PRODUCT DATASHEET

ES-IO-01-M004

Industrial Motion Controller

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

Product Overview

Industrial Motion Controller with weight Approx. 70 g, digital inputs 16 digital inputs; PNP/NPN and dimensions 12 × 100 × 80mm.

Key Specifications

PARAMETER	VALUE	UNIT
Weight	Approx. 70 g	
Digital inputs	16 digital inputs; PNP/NPN	
Dimensions	12 × 100 × 80mm	
Module type	Digital input module	
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	
DC Supply Voltage	24	V DC
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 current consumption	135 mA at 5 VDC, room temperature	

Technical Specifications

PARAMETER	SPECIFICATION	UNIT
ELECTRICAL		
Input Impedance	6.8 k	Ω
Switch-on delay	< 50 µs	
Status indicators - PR	Flashes after power-up and stays on when communication is connected	
Status indicators - ERR	Operating fault	
Status indicators - Green channel LED	Input active	
Software filter time	Configurable	
Isolation	Yes	
DC Supply Voltage	24	V DC
Expansion-bus current consumption	135 mA at 5 VDC, room temperature	
Switch-off delay	< 50 µs	
Hot-swap support	Not supported	
Logic-high input threshold	15 V, 2 mA	
Logic-low input threshold	5 V, 0.8 mA	

Technical Specifications

PARAMETER	SPECIFICATION	UNIT	NOTES
MECHANICAL			
Weight	Approx. 70 g		
Mounting Orientation	DIN 35 mm rail mounting		
INTERFACES			
Digital inputs	16 digital inputs; PNP/NPN		
Programming software	IEC 61131-3 CODESYS programming software		
Input current	3.5 mA at 24 VDC		
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		
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		

Technical Specifications

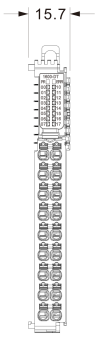
PARAMETER	SPECIFICATION	UNIT	NOTES
ENVIRONMENTAL			
Operating climate conditions - Ambient temperature	-20 to +55	°C	An open, naturally ventilated installation
Operating climate conditions - Relative humidity	10-95%		Non-condensing
Operating climate conditions - Altitude	≤2,000 m		
Operating climate 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	Digital input module		
Dimensions	12 × 100 × 80mm		
ADDITIONAL SPECIFICATIONS			
Protection rating	IP20		
Supply voltage	24	V DC	

Dimensional & Integration Overview

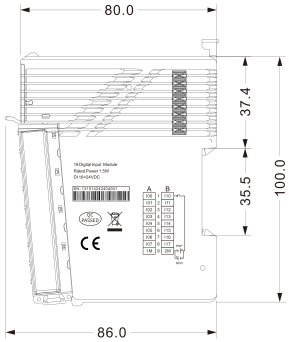
Mechanical Overview

PARAMETER	VALUE	UNIT
Weight	Approx. 70 g	
Mounting Orientation	DIN 35 mm rail mounting	
Dimensions	12 × 100 × 80mm	

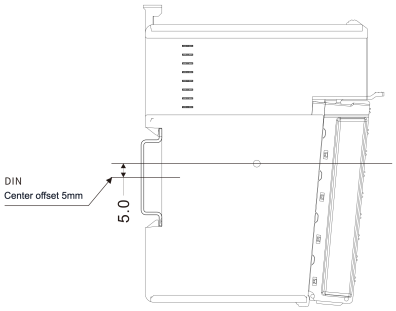
Dimensional Drawings



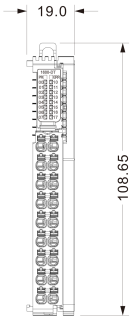
Mechanical View 1



Mechanical View 2



Mechanical View 3



Mechanical View 4

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Width	15.7 mm
	Model designation	1600-DT
	Error indicator label	ERR
	Power indicator label	PR
Mechanical View 2	Overall Width	80.0 mm
	Right Side Distance	37.4 mm
	Overall Height	100.0 mm
	Lower Section Distance	35.5 mm
Mechanical View 3	DIN rail mounting position label	DIN rail mounting position
	Product center offset from DIN rail	5.0 mm downward offset
Mechanical View 4	Module width	19.0 mm
	Module total height	108.65 mm
	Module model number	1600-DT
	PR status indicator	PR
	Error indicator	ERR

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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.