PRODUCT DATASHEET

ES-IO-01-M005

Industrial Motion Controller

EtherCAT Remote I/O | EtherCAT Remote I/O Series - ES-IO-01

Product Overview

Industrial Motion Controller with weight Approx. 120 g, dimensions 24.3 × 100 × 80mm and fieldbus protocol EtherCAT.

Key Specifications

PARAMETER	VALUE	UNIT
Weight	Approx. 120 g	
Dimensions	24.3 × 100 × 80mm	
Fieldbus protocol	EtherCAT	
Module type	Bus coupler	
Power Consumption	6 W standalone / 20 W at full load	
CE compliance	CE conformity recorded; tested to EN IEC 61000-6-2:2019 and EN IEC 61000-6-4:2019	
Cooling Method	Natural convection cooling	
Electromagnetic compatibility	EMC immunity: Zone B, IEC 63313-2; ESD: 8 kV air and 4 kV contact discharge, performance criterion A; surge: DC supply 0.5 kV CM and 0.5 kV DM, I/O and communication ports 1 kV CM, criterion A; EFT/burst: supply coupling 2 kV at 5 kHz and I/O/communication coupling 1 kV at 5 kHz, criterion A	
Expansion bus speed	100 Mbps	

Technical Specifications

PARAMETER	SPECIFICATION	UNIT
PERFORMANCE		
Rated Power	6 W standalone / 20 W at full load	
ELECTRICAL		
Power Consumption	6 W standalone / 20 W at full load	
Rated bus output voltage	5 VDC (4.75–5.25 VDC)	
Status indicators - PWR	Power status	
Status indicators - RUN	Expansion-bus status	
Status indicators - ERR	EtherCAT bus error	
Status indicators - SF	Expansion-bus error	
Power output derating	Derate to 80% at 55 °C (output current ≤1.6 A)	
Rated input supply voltage	24 VDC ±20% (19.2–28.8 VDC)	
Protection Functions	Overcurrent, reverse-polarity and surge protection	
Rated bus output current	2.0 A typical at 5 V	
MECHANICAL		
Weight	Approx. 120 g	
Mounting Orientation	DIN 35 mm rail mounting	

Technical Specifications

PARAMETER	SPECIFICATION	UNIT
INTERFACES		
Fieldbus protocol	EtherCAT	
Programming software	IEC 61131-3 CODESYS programming software	
Expansion bus speed	100 Mbps	
Maximum station distance	100	m
Synchronization mode	DC-Sync: minimum 1 ms; SM-Sync supported	
Fieldbus interfaces	2 × RJ45	
Fieldbus speed	100 Mbps	
Expansion capacity	Up to 16 RP20 expansion modules	
ENVIRONMENTAL		
Cooling Method	Natural convection cooling	
Packaged drop test	Packaged free-fall: 5 drops from 1 m onto a concrete floor	
CE compliance	CE conformity recorded; tested to EN IEC 61000-6-2:2019 and EN IEC 61000-6-4:2019	

Technical Specifications

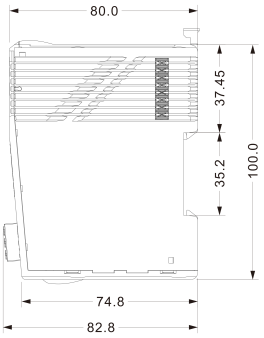
PARAMETER	SPECIFICATION	UNIT	NOTES
ENVIRONMENTAL			
Mechanical vibration and shock - Sinusoidal vibration	Random: 3.5 mm displacement; continuous: 1.75 mm displacement		5 < f < 8.4 Hz
	Random: 1.0 g; continuous: 0.5 g acceleration		8.4 < f < 150 Hz
Mechanical vibration and shock - Shock	Half-sine, 15 g, 11 ms, 6 times per axis		
Electromagnetic compatibility	EMC immunity: Zone B, IEC 63313-2; ESD: 8 kV air and 4 kV contact discharge, performance criterion A; surge: DC supply 0.5 kV CM and 0.5 kV DM, I/O and communication ports 1 kV CM, criterion A; EFT/burst: supply coupling 2 kV at 5 kHz and I/O/communication coupling 1 kV at 5 kHz, criterion A		
Operating climate conditions - Ambient temperature	-20 to +55	°C	An open, naturally ventilated installation
Operating climate conditions - Relative humidity	10-95%		Non-condensing
Operating climate conditions - Altitude	≤2,000 m		
Operating climate conditions - Pollution degree	2		
Storage climate conditions - Ambient temperature	-40 to +70	°C	
Storage climate conditions - Relative humidity	10-95%		Non-condensing
Storage climate conditions - Altitude	0-3,000 m		
SAFETY			
Ingress Protection Rating	IP20		
CONFIGURATION			
Module type	Bus coupler		
Dimensions	24.3 × 100 × 80mm		
ADDITIONAL SPECIFICATIONS			
Protection rating	IP20		

Dimensional & Integration Overview

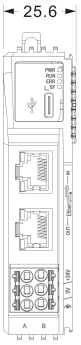
Mechanical Overview

PARAMETER	VALUE	UNIT
Weight	Approx. 120 g	
Mounting Orientation	DIN 35 mm rail mounting	
Dimensions	24.3 × 100 × 80mm	

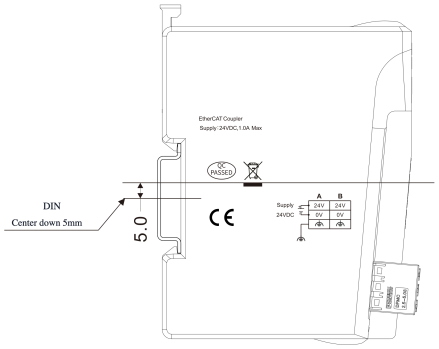
Dimensional Drawings



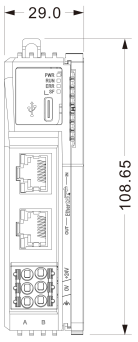
Mechanical View 1



Mechanical View 2



Mechanical View 3



Mechanical View 4

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Overall width	80.0 mm
	Upper section height	37.45 mm
	Lower section height	35.2 mm
	Overall height	100.0 mm
	Bottom inner width	74.8 mm
	Bottom outer width	82.8 mm
Mechanical View 2	Module Width	25.6
	Power Indicator LED	PWR LED
	Run Indicator LED	RUN LED
	Error Indicator LED	ERR LED
	Link Safety Fail Indicator LED	LSF LED
	Datum A	
	Datum B	
Mechanical View 3	DIN rail mounting offset	DIN rail mounting position offset 5mm below product center
Mechanical View 4	Module width	29.0 mm
	Total module height (with cover)	108.65 mm
	Mounting hole positions	Mounting positions A and B

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01 Specifications are subject to change without notice. Verify the current product configuration before final design release.

02 2D drawings, CAD files and integration documentation are controlled documents and are supplied separately on request.