

## SV660F – Single-Axis PROFINET Servo

High dynamic performance with a compact footprint:  
the SV660F servo solution for industrial automation applications

- User friendly installation
- Easy set-up and tuning
- Ultra-fast 4.5 kHz current loop
- Safe Torque Off - SIL3



Pending



# The SV660F

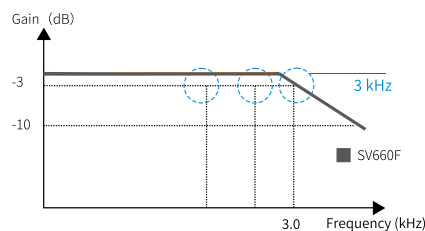
## Product overview

### Improved performance with ultra-fast current loop

SV660F's 4.5 kHz current loop bandwidth allows the motor to follow the motion profile with minimal error. The drive achieves a radically improved system performance with a shorter settling time and higher throughput. In case of mechanical resonance, high performance can be ensured through use of notch filters (up to four notch filters are available for simultaneous use if necessary).

SV660F	
Carrier frequency	12 kHz
Current loop cycle time	1.6 $\mu$ s
Speed loop cycle time	62.5 $\mu$ s
Position loop cycle time	62.5 $\mu$ s

Speed loop response graph



### PROFINET RT and IRT communication

PROFINET RT handles the exchange of time-critical data. It meets the vast majority of industry timing requirements, with a cycle time down to 1ms. PROFINET IRT goes one step further than PROFINET RT. It eliminates communication delays allowing deterministic and synchronized communication with cycle times down to 500  $\mu$ s. PROFINET IRT is optional and only required in specific high-performance applications.

### Supports PROFIdrive device profile

The PROFIdrive implementation in the SV660F supports the following application classes:

- AC1 adjustable-speed drives with/without technology function
- AC3 drives with positioning function
- AC4 synchronous servo applications and high-performance motion control applications, with the possibility of using dynamic servo control (DSC), which improves dynamic performance by transferring the position control loop to the drive side

Depending on the application class, the SV660F supports the telegrams 1, 2, 3, 102, 111, 105, 750.

### Functional safety – STO SIL3 EN/IEC 61800-5-2 compliant<sup>\*1</sup>

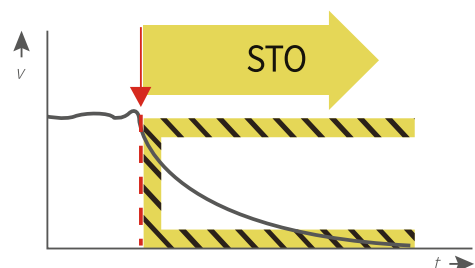
The STO function guarantees safe machine stop without using additional contactors.

### High resolution feedback encoder

23 bit serial single/multi-turn absolute encoder provides 8,388,608 pulses within one mechanical turn. Multi-turn absolute information can be also saved at power down, avoiding the need to perform machine homing at every power-up.

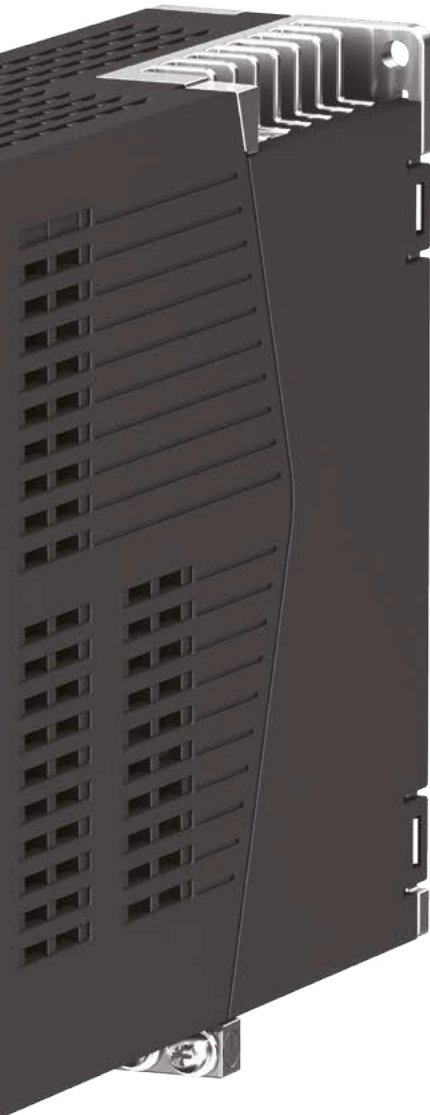
### Short output winding

Standard, built-in, *short output winding* ensures safe braking if the drive is unexpectedly disabled – even in the case of a failure in the motor holding brake.



<sup>\*1</sup> STO is supplied in the standard FS version. A non-STO version is also available.





### Robust and reliable – designed for harsh environments

Isolated cooling channel prevents dust contamination of internal electrical components. Conformally coated PCBs are resistant to 3S2 and 3C2 environments (acc. to IEC 60721-3-3), providing further protection.

### Comprehensive data storage in case of failure

Allows for thorough failure analysis.

### Reduced panel size

SV660F offers a compact footprint and increased power density, with an average 30% smaller footprint than the previous generation.

### Easy installation and fast commissioning

Pluggable connectors for both signal and power allows avoidance of wiring mistakes. Fine tuning is possible using the STune and ETune software functions, which are both designed for use in applications with small load inertia changes:

- STune obtains the gains using a calculation based on the set stiffness level
- ETune automatically adjusts the optimal gain parameters of the servo drive to deliver the best performance

### Easy cloning of drive parameters

Parameters of all SV660F drives in a machine can be cloned in one go using the commissioning software and the PROFINET network.

### Guided PC commissioning with advanced software wizard

A graphical user interface means specialist technical skills are not required for drive commissioning, freeing up skilled engineering personnel for other tasks.



# SV660F Selection Chart

Power supply voltage	Motor base speed (RPM)	Motor maximum speed (RPM)	Motor power (W)	Motor rated torque (N·m)	Motor peak torque (N·m)	Motor frame size (mm)	Rotor inertia (0.0001x kg·m <sup>2</sup> )	MS1 motor type	SV660F type	SV660F rated current (A)	SV660F peak current (A)	Size	Dimensions H x W x D (mm)	Connector kit
1PH 220V	3000	6000	50	0.16	0.56	40X40	0.026	MS1H1-05B30CB-A330Z	SV660FS1R6I	1.6	5.80	A	170X40X150	S6-C22
	3000	6000	100	0.32	1.12	40X40	0.041	MS1H1-10B30CB-A330Z	SV660FS1R6I	1.6	5.80	A	170X40X150	S6-C22
	3000	6000	200	0.64	2.24	60X60	0.207	MS1H1-20B30CB-A331Z	SV660FS1R6I	1.6	5.80	A	170X40X150	S6-C22
	3000	6000	400	1.27	4.46	60X60	0.376	MS1H1-40B30CB-A331Z	SV660FS2R8I	2.8	10.10	A	170X40X150	S6-C22
	3000	6000	400	1.27	4.46	60X60	0.657	MS1H4-40B30CB-A331Z	SV660FS2R8I	2.8	10.10	A	170X40X150	S6-C22
	3000	6000	550	1.75	6.13	80X80	1.06	MS1H1-55B30CB-A331Z*	SV660FS5R5I	5.5	16.90	B	170X50X173	S6-C22
	3000	6000	750	2.39	8.36	80X80	1.38	MS1H1-75B30CB-A331Z	SV660FS5R5I	5.5	16.90	B	170X50X173	S6-C22
	3000	6000	750	2.39	8.36	80X80	2	MS1H4-75B30CB-A331Z	SV660FS5R5I	5.5	16.90	B	170X50X173	S6-C22
1/3 PH 220V	1500	3000	850	5.39	13.50	130X130	13.3	MS1H3-85B15CB-A331Z	SV660FS7R6I	7.6	23.00	C	170X55X173	S6-C29
	3000	6000	1000	3.18	9.12	80X80	1.75	MS1H1-10C30CB-A331Z*	SV660FS7R6I	7.6	23.00	C	170X55X173	S6-C22
	3000	6000	1000	3.18	11.10	80X80	1.75	MS1H1-10C30CB-A331Z*	SV660FS012I	11.6	32.00	D	170X80X183	S6-C22
	3000	6000	1000	3.18	9.54	100X100	1.87	MS1H2-10C30CB-A331Z	SV660FS7R6I	7.6	23.00	C	170X55X173	S6-C29
	1500	3000	1300	8.34	20.85	130X130	17.8	MS1H3-13C15CB-A331Z	SV660FS012I	11.6	32.00	D	170X80X183	S6-C29
	3000	5000	1500	4.9	14.70	100X100	2.46	MS1H2-15C30CB-A331Z	SV660FS012I	11.6	32.00	D	170X80X183	S6-C29
3 PH 400V	3000	6000	1000	3.18	9.54	100X100	1.87	MS1H2-10C30CD-A331Z	SV660FT5R4I	5.4	14.00	C	170X55X173	S6-C29
	3000	5000	1500	4.9	14.70	100X100	2.46	MS1H2-15C30CD-A331Z	SV660FT5R4I	5.4	14.00	C	170X55X173	S6-C29
	3000	5000	2000	6.36	19.10	100X100	3.06	MS1H2-20C30CD-A331Z	SV660FT8R4I	8.4	20.00	D	170X80X183	S6-C29
	3000	5000	2500	7.96	19.12	100X100	3.65	MS1H2-25C30CD-A331Z	SV660FT8R4I	8.4	20.00	D	170X80X183	S6-C29
	3000	5000	2500	7.96	23.90	100X100	3.65	MS1H2-25C30CD-A331Z	SV660FT012I	11.9	29.75	D	170X80X183	S6-C29
	3000	5000	3000	9.8	29.16	130X130	7.72	MS1H2-30C30CD-A331Z	SV660FT012I	11.9	29.75	D	170X80X183	S6-C29
	3000	5000	3000	9.8	29.40	130X130	7.72	MS1H2-30C30CD-A331Z	SV660FT017I	16.5	41.25	E	250X90X230	S6-C29
	3000	5000	4000	12.6	37.80	130X130	12.1	MS1H2-40C30CD-A331Z	SV660FT017I	16.5	41.25	E	250X90X230	S6-C29
	3000	5000	5000	15.8	40.91	130X130	15.4	MS1H2-50C30CD-A331Z	SV660FT017I	16.5	41.25	E	250X90X230	S6-C29
	3000	5000	5000	15.8	47.60	130X130	15.4	MS1H2-50C30CD-A331Z	SV660FT021I	20.8	52.12	E	250X90X230	S6-C29
	1500	3000	850	5.39	13.50	130X130	13.3	MS1H3-85B15CD-A331Z	SV660FT3R5I	3.5	11.00	C	170X55X173	S6-C29
	1500	3000	1300	8.34	20.85	130X130	17.8	MS1H3-13C15CD-A331Z	SV660FT5R4I	5.4	14.00	C	170X55X173	S6-C29
	1500	3000	1800	11.5	28.75	130X130	25	MS1H3-18C15CD-A331Z	SV660FT8R4I	8.4	20.00	D	170X80X183	S6-C29
	1500	3000	2900	18.6	37.20	180X180	55	MS1H3-29C15CD-A331Z	SV660FT012I	11.9	29.75	D	170X80X183	S6-C39
	1500	3000	4400	28.4	71.10	180X180	88.9	MS1H3-44C15CD-A331Z	SV660FT017I	16.5	41.25	E	250X90X230	S6-C39
	1500	3000	5500	35	87.60	180X180	107	MS1H3-55C15CD-A331Z	SV660FT021I	20.8	52.12	E	250X90X230	S6-C39
	1500	3000	7500	48	117.63	180X180	141	MS1H3-75C15CD-A331Z	SV660FT026I	25.7	64.25	E	250X90X230	S6-C39

\*Brake option not available  
For detailed motor dimension data, please contact your local Inovance representative



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