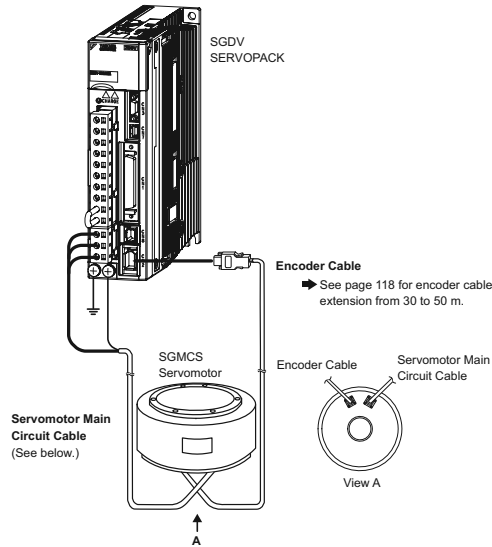


Selecting Cables

● Cables Connections



● Servomotor Main Circuit Cables

Name	Length (L)	Order No.		Specifications	Details				
		Standard Type	Flexible Type ^{*1}						
Small Capacity (02B-35E)	Cable with Loose Wire at SERVOPACK End	3 m	JZSP-CMM60-03-E	JZSP-CSM60-03-E	Applicable Flange ^{*2} : 1 	(1)			
		5 m	JZSP-CMM60-05-E	JZSP-CSM60-05-E					
		10 m	JZSP-CMM60-10-E	JZSP-CSM60-10-E					
		15 m	JZSP-CMM60-15-E	JZSP-CSM60-15-E					
		20 m	JZSP-CMM60-20-E	JZSP-CSM60-20-E					
	Servomotor-end Connector	JN1DS04FK1		Soldered		(3)			
		Cables	5 m	JZSP-CSM90-05-E			JZSP-CSM80-05-E		(4)
			10 m	JZSP-CSM90-10-E			JZSP-CSM80-10-E		
			15 m	JZSP-CSM90-15-E			JZSP-CSM80-15-E		
			20 m	JZSP-CSM90-20-E			JZSP-CSM80-20-E		
50 m	JZSP-CSM90-50-E		JZSP-CSM80-50-E						
Medium Capacity (45M, 80M, 80N, 1AM)	Cable with Loose Wire at SERVOPACK End	3 m	B1EV-03(A)-E	B1EP-03(A)-E		(2)			
		5 m	B1EV-05(A)-E	B1EP-05(A)-E					
		10 m	B1EV-10(A)-E	B1EP-10(A)-E					
		15 m	B1EV-15(A)-E	B1EP-15(A)-E					
		20 m	B1EV-20(A)-E	B1EP-20(A)-E					
Medium Capacity (1EN, 2ZN)	Cable with Loose Wire at SERVOPACK End	3 m	B2EV-03(A)-E	B2EP-03(A)-E					
		5 m	B2EV-05(A)-E	B2EP-05(A)-E					
		10 m	B2EV-10(A)-E	B2EP-10(A)-E					
		15 m	B2EV-15(A)-E	B2EP-15(A)-E					
		20 m	B2EV-20(A)-E	B2EP-20(A)-E					

*1: Use flexible cables for movable sections such as robot arms.

*2: For applicable flanges, see model designations on page 101.

*3 Premium cables are intended for use in applications that require CE. They have a continuous flex rating and are intended for use in movable sections such as robot arms.

NOTES:

Shaded items are non-stock.

SGMCS servomotors with holding brakes are not available.

Selecting Cables

(1) Small Capacity Series: Wiring Specifications for Cables

· Applicable Flange: 1

SERVOPACK End		Servomotor End	
Wire Color	Signal	Signal	Pin No.
Red	Phase U	Phase U	1
White	Phase V	Phase V	2
Blue	Phase W	Phase W	3
Green/(yellow)	FG	FG	4

· Applicable Flange: 4

SERVOPACK End		Servomotor End	
Wire Color	Signal	Signal	Pin No.
Red	Phase U	Phase U	1
White	Phase V	Phase V	2
Blue	Phase W	Phase W	3
Green/(yellow)	FG	FG	4

(2) Medium Capacity Series: Wiring Specifications for Cables

SERVOPACK-end Leads		Servomotor-end Connector	
Wire Label	Signal	Signal	Pin No.
G	FG	FG	D
W	Phase W	Phase W	C
V	Phase V	Phase V	B
U	Phase U	Phase U	A

*For servomotors with holding brakes, the holding brake cable must also be wired.

(3) Small-capacity Series: Servomotor-end Connector Specifications

Items	Specifications
Manufacturer	Japan Aviation Electronics Industry, Ltd.
Order No.	JN1DS04FK1 (Soldered)
Outer Diameter of Applicable Cable	5.7 dia. to 7.3 dia. mm
External Dimensions mm	

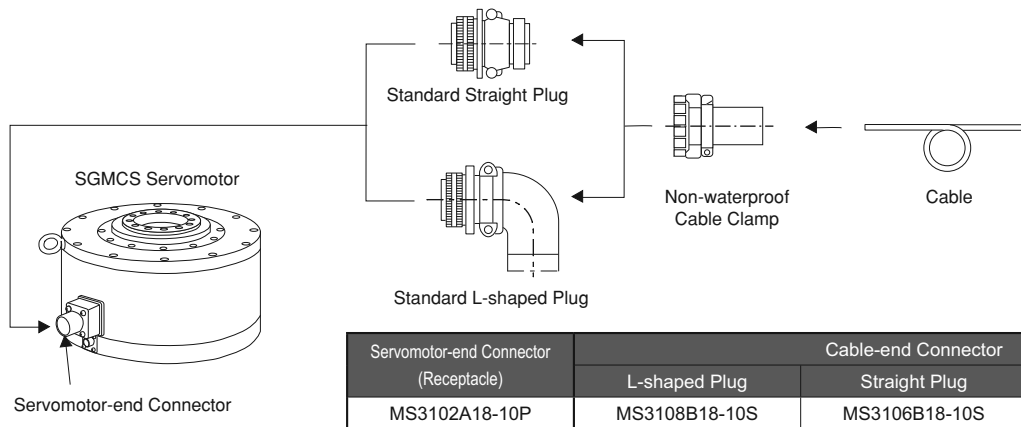
(4) Small-capacity Series: Cable Specifications

Items	Standard Type	Flexible Type
Order No.*	JZSP-CSM90-□□-E (50 m max.)	JZSP-CSM80-□□-E (50 m max.)
Specifications	UL2517 (Max. operating temperature: 105°C) AWG20×6C For power line: AWG20 (0.52 mm ²) Outer diameter of insulating sheath: 1.53 dia. mm For holding brake line: AWG20 (0.52 mm ²) Outer diameter of insulating sheath: 1.53 dia. mm	UL2517 (Max. operating temperature: 105°C) AWG22×6C For power line: AWG22 (0.33 mm ²) Outer diameter of insulating sheath: 1.37 dia. mm For holding brake line: AWG22 (0.33 mm ²) Outer diameter of insulating sheath: 1.37 dia. mm
Finished Dimensions	7 ± 0.3 mm	
Internal Configuration and Lead Color		
Yaskawa Standard Specifications (Standard Length)	Cable length : 5 m, 10 m, 15 m, 20 m, 50 m	

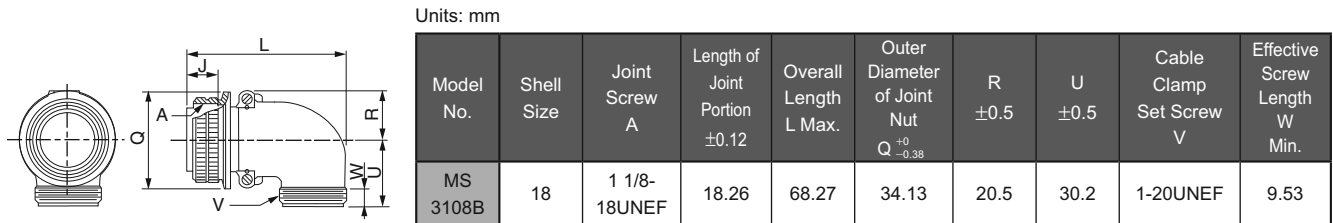
*: Specify the cable length □□ of order no.
Example: JZSP-CSM90-15-E (15 m)

Selecting Cables

(Medium-capacity Series (SGMCS-□□M and N): Connector Specifications



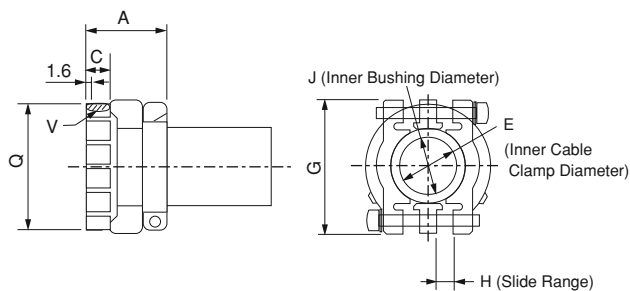
· Dimensional Drawings: MS3108B L-shaped Plug Shell



· Dimensional Drawings: MS3106B Straight Plug Shell



· Dimensional Drawings: MS3057-10A Cable Clamp with Rubber Bushing

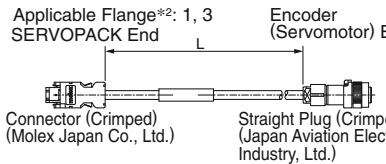
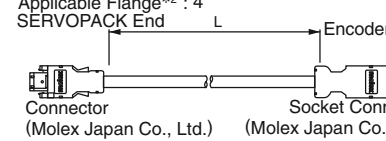
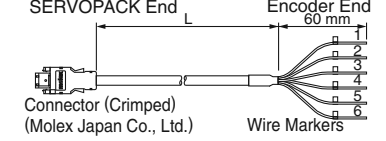

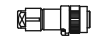



Units: mm

Model No.	Applicable Connector Shell Size	Overall Length A ±0.7	Effective Screw Length C	E	G ±0.7	H	J	Set Screw V	Outer Diameter Q ±0.7	Attached Bushing
MS3057-10A	18	23.8	10.3	15.9	31.7	3.2	14.3	1-20UNEF	30.1	AN3420-10

Selecting Cables

● Encoder Cables and Connectors (Max. length: 20 m)

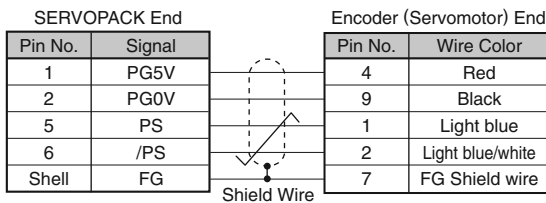
Name	Length (L)	Order No.		Specifications	Details
		Standard Type	Flexible Type ¹		
Cable with Connectors (For Incremental and Absolute Encoder)	3 m	JZSP-CMP60-03-E	JZSP-CSP60-03-E	Applicable Flange ^{*2} : 1, 3 SERVOPACK End  Encoder (Servomotor) End Connector (Crimped) (Molex Japan Co., Ltd.) Straight Plug (Crimped) (Japan Aviation Electronics Industry, Ltd.)	(1)
	5 m	JZSP-CMP60-05-E	JZSP-CSP60-05-E		
	10 m	JZSP-CMP60-10-E	JZSP-CSP60-10-E		
	15 m	JZSP-CMP60-15-E	JZSP-CSP60-15-E		
	20 m	JZSP-CMP60-20-E	JZSP-CSP60-20-E	Applicable Flange ^{*2} : 4 SERVOPACK End  Encoder End Connector (Molex Japan Co., Ltd.) Socket Connector (Molex Japan Co., Ltd.)	(2)
	3 m	JZSP-CMP00-03-E	JZSP-CMP10-03-E		
	5 m	JZSP-CMP00-05-E	JZSP-CMP10-05-E		
	10 m	JZSP-CMP00-10-E	JZSP-CMP10-10-E		
Cable with Loose Wire at Encoder End (For Incremental and Absolute Encoder)	15 m	JZSP-CMP00-15-E	JZSP-CMP10-15-E	SERVOPACK End  Encoder End 60 mm Connector (Crimped) (Molex Japan Co., Ltd.) Wire Markers	(3)
	20 m	JZSP-CMP00-20-E	JZSP-CMP10-20-E		
	3 m	JZSP-CMP03-03-E	JZSP-CMP13-03-E		
	5 m	JZSP-CMP03-05-E	JZSP-CMP13-05-E		
SERVOPACK-end Connector Kit		JZSP-CMP9-1-E		Soldered  (Molex Japan Co., Ltd.)	(4)
	Encoder-end Connector (Straight Plug)	JN1DS10SL1			
Encoder-end Connector (Socket Contact)	JN1-22-22S-PKG100		Crimping Type (A crimp tool is required.)  (Japan Aviation Electronics Industry, Ltd.)		
Cables	5 m	JZSP-CMP09-05-E	JZSP-CSP39-05-E		(5)
	10 m	JZSP-CMP09-10-E	JZSP-CSP39-10-E		
	15 m	JZSP-CMP09-15-E	JZSP-CSP39-15-E		
	20 m	JZSP-CMP09-20-E	JZSP-CSP39-20-E		

*1: Use flexible cables for movable sections such as robot arms.
 *2: For applicable flanges, see model designations on page 101.

NOTE: Shaded items are non-stock.

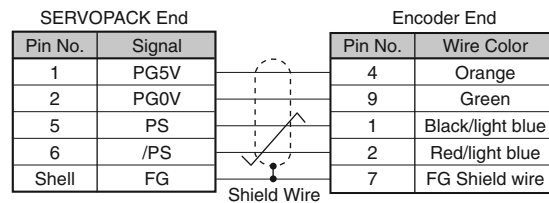
(1) Wiring Specifications for Cable with Connectors

· Applicable Flange: 1, 3
 (Standard type)



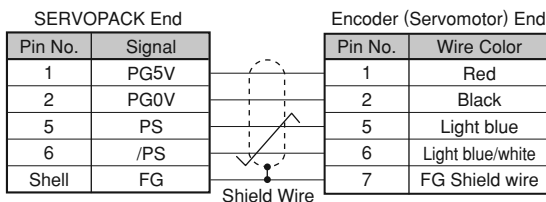
Note: Be sure to connect the shield wire of encoder cable to the connector case (shell).

(Flexible type)



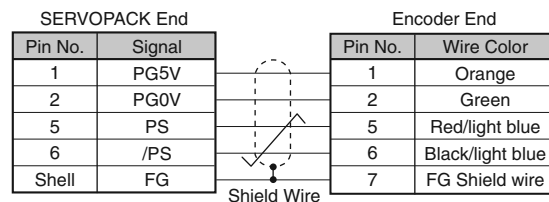
(2) Wiring Specifications for Cable with Connectors

· Applicable Flange: 4
 (Standard type)



Note: Be sure to connect the shield wire of encoder cable to the connector case (shell).

(Flexible type)



Selecting Cables

(3) Wiring Specifications for Cable with Loose Wire at Encoder End

(Standard type)

SERVOPACK End		Encoder (Servomotor) End	
Pin No.	Signal	Wire Color	Marker
6	/PS	Light blue/white	6
5	PS	Light blue	5
4	BAT(-)	Orange/white	4
3	BAT(+)	Orange	3
2	PG0V	Black	2
1	PG5V	Red	1
Shell	FG		

(Flexible type)

SERVOPACK End		Encoder (Servomotor) End	
Pin No.	Signal	Wire Color	Marker
1	PG5V	Orange	1
2	PG0V	Green	2
3	BAT(+)	Red/pink	3
4	BAT(-)	Black/pink	4
5	PS	Red/light blue	5
6	/PS	Black/light blue	6
Shell	FG		

Notes: 1 The signals BAT (+) and BAT (-) are not needed when using single turn absolute feedback.
2 Be sure to connect the shield wire of encoder cable to the connector case (shell).

(4) SERVOPACK-end Connector Specifications

Items	SERVOPACK End	Encoder End
Order No.	JZSP-CMP9-1-E	Tools are not included.
Manufacturer	Molex Japan Co., Ltd.	Japan Aviation Electronics Industry, Ltd.
Connector	55100-0670 (soldered) Note: 55100-0670 (soldered) when using a connector kit	Straight plug: JN1DS10SL1 (crimped) Socket contact type: JN1-22-22S-PKG100 Outer diameter of applicable cable : 5.7 dia. to 7.3 dia. mm Applicable wire size: AWG21 to 25 Outer diameter of insulating sheath: 0.8 dia. to 1.5 dia. mm Crimp tool (hand tool) model: CT150-2-JN
External Dimensions (Units: mm)		

(5) Cable Specifications

Items	Standard Type	Flexible Type
Order No.*	JZSP-CMP09-□□-E	JZSP-CSP39-□□-E
Cable Length	20 m max.	
Specifications	UL20276 (Max. operating temperature: 80°C) AWG22×2C+AWG24×2P AWG22 (0.33 mm ²) Outer diameter of insulating sheath: 1.15 dia. mm AWG24 (0.20 mm ²) Outer diameter of insulating sheath: 1.09 dia. mm	UL20276 (Max. operating temperature: 80°C) AWG22×2C+AWG24×2P AWG22 (0.33 mm ²) Outer diameter of insulating sheath: 1.35 dia. mm AWG24 (0.20 mm ²) Outer diameter of insulating sheath: 1.21 dia. mm
Finished Dimensions	6.5 dia. mm	6.8 dia. mm
Internal Configuration and Lead Colors		
Yaskawa Standard Specifications (Standard Length)	Cable length: 5 m, 10 m, 15 m, 20 m	

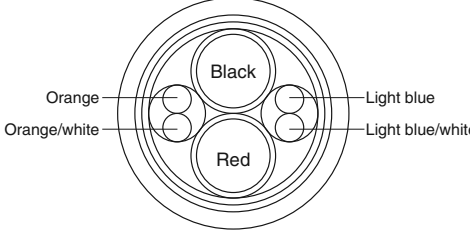
* Specify the cable length in □□ of order no.
Example: JZSP-CMP09-05-E (5 m)

Selecting Cables

● Encoder Cables (For Extending from 30 to 50 m)

To extend the wiring distance up to 50 m, the following cables and connectors are available from Yaskawa Controls Co., Ltd.

· Cable Specifications

Items	Standard Type
Order No.*	JZSP-CMP19-□□-E
Cable Length	50 m max.
Specifications	UL20276 (Max. operating temperature: 80°C) AWG16×2C+AWG26×2P AWG16 (1.31 mm ²) Outer diameter of insulating sheath: 2.0 dia.mm AWG26 (0.13 mm ²) Outer diameter of insulating sheath: 0.91 dia. mm
Finished Dimensions	6.8 dia. mm
Internal Configuration and Lead Colors	
Yaskawa Standard Specifications (Standard Length)	Cable length: 30 m, 40 m, 50 m

* Specify the cable length in □□ of order no.
Example: JZSP-CMP19-30-E (30 m)

· SERVOPACK-end Connector Specifications

Items	SERVOPACK End	Servomotor End
Order No.	JZSP-CMP9-1-E	Tools are not included.
Manufacturer	Molex Japan Co., Ltd.	Japan Aviation Electronics Industry, Ltd.
Connector	55100-0670 (soldered) Note: 55100-0670 (soldered) when using a connector kit	Straight plug: JN1DS10SL1 (crimped) Socket contact : JN1-22-22S-PKG100 Outer diameter of applicable cable : 5.7 dia. to 7.3 dia. mm Applicable wire size: AWG21 to 25 Outer diameter of insulating sheath: 0.8 dia. to 1.5 dia. mm Crimp tool (hand tool) model: CT150-2-JN
External Dimensions (Units: mm)	