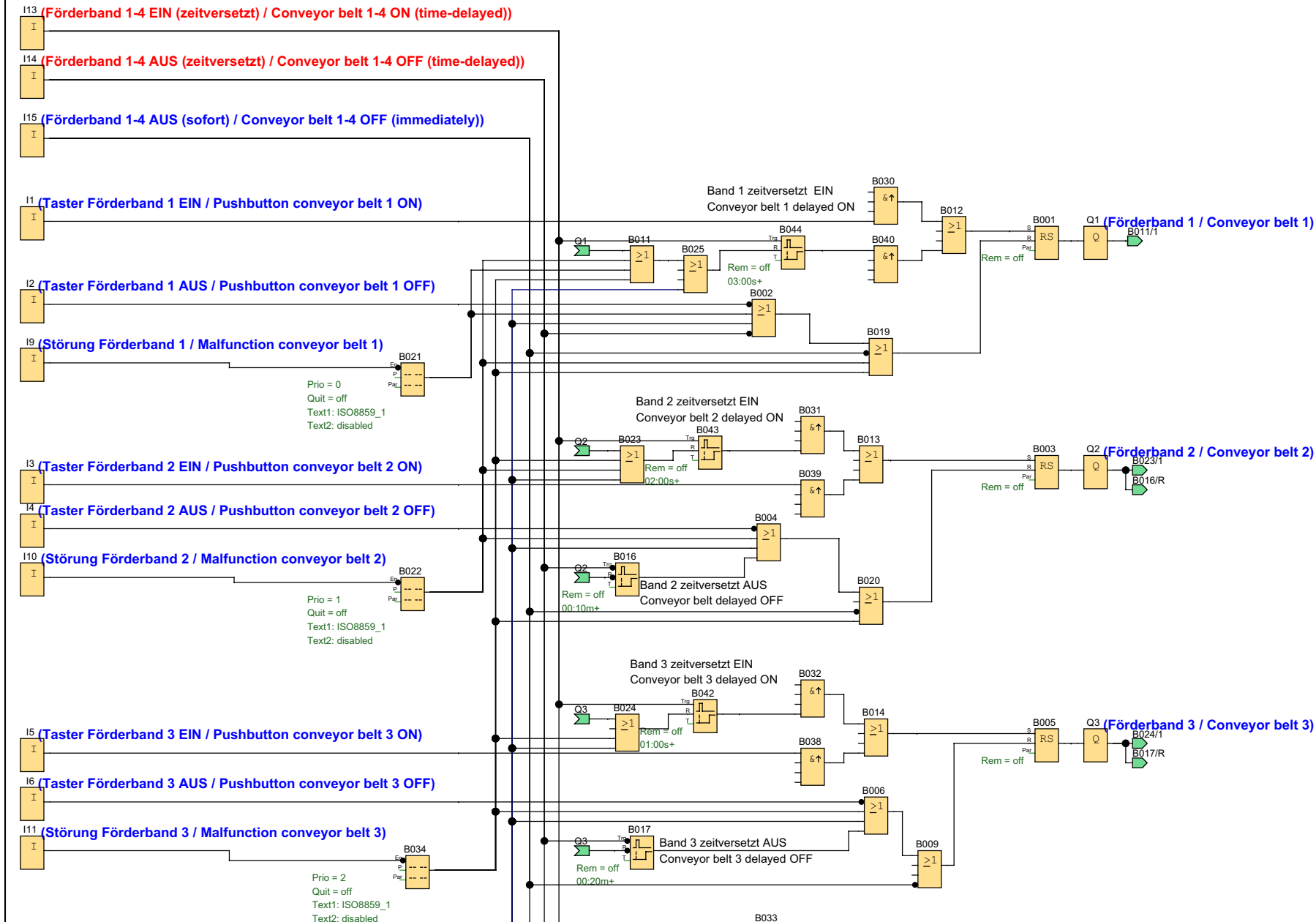


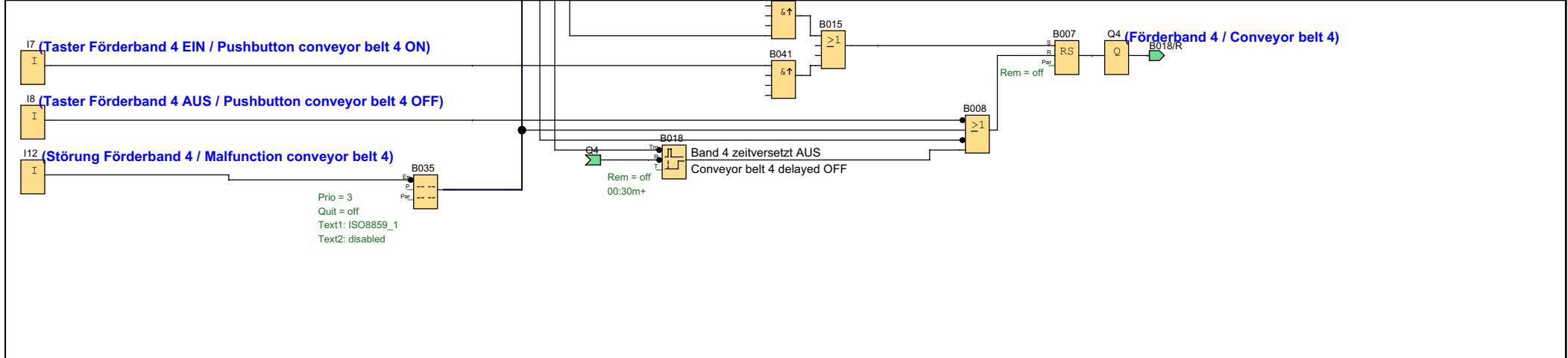
Steuerung von 4 hintereinandergeschalteten Förderbändern

Control system for 4 conveyor belts, connected in series



| | | | | | |
|----------|----------------------------------|---------------|--|--------------|------------|
| Creator: | ADBEJO0 | Project: | Steuerung von 4 hintereinandergeschalteten | Customer: | SIEMENS AG |
| Checked: | Beyer | Installation: | Control system for 4 conveyor belts, connected | Diagram No.: | |
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SIEMENS



Deutsch:

Anforderung:
Mit LOGO! sollen 4 Förderbänder gesteuert werden, um Sand über längere Strecken zu transportieren.
Dabei sollen die 4 Bänder durch einen Taster nacheinander anlaufen, durch einen weiteren Taster nacheinander wieder stoppen.
Wenn gestoppt wird, soll erst Förderband 1 anhalten damit nichts mehr nachtransportiert wird.
Dann muss nacheinander Förderband 2, 3 und 4 anhalten, damit alle Bänder noch leerlaufen, um beim nächsten Start nicht unter Vollast anlaufen zu müssen.
Hat ein Förderband eine Störung, werden die vorgeschalteten Bänder abgeschaltet.

Lösung mit LOGO!:

Es ist ein Taster I13 angeschlossen, um die 4 Förderbänder nacheinander zu starten.
Dabei läuft erst das Band 4 an, 1 Sek. später Band 3, 2 Sek. später Band 2, 3 Sek. später Band 1.
Über Taster I14 können die Förderbänder zeitversetzt gestoppt werden.
Dabei hält erst das Band 1 an, 10 Sek. später Band 2, usw.
Jedes Förderband kann aber auch zusätzlich vor Ort per Taster EIN/AUS geschaltet werden.

Ausserdem wird jede Komponente auf Störung überwacht (z.B. auf Überstrom). Wurde eine Störung gemeldet, wird im Display angezeigt wo die Störung vorliegt. Es muss dann erneut gestartet werden.

Bei einer Störung werden die nachfolgenden Bänder für deren Leerlauf weiterbetrieben.
Alle Bänder bis zur Störung werden abgeschaltet.
Beispiel:

- Störung Band 1: Band 2, Band 3, Band 4 laufen weiter
- Störung Band 2: Band 3, Band 4 laufen weiter
- Störung Band 3: Band 4 läuft weiter
- Störung Band 4: Alle 4 Bänder halten an

Verwendete Komponenten:

- LOGO! 230RC
- LOGO! DM16 230R
- I1 Taster Förderband 1 EIN (Schließer)
- I2 Taster Förderband 1 AUS (Öffner)
- I3 Taster Förderband 2 EIN (Schließer)
- I4 Taster Förderband 2 AUS (Öffner)
- I5 Taster Förderband 3 EIN (Schließer)
- I6 Taster Förderband 3 AUS (Öffner)
- I7 Taster Förderband 4 EIN (Schließer)
- I8 Taster Förderband 4 AUS (Öffner)
- I9 Störung Förderband 1 (Öffner)
- I10 Störung Förderband 2 (Öffner)
- I11 Störung Förderband 3 (Öffner)
- I12 Störung Förderband 4 (Öffner)
- I13 Förderband 1-4 zeitversetzt EIN (Schließer)
- I14 Förderband 1-4 zeitversetzt AUS (Öffner)
- I15 Förderband 1-4 sofort AUS (Öffner)

Änderung der Anschlussnamen unter
"Bearbeiten - Anschlussnamen"

English:

Requirements:

With LOGO! 4 conveyor belts shall be controlled to transport sand over long distances.

In this process one conveyor after another shall be started with one pushbutton and shall be stopped with another pushbutton.

If they are stopped, at first conveyor belt 1 shall stop so that no further sand is transported.

Then successively conveyor belt 2, 3 and 4 has to stop so that all conveyors run empty.

So they need not to restart the next time with full load.

If a conveyor belt has a malfunction, the previous conveyors will be switched off.

LOGO!-Solution:

A pushbutton I13 is connected to start the 4 conveyor belts successively.

If I13 is pressed, at first conveyor 4 starts running, 1 sec. later conveyor 3, 2 sec. later conveyor 2, 3 sec. later conveyor 1.

By pushbutton I14, the conveyor belts are able to be stopped time delayed.

In doing so, at first conveyor 1 stops, 10 sec. later conveyor 2, and so on.

It is also possible to switch every conveyor belt on/off locally by pushbutton.

Additionally every component is monitored on malfunctions (e.g. on overcurrent). If a malfunction is recognized, it is displayed where the malfunction has happened. Then it has to be started again.

In case of a malfunction, the following conveyors keep running to run them completely empty.

All conveyors to the point of malfunction will be switched off.

Example:

Malfunction conveyor 1: conveyor 2, conveyor 3, conveyor 4 keep running

Malfunction conveyor 2: conveyor 3, conveyor 4 keep running

Malfunction conveyor 3: conveyor 4 keeps running

Malfunction conveyor 4: all 4 conveyors stop

Used components:

- LOGO! 230RC

- LOGO! DM16 230R

- I1 pushbutton conveyor belt 1 ON (NO-contact)

- I2 pushbutton conveyor belt 1 OFF (NC-contact)

- I3 pushbutton conveyor belt 2 ON (NO-contact)

- I4 pushbutton conveyor belt 2 OFF (NC-contact)

- I5 pushbutton conveyor belt 3 ON (NO-contact)

- I6 pushbutton conveyor belt 3 OFF (NC-contact)

- I7 pushbutton conveyor belt 4 ON (NO-contact)

- I8 pushbutton conveyor belt 4 OFF (NC-contact)

- I9 malfunction conveyor belt 1 (NC-contact)

- I10 malfunction conveyor belt 2 (NC-contact)

- I11 malfunction conveyor belt 3 (NC-contact)

- I12 malfunction conveyor belt 4 (NC-contact)


- I13 conveyor belt 1-4 time-delayed ON (NO-contact)

- I14 conveyor belt 1-4 time-delayed OFF (NC-contact)

- I15 conveyor belt 1-4 immediately OFF (NC-contact)

Changing the input/output names:

"Edit - input/output names"

| | | | | | | |
|----------|----------------------------------|--|---------------|--|--------------|------------|
| Creator: | ADBEJO0 |  | Project: | Steuerung von 4 hintereinandergeschalteten | Customer: | SIEMENS AG |
| Checked: | Beyer | | Installation: | Control system for 4 conveyor belts, connected | Diagram No.: | |
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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, Instalation, Betrieb und Wartung. Durch die Nutzung dieses von der Siemens AG erstellten Programm-Beispieles 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.

| Block Number (Type) | Parameter |
|---|----------------------|
| B001 (Latching Relay) : | Rem = off |
| B003 (Latching Relay) : | Rem = off |
| B005 (Latching Relay) : | Rem = off |
| B007 (Latching Relay) : | Rem = off |
| B016 (Retentive On-Delay) : Band 2 zeitversetzt AUS Conveyor belt delayed OFF | Rem = off 00:10m+ |
| B017 (Retentive On-Delay) : Band 3 zeitversetzt AUS Conveyor belt 3 delayed OFF | Rem = off 00:20m+ |
| B018 (Retentive On-Delay) : Band 4 zeitversetzt AUS Conveyor belt 4 delayed OFF | Rem = off 00:30m+ |

| | | | |
|------------------------|--|---|--|
| B021 (Message texts) : | | Prio = 0 Quit = off Text1: ISO859_1 Text2: disabled | |
| | | --> Ticker setting - Line by line - Line1: Y - Line2: Y - Line3: Y - Line4: Y Message Destination - Both | |

[illegible]

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|----------|----------------------------------|--|--|---------------|-------------------------------|--------------|------------|
| Creator: | ADBEJO0 | | | Project: | Steuerung von 4 | Customer: | SIEMENS AG |
| Checked: | Beyer | | | Installation: | Control system for 4 conveyor | Diagram No.: | |
| Date: | 9/15/09 2:29 PM/1/22/10 10:45 AM | | | File: | control_system_for_4 | Page: | 5 |

| Block Number (Type) | | Parameter | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| B034 (Message texts) : | | Prio = 2 Quit = off Text1: ISO8859_1 Text2: disabled | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| B042 (Retentive On-Delay) : Band 3 zeitversetzt EIN Conveyor belt 3 delayed ON | | Rem = off 01:00s+ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| B043 (Retentive On-Delay) : Band 2 zeitversetzt EIN Conveyor belt 2 delayed ON | | Rem = off 02:00s+ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| B044 (Retentive On-Delay) : Band 1 zeitversetzt EIN Conveyor belt 1 delayed ON | | Rem = off 03:00s+ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Creator: ADBEJO | | Project: Steuerung von 4 | Customer: SIEMENS AG | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Checked: Beyer | | Installation: control_system_for_4 conveyor | Diagram No.: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Date: 9/15/09 2:29 PM/1/22/10 10:45 AM | | File: | Page: 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SIEMENS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Connection | Label |
|------------|--|
| I1 | Taster Förderband 1 EIN / Pushbutton conveyor belt 1 ON |
| I2 | Taster Förderband 1 AUS / Pushbutton conveyor belt 1 OFF |
| I3 | Taster Förderband 2 EIN / Pushbutton conveyor belt 2 ON |
| I4 | Taster Förderband 2 AUS / Pushbutton conveyor belt 2 OFF |
| I5 | Taster Förderband 3 EIN / Pushbutton conveyor belt 3 ON |
| I6 | Taster Förderband 3 AUS / Pushbutton conveyor belt 3 OFF |
| I7 | Taster Förderband 4 EIN / Pushbutton conveyor belt 4 ON |
| I8 | Taster Förderband 4 AUS / Pushbutton conveyor belt 4 OFF |
| I9 | Störung Förderband 1 / Malfunction conveyor belt 1 |
| I10 | Störung Förderband 2 / Malfunction conveyor belt 2 |
| I11 | Störung Förderband 3 / Malfunction conveyor belt 3 |
| I12 | Störung Förderband 4 / Malfunction conveyor belt 4 |
| I13 | Förderband 1-4 EIN (zeitversetzt) / Conveyor belt 1-4 ON (time-delayed) |
| I14 | Förderband 1-4 AUS (zeitversetzt) / Conveyor belt 1-4 OFF (time-delayed) |
| I15 | Förderband 1-4 AUS (sofort) / Conveyor belt 1-4 OFF (immediately) |
| I16 | |
| I17 | |
| I18 | |
| I19 | |
| I20 | |
| I21 | |
| I22 | |
| I23 | |
| I24 | |
| C1▲ | |
| C2▼ | |
| C3◄ | |
| C4► | |
| F1 | |
| F2 | |
| F3 | |
| F4 | |
| S1 | |
| S2 | |
| S3 | |

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| Creator: | ADBE/IO0 |  | | | | Customer: | SIEMENS AG |
| Checked: | Beyer | | | | | Diagram No.: | |
| Date: | 9/15/09 2:29 PM/1/22/10 10:45 AM | Project: | Installation: | Steuerung von 4 | Control system for 4 conveyor | Page: | 7 |
| | | File: | | control_system_for_4 | | | |

| Connection | Label |
|------------|--------------------------------|
| S4 | |
| S5 | |
| S6 | |
| S7 | |
| S8 | |
| AI1 | |
| AI2 | |
| AI3 | |
| AI4 | |
| AI5 | |
| AI6 | |
| AI7 | |
| AI8 | |
| Q1 | Förderband 1 / Conveyor belt 1 |
| Q2 | Förderband 2 / Conveyor belt 2 |
| Q3 | Förderband 3 / Conveyor belt 3 |
| Q4 | Förderband 4 / Conveyor belt 4 |
| Q5 | |
| Q6 | |
| Q7 | |
| Q8 | |
| Q9 | |
| Q10 | |
| Q11 | |
| Q12 | |
| Q13 | |
| Q14 | |
| Q15 | |
| Q16 | |
| AQ1 | |
| AQ2 | |
| X1 | |
| X2 | |
| X3 | |
| X4 | |

| | | | | | | | |
|----------|----------------------------------|---|----------------------|-----------------|-------------------------------|--------------|------------|
| Creator: | ADBE/IO0 |  | | | | Customer: | SIEMENS AG |
| Checked: | Beyer | Project: | Installation: | Steuerung von 4 | Control system for 4 conveyor | Diagram No.: | |
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| Connection | Label |
|------------|-------|
| | |
| X5 | |
| X6 | |
| X7 | |
| X8 | |
| X9 | |
| X10 | |
| X11 | |
| X12 | |
| X13 | |
| X14 | |
| X15 | |
| X16 | |

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|----------|----------------------------------|---|-------------------------------|--|--|--------------|------------|
| Creator: | ADBE/00 |  | | | | Customer: | SIEMENS AG |
| Checked: | Beyer | | | | | Diagram No.: | |
| Date: | 9/15/09 2:29 PM/1/22/10 10:45 AM | | | | | Page: | 9 |
| | | Project: | Steuerung von 4 | | | | |
| | | Installation: | Control system for 4 conveyor | | | | |
| | | File: | control_system_for_4 | | | | |