



Mount the terminal block on spare DIN rail space.  
Use the terminal block to distribute the 24V supply.

This EtherCAT chassis uses copper only.  
Mount the modular adapters to the front panel.  
Using CAT5 patch cables:

- Connect the front panel input to the input of the first modbus gateway (left rail).
- Connect the first modbus gateway to the second one (left rail).
- Connect the second modbus gateway to the first coupler (left rail).
- Connect the front panel output to the output of the last coupler (right rail).
- Connect the output of the first coupler to the input of the second one.
- Connect the output of the second coupler to the input of the third one.
- Connect the modbus outputs to the corresponding ports.

### Ports

IN

OUT

1A

2A

3A

PN1  
EtherCAT chassis  
LIGO  
D0902552-v3

PN6  
Ethernet patch cable, 1'

PN11  
Ethernet patch cable, 1'

PN14  
Modular coupler  
L-Com  
ECF504-SC5E

PN19  
Modular coupler

PN24  
Modular coupler

PN2  
Name Plate  
LIGO  
D1102269-v1

PN7  
Ethernet patch cable, 1'  
PN8  
Ethernet patch cable, 1'  
PN9  
Ethernet patch cable, 1'

PN12  
Ethernet patch cable, 1'  
Newark  
21M5658

1B

2B

3B

PN15  
Modular coupler

PN20  
Modular coupler

PN25  
Modular coupler

PN3  
Front Panel (alt)  
LIGO  
D1102322-v1

CAT5  
Corner

CAT5  
Corner

PN16  
Ethernet patch cable, 1'  
PN17  
Ethernet patch cable, 3'

CAT5  
Modbus

PN21  
Ethernet patch cable, 1'  
PN22  
Ethernet patch cable, 3'

CAT5  
Modbus

PN26  
Ethernet patch cable, 1'  
PN27  
Ethernet patch cable, 1'

CAT5  
Modbus

PN4  
Rear Panel (alt)  
LIGO  
D1102268-v1

### TBLOCK

PN32 Terminal Block  
PN33 Terminal Block  
PN34 Terminal Block  
PN35 Terminal Block  
PN36 Terminal Block  
Digi-Key  
277-1483-ND

PN38 Terminal Block  
PN39 Terminal Block  
PN40 Terminal Block  
PN41 Terminal Block  
PN42 Terminal Block  
PN43 Jumper, 10pos  
PN44 Jumper, 10pos  
Digi-Key  
277-1494-ND

PN46 Terminal Block  
PN47 Terminal Block  
PN48 Terminal Block  
PN49 Terminal Block  
PN50 Terminal Block  
Digi-Key  
277-1483-ND

PN53 Terminal Block  
PN54 Terminal Block  
PN55 Terminal Block  
PN56 Terminal Block  
PN57 Terminal Block  
PN58 Jumper, 10pos  
PN59 Jumper, 10pos  
Digi-Key  
277-1494-ND

PN37 End Plate  
Digi-Key  
277-1495-ND

PN51 End Plate  
Digi-Key  
277-1495-ND

### Slots

1

2

3

4

5

6

7

8

9

10

11

12

13

PN5  
Picomotor adapter  
LIGO  
D1100419-v3

PN10  
Picomotor adapter  
LIGO  
D1100419-v3

PN13  
Picomotor adapter  
LIGO  
D1100419-v3

PN18  
Picomotor adapter  
LIGO  
D1100419-v3

PN23  
Picomotor adapter  
LIGO  
D1100419-v3

PN28  
Picomotor adapter  
LIGO  
D1100419-v3

PN29  
Picomotor adapter  
LIGO  
D1100419-v3

PN30  
Picomotor adapter  
LIGO  
D1100419-v3

PN31  
Picomotor adapter  
LIGO  
D1100419-v3

PN45  
Picomotor adapter  
LIGO  
D1100419-v3

PN52  
Picomotor adapter  
LIGO  
D1100419-v3

PN60  
Adapter panel  
LIGO  
D1100661-v1

PN62  
Adapter panel  
LIGO  
D0902557-v1

E1 Jack screw  
E2 Jack screw  
E3 Jack screw  
E4 Jack screw  
L-Com  
SDG450XS

E5 Jack screw  
E6 Jack screw  
E7 Jack screw  
E8 Jack screw

E9 Jack screw  
E10 Jack screw  
E11 Jack screw  
E12 Jack screw  
L-Com  
SDG450XS

E13 Jack screw  
E14 Jack screw  
E15 Jack screw  
E16 Jack screw

E17 Jack screw  
E18 Jack screw  
E19 Jack screw  
E20 Jack screw  
L-Com  
SDG450XS

E21 Jack screw  
E22 Jack screw  
E23 Jack screw  
E24 Jack screw

E25 Jack screw  
E26 Jack screw  
E27 Jack screw  
E28 Jack screw  
L-Com  
SDG450XS

E29 Jack screw  
E30 Jack screw  
E31 Jack screw  
E32 Jack screw

E33 Jack screw  
E34 Jack screw  
E35 Jack screw  
E36 Jack screw

E37 Jack screw  
E38 Jack screw  
E39 Jack screw  
E40 Jack screw

E41 Jack screw  
E42 Jack screw  
E43 Jack screw  
E44 Jack screw

PN61  
Serial adapter  
LIGO  
D1100638-v1  
E45 #6-32 1/4" flat  
E46 #6-32 1/4" flat  
McMaster-Carr  
91099A205

Picomotor  
HAM1/3

Picomotor  
HAM2

Picomotor  
HAM6

Picomotor  
ISCT1/IOT1

Picomotor  
OL

Picomotor  
TCS HWS

Picomotor  
TCSX CO2

Picomotor  
TCSY CO3

Picomotor  
Spare 1

Picomotor  
Spare 2

Picomotor  
Spare 3

Serial  
Concentrator

Blank

|   |                           |                      |
|---|---------------------------|----------------------|
| Title<br><b>EtherCAT Corner 2</b>             |                           |                      |
| Size<br>B                                     | Number<br><b>D1100680</b> | Revision<br><b>1</b> |
| Date:<br>2/4/2014                             | Sheet 1 of 4              |                      |
| File:<br>C:\Users\...\EtherCATCornerB1.SchDoc | Drawn By: Daniel Sigg     |                      |

B1  
AB9000  
HMS  
Anybus X-gateway EtherCAT/Modbus



B2  
AB9000  
HMS  
Anybus X-gateway EtherCAT/Modbus



Future expansion

B3  
EK1101  
EtherCAT coupler w/ ID switch



B4  
EL6022  
Dual serial interface RS422/RS485



B5  
EL6022  
Dual serial interface RS422/RS485



B6  
EL9011  
End cap



0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

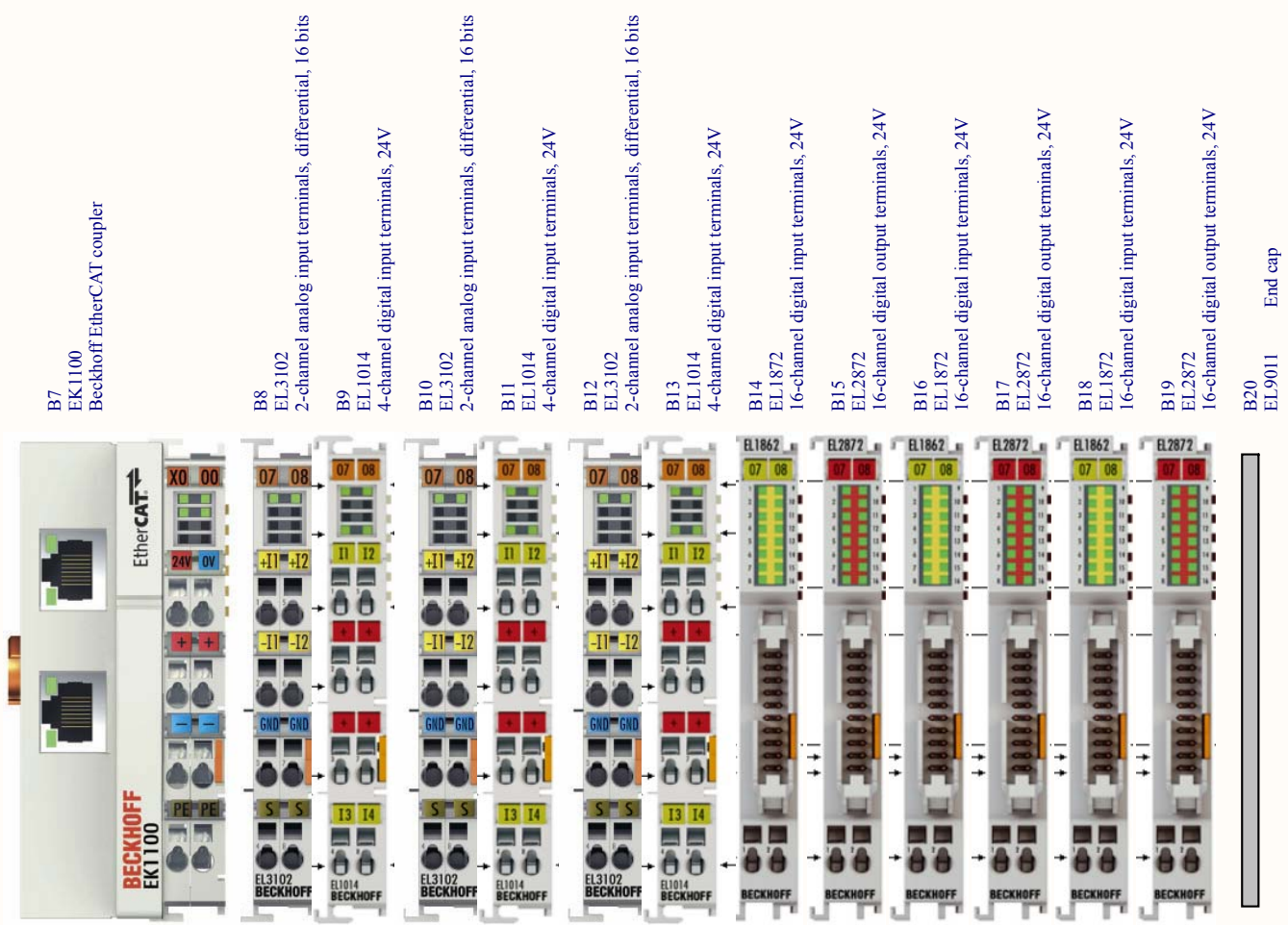
Ebus 24V  
Power contacts 24V

### Serial

Power budget:  
EL6022: 0.350 A (2x)  
-----  
0.700 A

- PN63 D-Sub cable, DB9, male
- PN64 IDC socket, 10pin
- PN65 IDC socket, 10pin
- PN66 D-Sub cable, DB9, male
- PN67 D-sub screw/retainer
- PN68 D-Sub cable, DB9, male
- PN69 IDC socket, 10pin
- PN70 D-Sub cable, DB9, male
- PN71 IDC socket, 10pin
- H7PXH-0906G-ND Digi-Key
- MKC10A-ND Digi-Key

|  |                        |                   |
|--|------------------------|-------------------|
| Title <b>EtherCAT Corner 2: Left Rail</b>  |                        |                   |
| Size B                                     | Number <b>D1100680</b> | Revision <b>1</b> |
| Date: 2/4/2014                             | Sheet 2 of 4           |                   |
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B7 EK1100 Beckhoff EtherCAT coupler

B8 EL3102 2-channel analog input terminals, differential, 16 bits

B9 EL1014 4-channel digital input terminals, 24V

B10 EL3102 2-channel analog input terminals, differential, 16 bits

B11 EL1014 4-channel digital input terminals, 24V

B12 EL3102 2-channel analog input terminals, differential, 16 bits

B13 EL1014 4-channel digital input terminals, 24V

B14 EL1872 16-channel digital input terminals, 24V

B15 EL2872 16-channel digital output terminals, 24V

B16 EL1872 16-channel digital input terminals, 24V

B17 EL2872 16-channel digital output terminals, 24V

B18 EL1872 16-channel digital input terminals, 24V

B19 EL2872 16-channel digital output terminals, 24V

B20 EL9011 End cap

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22

Ebus 24V

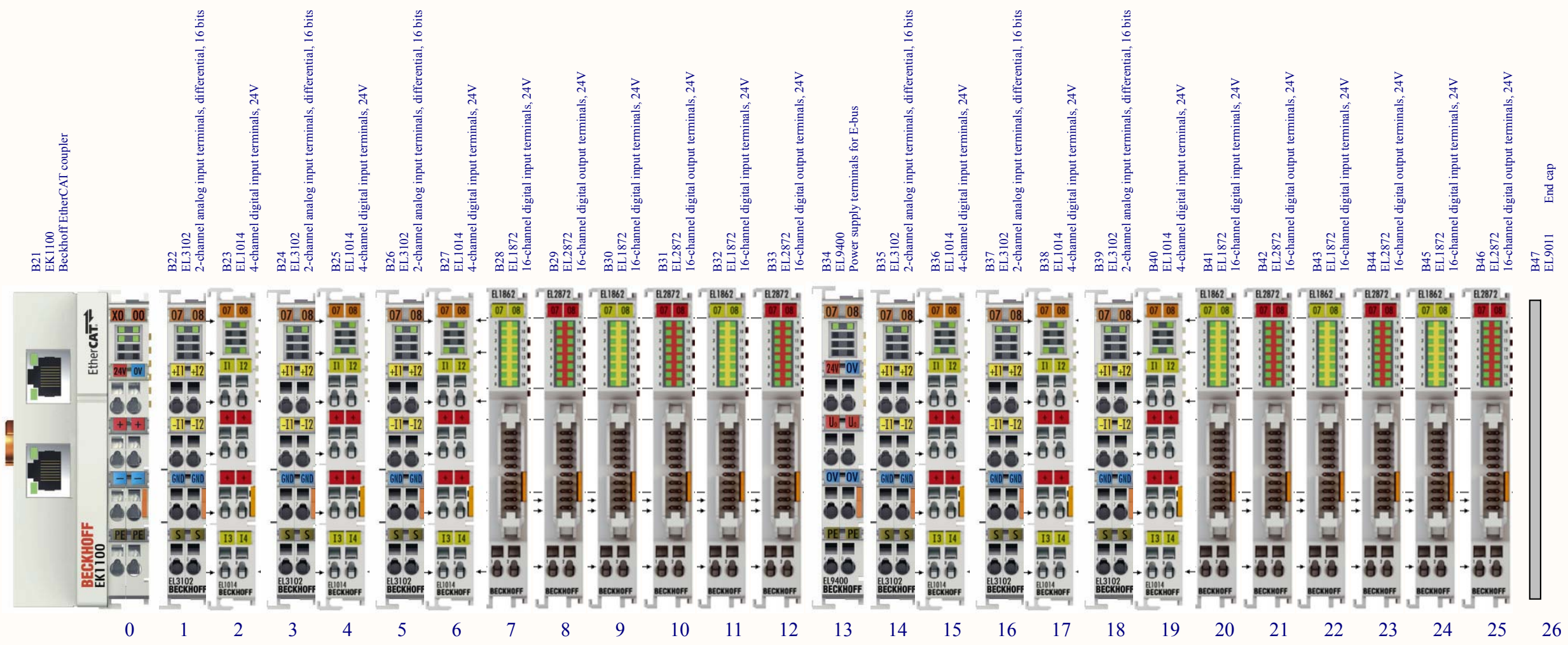
Power contacts 24V

### Picomotors

Power budget:  
 EL3102: 0.180 A (3x)  
 EL1014: 0.090 A (3x)  
 EL1872: 0.130 A (3x)  
 EL2872: 0.130 A (3x)  
 -----  
 1.590 A

- PN72 IDC Cable, 20-pin
- PN73 IDC socket, 20pin
- PN74 IDC socket, 20pin
- PN75 IDC Cable, 20-pin
- PN76 IDC socket, 20pin
- PN77 IDC socket, 20pin Digi-Key MKC20A-ND
- PN78 IDC Cable, 20-pin Digi-Key H3CCH-2036G-ND
- PN79 IDC socket, 20pin
- PN80 IDC socket, 20pin

|   |                        |                   |
|---|------------------------|-------------------|
| Title <b>EtherCAT Corner 2: Middle Rail</b> |                        |                   |
| Size B                                      | Number <b>D1100680</b> | Revision <b>1</b> |
| Date: 2/4/2014                              | Sheet 3 of 4           |                   |
| File: C:\Users\...\EtherCATCornerB3.SchDoc  | Drawn By: Daniel Sigg  |                   |



Ebus 24V  
 Power contacts 24V

24V  
 24V

**Picomotors**

Power budget:  
 EL3102: 0.180 A (3x)  
 EL1014: 0.090 A (3x)  
 EL1872: 0.130 A (3x)  
 EL2872: 0.130 A (3x)  
 -----  
 1.590 A

Power budget:  
 EL3102: 0.180 A (3x)  
 EL1014: 0.090 A (3x)  
 EL1872: 0.130 A (3x)  
 EL2872: 0.130 A (3x)  
 -----  
 1.590 A

|                           |                           |                           |
|---------------------------|---------------------------|---------------------------|
| PN81<br>IDC Cable, 20-pin | PN87<br>IDC Cable, 20-pin | PN93<br>IDC Cable, 20-pin |
| PN82<br>IDC socket, 20pin | PN88<br>IDC socket, 20pin | PN94<br>IDC socket, 20pin |
| PN83<br>IDC socket, 20pin | PN89<br>IDC socket, 20pin | PN95<br>IDC socket, 20pin |
| PN84<br>IDC Cable, 20-pin | PN90<br>IDC Cable, 20-pin | PN96<br>IDC Cable, 20-pin |
| PN85<br>IDC socket, 20pin | PN91<br>IDC socket, 20pin | PN97<br>IDC socket, 20pin |
| PN86<br>IDC socket, 20pin | PN92<br>IDC socket, 20pin | PN98<br>IDC socket, 20pin |

|  |                        |                   |
|--|------------------------|-------------------|
| Title <b>EtherCAT Corner 2: Right Rail</b> |                        |                   |
| Size B                                     | Number <b>D1100680</b> | Revision <b>1</b> |
| Date: 2/4/2014                             | Sheet 4 of 4           |                   |
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