

Instruction Manual for CK3M-series AXIS UNIT

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Precautions for Compliance with UL/CSA Standards and EU Directives

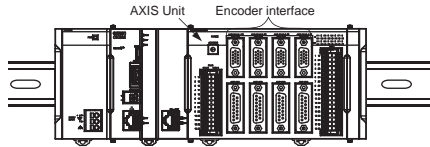
Notice to Users of the CK3M-series components in the USA, Canada and Europe

This manual must be consulted in all cases in order to find out the nature of the potential HAZARDS and any actions which have to be taken to avoid them. If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired. This product is defined as an in-panel device and must be installed within a control panel.

Model

CK3W-AX1414N, CK3W-AX1414P, CK3W-AX1515N, CK3W-AX1515P, CK3W-AX1313N, CK3W-AX1313P, CK3W-AX2323N and CK3W-AX2323P

Electrical Rating



All external power sources must be class 2 or SELV power supplies with F4A over-current protection.

[Power consumption]

CK3W-AX1414N: 5 V DC, 4.5 W 24 V DC, 10.8 W	CK3W-AX1313N: 5 V DC, 3.4 W 24 V DC, 12.5 W
CK3W-AX1414P: 5 V DC, 4.5 W 24 V DC, 10.8 W	CK3W-AX1313P: 5 V DC, 3.4 W 24 V DC, 12.5 W
CK3W-AX1515N: 5 V DC, 4.5 W 24 V DC, 12.5 W	CK3W-AX2323N: 5 V DC, 3.0 W 24 V DC, 13.1 W
CK3W-AX1515P: 5 V DC, 4.5 W 24 V DC, 12.5 W	CK3W-AX2323P: 5 V DC, 3.0 W 24 V DC, 13.1 W

FLAG Interface

[Digital input]
HOME/PLIM/NLIM: 5 to 24 V DC, 7.0 mA, 1 point per channel, 4 channels
USER: 5 to 24 V DC, 9.3 mA, 1 point per channel, 4 channels
[Digital output]
EQU: 5 V DC (RES.), 35 mA/P, 1 point per channel, 4 channels

Encoder Interface for CK3W-AX1414N/AX1414P/AX1515N/AX1515P

[Digital encoder]
Pulse input: RS-422 line receiver level, 3 points per channel, 4 channels
[Serial encoder]
Clock output: RS-422 line driver level, 1 point per channel, 4 channels
Digital input/output: RS-422 line receiver/driver level, 1 point per channel, 4 channels
[Digital output]
5 V DC (RES.), 5 mA/P, 1 point per channel, 4 channels
[Digital input]
5 V DC, 4 points per channel, 4 channels
[Encoder power supply]
5 V DC, 0.5 A per channel, 4 channels, 1 A max. per Unit

Encoder Interface for CK3W-AX1313N/AX1313P/AX2323N/AX2323P

[Digital encoder] (CK3W-AX1313N/AX1313P)
Pulse input: RS-422 line receiver level, 3 points per channel, 4 channels
[Sinusoidal encoder] (CK3W-AX2323N/AX2323P)
Pulse input: RS-422 line receiver level, 3 points per channel, 4 channels
Analog input: 1.35Vp-p Differential, 2 points per channel, 4 channels
[Serial encoder]
Clock output: RS-422 line driver level, 1 point per channel, 4 channels
Digital input/output: RS-422 line receiver/driver level, 1 point per channel, 4 channels
[Digital input]
5 V DC, 4 points per channel, 4 channels
[Encoder power supply]
5 V DC, 0.5 A per channel, 4 channels, 1 A max. per Unit

AMP Interface for CK3W-AX1414N/AX1414P/AX1515N/AX1515P

[Analog output]
FilteredPWM Type: (CK3W-AX1414N / AX1414P)
-20 to +20 V Differential, 1 point per channel, 4 channels
TrueDAC Type: (CK3W-AX1515N / AX1515P)
-20 to +20 V Differential, 2 points per channel, 4 channels
[Relay output]
24 V DC (RES.), 0.5 A NO + NC type, 1 point per channel, 4 channels
[Pulse output]
RS-422-A line driver level, 2 points per channel, 4 channels
[Digital input]
5 to 24 V DC, 7.0 mA, 1 point per channel, 4 channels

AMP Interface for CK3W-AX1313N/AX1313P/AX2323N/AX2323P

[DirectPWM]
Pulse output: RS-422 line driver level, 10 points per channel, 4 channels
Pulse input: RS-422 line receiver level, 3 points per channel, 4 channels
Power supply output: 5 V DC, 0.1 A per channel, 4 channels

GPIO Interface

[Digital Input]
24 V DC, 3.9 mA/P 16 points
[Digital Output]
12 to 24 V DC (RES.), (TUN.), (P.D.), 0.5 A/P 16 points, 2 A max. per Unit
Internal current consumption of CK3W-AX1414N / AX1515N / AX1313N / AX2323N : 40 mA max. per Unit
Internal current consumption of CK3W-AX1414P / AX1515P / AX1313P / AX2323P : 80 mA max. per Unit

Environment

Indoor use only.
Altitude: 2,000 m max.
Surrounding Air Temperature: 0 to 55 °C
Surrounding Air Humidity: 10 to 95%
Overvoltage Category II
Pollution Degree 2

Cable for I/O Terminal

Please select the cable by which rated temperature is 75°C or above.

Cleaning

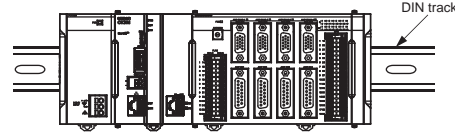
Do not use paint thinner or similar chemical to clean with. Use a dry cloth.

Enclosure Type

Please use this product in a control board.
Enclosure type: Type 1 or more.

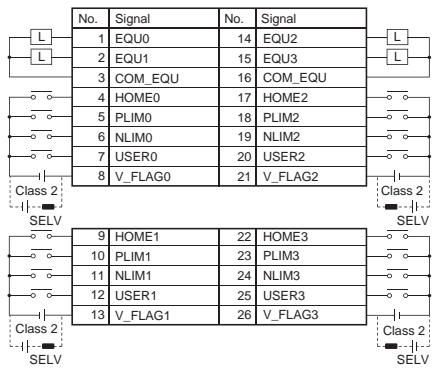
Direction of Installation

Vertical only.

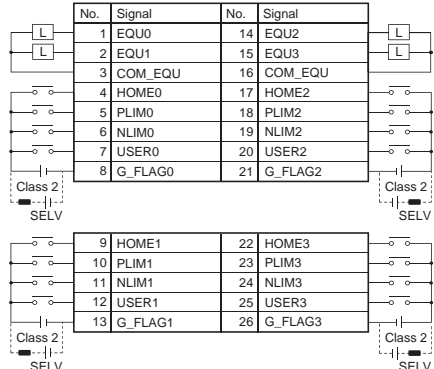


I/O Wiring Diagram

FLAG Interface (FLAG) NPN type



PNP type



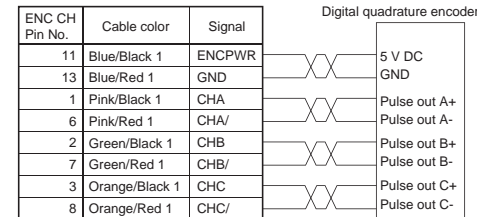
■ : Over-current protection (Current limitation: F4A, 24 VDC minimum)
● : UL Listed and CSA certified

Encoder Interface (ENC CH 0 to 3)

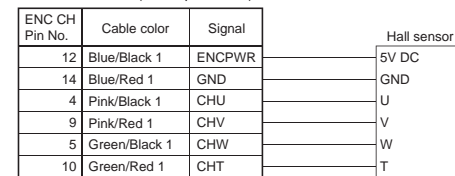
To connect to a digital quadrature encoder and Hall sensor, use the following cable.
CK3W-CAEW03A

The diagram for cables and device connections is shown below.

CK3W-CAEW03A (Four pair cable)

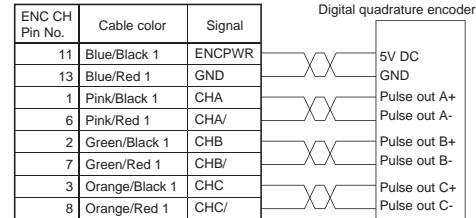


CK3W-CAEW03A (Three pair cable)

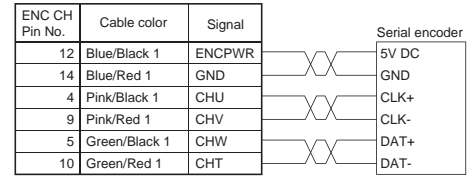


To connect to a digital quadrature encoder and serial encoder, use the following cable.
CK3W-CAEW03A

The diagram for cables and device connections is shown below.
CK3W-CAEW03A (Four pair cable)

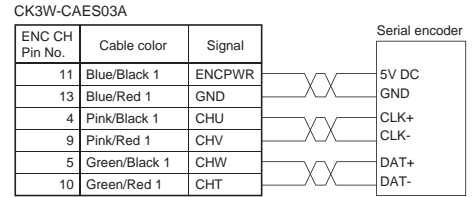


CK3W-CAEW03A (Three pair cable)



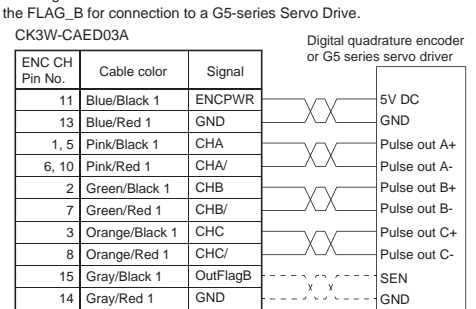
To connect to a serial encoder, use the following cable.
CK3W-CAES03A

The diagram for cables and device connections is shown below.
CK3W-CAES03A



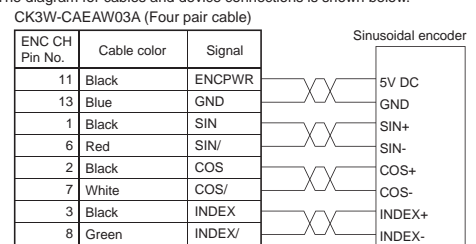
To connect to a digital quadrature encoder or G5-series Servo Drive, use the following cable.
CK3W-CAED03A

The diagram for cables and device connections is shown below. Use the FLAG_B for connection to a G5-series Servo Drive.
CK3W-CAED03A

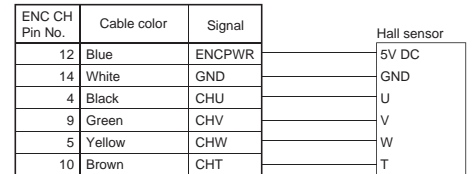


To connect to sinusoidal encoder and Hall sensor, use the following cable.
CK3W-CAEA03A

The diagram for cables and device connections is shown below.
CK3W-CAEA03A (Four pair cable)



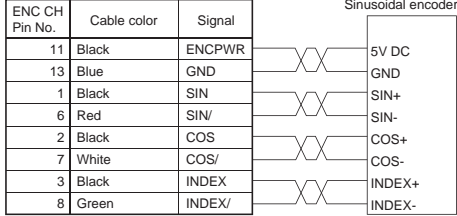
CK3W-CAEA03A (Three pair cable)



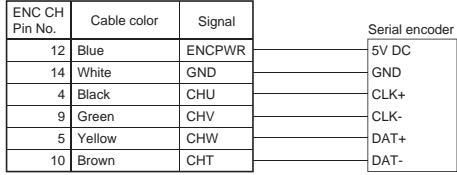
To connect to sinusoidal encoder and serial encoder, use the following cable.
CK3W-CAEAW03A

The diagram for cables and device connections is shown below.

CK3W-CAEAW03A (Four pair cable)



CK3W-CAEAW03A (Three pair cable)

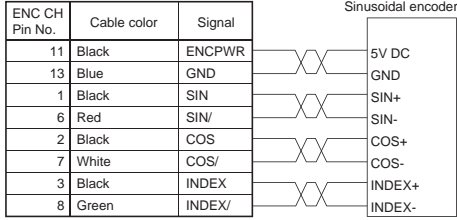


To connect to sinusoidal encoder, use the following cable.

CK3W-CAEA03A

The diagram for cables and device connections is shown below.

CK3W-CAEA03A (Four pair cable)



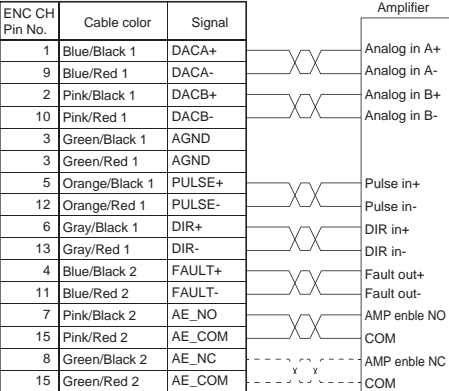
■ AMP Interface (AMP CH 0 to 3)

To connect to AMP interface for FilteredPWM type and TrueDAC type, use the following cable.

CK3W-CAA03A

The diagram for cables and device connections is shown below.

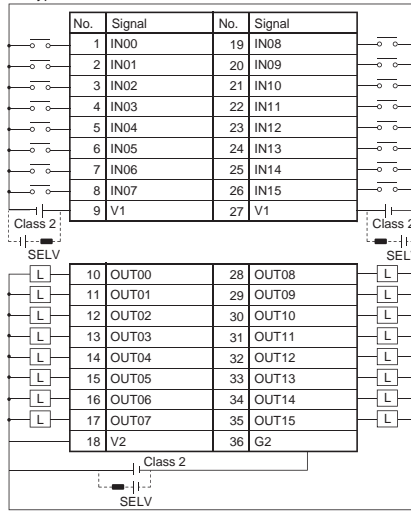
CK3W-CAA03A



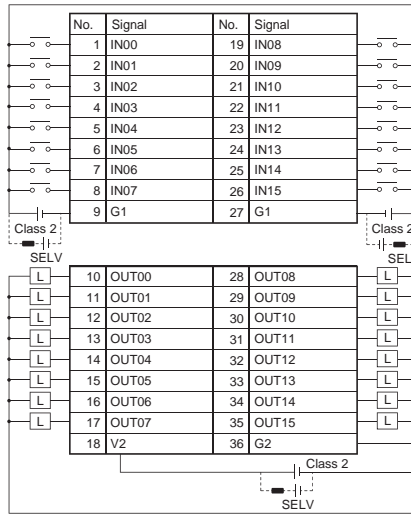
To connect to AMP interface for Direct PWM type, use the following cable.

CK3W-CAAD009A/CAAD018A/CAAD036A

■ GPIO Interface
NPN type



PNP type



- : Over-current protection (Current limitation: F4A, 24 VDC minimum)
- Use fuses of either of the following categories
 - cULus Listed
 - UL Listed and CSA certified

Conformance to UL/CSA Standards

● Terminal Connection Diagram

1. Do not use ferrule terminals. Insert the stranded or solid wire directly into the holes on the terminal block.
2. Strip length: 10 mm
3. Wire size: AWG 16 to AWG 26, Solid or Strand, CU

● Accessory Cables

As shown in the table below, accessory cables are available.

	Interface	Model	Manufacturer
AMP interface cable	FilteredPWM type and TrueDAC type	CK3W-CAA03A	OMRON corporation
		CK3W-CAAD009A CK3W-CAAD018A CK3W-CAAD036A	
	DirectPWM type	CK3W-CAEW03A	
Encoder interface cable	Digital quadrature encoder and UVWT Digital quadrature encoder and Serial encoder	CK3W-CAES03A	
	Serial encoder	CK3W-CAED03A	
	Sinusoidal encoder and UVWT Sinusoidal encoder and Serial encoder	CK3W-CAEAW03A	
	Sinusoidal encoder	CK3W-CAEA03A	

These accessory cables are Internal Wiring only. Separate the accessory cable 50.8 mm (2 inch) or more from more than 150 V circuit, 6.4 mm (1/4 inch) or more from less than 150 V circuit.

Conformance to EU Directives

This is a class A product. In a residential areas it may cause radio interference, in which case the user may be required to take adequate measures to reduce interference.

Conformance to KC Standard

사용자 안내문

이 기기는 업무용 환경에서 사용할 목적으로 적합성평가를 받은 기기로서 가정용 환경에서 사용하는 경우 전파간섭의 우려가 있습니다.

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Note: Specifications subject to change without notice.