


# ECAT-2072A/ECAT-2074A

EtherCAT SubDevice
Tow/Four-Channel BISS-C/SSI Absolute Encoder Master

## Features

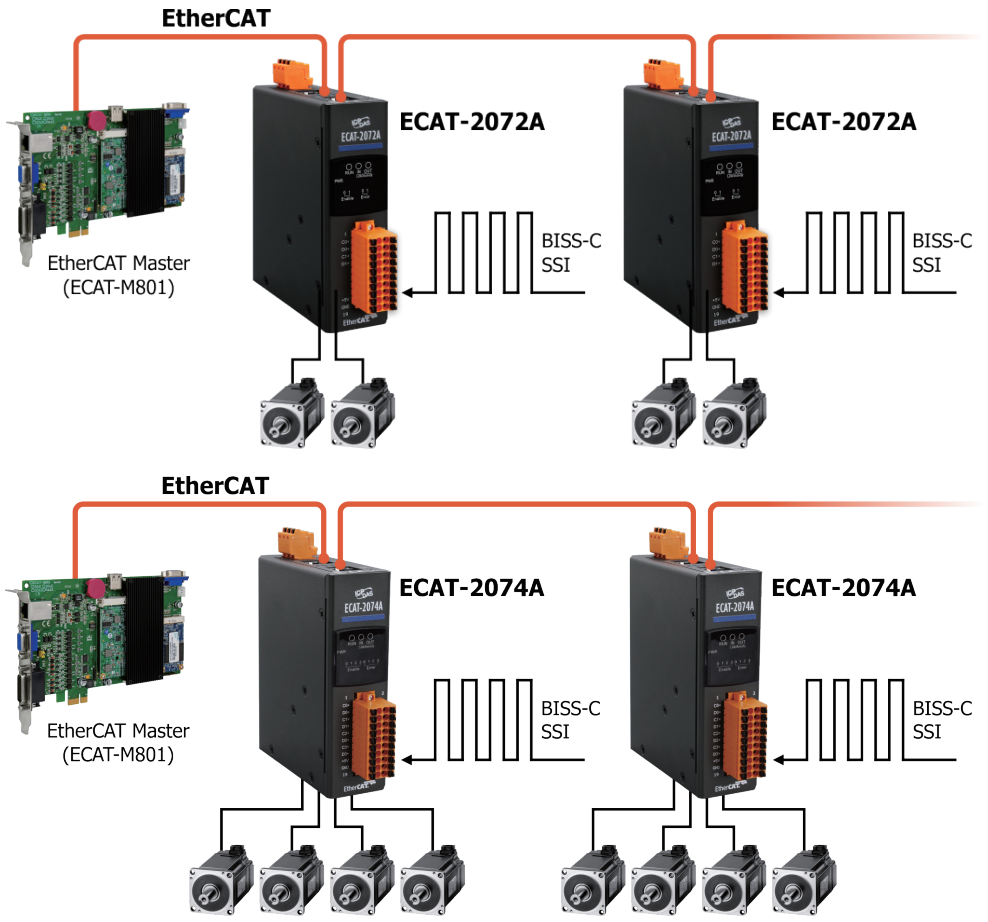
- EtherCAT SubDevice
- Two and Four channels, 48-bit absolute encoder Master
- Transmission interface : SSI, BISS-C (unidirectional)
- Data encoding mode : Binary, Gray
- CRC generator polynomial can be customized, and the maximum setting is within CRC-8
- Support CRC bit Invert
- Maximum transmission 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






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## Specifications

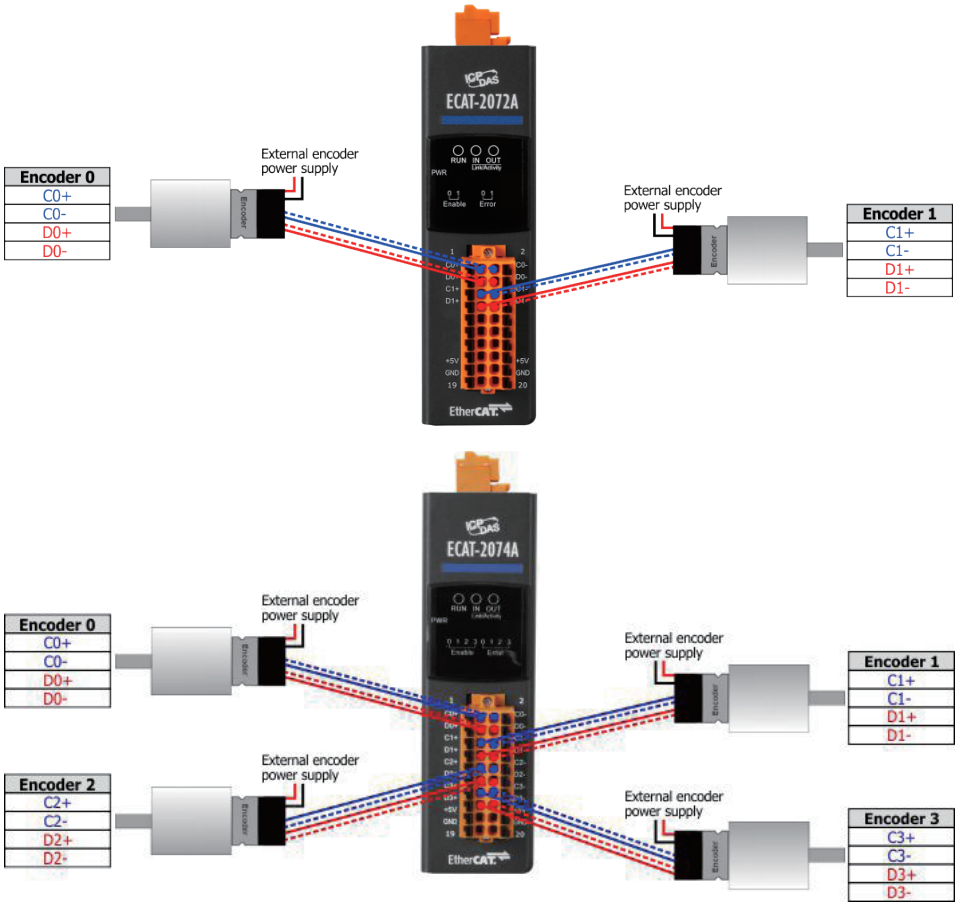
| Model | ECAT-2072A | ECAT-2074A |
|---|---|---|
| **Encoder** | | |
| Number of encoder inputs | 2x encoder channel (0-1) | 4x encoder channel (0-3) |
| Sampling type | Simultaneous | |
| Resolution | max. 48 bit position | |
| Maximum input pulse frequency | 10MHz | |
| Input level | 5V (default) | |
| 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 | |



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## 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 | |



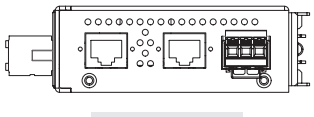
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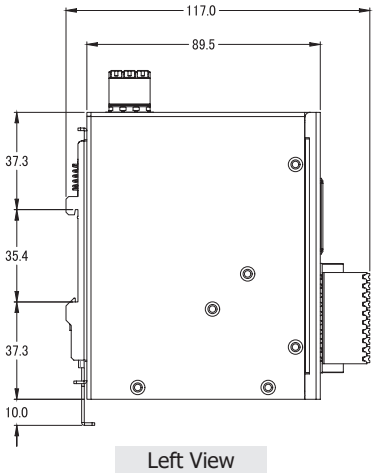

ECAT-2074A Connection interfaces of the encoder

| 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 | |

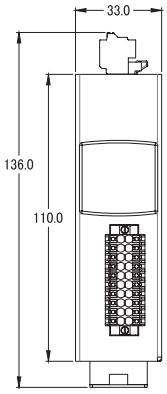
## Dimensions (Units: mm)



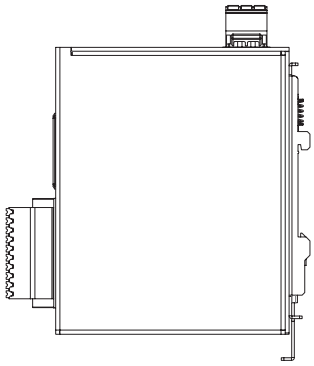
Top View



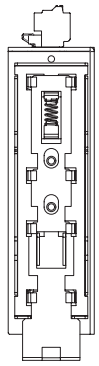

Left View



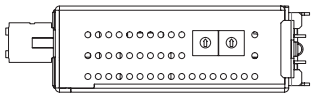

Front View



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) |



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