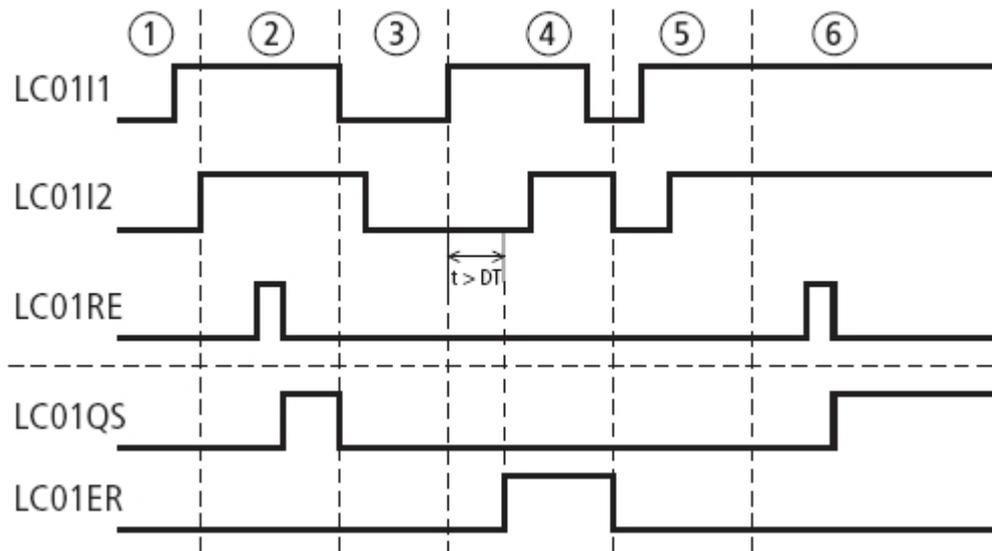


Figure 2: Signal diagram

- 1 Clearing of the light curtain.
- 2 Monitored enabling at the Reset coil, LC01QS initiates enable.
- 3 Intervention in the protected area of the light curtain with the removal of the enable.
- 4 Discrepancy time exceeded when the light curtain is cleared again: Error.
- 5 Acknowledgement of the error signal at LC01ER by repeated interruption of light curtain and dropping out of LC01I1 and LC01I2 within the discrepancy time DT of 0.5 seconds.
- 6 Monitored re-enabling after the Reset coil has dropped out.

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