Specification
for
Mitsubishi Electric AC Servo System
Encoder / Power supply cable

Type SC-AEP4C□M-■-H

MITSUBISHI ELECTRIC
SYSTEM & SERVICE CO.,LTD

Note

Revision				Drawn	Check	Design	Approved
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Send to								Date	Dwg
								7 June 2024	
								Order	X953503D70003-E13

1. SCOPE

This specification covers the requirements for the Mitsubishi Electric AC Servo System Encoder / Power supply cable.

・SC-AEP4C□M-■-H

※ The products specified in this specification comply with the EU RoHS Directive.

※ UL's Wiring Harnesses Traceability program provides traceability for this cable.

2. CABLE TYPE

SC - AEP 4 C □ M - ■ - H

Sign	Bending life
H	Long bending life

Sign	Cable lead out direction
A1	Motor shaft side
A2	Opposite of motor shaft
A5	Vertical side

Sign	Length of cable
□	Refer to clause 4

Sign	Motor connection side connector specifications
4	1 connector / 1 cables (Power supply cable with shield)

Sign	Application
AEP	Encoder / Power supply cable

3. APPLICABLE STANDARDS

Wire part : UL standard (UL 758 : AWM)

UL Style No.	Rated	
2586	105°C	600V

4. LENGTH OF CABLE

0.5m to 20m

※The maximum cable length differs depending on the motor.
Refer to the cable length selection table "R9535021-018028-010" for details.

5. EXAMPLE OF PRINTING CABLE TYPE NAME

SC-AEP4C□M-■-H ×××××××

※ □ is a figure from 0.5 to 20.
※ ■ is cable lead out direction from A1, A2, or A5.
※ ××××××× are the serial number for seven digits.

6. STRUCTURE AND CHARACTERISTICS

(1) Wire

Item		Unit	Specification	
			For power supply	For encoder
Structure		—	AWG18×4C+(AWG22×3P)	
Conductor	Conductor size	—	AWG18	AWG22
	Outer diameter	mm	Approx. 1.4	Approx. 0.8
Insulation	Material	—	ETFE	
	Outer diameter	mm	Approx. 1.9	Approx. 1.3
Twisted pair	Number of insulated core wire	—	—	2C
	Outer diameter	mm	—	Approx. 2.5
Twisted	Number of pairs	—	—	3P
	Number of insulated core wire	—	4C	—
Shield	Material	—	Tin coated copper braid	
Sheath	Material	—	Flame resisting PVC	
	color	—	Black	
Overall diameter		mm	Approx. 11.9	
Approx. weight		kg/km	210	
Electrical characteristics	Insulation resistance	MΩ・km	Over 100	
	Withstand voltage	V / for 1 min	AC2000	
Minimum bend radius		mm	6 times the overall diameter	
Bending life		—	Over 1 million times[*1] (by Minimum bend radius)	
Flame retardant		—	UL1581 VW-1	

*1 It is a test outcome, and not a guaranteed value. (The performance is different according to customer's environment.)

(2) Connector

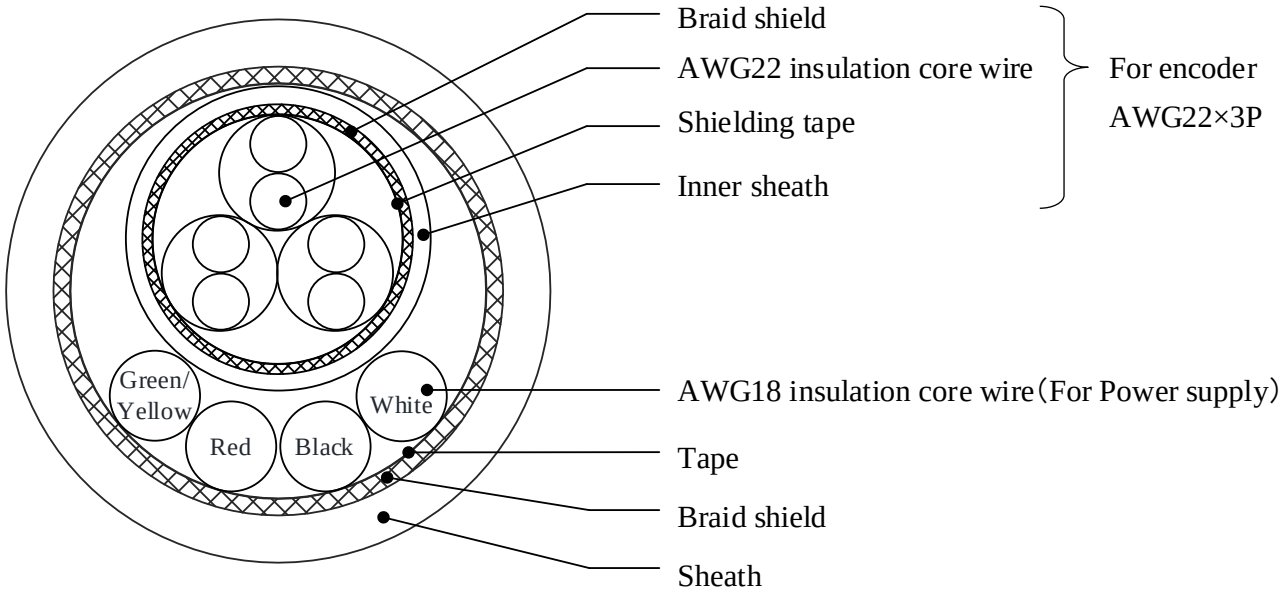
Amplifier side	Encoder side	Type	Molex Japan Co., Ltd. 54599-1016 (Connector set)
		IP rating	IP20[*2]
	Power supply side	—	Discrete wires
Motor side	Cable lead out direction A1, A2	Type	Hirose Electric Co., Ltd. MT50W-8D/2D4ES-CVL(11.9) (Connector set)
		IP rating	IP65[*2]
	Cable lead out direction A5	Type	Hirose Electric Co., Ltd. MT50W-8D/2D4ES-CVS(11.9) (Connector set)
		IP rating	IP65[*2]

*2 The IP rating indicated is for the connector's protection against ingress of dust and water when coupled to a servo amplifier/servo motor. If the IP rating of the servo amplifier/servo motor differs from that of these connectors, overall IP rating depends on the lowest of all.

(3) Cable harness

Environment	Ambient temperature	℃	0 to 60 (non-freezing)
	Ambient humidity	%RH	5 to 95 (non-condensing)
	Ambience	—	Indoors (no direct sunlight), no corrosive gas, inflammable gas, oil mist, or dust
Electrical characteristics	Insulation resistance	MΩ・km	Over 10
	Withstand voltage	V / for 1 min	For encoder : AC500 For power supply : AC1800

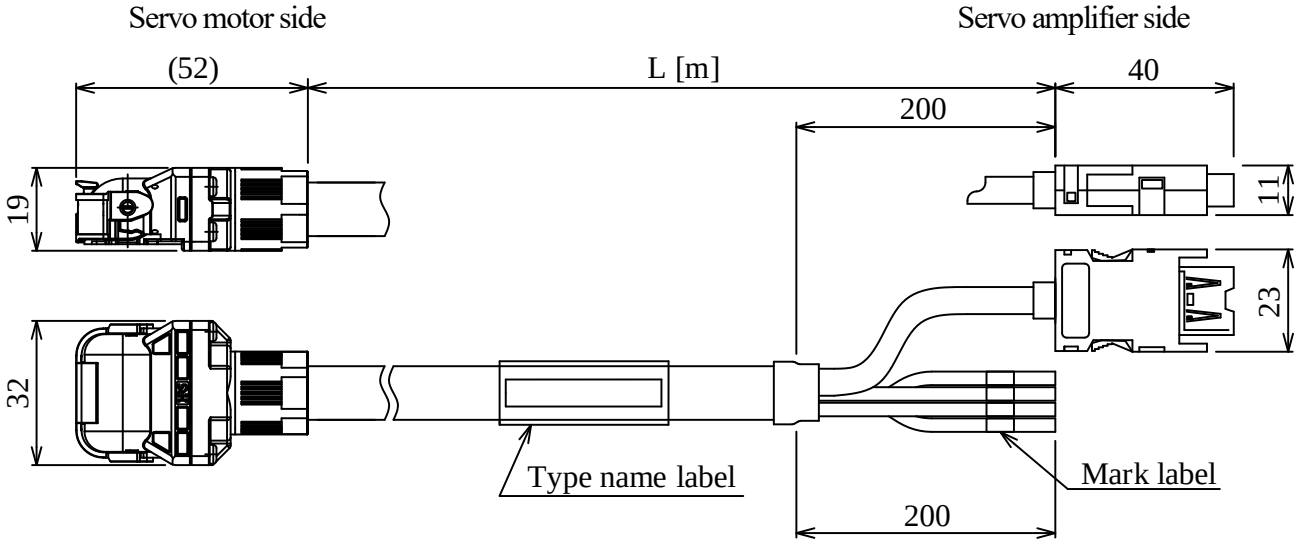
7. STRUCTURAL DRAWING



8. OUTLINE DRAWING

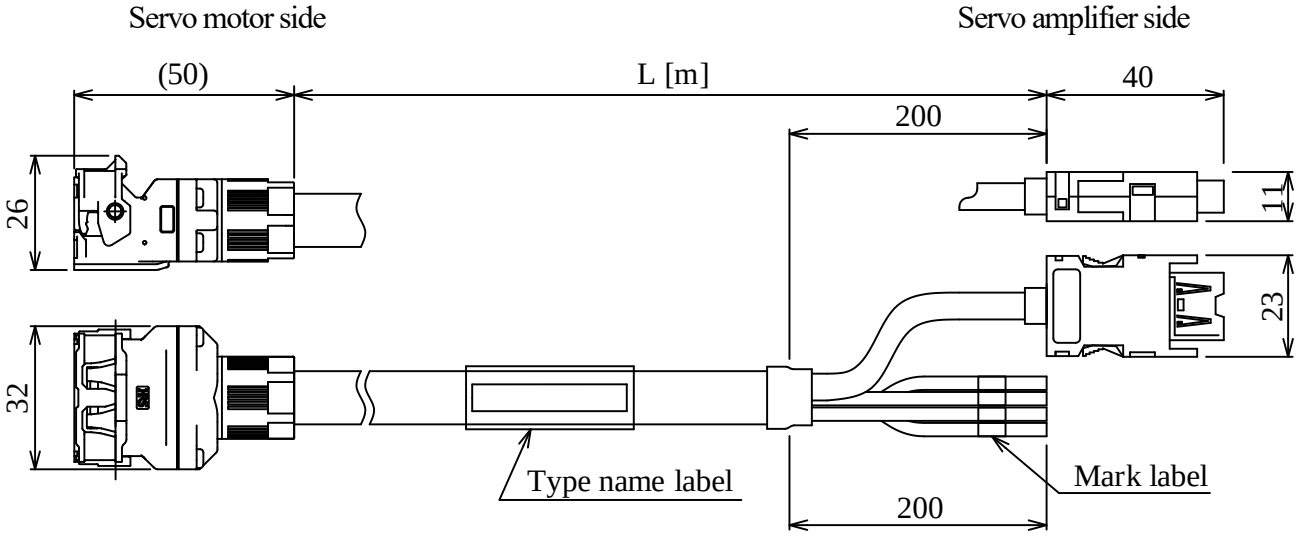
(1) SC-AEP4C□M-A1-H / SC-AEP4C□M -A2-H

[Unit : mm]



(2) SC-AEP4C□M-A5-H

[Unit : mm]



Refer to the following table for mark label and insulation color.

Mark label	Insulation color
U	Red
V	White
W	Black
E	Green / Yellow