

EtherCAT®



ECAT-2072A/ECAT-2074A

EtherCAT SubDevice

Tow/Four-Channel BiSS-C/SSI Absolute Encoder Master

Features

- EtherCAT SubDevice
- Two and Four channels, 48-bit absolute encoder Master
- Transmission interface : SSI, BiSS-C (unidirectional)
- Data encoding mode : Binary, Gray
- CRC generator polynomial can be customized, and the maximum setting is within CRC-8
- Support CRC bit Invert
- Maximum transmission pulse frequency : 10MHz
- Simultaneous sampling of each channel
- EtherCAT :
 - ▶ 2 x RJ-45 bus interface
 - ▶ Supports Free-Run and Distributed Clock (DC) operation modes

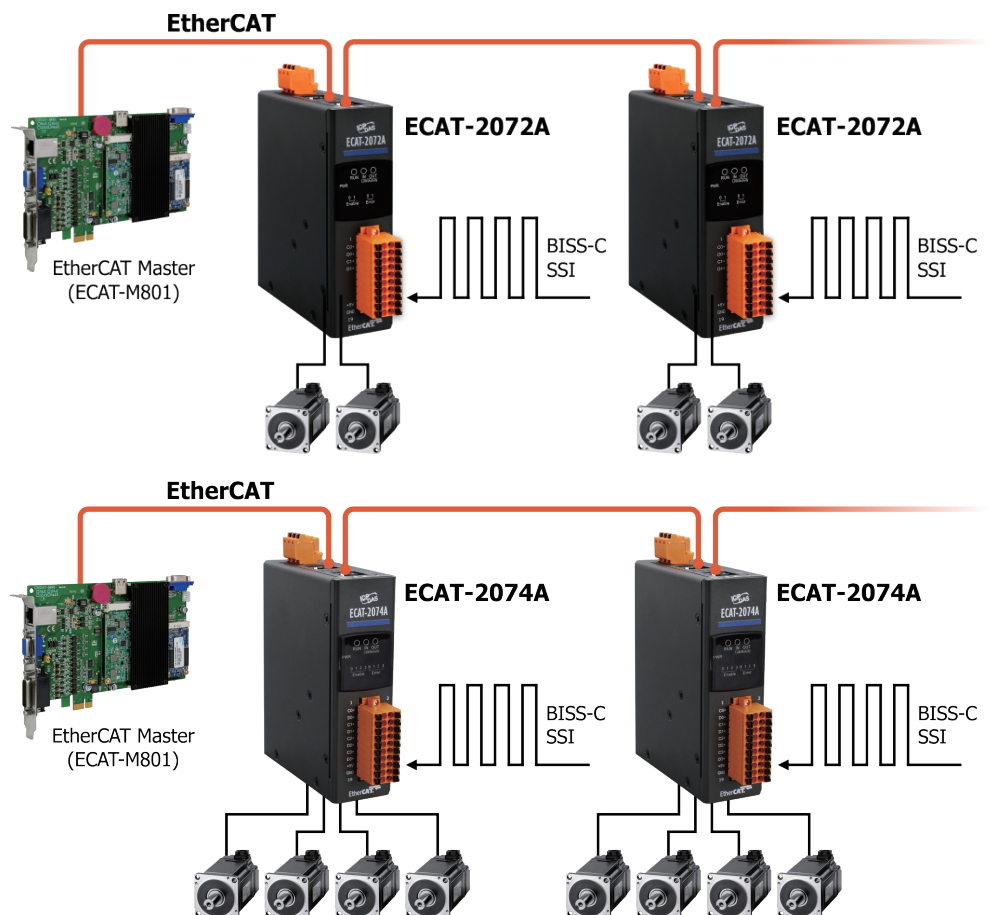


Introduction

The EtherCAT SubDevice ECAT-2072A and ECAT-2074A are absolute encoder Master stations. ECAT-2074A provides four channels, and ECAT-2072A provides two channels. Each channel is independent of each other. It supports two serial transmission interfaces: SSI (Serial Synchronous Interface) & BiSS-C (BiSS Continuous Mode, unidirectional). ECAT-207xA also supports a maximum transmission frequency of 10MHz, a maximum transmission bit of 48bit (Including error bit, warning bit, CRC in BiSS-C mode), and Automatic compensation of cable delays in BiSS-C mode. The maximum cable length supported is 70 meters.

Application

- Precision Position Measurement

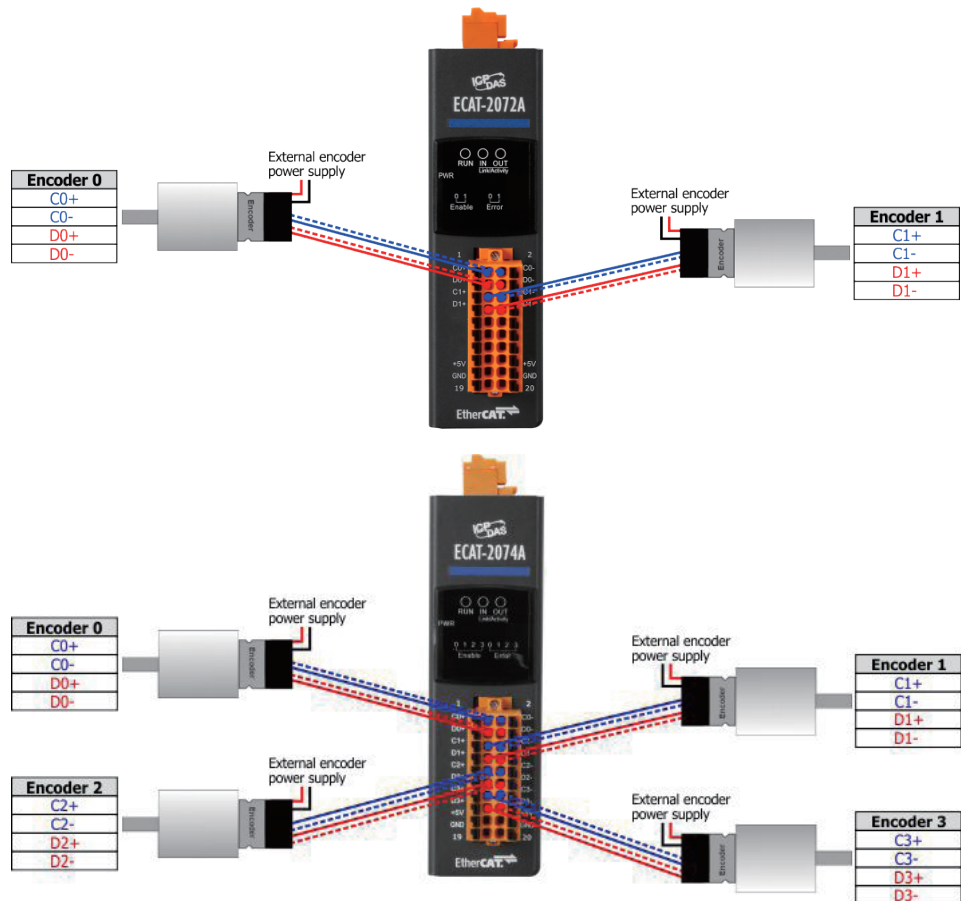


Specifications

Model	ECAT-2072A	ECAT-2074A
Encoder		
Number of encoder inputs	2x encoder channel (0-1)	4x encoder channel (0-3)
Sampling type	Simultaneous	
Resolution	max. 48 bit position	
Maximum input pulse frequency	10MHz	
Input level	5V (default)	
Transmission Interface	SSI mode, BiSS-C mode (unidirectional)	
Photo-Isolation	2500 V _{DC}	
LED Indicators		
Diagnostic LED	Power, EtherCAT status, signal status of each encoder input	
Communication Interface		
Connector	2 x RJ-45	
Protocol	EtherCAT	
Distance between stations	Max. 100 m (100BASE-TX)	
Data transfer medium	Ethernet/EtherCAT Cable (Min. CAT 5), Shielded	
Power		
Input voltage range	20V ~ 30VDC	
Power consumption	Maximum 4.5W	
EMS Protection		
ESD (IEC 61000-4-2)	4 KV Contact for each channel	
EFT (IEC 61000-4-4)	Signal: 1 KV Class A; Power: 1 KV Class A	
Surge (IEC 61000-4-5)	1 KV Class A	
Mechanism		
Installation	DIN-Rail	
Dimensions (LxWxH)	110mm x 90mm x 33mm (without connectors)	
Case material	Metal	
Environment		
Operating temperature	-25 ~ +75° C	
Storage temperature	-30 ~ +80° C	
Relative humidity	10 ~ 90% ,No condensation	

Encoder Connection

ECAT-2072A / ECAT-2074A can accept the absolute encoder input of SSI and BISS interface. By default it is set to support the BISS interface.



Connection Interfaces



Power supply and EtherCAT interfaces

Name	Signal	Description
F.G	Frame ground	
GND	Power supply: Ground 0V (from negative power contact)	Feeding for ECAT-2074A
+Vs	Power supply: +24 VDC (from positive power contact)	
IN	EtherCAT signal input	Incoming EtherCAT cable
OUT	EtherCAT signal output	Outgoing EtherCAT cable



ECAT-2072A Connection interfaces of the encoder

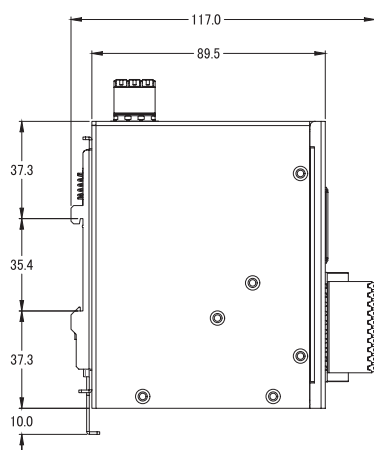
Name	Signal	Signal Description	
C0-	Input	Encoder Input CLK0-	Encoder Channel 0
C0+	Input	Encoder Input CLK0+	
D0-	Input	Encoder Input Data0-	
D0+	Input	Encoder Input Data0+	
C1-	Input	Encoder Input CLK1-	Encoder Channel 1
C1+	Input	Encoder Input CLK1+	
D1-	Input	Encoder Input Data1-	
D1+	Input	Encoder Input Data1+	
+5V		+5VDC, for testing purposes only. For long-term use, please provide an external power supply for the encoder	
GND		0V	



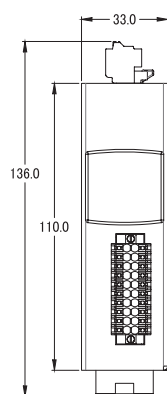
ECAT-2074A Connection interfaces of the encoder

Name	Signal	Signal Description	
C0-	Input	Encoder Input CLK0-	Encoder Channel 0
C0+	Input	Encoder Input CLK0+	
D0-	Input	Encoder Input Data0-	
D0+	Input	Encoder Input Data0+	
C1-	Input	Encoder Input CLK1-	Encoder Channel 1
C1+	Input	Encoder Input CLK1+	
D1-	Input	Encoder Input Data1-	
D1+	Input	Encoder Input Data1+	
C2-	Input	Encoder Input CLK2-	Encoder Channel 2
C2+	Input	Encoder Input CLK2+	
D2-	Input	Encoder Input Data2-	
D2+	Input	Encoder Input Data2+	
C3-	Input	Encoder Input CLK3-	Encoder Channel 3
C3+	Input	Encoder Input CLK3+	
D3-	Input	Encoder Input Data3-	
D3+	Input	Encoder Input Data3+	
+5V		+5VDC, for testing purposes only. For long-term use, please provide an external power supply for the encoder	
GND		0V	

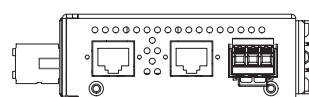
Dimensions (Units: mm)



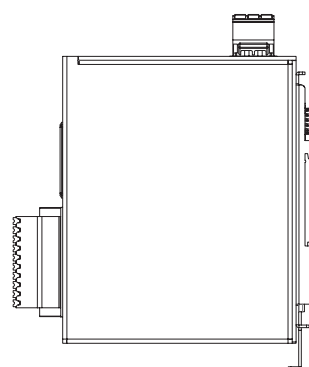
Left View



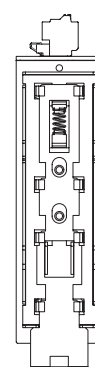
Front View



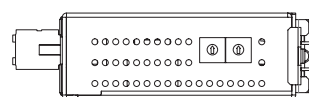
Top View



Right View



Rear View



Bottom View

Ordering Information

ECAT-2072A CR	EtherCAT SubDevice Tow-Channel BISS-C/SSI Absolute Encoder Master (RoHS)
ECAT-2074A CR	EtherCAT SubDevice Four-Channel BISS-C/SSI Absolute Encoder Master (RoHS)