

ECS Hardware Reference Manual



4CHANNEL **DIGITAL OUTPUT** MODULE

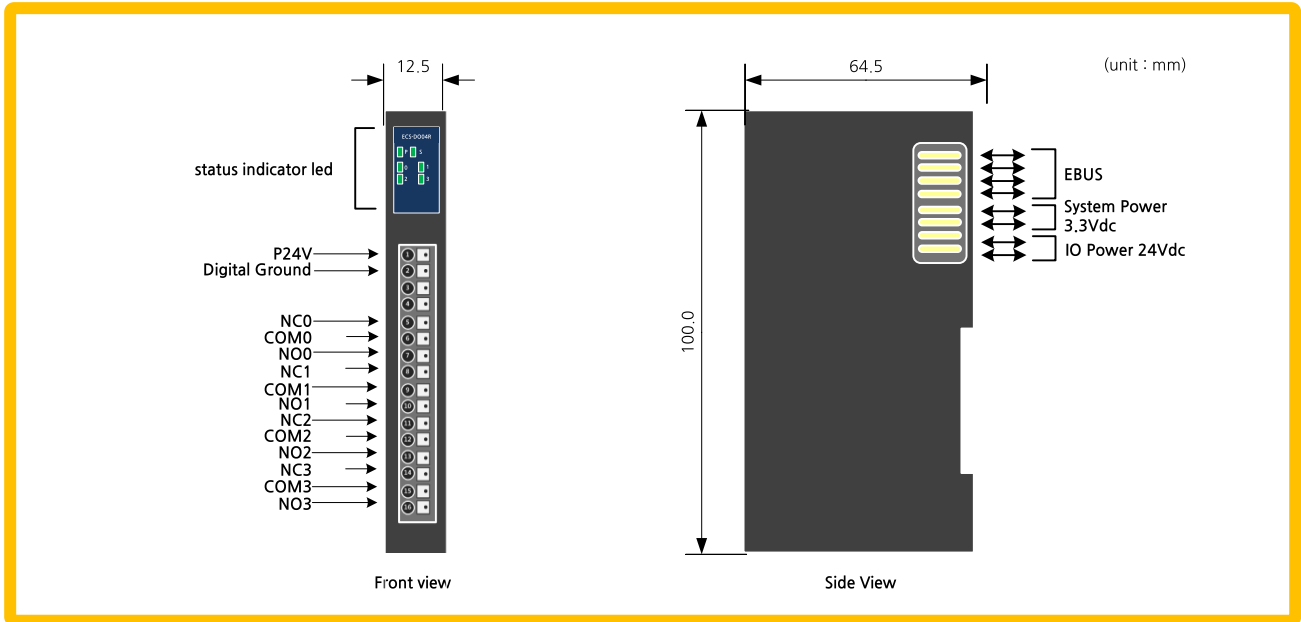
ECS-DO04R

FEB 2016
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Hardware Manual Revision : 1.0.1
Revision Data 2016. 02. 29

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개요

ECS Series - ECS-DO04R (Relay Output 4ch)

ECS-DO04R는 EtherCAT 기반 제어기인 ECS Series의 4채널 Relay 출력 모듈입니다.

각 채널의 내부 제어신호와 외부 입출력 신호는 포토커플러를 사용하여 절연됩니다.

본 매뉴얼은 ECS-DO04R의 하드웨어 구성과 기능에 대해 설명하는 하드웨어 매뉴얼입니다.

제품사양
Relay Specification

ITEM		ECS-DO04R
Number of Outputs		4 Output
Insulation resistance(Initial)		Min. 1,000MΩ (at 500V DC)
Rated Load		9.6mA at 24V DC
Min Switching capacity		10uA 10mV DC
Max Switch current		2A
Max Switch voltage		110V DC, 125V AC
Contact Material		AgPd
Initial contact resistance, max.		Max. 100mΩ (By voltage drop 6V DC 1A)
Leakage Current		±10uA
Max. operating speed		20 cpm
Expected life		Mechanical : Min. 5×10^7 Electrical : Min. 5×10^4 (2A 30V DC resistive)
Nominal operating power		230mW (24V DC)
Operate time[Set time] at 20°C		Max. 4ms
Release time[Reset time] at 20°C		Max. 4ms
Temperature rise at 20°C		Max. 50°C
Vibration	Functional	10 to 55 Hz at double amplitude of 3.3 mm (Detection time : 10us)
	Destructive	10 to 55Hz at double amplitude of 5 mm
Shock resistance	Functional	Min. 750 m/s ² (Half-wave pulse of sine wave: 6ms, detection time: 10us)
	Destructive	Min. 1,000 m/s ² (Half-wave pulse of sine wave :6ms)
Wiring contact		LSF-SMT3.50/16/90 3.5SN BK TU

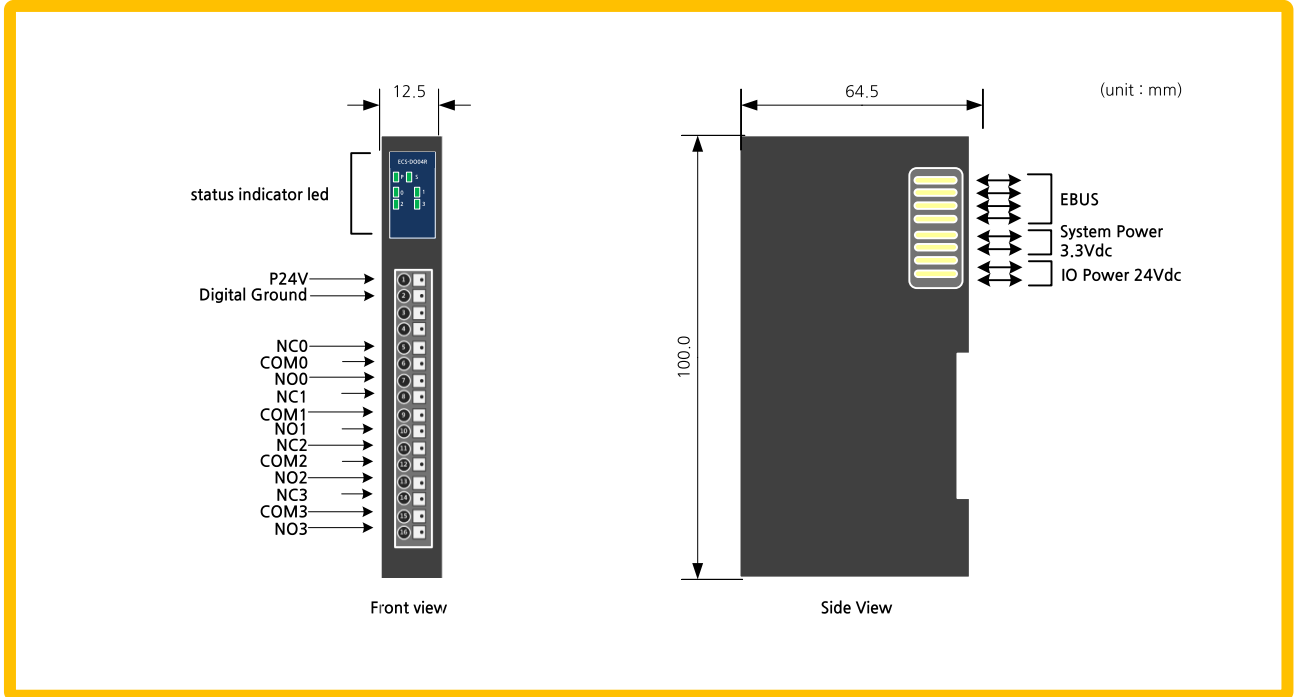
Power Specification

ITEM		ECS-DO04R
Power Dissipation(System)		Max. 100mA @ 3.3V DC
Power Dissipation(I/O)		Max. 40mA @ 24.0V DC
Rated Input Voltage		24V DC (-15%/+20%, ripple ratio within 5%) EN 61131-2

Environmental Specification

ITEM		ECS-DO04R
Dimension		64.5 * 100 * 12.5 (mm)
Install		Industrial DIN rail
Operating Temperature Range		0°C ~ 50°C
Storage Temperature Range		-20°C ~ 80°C
Operating Humidity Range		5% ~ 90%RH, non-condensing
Storage Humidity Range		5% ~ 90%RH, non-condensing

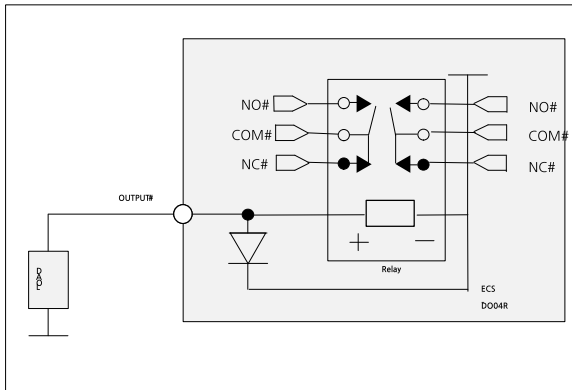
제품사양



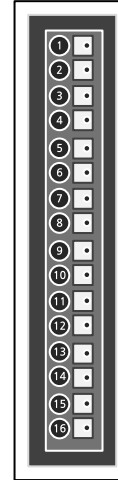
Dimension

Wiring

■ Circuit Diagram

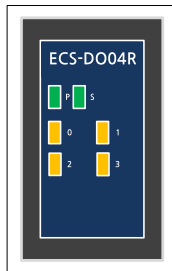


■ PIN MAP



1	P24V
2	N24V
3	
4	
5	NC0
6	COM0
7	NO0
8	NC1
9	COM1
10	NO1
11	NC2
12	COM2
13	NO2
14	NC3
15	COM3
16	NO3

Indicators



P	SYSTEM POWER LED	ON	SYSTEM POWER(5V DC) ON
		OFF	SYSTEM POWER(5V DC) OFF
S	EtherCAT AL STATE LED	OFF	INIT
		Blinking(slow)	PRE-OP
		Single Flash	SAFE-OP
		ON	OP
0-3	OUTPUT STATE LED	Flickering(fast)	BOOTSTRAP
		ON	OUTPUT ON STATE (LOGIC '1')
		OFF	OUTPUT OFF STATE (LOGIC '0')

Hardware Reference Manual Update List

No.	Version	Date	Changes in
1			First Edition
2	1.01	2016.02.29	글꼴변경 (나눔고딕, 굴림)

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2016. 02. 29.



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