

SV660N – Single-Axis EtherCAT Servo

High dynamic performance with a compact footprint:
the SV660N servo solution for industrial automation applications

- User friendly installation
- Easy set-up and tuning
- Ultra-fast 4 kHz current loop
- Safe Torque Off - SIL3

EtherCAT[®] 



The SV660N

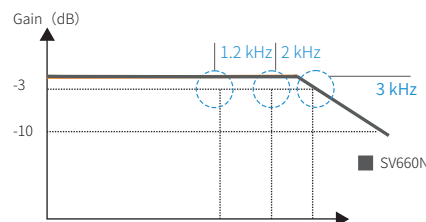
Product overview

Improved performance with ultra-fast current loop

SV660N's 4.5 kHz current loop bandwidth allows the motor to follow the motion profile with minimal error. SV660N has achieved perfect synchronization by eliminating all delay between the speed loop and current loop. The result is 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).

SV660N	
Carrier frequency	12 kHz
Current loop cycle time	1.6 μ s
Speed loop cycle time	62.5 μ s
Position loop cycle time	125 μ s

Speed loop response graph



High speed communications – 125 μ s

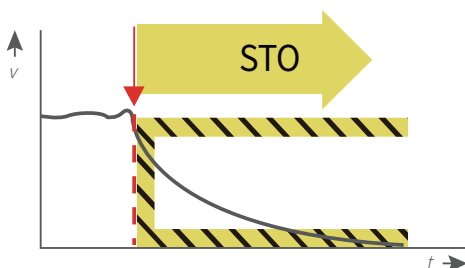
The SV660N series uses a high performance processor for high speed communications, achieving a cycle time of 125 μ s for all EtherCAT operating modes.

Rapid synchronization – 20 ns synchronization jitter

Through precise operation of the EtherCAT distributed clock, SV660N achieves a 15 ns synchronization error and ± 20 ns synchronization jitter for 300 nodes (with a maximum distance of 120 m). Position control loops are coordinated with the synchronization signal to further improve the accuracy of multi-axes control.

Functional safety – STO SIL3 EN/IEC 61800-5-2 compliant

STO function guarantees safe machine stop without using additional contactors.



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.





Robust and reliable – designed for harsh environments

Isolated cooling channel prevents dust contamination of internal electrical components.

Comprehensive data storage in case of failure

Allows for thorough failure analysis.

Reduced panel size

SV660N 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:

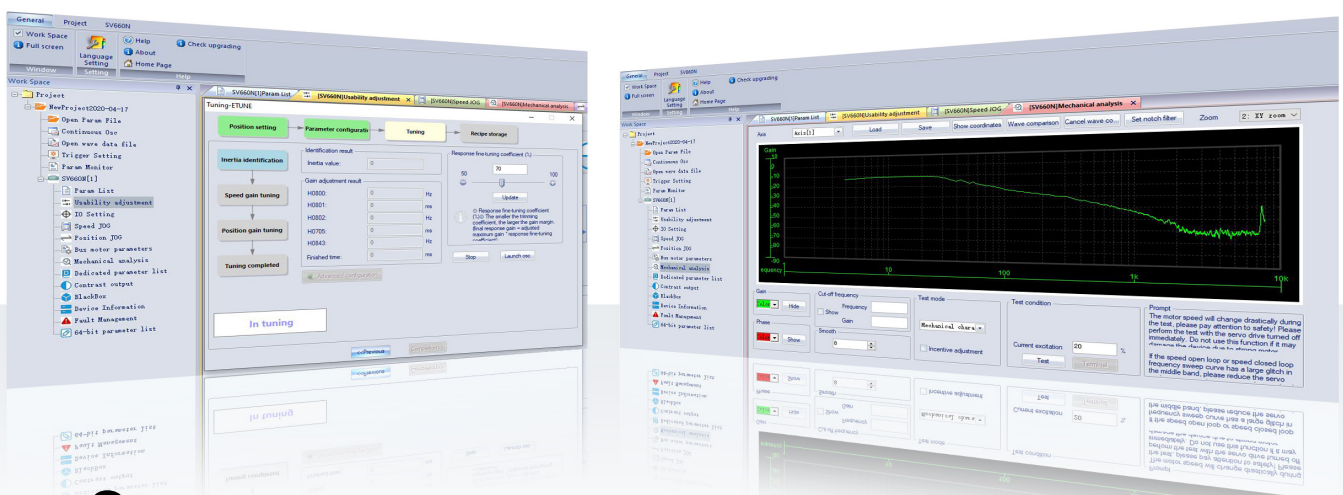
- STune obtains the gains using a calculation based on the set stiffness level
- ETune automatically adjusts the optimal gain parameters of the servo drive to deliver the best performance

Easy cloning of drive parameters

Parameters of all SV660N drives in a machine can be cloned in one go using the commissioning software and the EtherCAT 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.



SV660 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 ²)	MS1 motor type	SV660N type	SV660N rated current (A)	SV660N rated peak (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	SV660NS1R6I-INT	1.6	5.80	A	170X50X173	S6-C22
	3000	6000	100	0.32	1.12	40X40	0.041	MS1H1-10B30CB-A330Z	SV660NS1R6I-INT	1.6	5.80	A	170X50X173	S6-C22
	3000	6000	200	0.64	2.24	60X60	0.207	MS1H1-20B30CB-A331Z	SV660NS1R6I-INT	1.6	5.80	A	170X40X150	S6-C22
	3000	6000	400	1.27	4.46	60X60	0.376	MS1H1-40B30CB-A331Z	SV660NS2R8I-INT	2.8	10.10	A	170X40X150	S6-C22
	3000	6000	400	1.27	4.46	60X60	0.657	MS1H4-40B30CB-A331Z	SV660NS2R8I-INT	2.8	10.10	A	170X40X150	S6-C22
1/3PH 220V	3000	6000	550	1.75	6.13	80X80	1.06	MS1H1-55B30CB-A331Z*	SV660NS5R5I-INT	5.5	16.90	B	170X50X173	S6-C22
	3000	6000	750	2.39	8.36	80X80	1.38	MS1H1-75B30CB-A331Z	SV660NS5R5I-INT	5.5	16.90	B	170X50X173	S6-C22
	3000	6000	750	2.39	8.36	80X80	2.00	MS1H4-75B30CB-A331Z	SV660NS5R5I-INT	5.5	16.90	B	170X50X173	S6-C22
3PH 220V	1500	3000	850	5.39	13.50	130X130	13.30	MS1H3-85B15CB-A331Z	SV660NS6R6I-INT	6.6	16.50	B	170X50X173	S6-C29
	3000	6000	1000	3.18	9.62	80X80	1.75	MS1H1-10C30CB-A331Z*	SV660NS7R6I-INT	7.6	23.00	C	170X55X173	S6-C22
	3000	6000	1000	3.18	9.54	100X100	1.87	MS1H2-10C30CB-A331Z	SV660NS7R6I-INT	7.6	23.00	C	170X55X173	S6-C29
	1500	3000	1300	8.34	20.85	130X130	17.80	MS1H3-13C15CB-A331Z	SV660NS012I-INT	11.6	32.00	D	170X80X183	S6-C29
	3000	5000	1500	4.90	14.70	100X100	2.46	MS1H2-15C30CB-A331Z	SV660NS012I-INT	11.6	32.00	D	170X80X183	S6-C29
3PH 400V	3000	6000	1000	3.18	9.54	100X100	1.87	MS1H2-10C30CD-A331Z	SV660NT5R4I-INT	5.4	14.00	C	170X55X173	S6-C29
	3000	5000	1500	4.90	14.70	100X100	2.46	MS1H2-15C30CD-A331Z	SV660NT5R4I-INT	5.4	14.00	C	170X55X173	S6-C29
	3000	5000	2000	6.36	19.10	100X100	3.06	MS1H2-20C30CD-A331Z	SV660NT8R4I-INT	8.4	20.00	D	170X80X183	S6-C29
	3000	5000	2500	7.96	21.06	100X100	3.65	MS1H2-25C30CD-A331Z	SV660NT8R4I-INT	8.4	20.00	D	170X80X183	S6-C29
	3000	5000	3000	9.80	29.16	130X130	7.72	MS1H2-30C30CD-A331Z	SV660NT012I-INT	11.9	29.75	D	170X80X183	S6-C29
	3000	5000	4000	12.60	37.80	130X130	12.10	MS1H2-40C30CD-A331Z	SV660NT017I-INT	16.5	41.25	E	250X90X230	S6-C29
	3000	5000	5000	15.80	40.73	130X130	15.40	MS1H2-50C30CD-A331Z	SV660NT017I-INT	16.5	41.25	E	250X90X230	S6-C29
	3000	5000	5000	15.80	47.60	130X130	15.40	MS1H2-50C30CD-A331Z	SV660NT021I-INT	20.8	52.12	E	250X90X230	S6-C29
	1500	3000	850	5.39	13.50	130X130	13.30	MS1H3-85B15CD-A331Z	SV660NT3R5I-INT	3.5	11.00	C	170X55X173	S6-C29
	1500	3000	1300	8.34	20.85	130X130	17.80	MS1H3-13C15CD-A331Z	SV660NT5R4I-INT	5.4	14.00	C	170X55X173	S6-C29
	1500	3000	1800	11.50	28.75	130X130	25.00	MS1H3-18C15CD-A331Z	SV660NT8R4I-INT	8.4	20.00	D	170X80X183	S6-C29
	1500	3000	2900	18.60	37.20	180X180	55.00	MS1H3-29C15CD-A331Z	SV660NT012I-INT	11.9	29.75	D	170X80X183	S6-C39
	1500	3000	4400	28.40	71.10	180X180	88.90	MS1H3-44C15CD-A331Z	SV660NT017I-INT	16.5	41.25	E	250X90X230	S6-C39
	1500	3000	5500	35.00	87.60	180X180	107.00	MS1H3-55C15CD-A331Z	SV660NT021I-INT	20.8	52.12	E	250X90X230	S6-C39
	1500	3000	7500	48.00	120.00	180X180	141.00	MS1H3-75C15CD-A331Z	SV660NT026I-INT	25.7	64.25	E	250X90X230	S6-C39

*Motor does not have an option with a brake
For detailed motor dimension data, please contact your local Inovance representative



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