

Control for 8 shutters - with central control and manual / automatic mode, controlled by LOGO! TD Textdisplay -

Highlights:

- Manual mode/ automatic mode
- Operation of each shutter locally
- Central control for UP / DOWN (by pushbutton or LOGO! TD)
- Central control for UP / DOWN (by time switch)
- Vary the switching time for central UP / DOWN to simulate presence of the inhabitants
- Locking the shutters for maintenance jobs (e.g. cleaning windows)

Functioning:

MANUAL MODE:

Two commercial pushbuttons are intended for each shutter (1x UP, 1x DOWN).
With operation of a pushbutton, the corresponding shutter moves in the desired direction for a defined time (here 40 sec.) until end position.
Because the motors have integrated limit switches, this time can be longer than the maximum operation time UP <-> DOWN without having trouble.
At operation of the opposite direction the motor activity stops immediately.
Additionally there are several possibilities available to move all 8 shutters simultaneously:
- by wired pushbuttons I17 / I18
- by function keys of the LOGO! TD Textdisplay
- (LOGO! Cursor keys would also be possible)


AUTOMATIC MODE:

The shutters are addressed additionally by a time switch (B057).
Thus, in the morning starting from 6:30 am, all shutters are opened and closed in the evening starting from 9:30 pm (B057, Cam 1).
On weekend all shutters are opened from 7:30 am and closed from 10:00 pm (B057, Cam 2).
By random generator (B095) the time of opening/closing is extended by max. 30 minutes, in order to vary the opening/closing temporally.
This implies the residents would be at home.

LOCKING THE SHUTTERS:

To lock the shutters for maintenance jobs (e.g. cleaning windows), function key F3 of the LOGO! TD is allocated. Additionally also a key switch (optional) can be used.
If the function key F3 is pressed or if the contact of the key switch is closed, hence the outputs are locked.

The message texts B135 and B136 indicate, if the system is in manual mode or in automatic mode. Additionally it is displayed, which function keys has to be pressed to open (F1) or to close (F2) the shutters. In line 4 it is alternately represented that with F4 between manual/automatic mode can be toggled and that with F3 the movement of the shutters can be locked.
If the shutters have been locked by F3, this is indicated by the message text B144.

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Inputs:

I1: Pushbutton shutter 1 UP
I2: Pushbutton shutter 1 DOWN
I3: Pushbutton shutter 2 UP
I4: Pushbutton shutter 2 DOWN
.
.

I15: Pushbutton shutter 8 UP
I16: Pushbutton shutter 8 DOWN
I17: Pushbutton all shutters UP
I18: Pushbutton all shutters DOWN
I19: Pushbutton Manual/Automatic mode
I20: Key switch for locking all shutters (maintenance)

F1: Central control (UP)
F2: Central control (DOWN)
F3: Locking all shutters (maintenance)
F4: Manual / automatic mode

Outputs:

Q1: Shutter 1 UP
Q2: Shutter 1 DOWN
Q3: Shutter 2 UP
Q4: Shutter 2 DOWN
.
.

Q13: Shutter 7 UP
Q14: Shutter 7 DOWN
Q15: Shutter 8 UP
Q16: Shutter 8 DOWN

**Editing the input/output names:
"Edit > Input/Output Names"**

Hints for the parameters:

- Maximum operating time of the shutters you can adjust in the following function blocks:


Shutter 1: B063, B062
Shutter 2: B010, B008
Shutter 3: B026, B025
Shutter 4: B039, B038
Shutter 5: B051, B050
Shutter 6: B068, B067
Shutter 7: B081, B080
Shutter 8: B093, B092

Time switch: B057
Random generator: B095

-Switching to the opposite direction as consequence always causes a delay of 0.5 seconds to protect the motors (see function blocks B016, B018, B003, B005, B020, B022, B033, B035, B045, B047, B058, B064, B075, B077, B087, B089).

**Tip:
easier locating of parameters by clicking at
"Edit > Go to Block"**

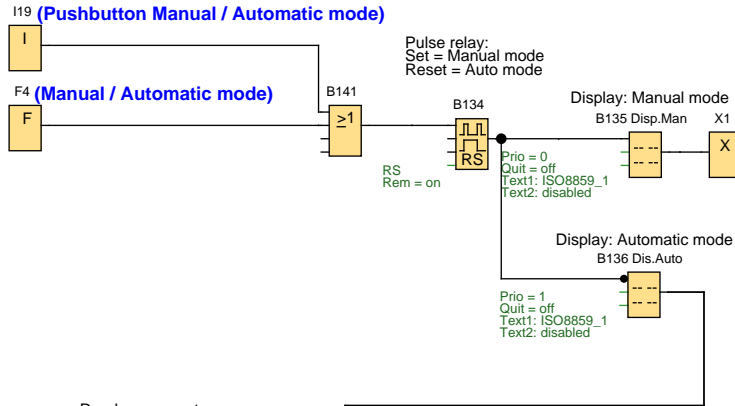
Used Componets:
LOGO! 12/24 RC (8I, 4O)
LOGO! DM16 24R (8I, 8O)
LOGO! DM8 12/24R (4I, 4O)
LOGO! TD Textdisplay
LOGO! Power 24V / 2.5A
> other combinations are possible! <

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Control part: Central control

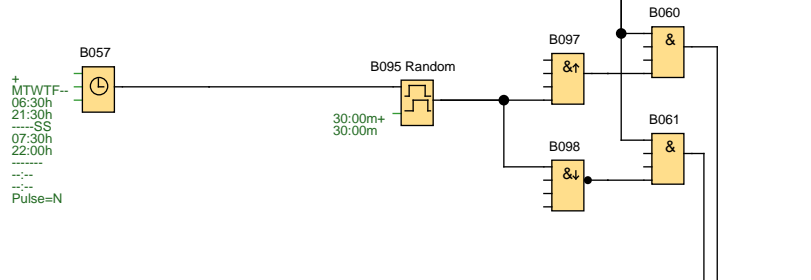
Toggle between Manual / Automatic mode

either by
 - digital input I19 or
 - LOGO! TD Funktion key F4



On weekdays from 6:30h am all shutters move up and from 9:30h pm they move down (extended by the random timer B095). On weekend from 7:30 am UP, from 10:00 pm DOWN.

Random generator: time-delay of max. 30 minutes for opening / closing of the shutters

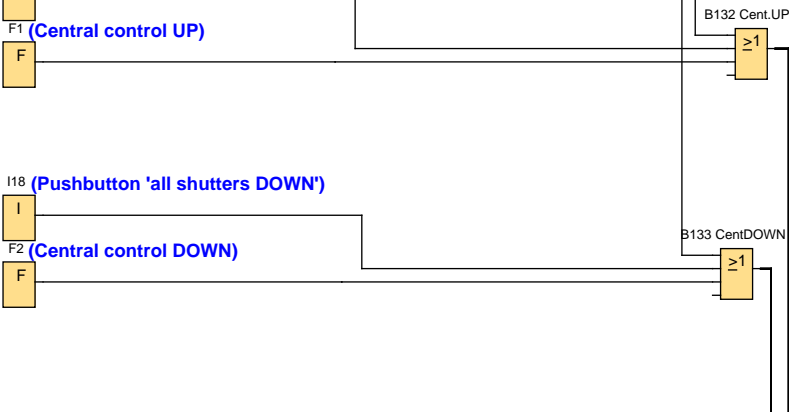


117 (Pushbutton 'all shutters UP')

F1 (Central control UP)

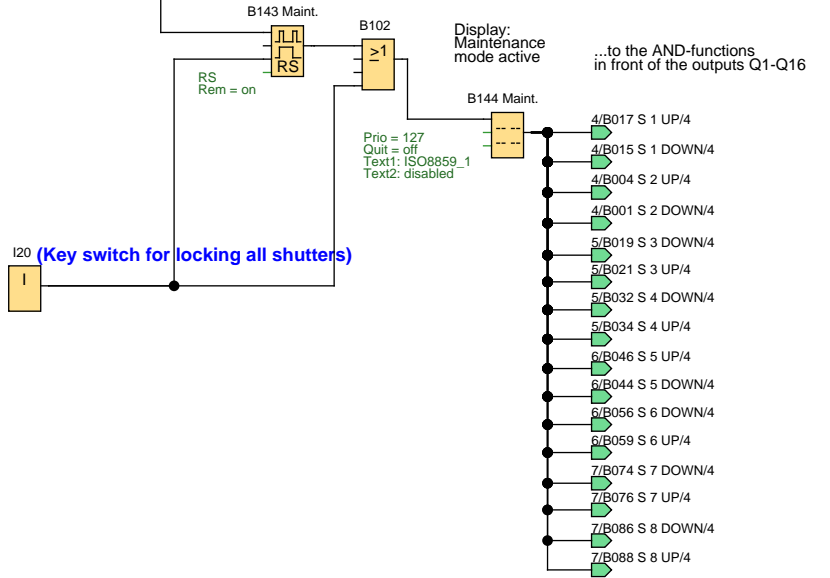
118 (Pushbutton 'all shutters DOWN')

F2 (Central control DOWN)



F3 (Locking all shutters for maintenance)

Pulse relay:
 Set = Shutters are locked
 Reset = Shutters are enabled



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Control part: Operation of each shutter locally

Shutter 1

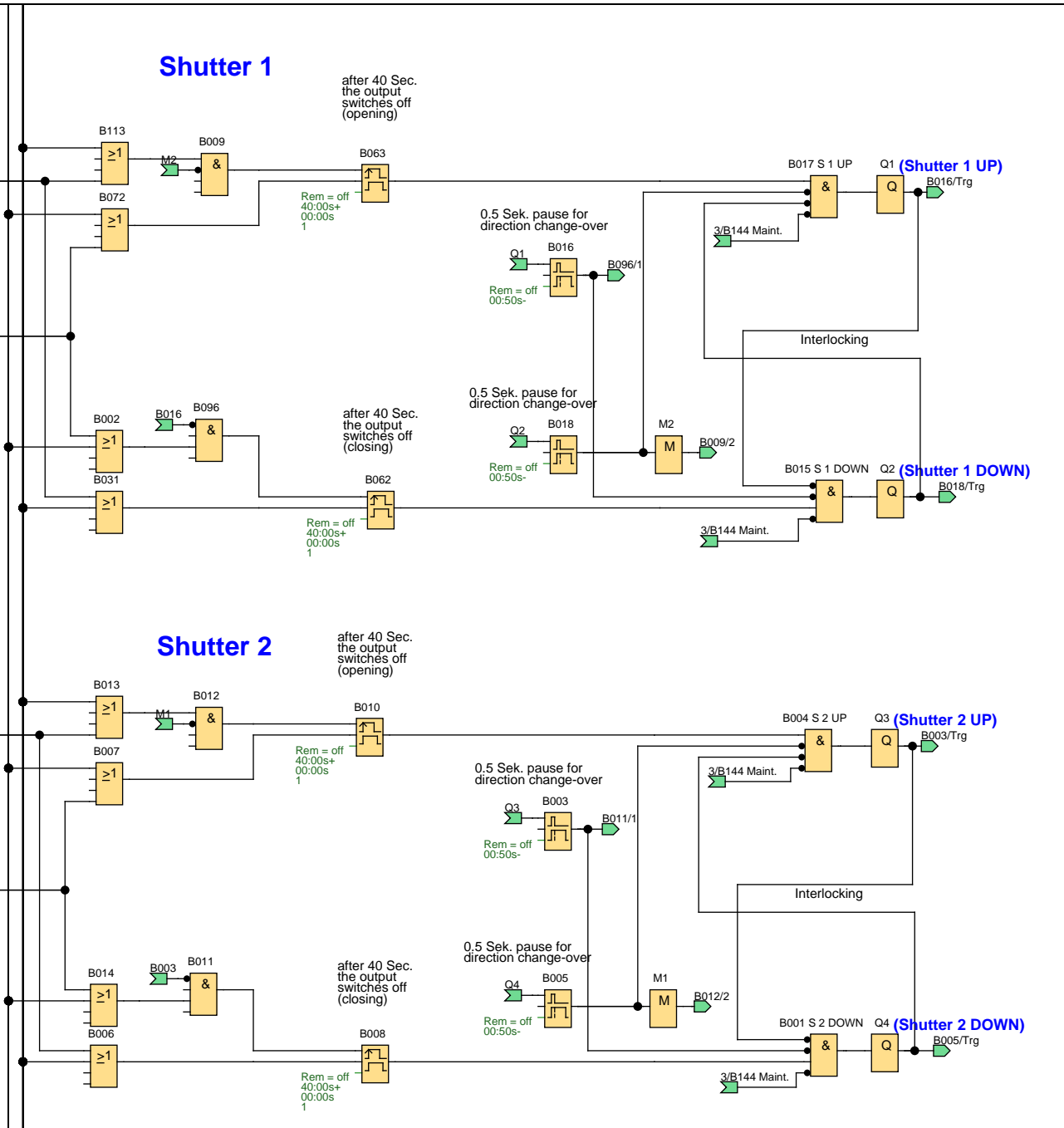
I1 (Pushbutton shutter 1 UP)

I2 (Pushbutton shutter 1 DOWN)

Shutter 2

I3 (Pushbutton shutter 2 UP)

I4 (Pushbutton shutter 2 DOWN)



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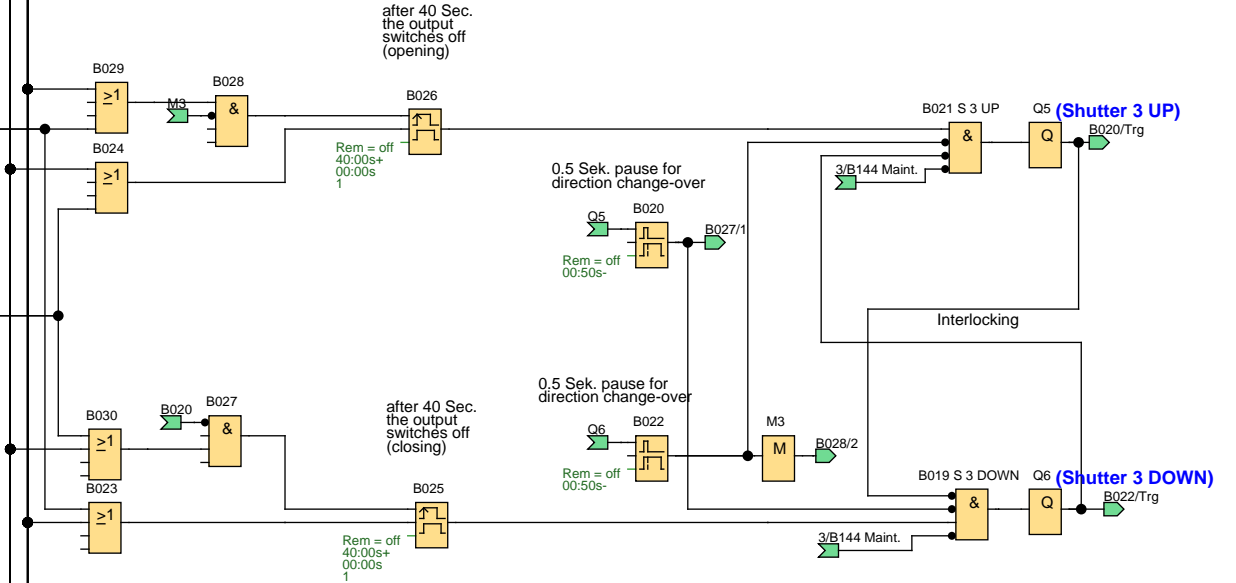
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Shutter 3

15 (Pushbutton shutter 3 UP)

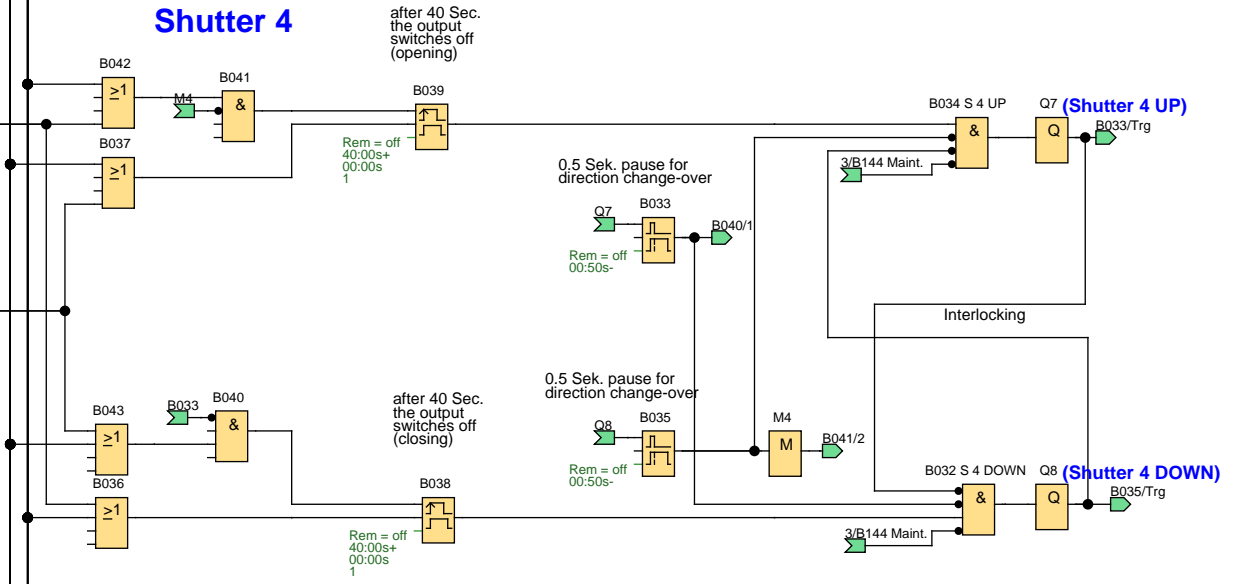
16 (Pushbutton shutter 3 DOWN)



Shutter 4

17 (Pushbutton shutter 4 UP)

18 (Pushbutton shutter 4 DOWN)

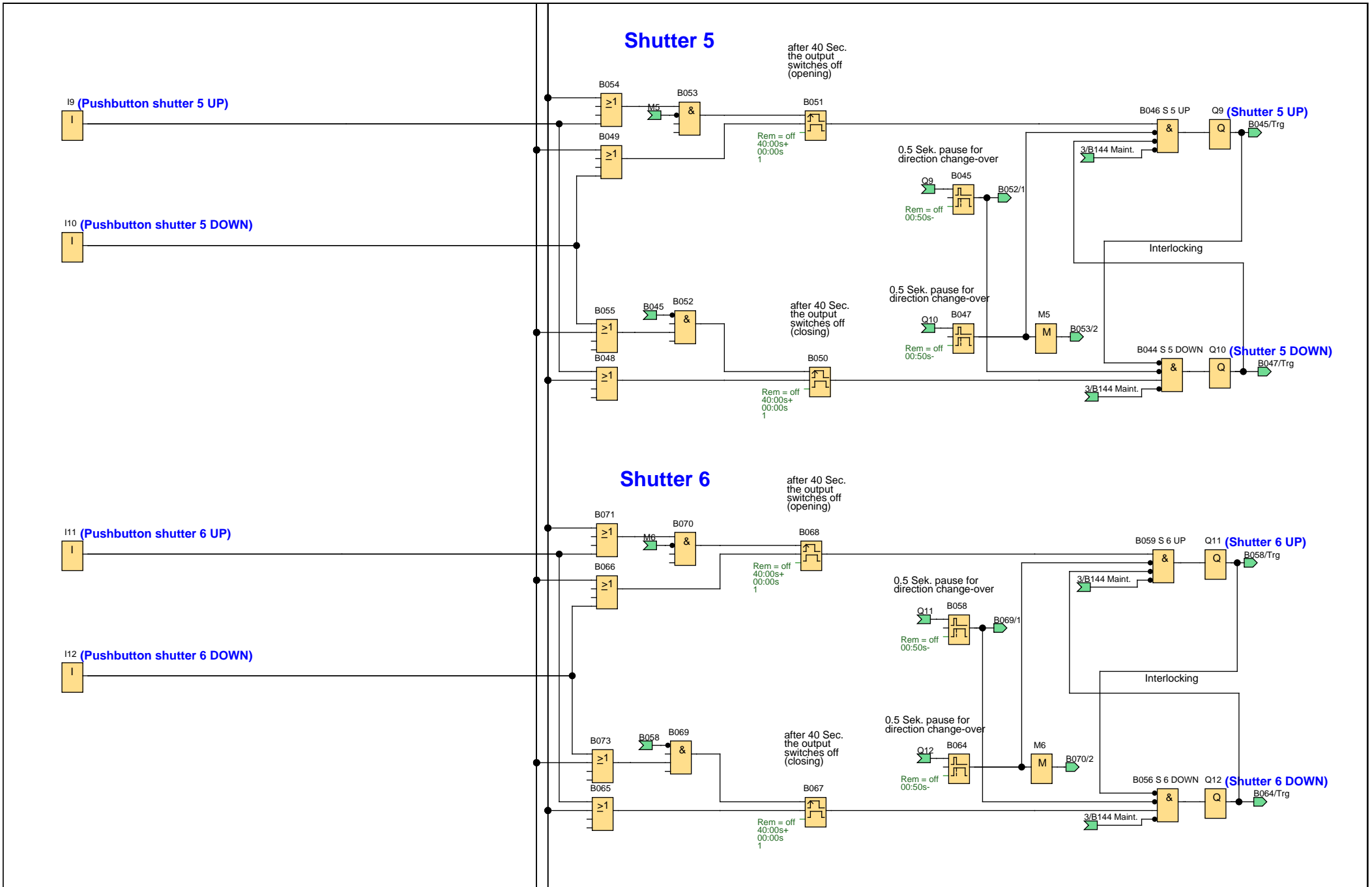


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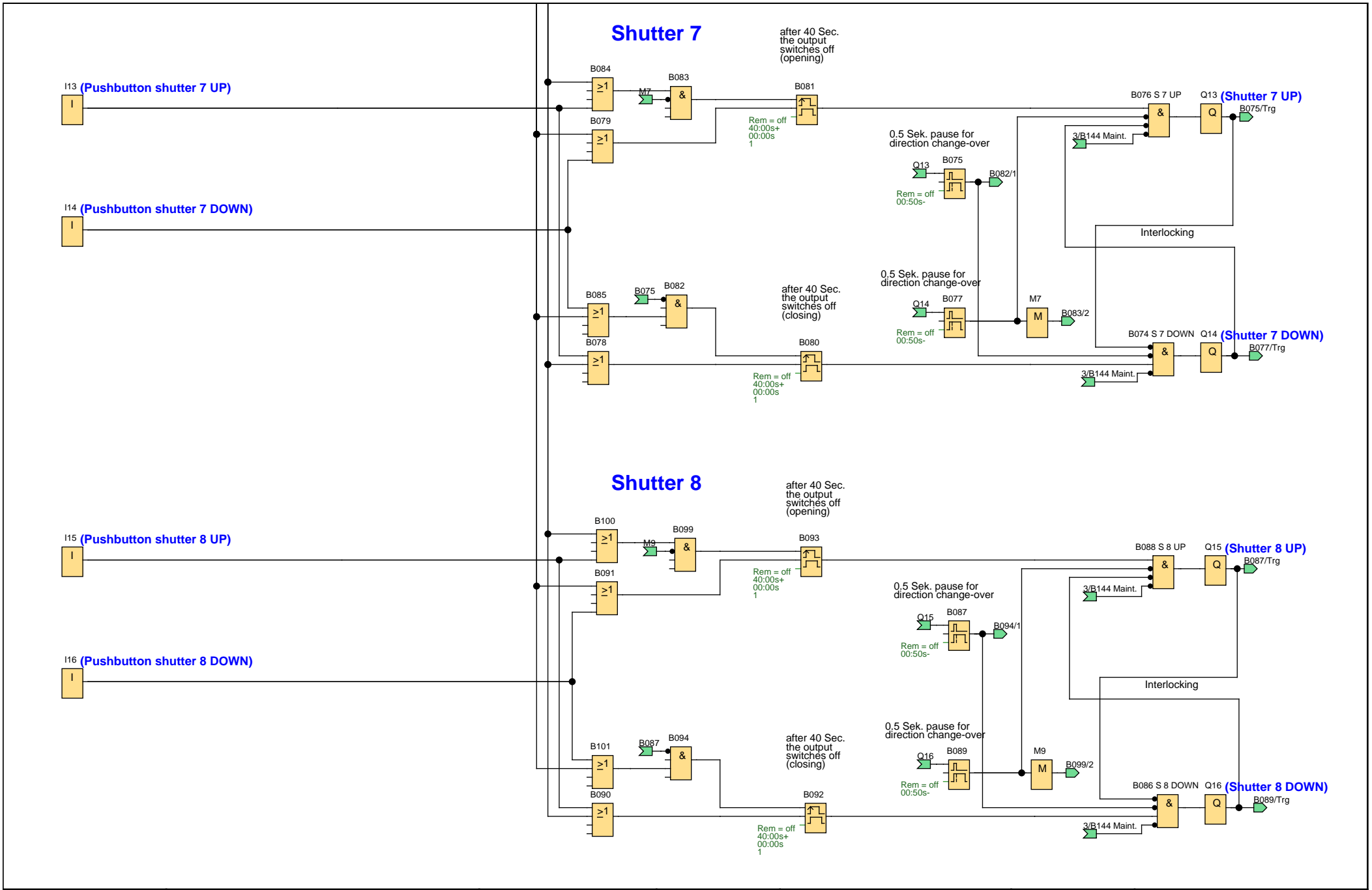


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SIEMENS AG- Beispielprogramm

Warnung und Haftungsausschluss

Siemens AG
Programmbeispiel ohne Gewähr

Warnung:
Steuerungen können bei unsicheren Betriebszuständen ausfallen und dadurch den unkontrollierten Betrieb der gesteuerten Geräte verursachen. Solche gefährliche Ereignisse können zu tödlichen und/oder schweren Verletzungen und/oder Sachschaden führen. Sorgen Sie daher für eine NOT-AUS-Funktion, elektrische oder andere redundante Sicherheitseinrichtungen, die von Ihrem Automatisierungssystem unabhängig sind.

Haftungsausschluss:
Jeder Anwender ist für den sachgemäßen Betrieb seines LOGO-Systems selbst verantwortlich. Dieses Programm enthebt Sie nicht der Verpflichtung zu sicherem Umgang bei Anwendung, Installation, Betrieb und Wartung. Durch die Nutzung dieses von der Siemens AG erstellten Programm-Beispiels erkennen Sie an, daß die Siemens AG unter keinen Umständen für möglicherweise infolge der Nutzung auftretende Sach- und/oder Personenschäden haftbar gemacht werden kann.


SIEMENS AG- Example Program

Warning and Disclaimer of Liability

Siemens AG
Example Program without Liability

Warning:
Unsafe operating conditions can cause controllers to fail, resulting in unchecked operation of controlled devices. Such hazardous events can cause death and/or serious injury and/or material damage. You must therefore provide an emergency stop function and electric or other redundant safety devices that are independent of your automation system.




Disclaimer of Liability:
Users are solely responsible for the correct operation of their LOGO! systems. This program does not relieve you of the obligation to observe safe practices during implementation, installation, operation, and maintenance. By using this example program created by Siemens AG you acknowledge that Siemens AG cannot under any circumstances be held liable for any possible personal injury or material damage resulting from the use of this program.

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Block Number (Type)	Parameter
B003(Off-Delay) : 0,5 Sek. pause for direction change-over	Rem = off 00:50s-
B005(Off-Delay) : 0,5 Sek. pause for direction change-over	Rem = off 00:50s-
B008(Edge triggered wiping relay) : after 40 Sec. the output switches off (closing)	Rem = off 40:00s+ 00:00s 1
B010(Edge triggered wiping relay) : after 40 Sec. the output switches off (opening)	Rem = off 40:00s+ 00:00s 1
B016(Off-Delay) : 0,5 Sek. pause for direction change-over	Rem = off 00:50s-
B018(Off-Delay) : 0,5 Sek. pause for direction change-over	Rem = off 00:50s-
B020(Off-Delay) : 0,5 Sek. pause for direction change-over	Rem = off 00:50s-
B022(Off-Delay) : 0,5 Sek. pause for direction change-over	Rem = off 00:50s-
B025(Edge triggered wiping relay) : after 40 Sec. the output switches off (closing)	Rem = off 40:00s+ 00:00s 1
B026(Edge triggered wiping relay) : after 40 Sec. the output switches off (opening)	Rem = off 40:00s+ 00:00s 1
B033(Off-Delay) : 0,5 Sek. pause for direction change-over	Rem = off 00:50s-
B035(Off-Delay) : 0,5 Sek. pause for direction change-over	Rem = off 00:50s-
B038(Edge triggered wiping relay) : after 40 Sec. the output switches off (closing)	Rem = off 40:00s+ 00:00s 1
B039(Edge triggered wiping relay) : after 40 Sec. the output switches off (opening)	Rem = off 40:00s+ 00:00s 1
B045(Off-Delay) : 0,5 Sek. pause for direction change-over	Rem = off 00:50s-
B047(Off-Delay) : 0,5 Sek. pause for direction change-over	Rem = off 00:50s-
B050(Edge triggered wiping relay) : after 40 Sec. the output switches off (closing)	Rem = off 40:00s+ 00:00s 1
B051(Edge triggered wiping relay) : after 40 Sec. the output switches off (opening)	Rem = off 40:00s+ 00:00s 1

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Block Number (Type)	Parameter
B057(Weekly Timer) : On weekdays from 6:30h am all shutters move up and from 9:30h pm they move down (extended by the random timer B095). On weekend from 7:30 am UP, from 10:00 pm DOWN.	+ MTWTF-- 06:30h 21:30h ----SS 07:30h 22:00h ----- -:-:- -:-:- Pulse=N
B058(Off-Delay) : 0.5 Sek. pause for direction change-over	Rem = off 00:50s-
B062(Edge triggered wiping relay) : after 40 Sec. the output switches off (closing)	Rem = off 40:00s+ 00:00s 1
B063(Edge triggered wiping relay) : after 40 Sec. the output switches off (opening)	Rem = off 40:00s+ 00:00s 1
B064(Off-Delay) : 0.5 Sek. pause for direction change-over	Rem = off 00:50s-
B067(Edge triggered wiping relay) : after 40 Sec. the output switches off (closing)	Rem = off 40:00s+ 00:00s 1
B068(Edge triggered wiping relay) : after 40 Sec. the output switches off (opening)	Rem = off 40:00s+ 00:00s 1
B075(Off-Delay) : 0.5 Sek. pause for direction change-over	Rem = off 00:50s-
B077(Off-Delay) : 0.5 Sek. pause for direction change-over	Rem = off 00:50s-
B080(Edge triggered wiping relay) : after 40 Sec. the output switches off (closing)	Rem = off 40:00s+ 00:00s 1
B081(Edge triggered wiping relay) : after 40 Sec. the output switches off (opening)	Rem = off 40:00s+ 00:00s 1
B087(Off-Delay) : 0.5 Sek. pause for direction change-over	Rem = off 00:50s-
B089(Off-Delay) : 0.5 Sek. pause for direction change-over	Rem = off 00:50s-
B092(Edge triggered wiping relay) : after 40 Sec. the output switches off (closing)	Rem = off 40:00s+ 00:00s 1
B093(Edge triggered wiping relay) : after 40 Sec. the output switches off (opening)	Rem = off 40:00s+ 00:00s 1
B095 Random(Random Generator) : Random generator: time-delay of max. 30 minutes for opening / closing of the shutters	30:00m+ 30:00m

Block Number (Type)	Parameter						
B134(Pulse Relay) : Pulse relay: Set = Manual mode Reset = Auto mode	RS Rem = on						
B135 Disp.Man(Message texts) : Display: Manual mode 	Prio = 0 Quit = off Text1: ISO8859_1 Text2: disabled Ticker setting - Line by line - Line1: N - Line2: N - Line3: N - Line4: Y Message Destination - Both						
B136 Dis.Auto(Message texts) : Display: Automatic mode 	Prio = 1 Quit = off Text1: ISO8859_1 Text2: disabled Ticker setting - Line by line - Line1: N - Line2: N - Line3: N - Line4: Y Message Destination - Both						
B143 Maint.(Pulse Relay) : Pulse relay: Set = Shutter are locked Reset = Shutter are enabled	RS Rem = on						
B144 Maint.(Message texts) : Display: Maintenance mode active 	Prio = 127 Quit = off Text1: ISO8859_1 Text2: disabled Ticker setting - Character by character - Line1: N - Line2: N - Line3: N - Line4: N Message Destination - Both						
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Connection	Label
I1	Pushbutton shutter 1 UP
I2	Pushbutton shutter 1 DOWN
I3	Pushbutton shutter 2 UP
I4	Pushbutton shutter 2 DOWN
I5	Pushbutton shutter 3 UP
I6	Pushbutton shutter 3 DOWN
I7	Pushbutton shutter 4 UP
I8	Pushbutton shutter 4 DOWN
I9	Pushbutton shutter 5 UP
I10	Pushbutton shutter 5 DOWN
I11	Pushbutton shutter 6 UP
I12	Pushbutton shutter 6 DOWN
I13	Pushbutton shutter 7 UP
I14	Pushbutton shutter 7 DOWN
I15	Pushbutton shutter 8 UP
I16	Pushbutton shutter 8 DOWN
I17	Pushbutton 'all shutters UP'
I18	Pushbutton 'all shutters DOWN'
I19	Pushbutton Manual / Automatic mode
I20	Key switch for locking all shutters
I21	
I22	
I23	
I24	
C1	
C2	
C3	
C4	
F1	Central control UP

Connection	Label
F2	Central control DOWN
F3	Locking all shutters for maintenance
F4	Manual / Automatic mode
S1	
S2	
S3	
S4	
S5	
S6	
S7	
S8	
A1	
A2	
A3	
A4	
A5	
A6	
A7	
A8	
Q1	Shutter 1 UP
Q2	Shutter 1 DOWN
Q3	Shutter 2 UP
Q4	Shutter 2 DOWN
Q5	Shutter 3 UP
Q6	Shutter 3 DOWN
Q7	Shutter 4 UP
Q8	Shutter 4 DOWN
Q9	Shutter 5 UP
Q10	Shutter 5 DOWN

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Connection	Label
Q11	Shutter 6 UP
Q12	Shutter 6 DOWN
Q13	Shutter 7 UP
Q14	Shutter 7 DOWN
Q15	Shutter 8 UP
Q16	Shutter 8 DOWN
AQ1	
AQ2	
X1	
X2	
X3	
X4	
X5	
X6	
X7	
X8	
X9	
X10	
X11	
X12	
X13	
X14	
X15	
X16	