



VER 1.1

Hardware Manual

DS-BVS-FETC/FCAO

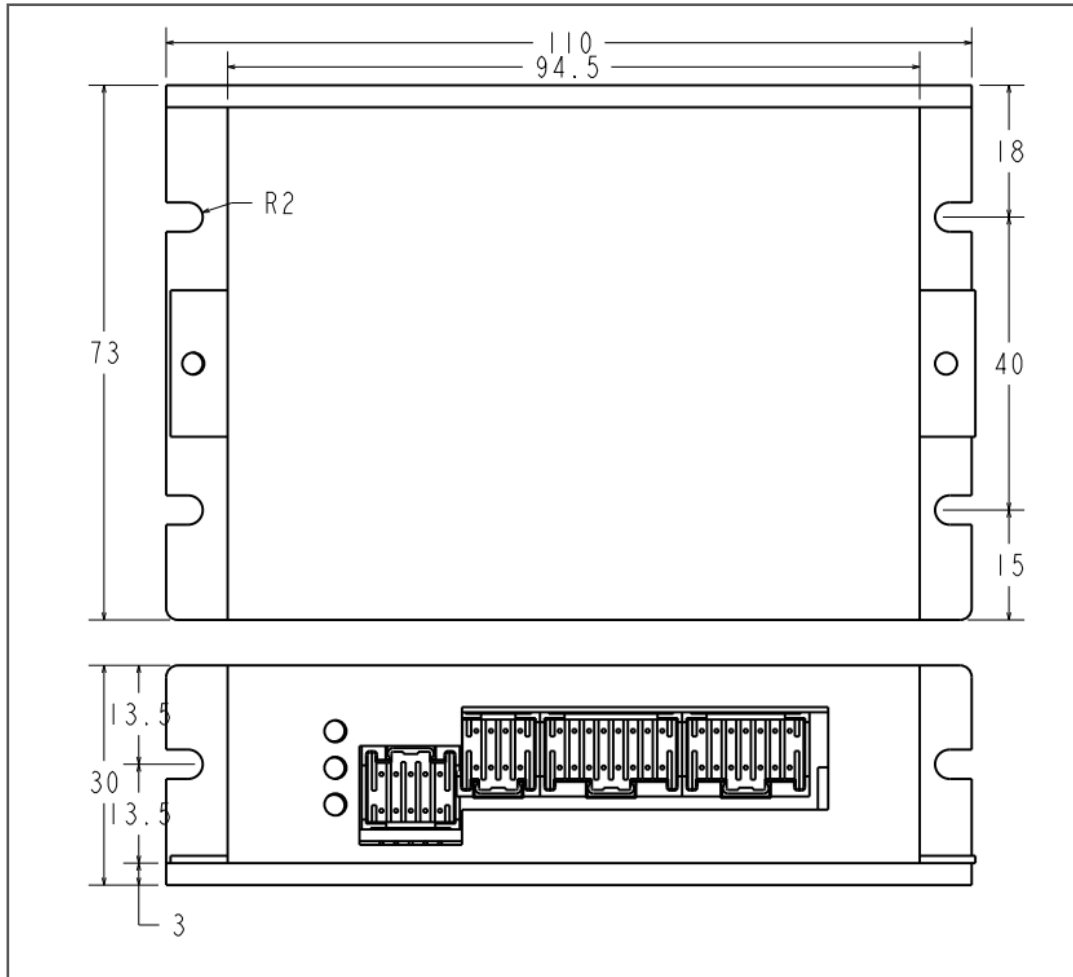


Table of contents

1. Technical Information.....	3
1.1 Mechanical Data.....	3
1.2 Electrical Data.....	4
2. Wiring.....	5
2.1 Tools.....	5
2.2 Connections.....	5
2.3 Regenerative Resistance.....	6
2.4 Main Power.....	7
2.5 UVW.....	8
2.6 Analog Encoder.....	9
2.7 Biss Encoder.....	10
2.8 Digital Encoder.....	11
2.9 GPIO.....	12
2.10 EtherCAT.....	14
2.11 CAN.....	15
2.12 RS-485.....	16
2.13 USB.....	17

1. Technical Information

1.1 Mechanical Data



Item	Unit	Description
SIZE (L x W x H)	mm	110 x 73 x 31
Fastener	M3	

1.2 Electrical Data

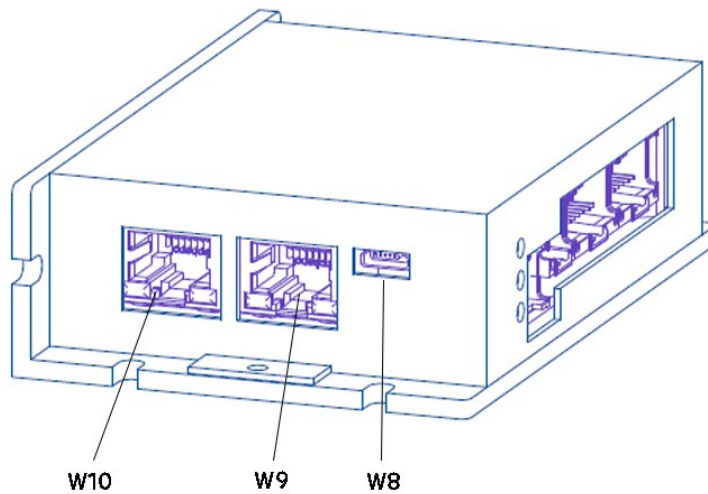
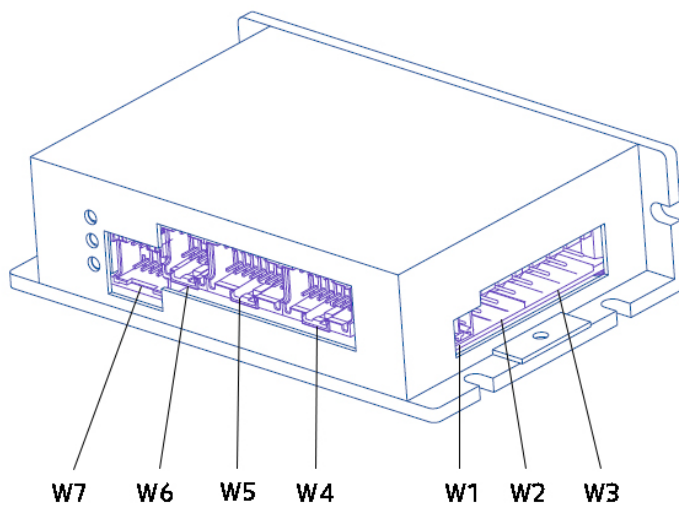
DS-BVS-FETC/FAO			
Basic	Motors	DC/BLDC/PMSM/VCM	
	Communication	USB + CANopen or EtherCAT(CoE, FoE)	
	GUI	DINGS' Servo Studio	
	Position Sensor	Incremental Encoder Shared/Separated Hall Sensor Analog Hall Sensor Sin/Cos Encoder SSI/Biss-C/Tamagawa Serial Encoder	
Inputs & Outputs	Analog Input	Quantity	1
		Voltage Range	Analog ± 10 VDC differential
		Input Resolution	14 bit
	Digital Input	Quantity	6 (with STO)
		Signal	Configurable. Opto-isolated
		Voltage	24V
	Digital Output	Quantity	2
		Signal	Configurable. Opto-isolated. Open collector
Voltage		24V	
Motor Feedback	General	Max. Output Current	50mA
		Supply Voltage	5VDC
	Incremental Encoder	Signal	A-quad-B with or without index, shared digital hall sensor, RS422, Differential
		A-quad-B Max Input Frequency	10MHz (before quadrature)
	Digital Hall Sensor	Signal	Differential-ended
		Type	Separated and shared hall sensor
	Analog Hall Sensor	Signal	0~5V, Single-ended
Sampling Frequency		24KHz	
Sin/Cos Encoder	Signal	-0.7~+0.7V at 2.5V	
	Sampling Frequency	24KHz	
Serial Encoder	Type	SSI, Biss-C, Tamagawa	
	Bite rate	0.5Mbps, 1Mbps, 2Mbps, 2.5Mbps, 5Mbps	

2. Wiring

2.1 Tools

Tool	Manufacturer	Part Number
Hand crimp Tool	MOLEX	63811-6300

2.2 Connections



- W1 → Regenerative resistance
- W2 → Main Power
- W3 → Motor Power
- W4 → Analog Encoder
- W5 → Digital Encoder
- W6 → Serial Encoder
- W7 → GPIO
- W8 → USB
- W9 → EtherCAT Output
- W10 → EtherCAT Input

2.3 Regenerative Resistance



ECH350R-02P		J904
Pin		Input Power
1		R+
2		R-

2.4 Main Power



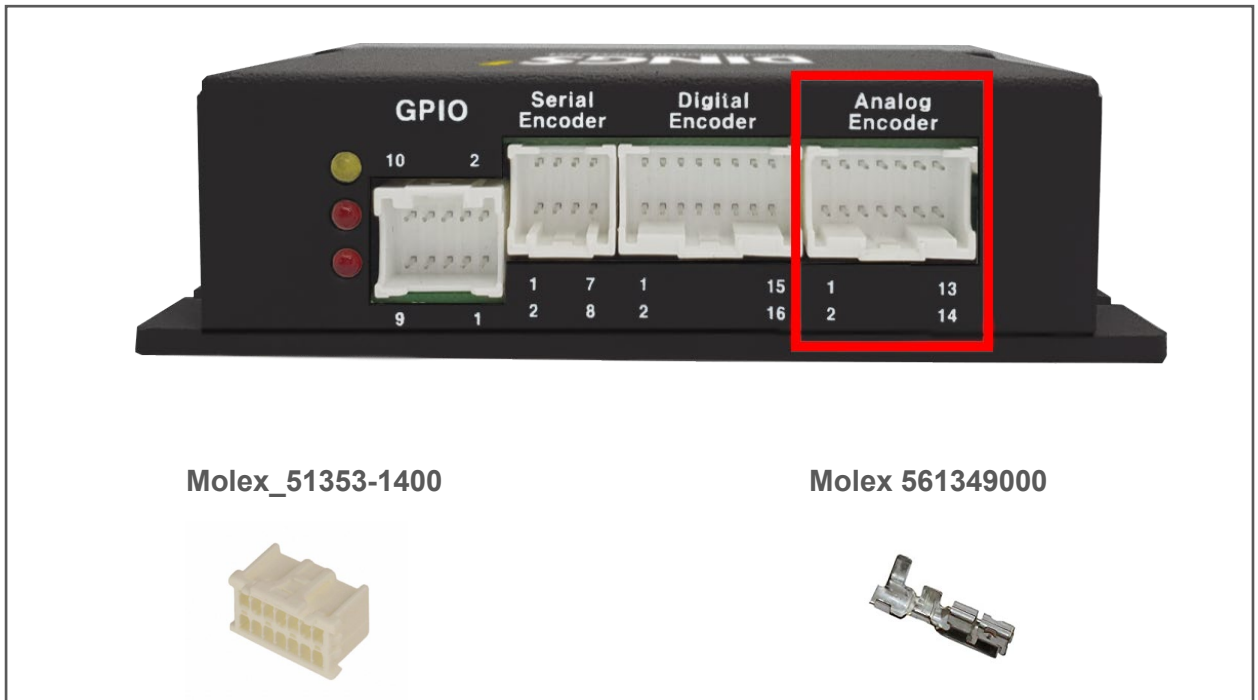
5EHDR-03P		J1	
Pin	Signal	Input Power	
1	VCC	12V ~ 48V DC	
2	GND	GND	
3	FG	FG	

2.5 UVW



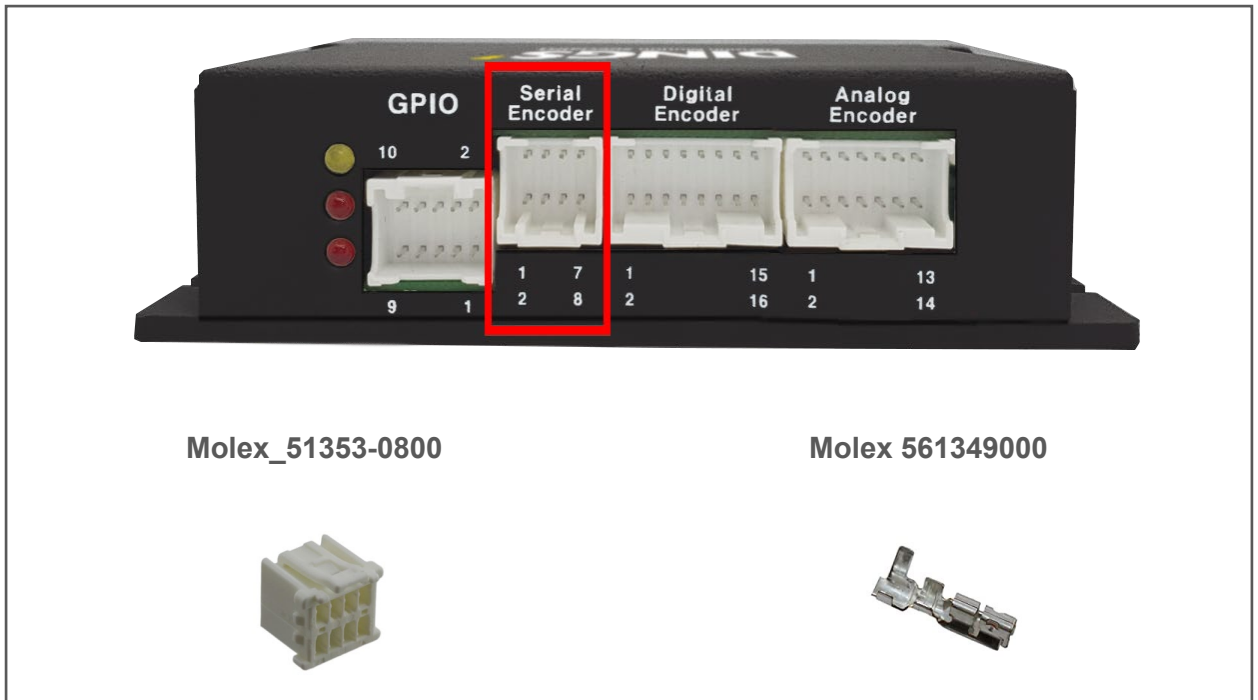
5EHDR-04P	J101
Pin	Signal
1	U
2	V
3	W
4	FG

2.6 Analog Encoder



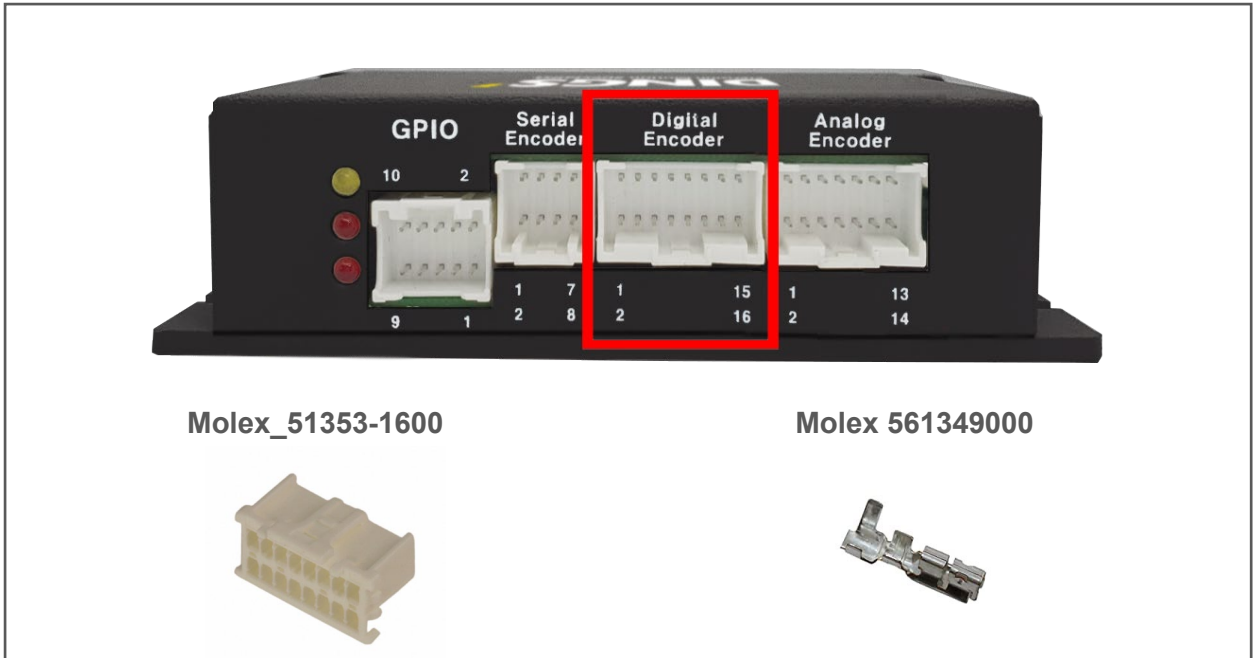
MOLEX 55959-1430	J901
Pin	Signal
1	SIN+
2	SIN-
3	COS+
4	COS-
5	REF+
6	REF-
7	5V
8	GND
9	FG
10	AHALL_U
11	AHALL_V
12	AHALL_W
13	AIN+
14	AIN-

2.7 Biss Encoder



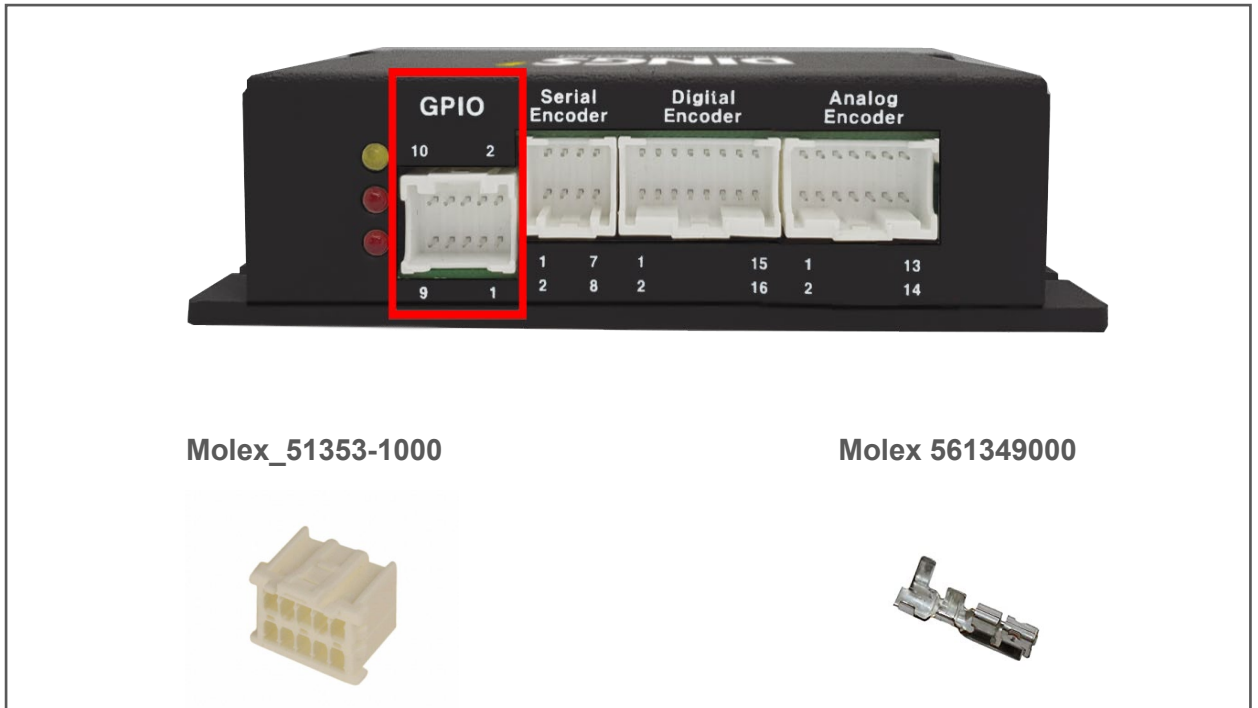
MOLEX 55959-0830	J801
Pin	Signal
1	BISS_DATA+ (SLO+)
2	BISS_DATA- (SLO-)
3	BISS_CLK+ (MA+)
4	BISS_CLK- (MA-)
5	RS485_RTX+
6	RS485_RTX-
7	5V
8	GND

2.8 Digital Encoder

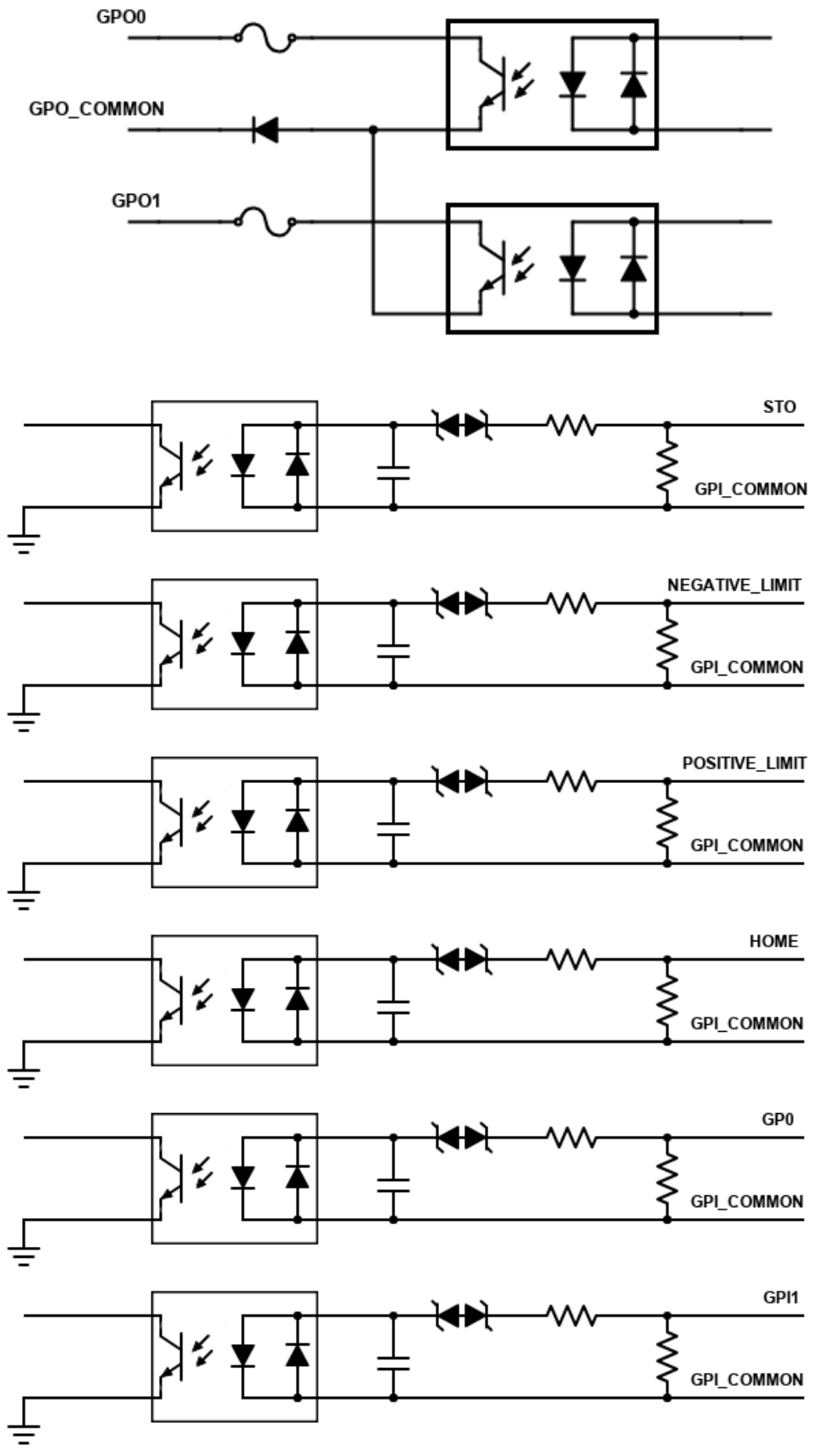


Molex 55959-1630	J701
Pin	Signal
1	5V
2	GND
3	Encoder A+
4	Encoder A-
5	Encoder B+
6	Encoder B-
7	Encoder I+
8	Encoder I-
9	HALL U+
10	HALL U-
11	HALL V+
12	HALL V-
13	HALL W+
14	HALL W-
15	FG
16	GND

2.9 GPIO

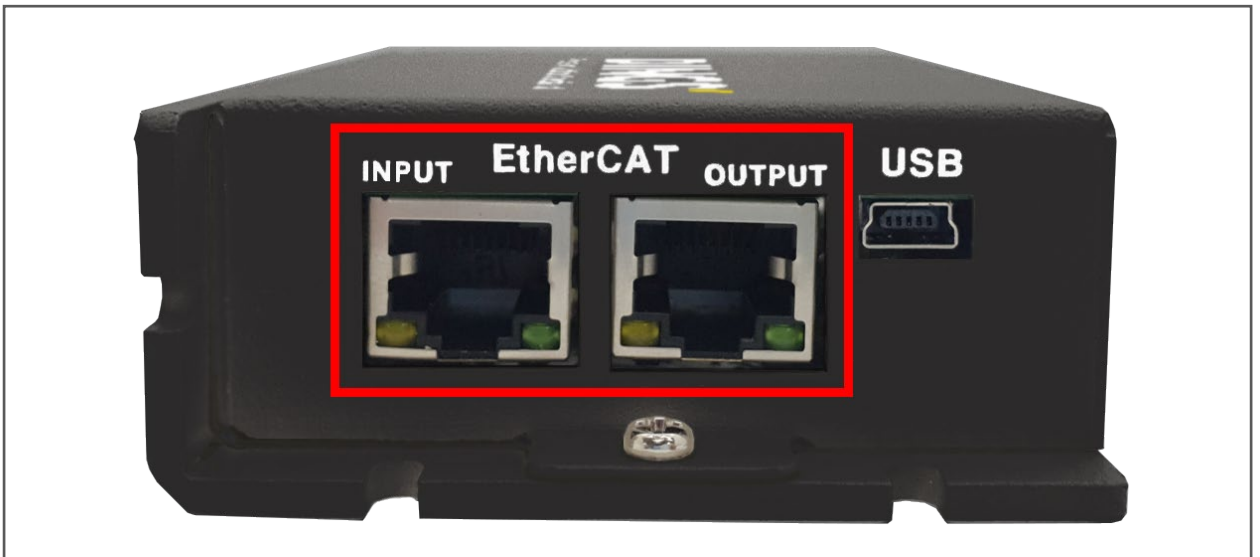


Molex 55959-1030	J301
Pin	Signal
1	STO
2	NEGATIVE_LIMIT
3	POSITIVE_LIMIT
4	HOME
5	GPI 0
6	GPI 1
7	GPI_COMMON
8	GPO 0
9	GPO 1
10	GPO_COMMON



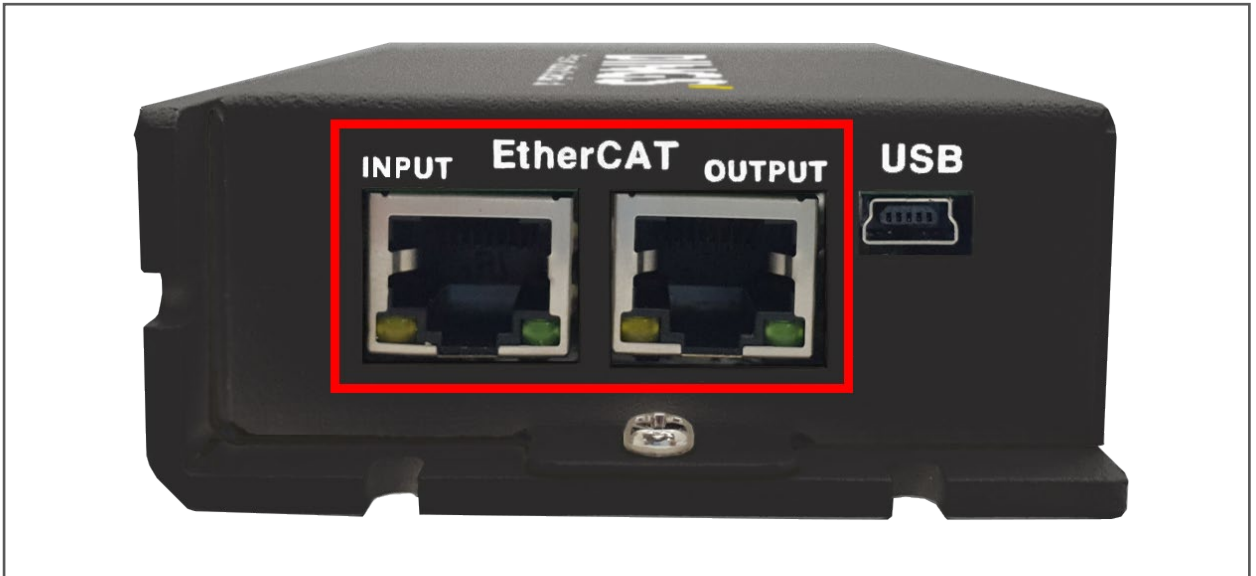
[GPIO Circuit]

2.10 EtherCAT



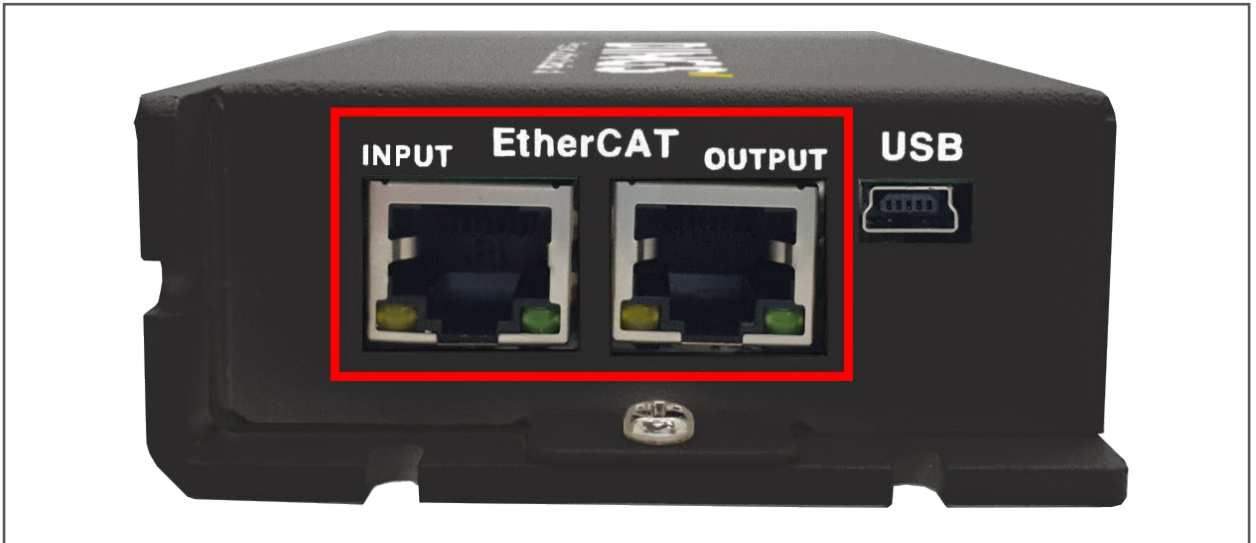
8pin RJ45	
Pin	Signal
1	EtherCAT Tx+
2	EtherCAT Tx-
3	EtherCAT Rx+
4	NC
5	NCs
6	EtherCAT RX-
7	NC
8	NC

2.11 CAN



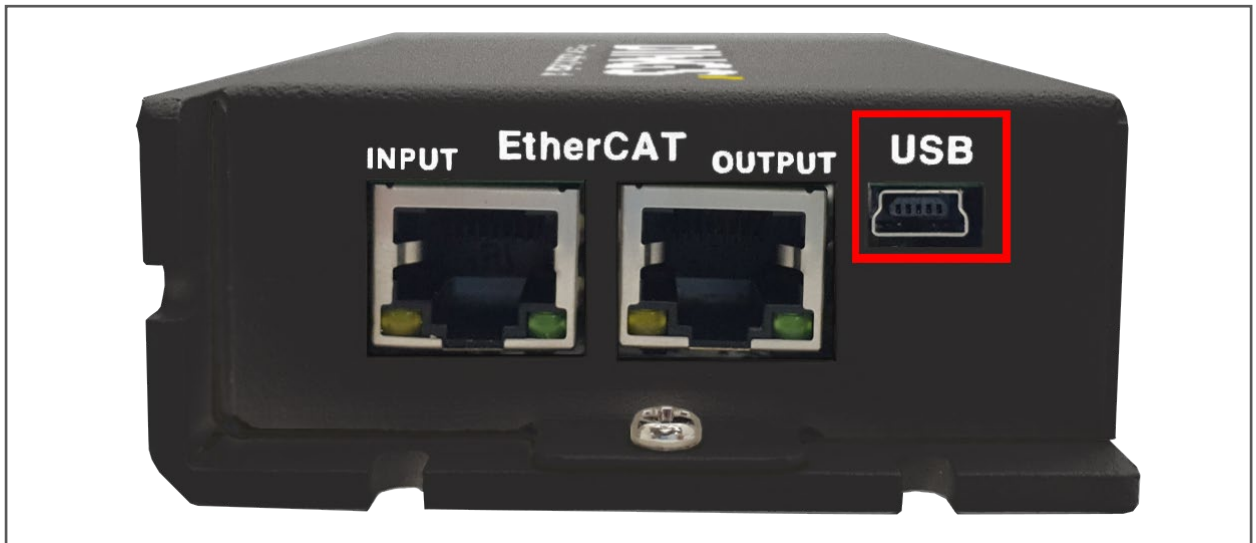
8pin RJ45	
Pin	Signal
1	HIGH
2	LOW
3	GND
4	NC
5	NC
6	NC
7	GND
8	NC

2.12 RS-485




8pin RJ45		
Pin	Signal	
1	RTD+	
2	NC	
3	GND	
4	RTD-	
5	NC	
6	NC	
7	NC	
8	NC	


2.13 USB




USB-Mini Type B (Keystone Model : 937)

Pin	Signal
1	VBUS
2	DM
3	DP
4	ID
5	GND
6	SHIELD

 +86-0519-8517 7825

 +86-0519-8517 7807

 No. 2850 Luheng Road, Changzhou Economic
Development Zone, Jiangsu Province, China

 www.dingsmotion.com

**International
Customer**

Person in Charge :

Daniel Jang

daniel@dingsmotion.com

No. 2850 Luheng Road, Changzhou
Economic Development Zone,
Jiangsu Province, China

+86-519-85177825, 85177826

**North America
Customer**

Person in Charge :

Nicolas Ha

sales@dingsmotionusa.com

335 Cochrane Circle Morgan Hill,
CA 95037

+1-408-612-4970

**China
Customer**

Person in Charge :

Sweet Shi

info@dingsmotion.com

No. 2850 Luheng Road, Changzhou
Economic Development Zone,
Jiangsu Province, China

+86-519-85177825, 85177826

It is prohibited to copyright or replication of the part or whole of user manual without permission.