

Specification  
for  
General purpose AC Servo  
Encoder / Power supply brake cable

Type SC-AEPB3J2TC□M-■-H

MITSUBISHI ELECTRIC  
SYSTEM & SERVICE CO.,LTD

Note

Revision								Drawn	Check	Design	Approved
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Send to								Date		Dwg	
								6 Sep.,2022		X953503D70003-E76	
								Order			

## 1. SCOPE

This specification covers the requirements for the General purpose AC Servo Encoder / Power supply brake cable.

- SC-AEPB3J2TC□M-■-H

※ The Products covered in this specification don't include the toxic substances in RoHS.

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

## 2. CABLE TYPE

SC - AEPB 3 J2 T C □ M - ■ - H

	Sign	Bending life
	H	Long bending life
	Sign	Cable lead out direction
	A1	Motor shaft side
	A2	Opposite of motor shaft
	Sign	Length of cable
	□	Refer to clause 4
	Sign	Communication method
	T	Two-wire type
	Sign	Relay connection side connector specifications
	J2	IP67 relay connector
	Sign	Motor connection side connector specifications
	3	1 connector / 2 cables (Power supply brake cable with shield)
	Sign	Application
	AEPB	Encoder / Power supply brake cable

### 3. APPLICABLE STANDARDS

Wire part : UL standard (UL 758 : AWM)

Application department	UL Style No.	Rated	
Encoder cable side	20276	80°C	30V
Power supply / brake cable side	2586	105°C	600V

### 4. APPLICABLE SERVO MOTOR / LENGTH OF CABLE

1 to 5m

※Refer to the CABLE SELECTION TABLE "R9535021-018028-015" and CABLE LENGTH SELECTION TABLE "R9535021-018028-010" for applicable motors, connection cables and total cable length.

### 5. EXAMPLE OF PRINTING CABLE TYPE NAME

SC-AEPB3J2TC□M-■-H    ×××××××

- ※ □ is a figure from 1 to 5.
- ※ ■ is cable lead out direction from A1, A2.
- ※ ××××××× are the serial number for seven digits.

## 6. STRUCTURE AND CHARACTERISTICS

### (1) Wire

Item		Unit	Specification		
			For encoder	For power supply / brake	
Structure		—	AWG22×3P	AWG18×4C + AWG24×2C	
Conductor	Conductor size	—	AWG22	AWG18	AWG24
	Outer diameter	mm	Approx.0.8	Approx.1.4	Approx.0.7
Insulation	Material	—	ETFE	ETFE	
	Outer diameter	mm	Approx.1.2	Approx.1.9	Approx.1.1
Twisted pair	Number of insulated core wire	—	2C	—	
	Outer diameter	mm	Approx.2.3	—	
Twisted	Number of pairs	—	3P	—	—
	Number of insulated core wire	—	—	4C	2C
Shield	Material	—	Tin coated copper braid	Tin coated copper braid	
Sheath	Material	—	Flame resisting PVC	Flame resisting PVC	
	color	—	Black	Black	
Overall diameter		mm	Approx. 7.5	Approx. 7.5	
Cable weight		kg/km	80	100	
Electrical characteristics	Insulation resistance	MΩ · km	Over 100	Over 100	
	Withstand voltage	V / for 1 min	AC500	AC2000	
Minimum bend radius		mm	6 times the overall diameter	6 times the overall diameter	
Bending life		—	Over 1 million times <sup>*1</sup> (by Minimum bend radius)	Over 1 million times <sup>*1</sup> (by Minimum bend radius)	
Flame retardant		—	UL1581 VW-1	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	DDK Ltd. CMV1-CR10P-M2 (Cable receptacle)
		IP rating	IP67*2
	Power supply / brake side	Type	DDK Ltd. D/MS3101A22-23P(D263) (Cable receptacle) CE02-22BS-S-D(R1) (Waterproof straight back shell) CE3057-12A-3-D(R1) (Cable clamp)
		IP rating	IP67*2
Motor side		Type	Hirose Electric Co., Ltd. MT50W-8D/2D4ES-CVLD(7.5) (Connector set)
		IP rating	IP65*2

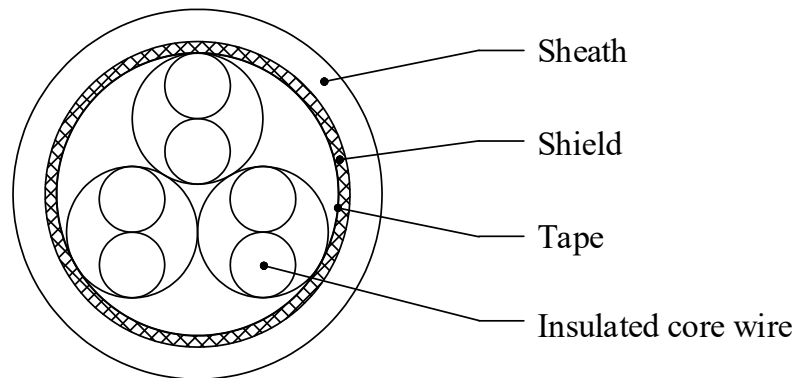
\*2 The IP rating indicated is for the connector's protection against ingress of dust and water when coupled to a servo amplifier/servo motor. If the IP rating of the servo amplifier/servo motor differs from that of these connectors, overall IP rating depends on the lowest of all.

## (3) Cable harness

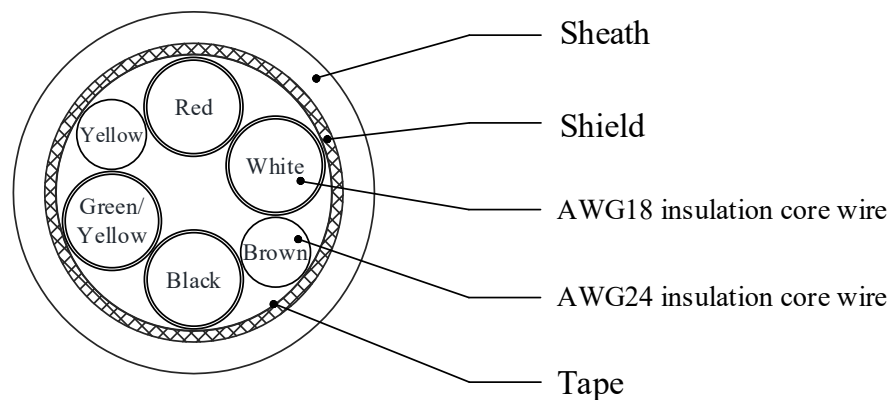
Environment	Ambient temperature	°C	0 to 60 (Without freezing)
	Ambient humidity	%RH	5 to 95 (Without condensation)
	Ambience	—	Indoors (no direct sunlight), no corrosive gas, inflammable gas, oil mist, or dust
Electrical characteristics	Insulation resistance	MΩ · km	Over 10
	Withstand voltage	V / for 1 min	For encoder : AC500 For power supply / brake: AC1800

## 7. STRUCTURAL DRAWING

## 7.1. For encoder

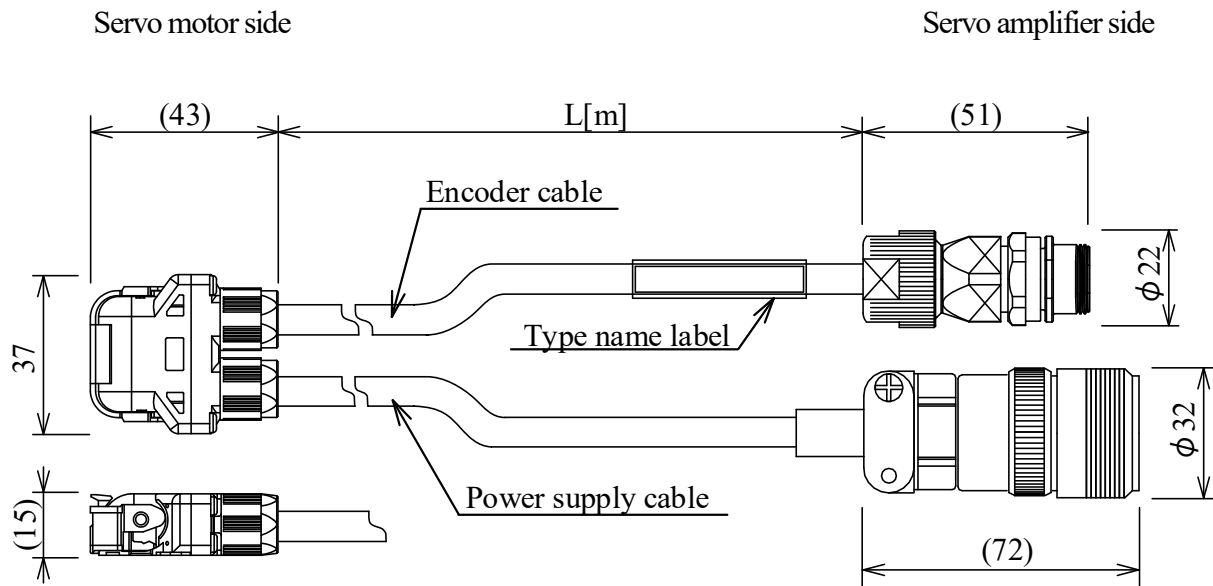


## 7.2. For power supply / brake



## 8. OUTLINE DRAWING

[Unit : mm]



※ This outline drawing is for the cable lead out direction “A1”.

The cable lead out direction “A2” reverses the position of the encoder cable and the power supply brake cable.