ECAT-IO M Series

EtherCAT IO Slave for M-Type Modules


ECAT-AI16AO2-M-VV


ECAT-DI32-M-N with ECAT-TB32-M-DIN


ECAT-DO32-M-N


ECAT-DI16DO16-M-NN

Key Features

- IO response time up to 20KHz
- Supports up to 100μs EtherCAT cycle time with DC mode
- Status Holding Mode when disconnected
- Connects up to 256 modules
- Easy maintenance by hot-swapping
- Flexible terminal block design for alternate wiring
- Compatible with APS function library
- Same wiring and layout as HSL IO

Introduction

The ADLINK complete EtherCAT solution, from hardware to middleware to software, with every element tailored for dedicated EtherCAT functionality, includes PCIe-833x and SuperCAT master controllers, ECAT & EU slave systems, and remote monitoring and control providers. ADLINK's Softmotion one-stop control kernel also delivers flexible and easy-to-use intelligent platforms for driving next-generation modern Smart Factories.

ADLINK's ECAT IO system features a modular design for flexible high channel density, rugged construction, easy maintenance, and compatibility with third-party EtherCAT master products. Precise time-deterministic control enables I/O synchronization for critical applications, while the flexible terminal block design supports multiple wiring methods.

The ECAT's unique structural and electronic design supports hot-swapping of modules, reducing repair time, and offers full operability from 0°C to 60°C. The ECAT slave system is also fully compliant with the EN 61131-2 standard for shock and vibration and EN 61000-6 for heavy industrial EMC protection, as well as receiving an emission certificate.

Ordering Information

- **ECAT-DI32-M-N**
  32-ch sinking / sourcing type digital input
- **ECAT-DO32-M-N**
  32-ch sinking type digital output
- **ECAT-DI16DO16-M-NN**
  16-ch digital input and 16-ch digital output
- **ECAT-AI16AO2-M-VV**
  16-ch analog input and 2-ch analog output

Accessory

- **ECAT-TB32-M-DIN**
  32-ch ECAT IO Terminal Base for M-Type Modules

Specifications

- **Digital I/O Module**

Model	ECAT-DI32-M-N	ECAT-DO32-M-N	ECAT-DI16DO16-M-NN
Digital Input			
Channels	32	N/A	16
Input Type	Wet (Sink/Source)		Wet (Sink/Source)
Operational Voltage (24V DC)	NPN: On: 11.4V DC (max.) Off: 14.3V DC (min.) PNP: On: 12.6V DC (min.) Off: 9.8V DC (max.)		NPN: On: 11.4V DC (max.) Off: 14.3V DC (min.) PNP: On: 12.6V DC (min.) Off: 9.8V DC (max.)
Isolation Voltage	2000V DC		2000V DC
Input Current	4.5 mA (max)		4.5 mA (max)
Input Response	ON: 8.8 µs (Typical); OFF: 42 µs (Typical)		ON: 8.8 µs (Typical); OFF: 42 µs (Typical)
Input Impedance	4.7 KΩ		4.7 KΩ
Digital Output			
Channels	N/A	32	16
Output Type		Open Collector (Sink)	
Load Voltage		+3.5V to +30V	
Output Switching Capacity		8 channel 400 mA; Full channels 50 mA at 100% duty cycle	
Isolation Voltage		2000V DC	
Output Response		ON → OFF: 750 ns, OFF → ON: 25 ns (24V @4.7K)	
Communication Interface			
Connector	2 x RJ45		
Protocol	EtherCAT		
Distance Between Stations	Max. 100 m (100BASE-TX)		
Communication Cycle Time	100 µs		
Data Transfer Medium	Ethernet/EtherCAT Cable (Min. CAT 5), Shielded		
Distributed Clocks	DC		
Status Holding Mode	N/A	Configurable by software	
LED Indicator	Power, Run, Error, EEP, Link and DI status	Power, Run, Error, EEP, Link and DO status	Power, Run, Error, EEP, Link and DIO status
Power			
Input Voltage Range	9V to 30V DC		
Power Consumption	1.8W@24V	2.3W@24V	2.2W@24V
General			
Installation	DIN Rail		
Casing	Metal with IP40		
Dimensions	82.5mm x 97.4mm x 21.5mm (H x W x D)		
Operating Temperature	0˚C to 60˚C (32˚F to 140˚F)		
Storage Temperature	-20˚C to 80˚C (-4˚F to 176˚F)		
Relative Humidity	95%, non-condensing		

Specifications

- **Analog I/O Module**

	ECAT-AI16AO2-M-W
Analog Input	
Channels	16
Type	Voltage
Input range	±10V, ±5V, ±2.5V, ±1.25V
Wire Connection	8 Differential or 16 Single-ended
Resolution	16-bit
Sampling Rate	250KS/s
Accuracy	±0.1% FSR @ 25˚C, ± 10V
Over Voltage Protection	±15 VDC
Analog Output	
Channels	2
Type	Voltage
Output range	±10V
Wire Connection	8 Differential or 16 Single-ended
Resolution	16-bit
Accuracy	±0.1% FSR @ 25˚C
Settling time	5us
Communication Interface	
Connector	2 x RJ45
Protocol	EtherCAT
Distance Between Stations	Max. 100 m (100BASE-TX)
Communication Cycle Time	100 µs
Data Transfer Medium	Ethernet/EtherCAT Cable (Min. CAT 5), Shielded
Distributed Clocks	DC
Status Holding Mode	Configurable by software, AO only
LED Indicator	Power, Run, Error, EEP, Link
Power	
Input Voltage Range	10V to 30V DC
Power Consumption	5W@24V
General	
Installation	DIN Rail
Casing	Metal with IP40
Dimensions	82.5mm x 97.4mm x 21.5mm (H x W x D)
Operating Temperature	0˚C to 60˚C (32˚F to 140˚F)
Storage Temperature	-20˚C to 80˚C (-4˚F to 176˚F)
Relative Humidity	95%, non-condensing
Certification	CE, FCC, RoHS

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