

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

This EtherCAT chassis uses fiber for input and copper for output.
Mount the fiber feedthroughs into the IN front panel.
Using LC-to-SC fiber patch cables:
- Connect the front panel fiber input to the input of the media converter.

Mount the modular adapters to the OUT front panel.
Using CAT5 patch cables:
- Connect the output of the media converter to the input of the coupler on the right rail.
- Connect the output of this coupler to the input of the coupler in the middle rail.
- Connect the output of the middle rail coupler to the front panel output.
- Connect the first coupler on the left rail to the X1 port of the EK1122 terminal.
- Connect the second coupler on the left rail to the X2 port of the EK1122 terminal.

Twist power supply cable pair for motor supply, and wind around toroid 10 times.

Ports

IN

OUT

1A

2A

PN2 EtherCAT chassis LIGO D0902552-v3	PN6 Fiber coupler panel adapter LIGO	PN12 Ethernet patch cable, 1' Newark 21M5658	PN16 Adapter panel LIGO D1100108-v1	PN18 Adapter panel LIGO D1100108-v1
PN3 Name Plate LIGO D1101121-v2	PN7 Fiber coupler panel adapter LIGO D1100095-v2	PN13 Ethernet patch cable, 2' Newark 74M6777		
	PN8 Fiber LC-LC coupler Newark 52M9124	PN14 Ethernet patch cable, 2' Newark 74M6777		

Fiber/LC Corner

CAT5 Corner

Blank

Blank

PN4 Rear Panel (alt) LIGO D2000017-v2	PN9 Fiber patch cable, LC-SC L-Com FODSC50-LC-01
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TBLOCK

PN23 Terminal Block	PN30 Terminal Block	PN37 Terminal Block	PN44 Terminal Block
PN24 Terminal Block	PN31 Terminal Block	PN38 Terminal Block	PN45 Terminal Block
PN25 Terminal Block	PN32 Terminal Block	PN39 Terminal Block	PN46 Terminal Block
PN26 Terminal Block	PN33 Terminal Block	PN40 Terminal Block	PN47 Terminal Block
PN27 Terminal Block	PN34 Terminal Block	PN41 Terminal Block	PN48 Terminal Block
Digi-Key 277-1483-ND	PN35 Jumper, 10pos	Digi-Key 277-1483-ND	PN49 Jumper, 10pos
PN28 End Plate	PN36 Jumper, 10pos	PN42 End Plate	PN50 Jumper, 10pos
Digi-Key 277-1495-ND	Digi-Key 277-1494-ND	Digi-Key 277-1495-ND	Digi-Key 277-1494-ND

Slots

1

2

3

4

5

6A

6B

7

8

9

10

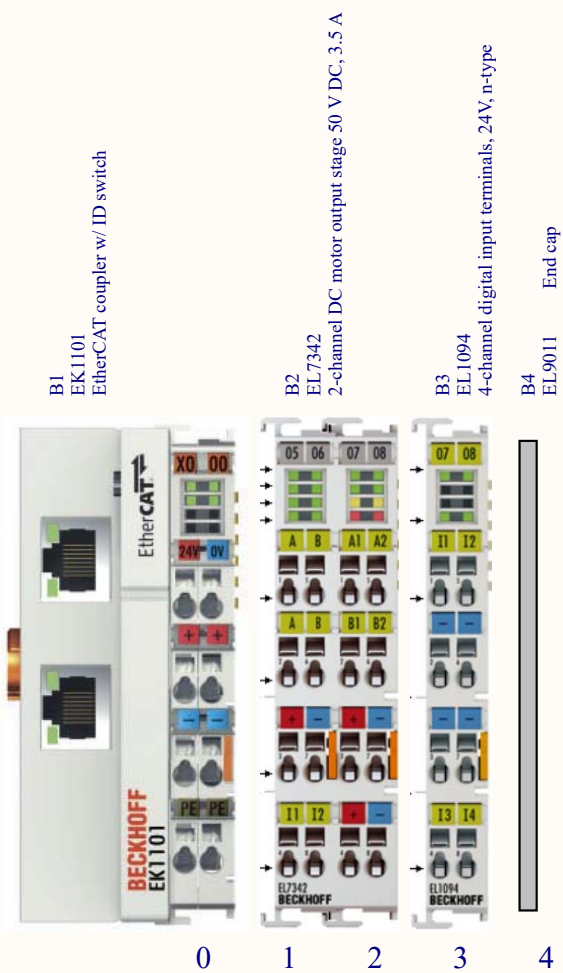
11

12

PN1 DB25F adapter LIGO D0902568-v1	PN5 DB25F adapter LIGO D0902568-v1	PN10 DB15/male LIGO	PN15 Picomotor adapter LIGO D1100419-v3	PN17 Picomotor adapter LIGO D1100419-v3	PN19 DB25F adapter LIGO D0902568-v1	PN20 DB25F adapter LIGO D0902568-v1	PN21 DB25M adapter LIGO D0902567-v1	PN22 DB25M adapter LIGO D0902567-v1	PN29 Rotation stage adapter LIGO D1300131-v1/E	PN43 Rotation stage adapter LIGO D1300131-v1/E	PN51 Rotation stage adapter LIGO D1300131-v1/E	PN52 Rotation stage adapter LIGO D1300131-v1/E
E1 #6-32 1/4" flat	E3 #6-32 1/4" flat	PN11 DB15/male Digi-Key A32503-ND	E9 Jack screw	E13 Jack screw	E17 #6-32 1/4" flat	E19 #6-32 1/4" flat	E21 #6-32 1/4" flat	E23 #6-32 1/4" flat	E25 #6-32 1/4" flat	E27 #6-32 1/4" flat	E29 #6-32 1/4" flat	E31 #6-32 1/4" flat
E2 #6-32 1/4" flat	E4 #6-32 1/4" flat	E5 Jack screw	E10 Jack screw	E14 Jack screw	E18 #6-32 1/4" flat	E20 #6-32 1/4" flat	E22 #6-32 1/4" flat	E24 #6-32 1/4" flat	E26 #6-32 1/4" flat	E28 #6-32 1/4" flat	E30 #6-32 1/4" flat	E32 #6-32 1/4" flat
McMaster-Carr 91099A205	McMaster-Carr 91099A205	E6 Jack screw	E11 Jack screw	E15 Jack screw	McMaster-Carr 91099A205	McMaster-Carr 91099A205	McMaster-Carr 91099A205	McMaster-Carr 91099A205	McMaster-Carr 91099A205	McMaster-Carr 91099A205	McMaster-Carr 91099A205	McMaster-Carr 91099A205
		E7 Jack screw	E12 Jack screw	E16 Jack screw								
		E8 Jack screw	L-Com SDG450XS	L-Com SDG450XS								

LASER ANTE	DIODE/CHILLER	IO PZT	Picomotor PSL	Picomotor Spare	T-SAMS HAM6 A	T-SAMS HAM6 B	P-SAMS HAM7	P-SAMS HAM6	Spare Rotation Stage	TCS X Rotation Stage	TCS Y Rotation Stage	IO/PSL Rotation Stage
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Title PSL/IO/TCS Controls Chassis		
Size B	Number D1101114	Revision 7
Date: 6/17/2021	Sheet 1 of 4	
File: C:\Users\...\PSLControls1.SchDoc	Drawn By: Daniel Sigg	

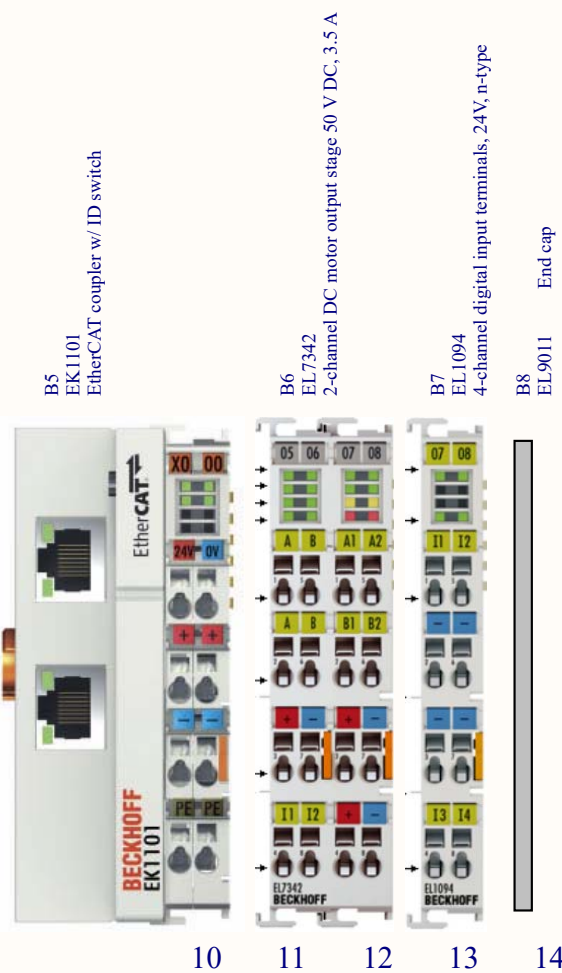


Ebus 24V
Power contacts 24V

Rotation Stage PSL

Power budget:
EL1094: 0.090 A (1x)
EL7342: 0.140 A (1x)

0.230 A



24V
24V

Rotation Stage TCS

Coupler +24V supply voltage wire is connected through relay contacts of EL2612 terminal.
PSL rotation stage on relay contact 1 NC.
TCS rotation stage on relay contact 2 NC.

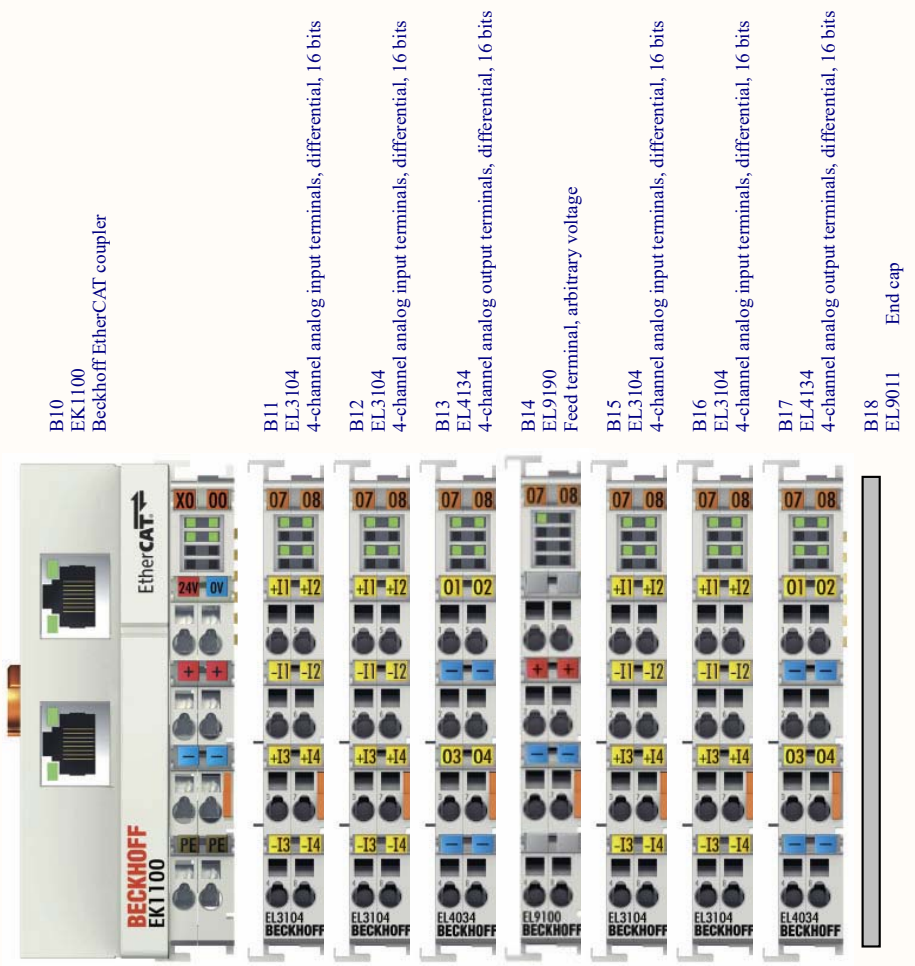


24V

Media Converter

Media converter needs to be mounted sideways to prevent fiber from bending too fast.
The rotary switch needs to be set to 0.

Title P/I/T Controls Chassis: Left Rail		
Size B	Number D1101114	Revision 7
Date: 6/17/2021	Sheet 2 of 4	
File: C:\Users\...\PSLControls2.SchDoc	Drawn By: Daniel Sigg	



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

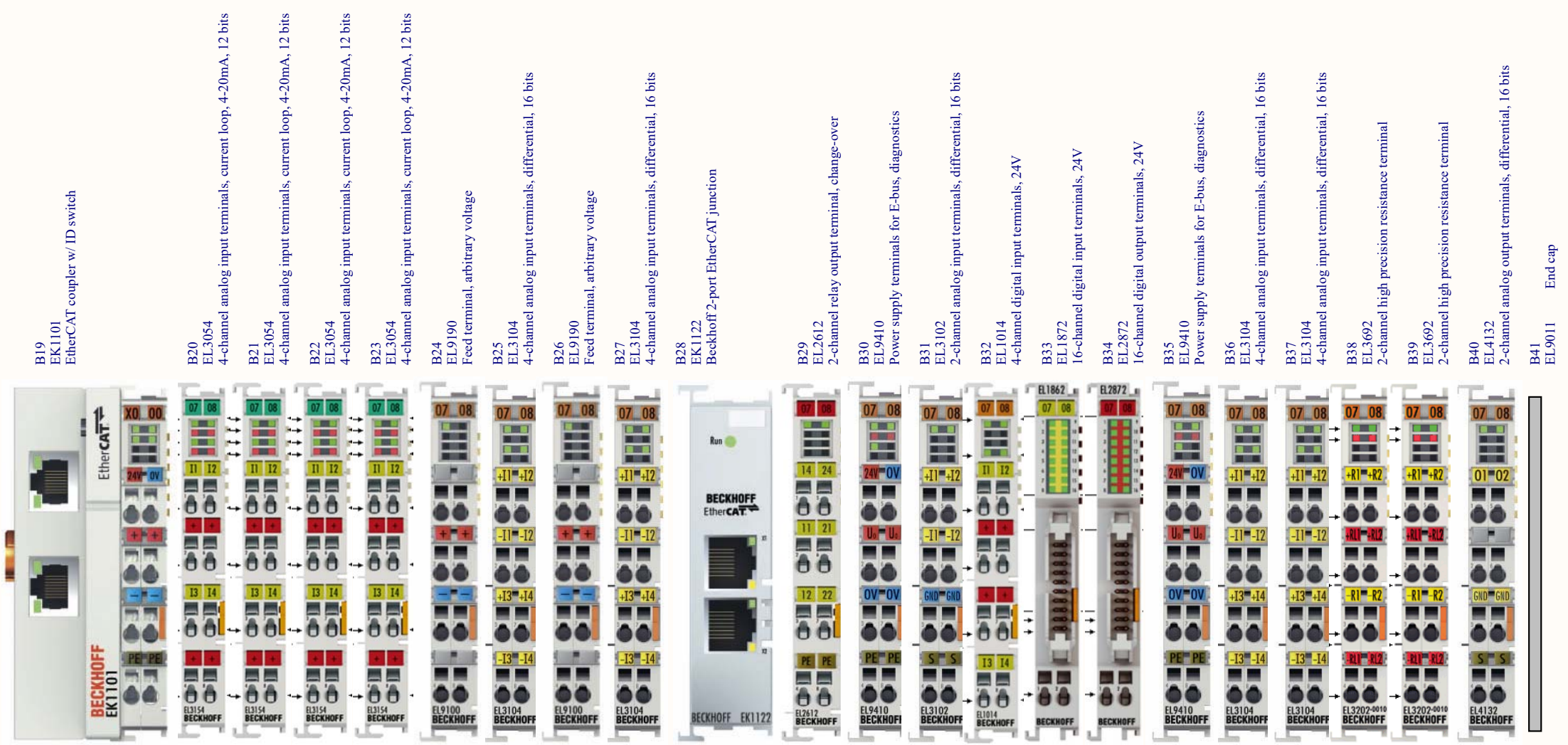
Ebus 24V — 24V
 Power contacts — 5V

Piezo SAMS

Power budget :
 EL3104: 0.130 A (4x)
 EL4134: 0.265 A (2x)

 1.050 A

Title		
P/I/T Controls Chassis: Middle Rail		
Size	Number	Revision
B	D1101114	7
Date:	6/17/2021	Sheet 3 of 4
File:	C:\Users\...\PSLControls3.SchDoc	Drawn By: Daniel Sigg



B19
EK1101
EtherCAT coupler w/ ID switch

B20
EL3054
4-channel analog input terminals, current loop, 4-20mA, 12 bits

B21
EL3054
4-channel analog input terminals, current loop, 4-20mA, 12 bits

B22
EL3054
4-channel analog input terminals, current loop, 4-20mA, 12 bits

B23
EL3054
4-channel analog input terminals, current loop, 4-20mA, 12 bits

B24
EL9190
Feed terminal, arbitrary voltage

B25
EL3104
4-channel analog input terminals, differential, 16 bits

B26
EL9190
Feed terminal, arbitrary voltage

B27
EL3104
4-channel analog input terminals, differential, 16 bits

B28
EK1122
Beckhoff 2-port EtherCAT junction

B29
EL2612
2-channel relay output terminal, change-over

B30
EL9410
Power supply terminals for E-bus, diagnostics

B31
EL3102
2-channel analog input terminals, differential, 16 bits

B32
EL1014
4-channel digital input terminals, 24V

B33
EL1872
16-channel digital input terminals, 24V

B34
EL2872
16-channel digital output terminals, 24V

B35
EL9410
Power supply terminals for E-bus, diagnostics

B36
EL3104
4-channel analog input terminals, differential, 16 bits

B37
EL3104
4-channel analog input terminals, differential, 16 bits

B38
EL3692
2-channel high precision resistance terminal

B39
EL3692
2-channel high precision resistance terminal

B40
EL4132
2-channel analog output terminals, differential, 16 bits

B41
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 23 24 25 26 27 28 29

Ebus 24V — — 24V 24V
 Power contacts 24V — — 24V —

Environmental

IO PZT

Rotation Stage Feed

Picomotors

Thermal SAMS

Power budget:
 EL3054: 0.130 A (4x)
 EL3104: 0.130 A (2x)
 EK1122: 0.220 A
 EL2612: 0.150 A

 1.150 A

Power budget:
 EL3102: 0.180 A (1x)
 EL1014: 0.090 A (1x)
 EL1872: 0.130 A (1x)
 EL2872: 0.130 A (1x)

 0.530 A

Power budget:
 EL3104: 0.130 A (2x)
 EL3692: 0.220 A (2x)
 EL4132: 0.210 A (1x)

 0.910 A

Title P/I/T Controls Chassis: Right Rail		
Size B	Number D1101114	Revision 7
Date: 6/17/2021	Sheet 4 of 4	
File: C:\Users\...\PSLControls4.SchDoc	Drawn By: Daniel Sigg	