



Hook-up wires (22 AWG, 7x30 strand):

Color	Use	Newark	Belden
Green	analog input +	87K6299	8503 005
White	analog input -	87K6301	8503 009
Blue	analog output +	87K7209	8503 006
Yellow	analog output -	87K2790	8503 004
Brown	binary input	02F4529	8503 001
Orange	binary output	87K6298	8503 003
Violet	24V	87K6300	8503 007
Gray	ground	02F4536	8503 008
Red	5V	87K2789	8503 002
Black	5V return	87K2788	8503 010

When hooking up 4 binary IOs within one module, one should use a 4 conductor cable instead (Newark: 02F4079; Belden 8444; black: 1; red: 2; white: 3; green: 4).

Hook-up wire (16 AWG) for power entry:

Color	Use	Newark	Belden
Violet	24V	87K2757	83030 007
Gray	Ground	87K1674	83030 008

The ground/shield wire needs to be connected to the chassis.  
 The 5V return must not be connected to ground. It is connected to the ground wire provided by the interface adapter.  
 Each interface with binary IO requires its own 5V supply to prevent ground loops.  
 The LED indicator connects to closest +5V (red) and ground (black).  
 The 5V supplies and the Beckhoff couplers connect to 24V/ground.

H1 Handle, 4.5"	E5 #4-40 3/16" flat	E30 #4-40 3/16" flat	E57 #10-32 1/4" pan	E78 #4-40 3/16" flat	E102 #4-40 3/16" flat
H2 Handle, 4.5"	E6 #4-40 3/16" flat	E31 #4-40 3/16" flat	E58 #10-32 1/4" pan	E79 #4-40 3/16" flat	E103 #4-40 3/16" flat
Mouser 534-481	E7 #4-40 3/16" flat	E32 #4-40 3/16" flat	E59 #10-32 1/4" pan	E80 #4-40 3/16" flat	E104 #4-40 3/16" flat
H3 Ferrule, 0.25"	E8 #4-40 3/16" flat	E33 #4-40 3/16" flat	E60 #10-32 1/4" pan	E81 #4-40 3/16" flat	E105 #4-40 3/16" flat
H4 Ferrule, 0.25"	E9 #4-40 3/16" flat	E34 #4-40 3/16" flat	E61 #10-32 1/4" pan	E82 #4-40 3/16" flat	E106 #4-40 3/16" flat
H5 Ferrule, 0.25"	E10 #4-40 3/16" flat	E35 #4-40 3/16" flat	E62 #10-32 1/4" pan	E83 #4-40 3/16" flat	E107 #4-40 3/16" flat
H6 Ferrule, 0.25"	E11 #4-40 3/16" flat	E36 #4-40 3/16" flat	E63 #10-32 1/4" pan		
Mouser 534-7163	E12 #4-40 3/16" flat	E37 #4-40 3/16" flat	E64 #10-32 1/4" pan	E84 #4-40 3/16" flat	E108 #4-40 3/16" flat
M1 #6-32 1/4" flat	E13 #4-40 3/16" flat	E38 #4-40 3/16" flat	E65 #10-32 1/4" pan	E85 #4-40 3/16" flat	E109 #4-40 3/16" flat
M2 #6-32 1/4" flat	E14 #4-40 3/16" flat	E39 #4-40 3/16" flat	E66 #10-32 1/4" pan	E86 #4-40 3/16" flat	E110 #4-40 3/16" flat
M3 #6-32 1/4" flat	E15 #4-40 3/16" flat	E40 #4-40 3/16" flat	E67 #10-32 1/4" pan	E87 #4-40 3/16" flat	E111 #4-40 3/16" flat
M4 #6-32 1/4" flat	E16 #4-40 3/16" flat	E41 #4-40 3/16" flat	E68 #10-32 1/4" pan	E88 #4-40 3/16" flat	E112 #4-40 3/16" flat
M5 #6-32 1/4" flat	E17 #4-40 3/16" flat	E42 #4-40 3/16" flat	E69 #10-32 1/4" pan	E89 #4-40 3/16" flat	E113 #4-40 3/16" flat
M6 #6-32 1/4" flat	E18 #4-40 3/16" flat	E43 #4-40 3/16" flat	E70 #10-32 1/4" pan		
McMaster-Carr 91099A205	E19 #4-40 3/16" flat	E44 #4-40 3/16" flat	E71 #10-32 1/4" pan	E90 #4-40 3/16" flat	E114 #4-40 3/16" flat
M7 #8-32 1/2" flat	E20 #4-40 3/16" flat	E45 #4-40 3/16" flat	E72 #10-32 1/4" pan	E91 #4-40 3/16" flat	E115 #4-40 3/16" flat
M8 #8-32 1/2" flat	E21 #4-40 3/16" flat	E46 #4-40 3/16" flat	E73 #10-32 1/4" pan	E92 #4-40 3/16" flat	E116 #4-40 3/16" flat
M9 #8-32 1/2" flat	E22 #4-40 3/16" flat	E47 #4-40 3/16" flat	E74 #10-32 1/4" pan	E93 #4-40 3/16" flat	E117 #4-40 3/16" flat
M10 #8-32 1/2" flat	E23 #4-40 3/16" flat	E48 #4-40 3/16" flat	E75 #10-32 1/4" pan	E94 #4-40 3/16" flat	E118 #4-40 3/16" flat
McMaster-Carr 91099A265	E24 #4-40 3/16" flat	E49 #4-40 3/16" flat	E76 #10-32 1/4" pan	E95 #4-40 3/16" flat	E119 #4-40 3/16" flat
	E25 #4-40 3/16" flat	E50 #4-40 3/16" flat	E77 #10-32 1/4" pan		
	E26 #4-40 3/16" flat	E51 #4-40 3/16" flat	McMaster-Carr 90402A821	E96 #4-40 3/16" flat	E120 #4-40 3/16" flat
E1 #4-40 3/16" flat	E27 #4-40 3/16" flat	E52 #4-40 3/16" flat		E97 #4-40 3/16" flat	E121 #4-40 3/16" flat
E2 #4-40 3/16" flat	E28 #4-40 3/16" flat	E53 #4-40 3/16" flat		E98 #4-40 3/16" flat	E122 #4-40 3/16" flat
E3 #4-40 3/16" flat	E29 #4-40 3/16" flat	E54 #4-40 3/16" flat		E99 #4-40 3/16" flat	E123 #4-40 3/16" flat
E4 #4-40 3/16" flat				E100 #4-40 3/16" flat	E124 #4-40 3/16" flat
				E101 #4-40 3/16" flat	E125 #4-40 3/16" flat
PN1 LED Indicator Digi-Key 350-2127-ND	PN6 Modular coupler Newark 21K6038	PN9 Modular coupler Newark 21K6038	PN12 Power pin, AWG 16-20 Digi-Key 626-1140-ND	PN16 Terminal, QC, AWG 16 Digi-Key A27243-ND	PN21 Ring terminal, #10, AWG 16 Digi-Key A27243-ND
PN2 3U chassis LIGO D0902555-v3	PN7 Front Panel LIGO D0902553-v2	PN10 Rear Panel LIGO D0902554-v2	PN13 Power pin, AWG 16-20 Digi-Key 626-1144-ND	PN17 Terminal, QC, AWG 16 Digi-Key A27824CT-ND	PN22 Jack screw Newark 80K5431
PN3 DIN rail, 20" Digi-Key ADR3515-S2000-ND	PN8 Hook-up, 22AWG Belden 8503	PN11 Hook-up, 16AWG Belden 8503	PN14 Power socket, AWG 16-20 Digi-Key 626-1144-ND	PN18 Terminal, QC, AWG 16 Digi-Key A27824CT-ND	
			PN15 D-sub shell, 3W3C Allied 626-1098-ND	PN19 Terminal, QC, AWG 16 Digi-Key A27824CT-ND	
				PN20 Thermal breaker Newark 677-0189	

Title <b>EtherCAT Chassis</b>		
Size B	Number <b>D0902552</b>	Revision <b>3</b>
Date: 1/13/2011	Sheet 1 of 1	
File: C:\Users\...\EtherCATChassis1.SchDoc	Drawn By: Daniel Sigg	