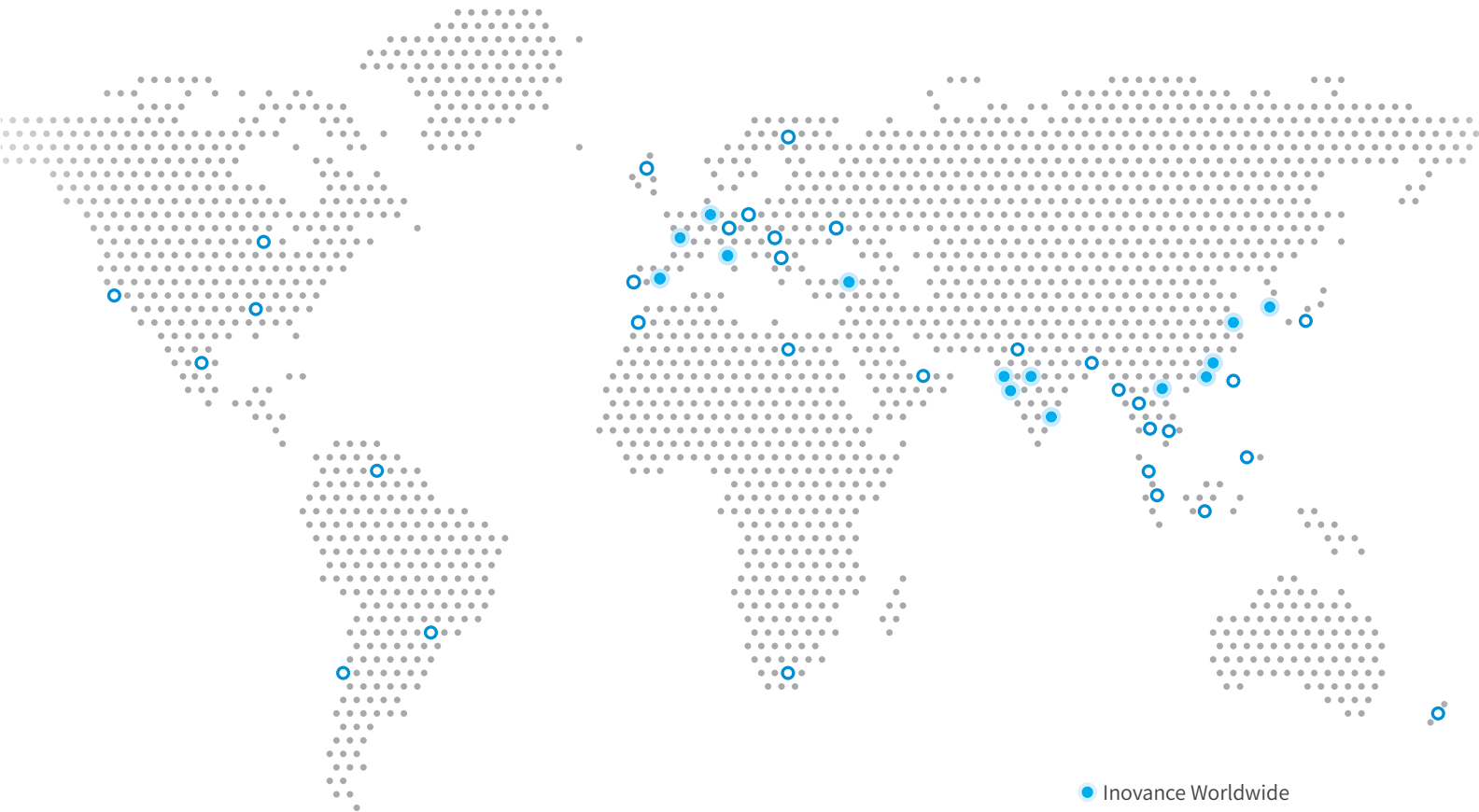




19120592 A00

Copyright © Shenzhen Inovance Technology Co., Ltd.



- Inovance Worldwide
- Distribution & Service Partners

Advancing industrial technology, for a better world

Europe

- **Germany-Stuttgart**
☎ +49 (0) 7144 8990
✉ sales.de@inovance.eu
- **France-Bordeaux**
☎ +33 (0) 5594 01050
✉ sales.fr@inovance.eu
- **Spain-Barcelona**
☎ +34 93 504 94 48
✉ sales.es@inovance.eu
- **Italy-Milano**
☎ +39 (0) 2268 22318
✉ sales.it@inovance.eu
- **Turkey-Istanbul**
☎ +90 (216) 706 17 89
✉ sales.tr@inovance.eu

Asia Pacific

- **India**
Chennai (Head Office) ☎ +91 (0) 44 4380 0201
Ahmedabad ☎ +91 794003 4272
Mumbai ☎ +91 22 4971 5883
New Delhi ☎ +91 11 4165 4524
Sales Network
Kolkata, Bengaluru, Pune, Coimbatore, Hyderabad, Vadodara, Jaipur
- **South Korea-Seoul**
☎ +82 (0)2 3489 8850
✉ INOVANCEKR@inovance.eu
- **Thai - Bangkok**
☎ +669 8163 8213
✉ Thailand@inovance.com
- **Vietnam - Hanoi**
☎ +84 948118793
✉ tiendinh@inovance.com

- **China**
Shenzhen Inovance Technology Co., Ltd.
Suzhou Inovance Technology Co. Ltd.
☎ 4000-300124 (within China)
✉ info@inovance.com
✉ service@inovance.com
Hong Kong SAR (International Export Office)
☎ +852 2751 6080
✉ info@inovance.eu

FOLLOW US



Pre-sales consultation Email:
motioncontrol@inovance.com

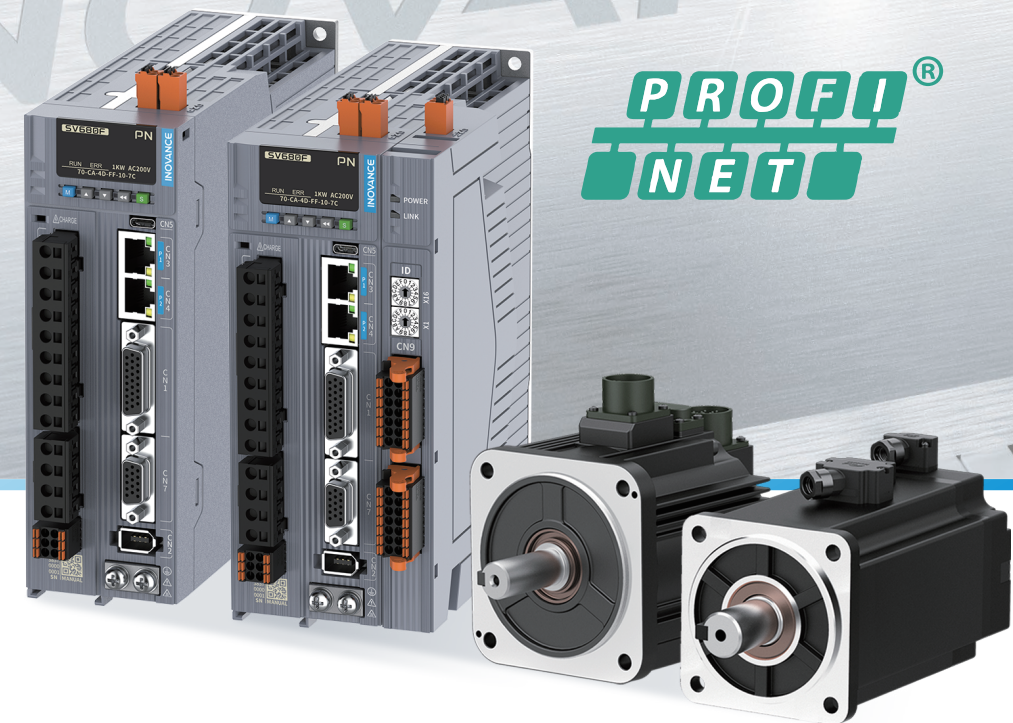
Servo System Online Selection Tool:
<https://www.inovance.com/global/prod-select>



INOVANCE

SV680F PROFINET Servo Drive

Precision with Safety & Flexible Functionality



PROFIsafe
Safety function supported

EnDat 2.2 **SSI** **BISS**
Multi-encoder supported

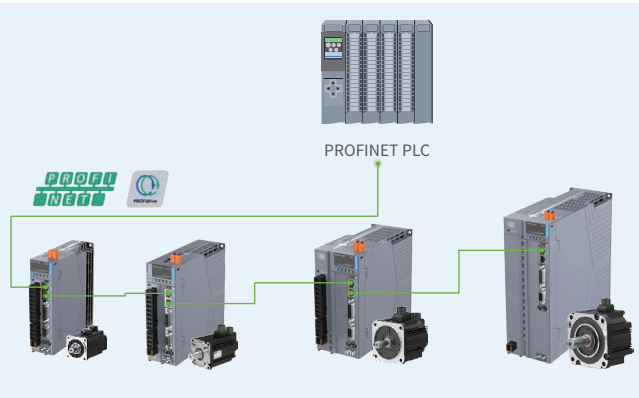
Gantry synchronization
supported



Scan for the manual of
SV680F-INT.

Compatible with multiple Profnet bus controllers,

The SV680F seamlessly interfaces with PROFINET controllers including S7-1200, S7-1500, and SIMOTION, fully compliant with the PROFIdrive profile.



Telegram types supported by SV680F

Code	Configuration	Description
AC1	Standard Telegram 1, 2	Closed-loop speed control
AC3	Siemens Telegram 111	EPOS drive-embedded positioning mode with integrated torque limitation via PROFIdrive telegrams
AC4	Standard Telegram 3	Controller-based closed-loop positioning
	Siemens Telegram 102, 105	Controller-based closed-loop positioning with integrated torque limitation via PROFIdrive telegrams
	Extended Telegram 750	Closed-loop torque control
	Inovance Extended Telegram 850	Communication given DI/DO
	Safety Telegrams 30, 901 (PROFIsafe Certified)	Trigger safety function

Safety Guaranteed,

PROFIsafe safety bus guarantees functional safety for robust industrial networks

Advantages of PROFIsafe

Monitoring Safety

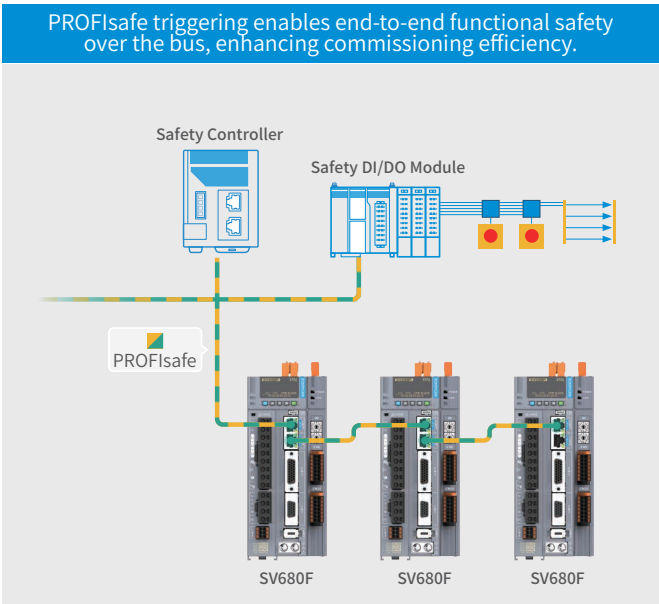
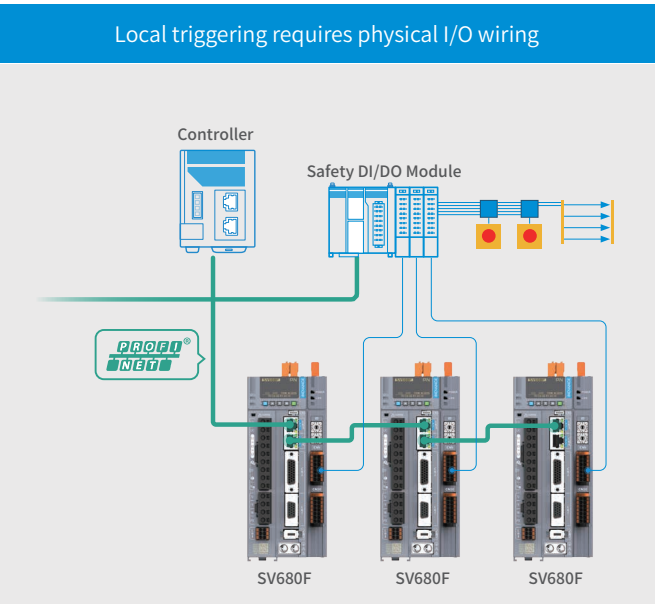
PROFIsafe monitors and verifies safety data within PROFINET process data frames to ensure integrity. If any anomalies are detected (e.g., corrupted data frames), PROFIsafe will trigger an alarm, initiate a safe state transition, and enforce STO (Safe Torque Off) or other predefined safety protocols.

Safety Control

Achieving secure control over automation systems through PROFIsafe communication, ensuring rapid response and appropriate actions in emergency scenarios.

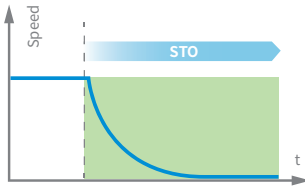
Cable Reduction

Cable Reduction: Servo drives can activate STO/SLS and other safety functions in two typical ways.

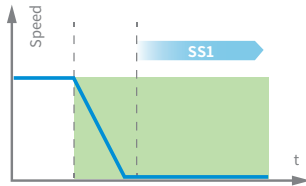


Equipped with eight standard safety functions

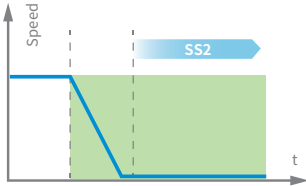
All models compliant with IEC 61508 SIL3 safety level requirements. STO supports as standard.



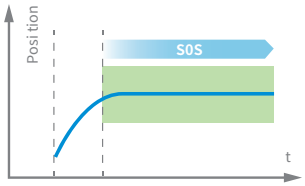
STO
STO (Safe Torque Off)



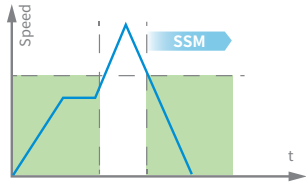
SS1
Safe Stop 1



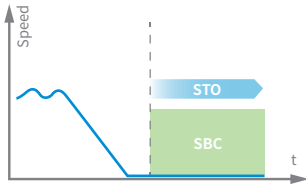
SS2
Safe Stop 2



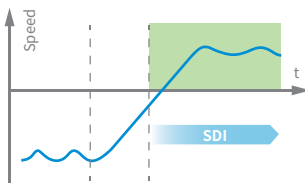
SOS
Safe Operating Stop



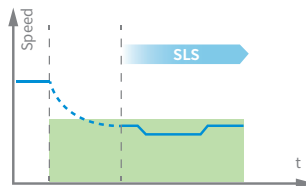
SSM
Safe Speed Monitor



SBC
Safe Brake Control



SDI
Safe Direction

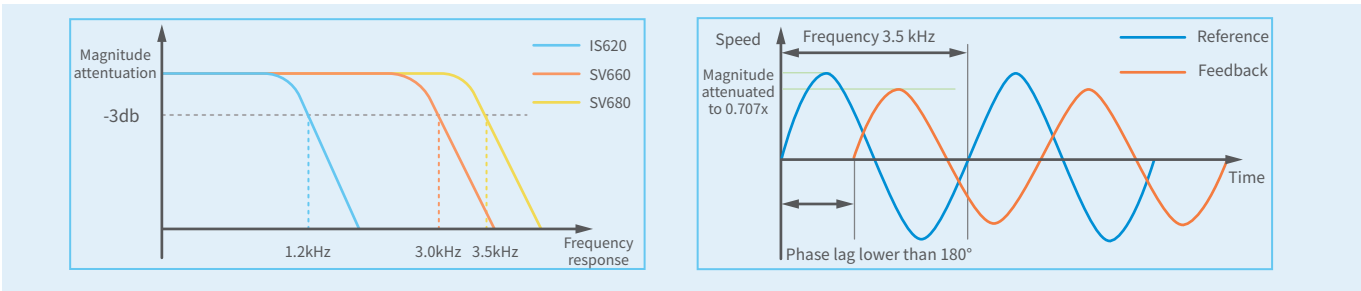


SLS
Safely-limited Speed



Superior Control with Ultra Fast Current Loop,

- Superior current loop control algorithm to deliver smooth and accurate motion profile.
- A speed loop response bandwidth of 3.5 kHz* gives significantly improved performance compared to the previous generation of Inovance products.
- Current loop cycle 1.6 μ s (625 kHz), speed loop cycle 62.5 μ s (16 kHz), position loop cycle 62.5 μ s (16 kHz).

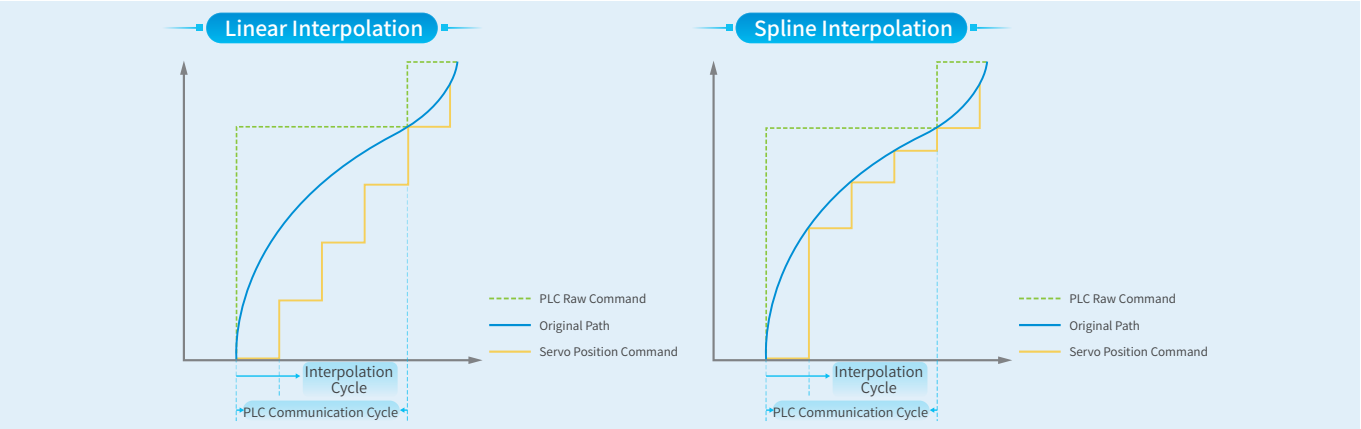


*Please note: The statement refers to the highest frequency speed command change that the servo system can respond to.

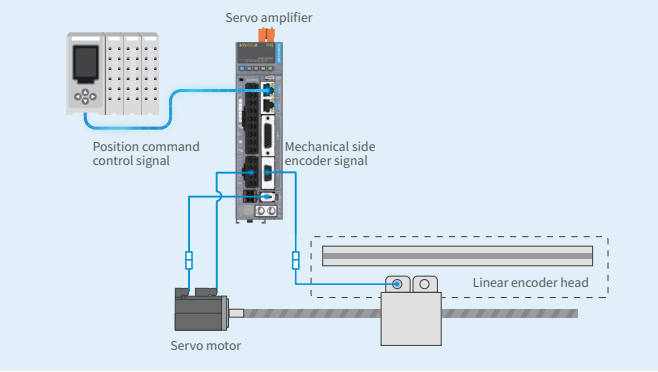
Enhanced Performance

DSC (Dynamic Servo Control)

The SV680F's DSC features spline interpolation, enabling smoother servo command signals and minimizing tracking errors.



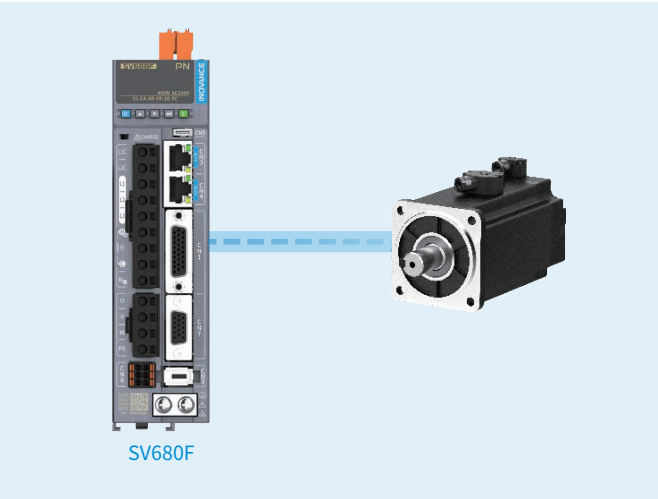
Full closed-loop control supported



SV680F supports Inovance's 26 bit absolute encoder, Endat 2.2, BISS-C, SSI and ABZ incremental encoders. And compatible with absolute linear encoder, enabling power-off retention of external loop data.

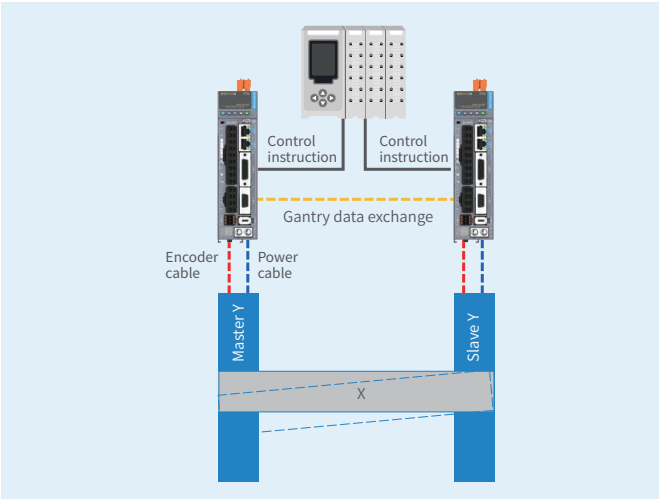
Wide adaptability

Supports rotating motor with Inovance's 26 bit, ABZ, BISS_C, Endat 2.2, SSI encoder protocol.



Gantry synchronization

Supports built-in gantry synchronization on servo drive. Supports multiple gantry alignment modes: Enable Alignment, Homing Alignment, and DI Alignment.

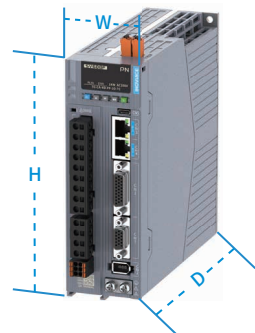


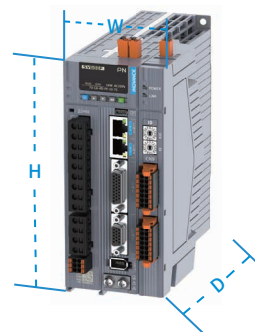
Ordering code

SV680 F S 2R8 I - GINT

①	②	③	④	⑤	⑥
① Product series SV680: SV680 series servo drive	④ Rated output current			⑤ Model configuration I: Standard type S: Advanced functional safety type with 24V DC backup	
② Product type F: PROFINET communication	S: 200 V ~ 240 V T: 380V ~ 480V			⑥ Version GINT: International	
③ Voltage class S: 200 V ~ 240 V T: 380 V ~ 480 V	1R6: 1.6A 3R5: 3.5A				
	2R8: 2.8A 5R4: 5.4A				
	5R5: 5.5A 8R4: 8.4A				
	7R6: 7.6A 012: 12.0A				
	012: 12.0A 017: 17.0A				
	018: 18.0A 021: 21.0A				
	022: 22.0A 026: 26.0A				
	027: 27.0A				

Dimensions

Models without 24V DC backup	Frame size	W (mm)	H (mm)	D (mm)	Mass (kg)
SV680F****I-GINT					
	SIZE A	45.5	170	150	0.96
	SIZE C	55±1	170	173±1	1.30
	SIZE D	80±1	170	183	1.80
	SIZE E	90	250	230	3.60

Models without 24V DC backup	Frame size	W (mm)	H (mm)	D (mm)	Mass (kg)
SV680F****S-GINT					
	SIZE A	64.5	170	150	1.11
	SIZE C	74±1	170	173±1	1.45
	SIZE D	99±1	170	183	1.95
	SIZE E	109	250	230	3.75

Note: Dimensions shown are for the drive module excluding the dimensions of the EMC shield brackets, terminals and DB connectors (refer to user guide).

Selection chart

Motor base speed (rpm)	Motor max. speed (rpm)	Motor power (W)	Motor rated torque (N.m)	Motor peak torque (N.m)	Motor frame size (mm)	Rotor inertia (kgc m²)	MS1 motor model ^[1]	SV680 drive model	SV680 rated current (A)	SV680 peak current (A)	SV680 size	Drive weight GINT/PINT (kg)	Motor weight (kg)
For 1/3PH 220V Servo Drive													
3000	7000	50	0.16	0.56	40×40	0.018	MS1H1-05B30CB-A6/ S63 *R-INT	SV680FS1R6I/ S -GINT	1.6	5.8	A	0.96/1.11	0.26
3000	7000	100	0.32	1.12	40×40	0.0316	MS1H1-10B30CB-A6/ S63 *R-INT	SV680FS1R6I/ S -GINT	1.6	5.8	A	0.96/1.11	0.35
3000	7000	200	0.64	2.24	60×60	0.094	MS1H1-20B30CB-A6 S63 *R-INT	SV680FS1R6I-GINT	1.6	5.8	A	0.96/1.11	0.80
3000	7000	400	1.27	4.45	60×60	0.145	MS1H1-40B30CB-A6/ S63 *R-INT	SV680FS2R8I/ S -GINT	2.8	10.1	A	0.96/1.11	1.11
3000	7000	550	1.75	6.13	80×80	0.55	MS1H1-55B30CB-A6/ S63 *R-INT ^[2]	SV680FS5R5I/ S -GINT	5.5	16.9	C	1.30/1.45	1.88
3000	7000	750	2.39	8.37	80×80	0.68	MS1H1-75B30CB-A6/ S63 *R-INT	SV680FS5R5I/ S -GINT	5.5	16.9	C	1.30/1.45	2.22
3000	7000	1000	3.18	11.13	80×80	0.82	MS1H1-10C30CB-A6/ S63 *R-INT	SV680FS7R6I/ S -GINT	7.6	23.0	C	1.30/1.45	2.61
3000	6000	1000	3.18	9.54	100×100	1.78	MS1H2-10C30CB-A6/ S63 *R-INT	SV680FS7R6I/ S -GINT	7.6	23.0	C	1.30/1.45	3.85
3000	6000	1500	4.90	14.70	100×100	2.35	MS1H2-15C30CB-A6/ S63 *R-INT	SV680FS012I/ S -GINT	12.0	32.0	D	1.80/1.95	4.65
1500	4500	850	5.39	13.50	130×130	13.56	MS1H3-85B15CB-A6/ S63 *R-INT	SV680FS7R6I/ S -GINT	7.6	23.0	C	1.30/1.45	5.80
1500	4500	1300	8.34	20.85	130×130	19.25	MS1H3-13C15CB-A6/ S63 *R-INT	SV680FS012I/ S -GINT	12.0	32.0	D	1.80/1.95	7.10
3000	7000	50	0.16	0.56	40×40	0.038	MS1H4-05B30CB- S63 *R-INT	SV680FS1R6 S -GINT	1.6	5.8	A	0.96/1.11	0.24
3000	7000	100	0.32	1.12	40×40	0.072	MS1H4-10B30CB- S63 *R-INT	SV680FS1R6 S -GINT	1.6	5.8	A	0.96/1.11	0.32
3000	7000	200	0.64	2.24	60×60	0.22	MS1H4-20B30CB- S63 *R-INT	SV680FS1R6 S -GINT	1.6	5.8	A	0.96/1.11	0.78
3000	7000	400	1.27	4.45	60×60	0.43	MS1H4-40B30CB-A6/ S63 *R-INT	SV680FS2R8I/ S -GINT	2.8	10.1	A	0.96/1.11	1.11
3000	7000	550	1.75	6.13	80×80	1.12	MS1H4-55B30CB-A6/ S63 *R-INT ^[2]	SV680FS5R5I/ S -GINT	5.5	16.9	C	1.30/1.45	1.85
3000	7000	750	2.39	8.37	80×80	1.46	MS1H4-75B30CB-A6/ S63 *R-INT	SV680FS5R5I/ S -GINT	5.5	16.9	C	1.30/1.45	2.18
3000	7000	1000	3.18	11.13	80×80	1.87	MS1H4-10C30CB-A6/ S63 *R-INT	SV680FS7R6I/ S -GINT	7.6	23.0	C	1.30/1.45	2.55
For 3PH 220V Servo Drive													
3000	6000	2000	6.36	19.10	100×100	2.92	MS1H2-20C30CB-A6/ S63 *R-INT	SV680FS018I/ S -GINT	18.0	45.0	E	3.60/3.75	5.50
3000	6000	2500	7.96	23.90	100×100	3.49	MS1H2-25C30CB-A6/ S63 *R-INT	SV680FS0221/ S -GINT	22.0	55.0	E	3.60/3.75	6.30
3000	6000	3000	9.80	24.50	130×130	6.40	MS1H2-30C30CB-A6/ S63 *R-INT	SV680FS0221/ S -GINT	22.0	55.0	E	3.60/3.75	10.00
3000	6000	4000	12.60	31.50	130×130	9.00	MS1H2-40C30CB-A6/ S63 *R-INT	SV680FS0271/ S -GINT	27.0	67.5	E	3.60/3.75	13.20
3000	6000	5000	15.80	39.50	130×130	11.60	MS1H2-50C30CB-A6/ S63 *R-INT	SV680FS027I/ S -GINT	27.0	67.5	E	3.60/3.75	16.35
1500	4500	1800	11.50	28.75	130×130	24.90	MS1H3-18C15CB-A6/ S63 *R-INT	SV680FS018I/ S -GINT	18.0	45.0	E	3.60/3.75	8.50
1500	4500	2900	18.60	46.50	180×180	44.70	MS1H3-29C15CB-A6/ S63 *R-INT	SV680FS0221/ S -GINT	22.0	55.0	E	3.60/3.75	13.80
1500	4500	4400	28.40	71.10	180×180	64.90	MS1H3-44C15CB-A6/ S63 *R-INT	SV680FS0271/ S -GINT	27.0	67.5	E	3.60/3.75	17.40
For 3PH 400V Servo Drive													
3000	6000	1000	3.18	9.54	100×100	1.78	MS1H2-10C30CD-A6/ S63 *R-INT	SV680FT3R5I/ S -GINT	3.5	11.0	C	1.30/1.45	3.85
3000	6000	1500	4.90	14.70	100×100	2.35	MS1H2-15C30CD-A6/ S63 *R-INT	SV680FT5R4I/ S -GINT	5.4	14.0	C	1.30/1.45	4.65
3000	6000	2000	6.36	19.10	100×100	2.92	MS1H2-20C30CD-A6/ S63 *R-INT	SV680FT8R4I/ S -GINT	8.4	20.0	D	1.80/1.95	5.50
3000	6000	2500	7.96	23.90	100×100	3.49	MS1H2-25C30CD-A6/ S63 *R-INT	SV680FT012I/ S -GINT	12.0	30.0	D	1.80/1.95	6.30
3000	6000	3000	9.80	29.40	130×130	6.40	MS1H2-30C30CD-A6/ S63 *R-INT	SV680FT012I/ S -GINT	12.0	30.0	D	1.80/1.95	10.00
3000	6000	4000	12.60	37.80	130×130	9.00	MS1H2-40C30CD-A6/ S63 *R-INT	SV680FT017I/ S -GINT	17.0	42.5	E	3.60/3.75	13.20
3000	6000	5000	15.80	47.40	130×130	11.60	MS1H2-50C30CD-A6/ S63 *R-INT	SV680FT0211/ S -GINT	21.0	52.5	E	3.60/3.75	16.35
1500	4500	850	5.39	13.50	130×130	13.56	MS1H3-85B15CD-A6/ S63 *R-INT	SV680FT3R5I/ S -GINT	3.5	11.0	C	1.30/1.45	5.80
1500	4500	1300	8.34	20.85	130×130	19.25	MS1H3-13C15CD-A6/ S63 *R-INT	SV680FT5R4I/ S -GINT	5.4	14.0	C	1.30/1.45	7.10
1500	4500	1800	11.50	28.75	130×130	24.90	MS1H3-18C15CD-A6/ S63 *R-INT	SV680FT8R4I/ S -GINT	8.4	20.0	D	1.80/1.95	8.50
1500	4500	2900	18.60	46.50	180×180	44.70	MS1H3-29C15CD-A6/ S63 *R-INT	SV680FT012I/ S -GINT	12.0	30.0	D	1.80/1.95	13.80
1500	4500	4400	28.40	71.10	180×180	64.90	MS1H3-44C15CD-A6/ S63 *R-INT	SV680FT017I/ S -GINT	17.0	42.5	E	3.60/3.75	17.40
1500	4500	5500	35.00	87.60	180×180	86.90	MS1H3-55C15CD-A6/ S63 *R-INT	SV680FT021I/ S -GINT	21.0	52.5	E	3.60/3.75	21.70
1500	4500	7500	48.00	119.00	180×180	127.50	MS1H3-75C15CD-A6/ S63 *R-INT	SV680FT026I/ S -GINT	26.0	65.0	E	3.60/3.75	29.00

Note: [1]: MS1 A6 motor for SV680FXXXXI model (standard type); MS1 S6 motor for SV680FXXXXS model (functional safety type).
[2]: Brake option not available.

MS1 H1- 75B 30C B - A6 3 1 R - * - INT

① MS1 series servo motor	④ Rated speed (rpm) Comprised of a letter and two digits B: x 10 C: x 100 Example: 30C: 3000 rpm	⑦ Shaft connection mode 3: Solid and keyed, with threaded hole in the shaft center
② Inertia and capacity type H1: Low inertia, small capacity H2: Low inertia, medium capacity H3: Medium inertia, medium capacity H4: Medium inertia, small capacity	⑤ Voltage class B: 200V D: 400V	⑧ Brake or oil seal ^[1] 0: Without oil seal or brake 1: With oil seal, without brake 2: Without oil seal, with brake 4: With oil seal and brake
③ Rated power (W) Comprised of a letter and two digits B: x 10 C: x 100 Example: 75B: 750 W	⑥ Encoder type Comprised of a letter and a digit A6: 26-bit multi-turn absolute encoder S6: 26-bit multi-turn absolute encoder of functional safety A3: 23-bit multi-turn absolute encoder V6: 26-bit multi-turn absolute battery-less encoder V3: 23-bit multi-turn absolute battery-less encoder	⑨ Sub-series No. R: R series
		⑩ Customization information _: Standard type -S: Flying leads type -**: Other customized types
		⑪ Model type INT: International Version

Note: [1] H1 type motors with a 40mm flange size are not equipped with an oil seal.
[2] Battery-less encoder motors do not have 40mm frame-size options (with powers of 50W and 100W).

Power cables

Motor Model		Cable Name	Cable Model	Cable Length (m)
MS1H1/ MS1H4 terminal type motor	Front outlet	Without brake	S6-L-M107-3.0(-T)-INT	3
			S6-L-M107-5.0(-T)-INT	5
			S6-L-M107-10.0(-T)-INT	10
		With brake	S6-L-B107-3.0(-T)-INT	3
			S6-L-B107-5.0(-T)-INT	5
	Back outlet	Without brake	S6-L-B107-10.0(-T)-INT	10
			S6-L-M108-3.0(-T)-INT	3
			S6-L-M108-5.0(-T)-INT	5
		With brake	S6-L-M108-10.0(-T)-INT	10
			S6-L-B108-3.0(-T)-INT	3
MS1H2 motors of 3 kW and below/ MS1H3 motors of 1.8 kW and below	Without brake	S6-L-B108-5.0(-T)-INT	5	
		S6-L-B108-10.0(-T)-INT	10	
		S6-L-M111-3.0(-T)-INT	3	
	With brake	S6-L-M111-5.0(-T)-INT	5	
		S6-L-M111-10.0(-T)-INT	10	
		S6-L-B111-3.0(-T)-INT	3	
		S6-L-B111-5.0(-T)-INT	5	
	S6-L-B111-10.0(-T)-INT	10		

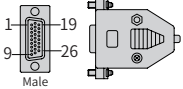
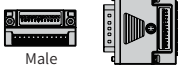
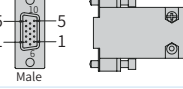
Motor Model	Cable Name	Cable Model	Cable Length (m)
MS1H2 motors of 4 kW/5 kW	Without brake	S6-L-M011-3.0(-T)-INT	3
		S6-L-M011-5.0(-T)-INT	5
		S6-L-M011-10.0(-T)-INT	10
	With brake	S6-L-B011-3.0(-T)-INT	3
		S6-L-B011-5.0(-T)-INT	5
		S6-L-B011-10.0(-T)-INT	10
MS1H3 motors of 2.9 kW	Without brake	S6-L-M112-3.0(-T)-INT	3
		S6-L-M112-5.0(-T)-INT	5
		S6-L-M112-10.0(-T)-INT	10
	With brake	S6-L-B112-3.0(-T)-INT	3
		S6-L-B112-5.0(-T)-INT	5
		S6-L-B112-10.0(-T)-INT	10
MS1H3 motors of 4.4 kW and above	Without brake	S6-L-M022-3.0(-T)-INT	3
		S6-L-M022-5.0(-T)-INT	5
		S6-L-M022-10.0(-T)-INT	10
	With brake	S6-L-B022-3.0(-T)-INT	3
		S6-L-B022-5.0(-T)-INT	5
		S6-L-B022-10.0(-T)-INT	10

Encoder cables

Motor Model			Cable Model	Cable Length (m)
MS1H1/ MS1H4 terminal-type motor	Front outlet	Single-turn absolute encoder	S6-L-P114-3.0(-T)-INT	3
			S6-L-P114-5.0(-T)-INT	5
		Multi-turn absolute encoder	S6-L-P114-10.0(-T)-INT	10
			S6-L-P124-3.0(-T)-INT	3
		Multi-turn absolute encoder	S6-L-P124-5.0(-T)-INT	5
			S6-L-P124-10.0(-T)-INT	10
	Rear outlet	Single-turn absolute encoder	S6-L-P115-3.0(-T)-INT	3
			S6-L-P115-5.0(-T)-INT	5
		Multi-turn absolute encoder	S6-L-P115-10.0(-T)-INT	10
			S6-L-P125-3.0(-T)-INT	3
		Multi-turn absolute encoder	S6-L-P125-5.0(-T)-INT	5
			S6-L-P125-10.0(-T)-INT	10

Motor Model		Cable Model	Cable Length (m)
MS1H2/MS1H3 motor	Single-turn absolute encoder	S6-L-P111-3.0(-T)-INT	3
		S6-L-P111-5.0(-T)-INT	5
		S6-L-P111-10.0(-T)-INT	10
	Multi-turn absolute encoder	S6-L-P121-3.0(-T)-INT	3
		S6-L-P121-5.0(-T)-INT	5
		S6-L-P121-10.0(-T)-INT	10

Accessories

Description	Model	Outline Drawing
CN1 connector (DB26)	S6-C74	
SV680N/SV680F CN1 IO DB26 to 14 push-in adapter	S6-C220	
CN7 connector (DB15)	S6-C6	
Shield bracket	S6-C25 (optional for sizes A and C) S6-C27 (optional for size D to size E)	
Battery box kit (without battery)	S6-C4A-NB	
Battery kit	S6-C4A	

