

3-Belt Conveyor Control

Task definition

easy is required to control 3 conveyor belts.

Start is used to switch on the system and Stop to switch it off.

With Start switched on, the conveyor belts start up with a delay of two seconds (belt 1->2->3), as soon as an object is detected in front of the Conveyor start proximity switch. Each conveyor belt is on for 10 seconds after activation. If no object is reported at the Conveyor start proximity switch within this time, the conveyor belts switch off automatically with a 10-second delay (belt 1->2->3).

The daily unit quantity of transported parts is counted at the end of conveyor belt 3 at the Belt 3 proximity switch. The monitored quantity is also retained in the event of a power failure. The daily quantity value is cleared at the end of the day (23:59 pm).

If a fault occurs when the conveyor system is switched on (Emergency-Stop or motor-protective circuit-breaker tripped), the outputs Q01 to Q03 are deactivated and a fault signal is output via Q04.

The fault signal has a fast pulse frequency (flashing 0.5 seconds) and a slow pulse frequency (flashing 1 second):

The fast pulse indicates an actuated Emergency-Stop and the slow pulse a tripped motor-protective circuit-breaker. If both faults occur simultaneously, the Emergency-Stop signal has priority. A fault signal remains active until you have rectified the fault and reset the fault message via Fault reset.

When the system is switched on and there is no fault signal, a text display is activated to show the currently recorded daily quantity.

If a fault signal is output, an appropriate text display is activated for the fault signal concerned. This text display stays activated until the fault has been rectified and reset.

Device class used

easy500

Wiring

Inputs

I01 Start button
I02 Stop button
I03 Conveyor start proximity switch
I04 Belt 3 proximity switch
I05 Motor protection 1-3 aux. contact
I06 Run empty button
I07 Emergency-stop button
I08 Fault reset button

Outputs

Q01 Belt 1 motor
Q02 Belt 2 motor
Q03 Belt 3 motor
Q04 Fault indicator light

Parameters

C05 Daily unit quantity
H01 Counter reset (night)
T01 Pulse generation
T02 Belt 1 operation
T03 Belt 2 delay
T04 Belt 2 operation
T05 Belt 3 delay
T06 Belt 3 operation
T07 Emergency-Stop fault signal pulse
T08 Motor fault signal pulse