Specification
for
General purpose AC Servo
Long Bending Life Encoder cable

Type SC-EKCBL□M-H

MITSUBISHI ELECTRIC
SYSTEM & SERVICE CO.,LTD

Note

Revision				Drawn	Check	Design	Approved
A	26 Mar.,2018			n. Ito	S. Kawajiri	T. Kazahaya	D. Fukushima
B	21 Aug.,2019						
C	19 Aug.,2021						

Send to								Date	Dwg
								22 Mar.,2016	
								Order	X903703D50052-E09C

1. SCOPE

This specification covers the requirements for the General purpose AC Servo Long Bending Life Encoder cable.

・SC-EKCBL□M-H

※ Please note that the product specifications described in this specification are subject to change without notice for improvement.

※ If you need copy exactly, please contact our Sales Department.
Copy exactly ... Products made in the same process, same parts

2. CABLE TYPE

SC - [EK] CBL [□] M - [H]

Sign	Bending life
H	Long bending life

Sign	Length of cable
□	Refer to clause 5.

Sign	Application
EK	Amplifier side encoder cable for relay connection *1 *2 ※ Refer to clause 4 for applicable motor

*1 Please use it with motor side encoder cable.
Refer to clause 6 for confirming the combination and cable length.

*2 The cable(Over 30m) is available in 4-wire type. Parameter setting is required to use the 4-wire type encoder cable. Refer to "SERVO AMPLIFIER INSTRUCTION MANUAL issued by Mitsubishi Electric Corporation" for more details.

3. APPLICABLE STANDARDS

Wire part : UL standard (UL 758 : AWM)

Length of cable	UL Style No.	Rated	
1～30m	20276	80°C	30V
31~50m	2464		300V

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

・This cable doesn't include the toxic substances in RoHS.

4. APPLICABLE SERVO MOTOR

Refer to MR-J4 APPLICABLE SERVO MOTOR TABLE "R9037020-010022-105".

5. LENGTH OF CABLE

1 to 50m Specified by 1m unit

6. CABLE LENGTH FOR RELAY CONNECTION

Combination			Total cable length
Amplifier side	Motor side		
SC-EKCBL□M-H	SC-J3JCBL□M-■-L SC-J3JCBL□M-■-H	1m or less	50m or less
	SC-J3JCBL□M-■-L SC-J3JCBL□M-■-H	2～5m	40m or less
	SC-J3J2CBL□M-■-S *1 SC-J3J2CBL□M-■-N *1	3m or less	30m or less

*1 This cable is only for 2 wire type connection.

7. EXAMPLE OF PRINTING CABLE TYPE NAME

SC-EKCBL□M-H ×××××××

※ □ is a figure from 1 to 50
※ ××××××× are the serial number for seven digits.

8. STRUCTURE AND CHARACTERISTICS

Item		Unit	Specification		
			1～10m	11～30m	31～50m
Structure		—	AWG22×3P	AWG25×6P	AWG25×7P
Conductor	Conductor size	—	AWG22	AWG25	
	Outer diameter	mm	Approx. 0.8	Approx. 0.5	
Insulation	Material	—	ETFE		
	Outer diameter	mm	Approx. 1.2	Approx.1.0	
Twisted pair	Number of insulated core wire	—	2C		
	Outer diameter	mm	Approx. 2.4	Approx. 2.0	
Twisted	Number of pairs	—	3P	6P	7P
Shield	Material	—	Tin coated copper braid		
Sheath[*3]	Material	—	Flame resisting PVC		
	Color	—	Black		
Overall diameter		mm	Approx. 7.2	Approx. 8.0	Approx.8.3
Cable weight		kg/km	75	85	95
Electrical characteristics	Insulation resistance	MΩ・km	Over 100		
	Withstand voltage	V for1minute	AC500		
Operating temperature range		℃	-10～+60 (without condensation)		
Minimum Bend Radius		mm	6 times the overall diameter		
Bending life		—	Over 1 million times [*1] (Bend radius: Minimum bend radius for each cable)		
Flame Retardant		—	UL1581 VW-1		

Connector	Servo amplifier side	Type	Molex Japan LLC 54599-1016 (Connector set) or 3M Japan Limited 36210-0100PL (Receptacle) 36310-3200-008 (Shell kit)
		IP rating	IP20[*2]
	Servo motor side	Type	Tyco electronics Japan G.K. 1-172161-9 (Housing) AINIX Co., Ltd. MTI-0002 (Cable crump)
		IP rating	IP20[*2]

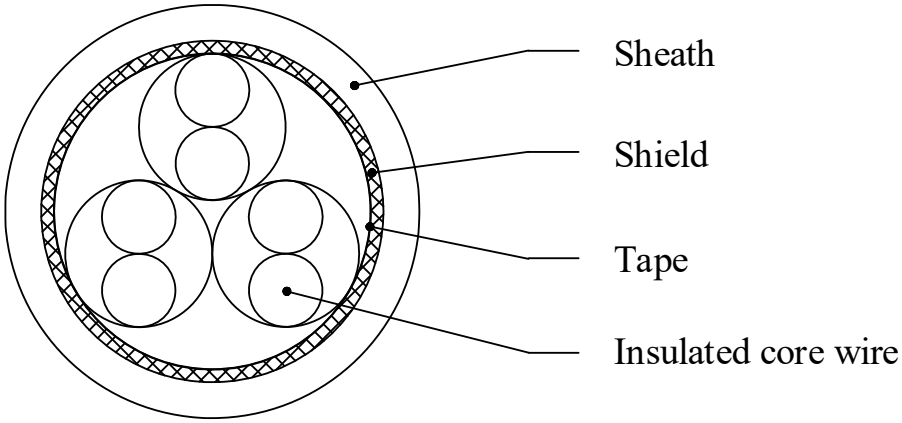
*1 This is the only test result, not guaranteed value. (The performance would be different depends on environment they are used.)

*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.

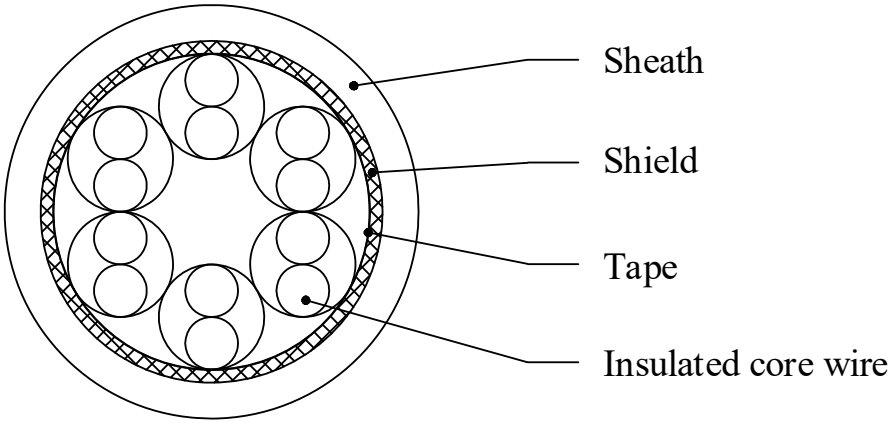
*3 Please note that the silk printing of the cable sheath varies depending on the manufacturer.

9. STRUCTURAL DRAWING

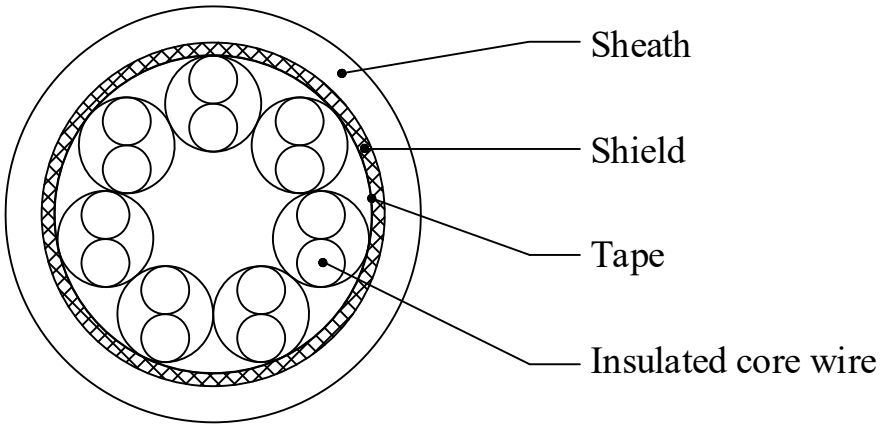
(1) 1～10m



(2) 11～30m

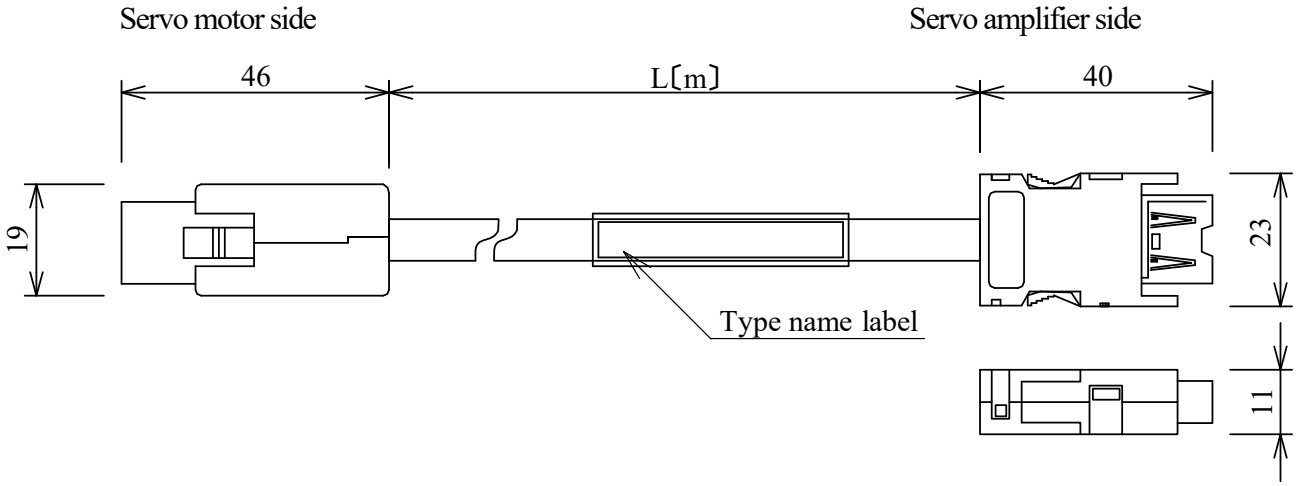


(3) 31~50m

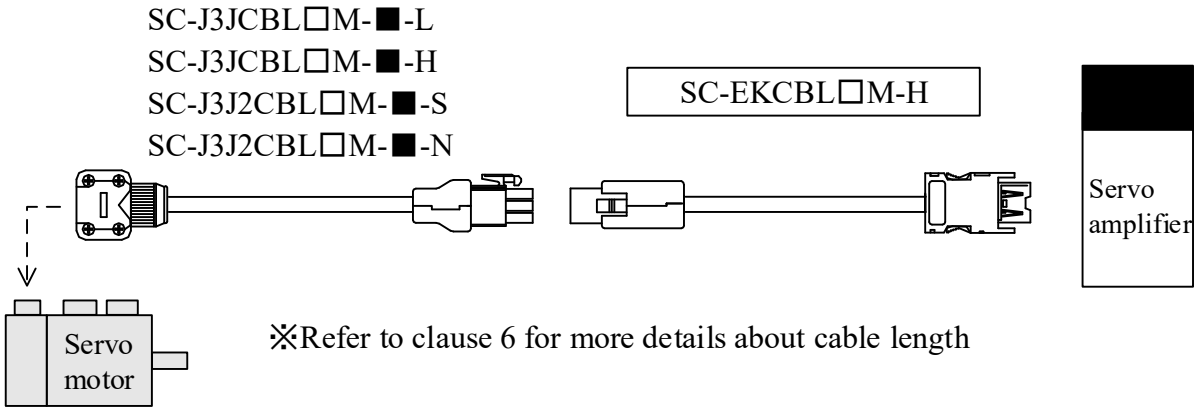


10. OUTLINE DRAWING

[Unit : mm]



11. SYSTEM CONFIGURATION DIAGRAM



※Refer to clause 6 for more details about cable length