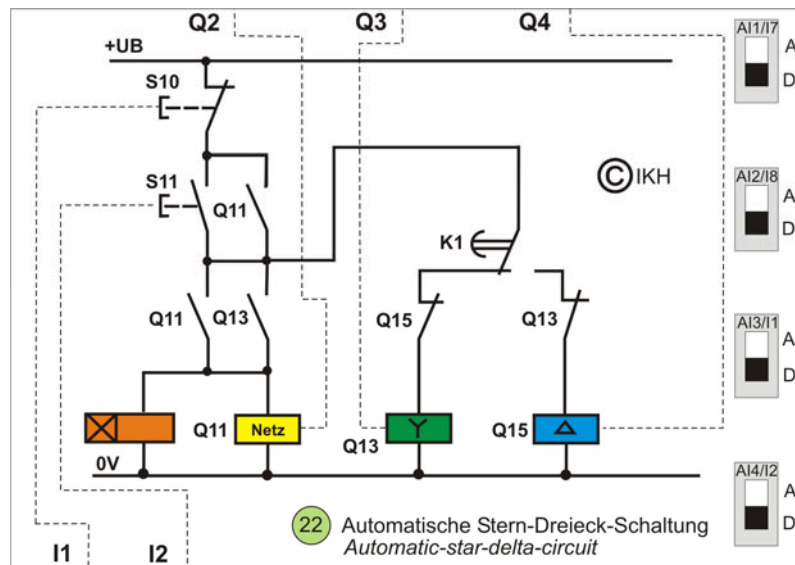


Automatic Star-Delta-Circuit with LOGO!Learn

Learning card: Automatic Star-Delta-Circuit



Operating description

A **Star-Delta-Circuit** is used to switch-on large squirrel cage motors because of the very high current which is prevalent if switched-on straight away. During the start-up of a motor working in delta-circuit mode the motor is temporarily operated by means of a (star) Y-circuit. Thereby the latching current and the torque are reduced during start-up to approximately 1/3 of the value compared to direct operation in delta-mode. Switching over to delta current mode can only take place once the motor has reached its full speed in (star) Y-circuit mode. If switch-over takes place too soon, a strong current surge is created and efficient switch-over is not achieved.

Correlation list		
Symbol	absolute	Comment
S10	I1	Button
S11	I2	Button
Q11	Q2	Mains-contactor
Q13	Q3	(Star)Y-contactor
Q15	Q4	Delta-contactor
K1		Switch-on delay

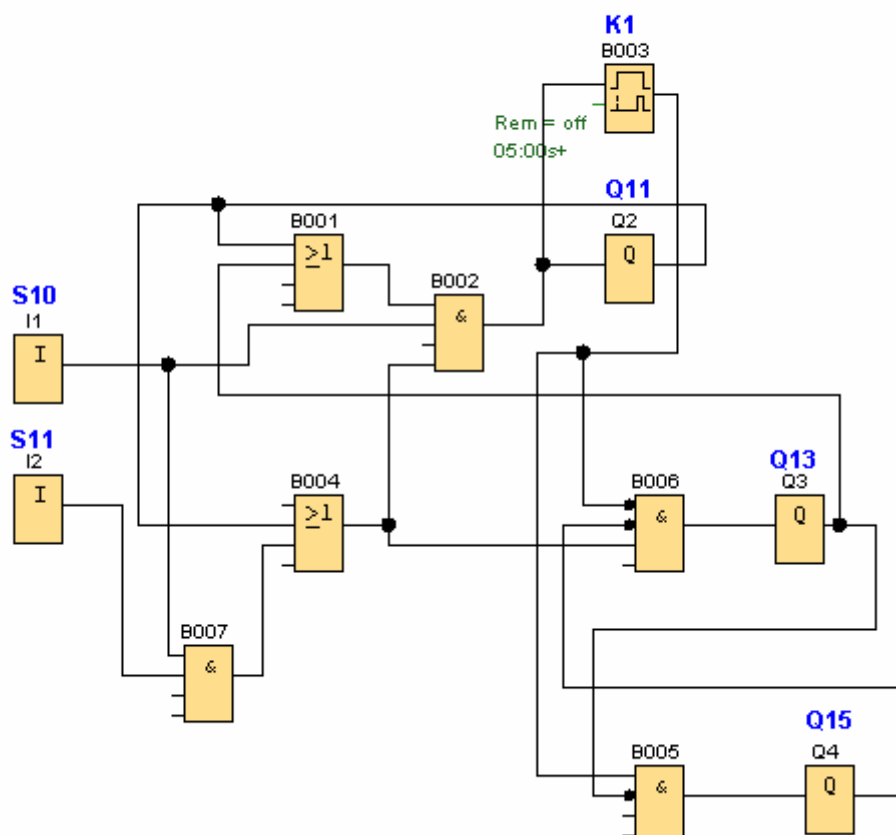
Exercise

Solution field 1 shows a suggested solution.

- Enter program according to function block diagram (solution field 1) into the programming unit (i.e. PC or keyboard) and transfer into LOGO!
- Test program
- Transfer the solution „FBD“ as „LAD“ (ladder diagram) into solution field 2.
- Enter program according to LAD (solution field 2) into the programming unit (i.e. PC or keyboard) and transfer into LOGO!
- Test program

Solution field 1

Automatische Stern-Dreieck-Schaltung



Solution field 2