

INOVANCE

SV670P - Single-Axis Pulse & CAN Servo Drive

Performance, enhanced functionality, and flexibility



- User friendly installation
- Easy set-up and tuning
- CANopen and CANlink communication
- Safe Torque Off - SIL 3



CANlink **CANopen**

SV670P

Product overview

Product features:

Pulse control

Pulse interface for position control (4 MHz maximum input frequency).

CANopen communication

Compliant with CiA 402 device profile (IEC 61800-7-201/301), supporting several operation modes.

CANlink communication

Uses the Inovance proprietary protocol, in combination with Inovance controller products.

CANopen operation modes

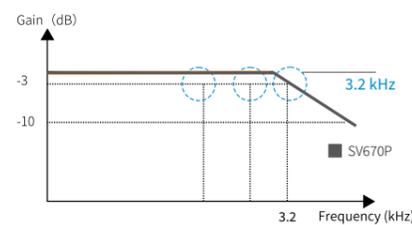
- Profile Position Mode (PP)
- Profile Velocity Mode (PV)
- Profile Torque Mode (PT)
- Homing Mode (HM)
- Interpolation Mode (IP)

Speed loop bandwidth*

A speed loop response bandwidth of 3.2 kHz gives significantly improved performance compared to the previous generation of Inovance products.

	SV670
Carrier frequency	12 kHz
Current loop cycle time	1.6 μ s
Speed loop cycle time	62.5 μ s
Position loop cycle time	62.5 μ s

Speed loop response graph



*Please note: The phrase 'speed loop bandwidth' refers to the highest frequency speed command change that the servo system can respond to.

Control signals I/Os: 2x AI (12 bits), 1x AO, 8x DI, 5x DO

Built-in USB-C port (for PC connection) and RS485 port (Modbus RTU communication protocol)

Drive's control circuit can be supplied from the USB-C port, allowing an easy parameter upload/download and firmware upgrade, with no requirement to provide any additional power supply.

Position, speed, torque, compound control

- 16x multi-position registers for point-to-point and sequential motion
- Homing sequence
- Interrupt positioning
- Position comparison

Notch filter for mechanical resonance suppression

Supports different types of feedback encoder

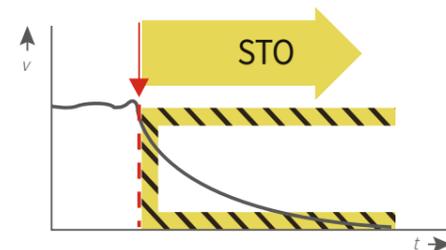
Supports Inovance's standard 23 bit serial single/multi-turn absolute encoder, which provides 8,388,608 pulses within one mechanical turn, and multi-turn non volatile information (avoiding the need to perform machine homing at power-up). Also supports Inovance's legacy 20 bit serial encoder, Nikon encoder (17 and 20 bit), Tamagawa encoder (17 and 23 bit) and Harmonic encoder (17 and 20 bit).

Functional safety – STO SIL3 EN/IEC 61800-5-2 compliant¹

The 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.



CANopen



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 3C3 environments (acc. to IEC 60721-3-3), providing further protection.

Enhanced functionality

Second encoder input (incremental quadrature type, differential signals) for full closed loop operation or DDL/DDR motor control. Simulated encoder output. Segregated control supply AC input in all ratings.

Easy installation and fast commissioning

Pluggable connectors for both signal and power allow 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:

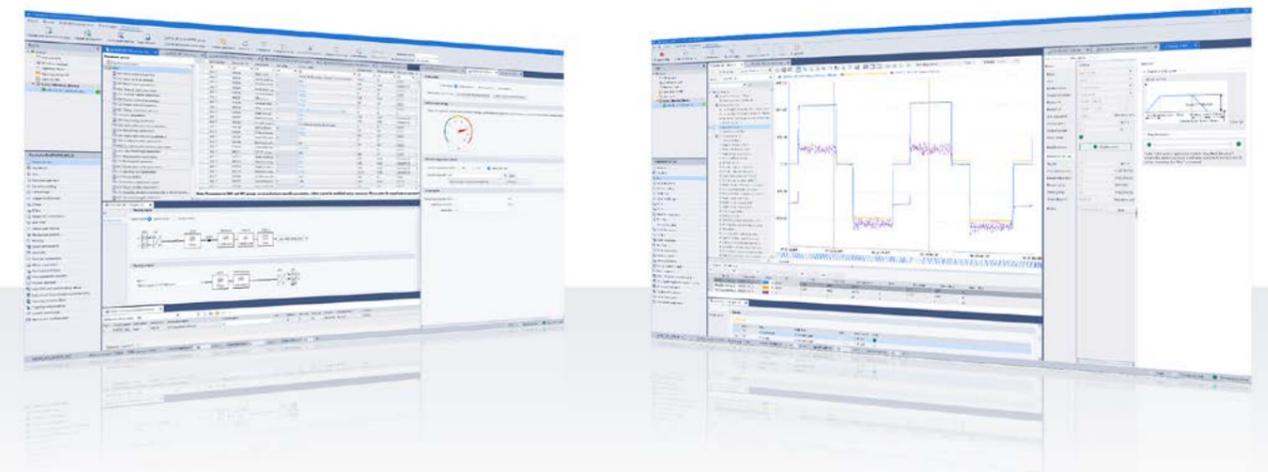
- STune obtains the gains using a calculation based on the set stiffness level
- ETune automatically adjusts the optimal gain parameters of the servo drive to deliver the best performance

Easy cloning of drive parameters

Parameters of all SV670 drives in a machine can be cloned in one go using the commissioning software.

New iFA Drive PC commissioning software with advanced graphical interface

- Specialist skills not needed for commissioning
- Software included free of charge
- Connect to a PC using standard USB-C cable



The information contained in the brochure is for guidance only.

Data code: 19120267 - V0.4

SV670P Selection Chart

Drive power supply voltage	Motor base speed (rpm)	Motor maximum speed (rpm)	Motor rated power (W)	Motor rated torque (N·m)	Motor peak torque (N·m)	Motor frame size (mm)	Rotor inertia without brake (10 ⁻⁴ kg·m ²)	MS1 motor type (please refer to below notes)	SV670P-FS Type	Material code of SV670P-FS	SV670 rated current (A)	SV670 peak current (A)	Drive size	Drive dimensions H x W x D (mm)	Connector kit
1/3 PH 220V	3000	7000	50	0.16	0.56	40X40	0.018	MS1H1-05B30CB-A33zR-INT	SV670PS1R6I-FS-INT	01053950	1.60	5.80	A	170X45X150	S6-C22
	3000	7000	50	0.16	0.56	40X40	0.038	MS1H4-05B30CB-A33zR-INT	SV670PS1R6I-FS-INT	01053950	1.60	5.80	A	170X45X150	S6-C22
	3000	7000	100	0.32	1.12	40X40	0.0316	MS1H1-10B30CB-A33zR-INT	SV670PS1R6I-FS-INT	01053950	1.60	5.80	A	170X45X150	S6-C22
	3000	7000	100	0.32	1.12	40X40	0.072	MS1H4-10B30CB-A33zR-INT	SV670PS1R6I-FS-INT	01053950	1.60	5.80	A	170X45X150	S6-C22
	3000	7000	200	0.64	2.24	60X60	0.094	MS1H1-20B30CB-yn3zR-INT	SV670PS1R6I-FS-INT	01053950	1.60	5.80	A	170X45X150	S6-C22
	3000	7000	200	0.64	2.24	60X60	0.22	MS1H4-20B30CB-yn3zR-INT	SV670PS1R6I-FS-INT	01053950	1.60	5.80	A	170X45X150	S6-C22
	3000	7000	400	1.27	4.45	60X60	0.145	MS1H1-40B30CB-yn3zR-INT	SV670PS2R8I-FS-INT	01053951	2.80	10.10	A	170X45X150	S6-C22
	3000	7000	400	1.27	4.45	60X60	0.43	MS1H4-40B30CB-yn3zR-INT	SV670PS2R8I-FS-INT	01053951	2.80	10.10	A	170X45X150	S6-C22
	3000	7000	550	1.75	6.13	80X80	0.55	MS1H1-55B30CB-yn31R-INT*	SV670PS5R5I-FS-INT	01053986	5.50	16.90	C	170X55X173	S6-C22
	3000	7000	550	1.75	6.13	80X80	1.12	MS1H4-55B30CB-yn31R-INT*	SV670PS5R5I-FS-INT	01053986	5.50	16.90	C	170X55X173	S6-C22
	3000	7000	750	2.39	8.36	80X80	0.68	MS1H1-75B30CB-yn3zR-INT	SV670PS5R5I-FS-INT	01053986	5.50	16.90	C	170X55X173	S6-C22
	3000	7000	750	2.39	8.37	80X80	1.46	MS1H4-75B30CB-yn3zR-INT	SV670PS5R5I-FS-INT	01053986	5.50	16.90	C	170X55X173	S6-C22
	1500	4500	850	5.39	13.50	130X130	13.56	MS1H3-85B15CB-yn3zR-INT	SV670PS7R6I-FS-INT	01053987	7.60	23.00	C	170X55X173	S6-C29
	3000	7000	1000	3.18	10.67	80X80	0.82	MS1H1-10C30CB-yn3zR-INT	SV670PS7R6I-FS-INT	01053987	7.60	23.00	C	170X55X173	S6-C22
	3000	7000	1000	3.18	10.67	80X80	1.87	MS1H4-10C30CB-yn3zR-INT	SV670PS7R6I-FS-INT	01053987	7.60	23.00	C	170X55X173	S6-C22
	3000	7000	1000	3.18	11.13	80X80	0.82	MS1H1-10C30CB-yn3zR-INT	SV670PS012I-FS-INT	01054001	12.00	32.00	D	170X80X183	S6-C22
	3000	7000	1000	3.18	11.13	80X80	1.77	MS1H4-10C30CB-yn3zR-INT	SV670PS012I-FS-INT	01054001	12.00	32.00	D	170X80X183	S6-C22
	3000	6000	1000	3.18	9.54	100X100	1.87	MS1H2-10C30CB-yn3zR-INT	SV670PS7R6I-FS-INT	01053987	7.60	23.00	C	170X55X173	S6-C29
	1500	4500	1300	8.34	20.85	130X130	19.25	MS1H3-13C15CB-yn3zR-INT	SV670PS012I-FS-INT	01054001	12.00	32.00	D	170X80X183	S6-C29
	3000	6000	1500	4.9	14.70	100X100	2.35	MS1H2-15C30CB-yn3zR-INT	SV670PS012I-FS-INT	01054001	12.00	32.00	D	170X80X183	S6-C29
1500	4500	1800	11.5	28.57	130X130	24.9	MS1H3-18C15CB-yn3zR-INT	SV670PS012I-FS-INT	01054001	12.00	32.00	D	170X80X183	S6-C29	
3 PH 220V	1500	4500	1800	11.5	28.75	130X130	24.9	MS1H3-18C15CB-yn3zR-INT	SV670PS018I-FS-INT	01053952	18.00	45.00	E	250X90X230	S6-C29
	3000	6000	2000	6.36	19.10	100X100	2.92	MS1H2-20C30CB-yn3zR-INT	SV670PS018I-FS-INT	01053952	18.00	45.00	E	250X90X230	S6-C29
	3000	6000	2500	7.96	23.90	100X100	3.49	MS1H2-25C30CB-yn3zR-INT	SV670PS022I-FS-INT	01053953	22.00	55.00	E	250X90X230	S6-C29
	1500	4500	2900	18.6	46.50	180X180	44.7	MS1H3-29C15CB-yn3zR-INT	SV670PS022I-FS-INT	01053953	22.00	55.00	E	250X90X230	S6-C39
	3000	6000	3000	9.8	24.50	130X130	6.4	MS1H2-30C30CB-yn3zR-INT	SV670PS022I-FS-INT	01053953	22.00	55.00	E	250X90X230	S6-C29
	3000	6000	4000	12.6	31.50	130X130	9	MS1H2-40C30CB-yn3zR-INT	SV670PS027I-FS-INT	01053954	27.00	67.50	E	250X90X230	S6-C29
	1500	4500	4400	28.4	71.10	180X180	64.9	MS1H3-44C15CB-yn3zR-INT	SV670PS027I-FS-INT	01053954	27.00	67.50	E	250X90X230	S6-C29
	3000	6000	5000	15.8	39.50	130X130	11.6	MS1H2-50C30CB-yn3zR-INT	SV670PS027I-FS-INT	01053954	27.00	67.50	E	250X90X230	S6-C29
	1500	4500	850	5.39	13.50	130X130	13.56	MS1H3-85B15CB-yn3zR-INT	SV670PT3R5I-FS-INT	01053955	3.50	11.00	C	170X55X173	S6-C29
	3000	6000	1000	3.18	9.54	100X100	1.78	MS1H2-10C30CB-yn3zR-INT	SV670PT3R5I-FS-INT	01053955	3.50	11.00	C	170X55X173	S6-C29
1500	4500	1300	8.34	20.85	130X130	19.25	MS1H3-13C15CB-yn3zR-INT	SV670PT5R4I-FS-INT	01054002	5.40	14.00	C	170X55X173	S6-C29	
3000	6000	1500	4.9	14.70	100X100	2.35	MS1H2-15C30CB-yn3zR-INT	SV670PT5R4I-FS-INT	01054002	5.40	14.00	C	170X55X173	S6-C29	
1500	4500	1800	11.5	28.75	130X130	24.9	MS1H3-18C15CB-yn3zR-INT	SV670PT8R4I-FS-INT	01053994	8.40	20.00	D	170X80X183	S6-C29	
3000	6000	2000	6.36	19.10	100X100	2.92	MS1H2-20C30CB-yn3zR-INT	SV670PT8R4I-FS-INT	01053994	8.40	20.00	D	170X80X183	S6-C29	
3000	6000	2500	7.96	18.38	100X100	3.49	MS1H2-25C30CB-yn3zR-INT	SV670PT8R4I-FS-INT	01053994	8.40	20.00	D	170X80X183	S6-C29	
3000	6000	2500	7.96	23.90	100X100	3.49	MS1H2-25C30CB-yn3zR-INT	SV670PT012I-FS-INT	01053956	12.00	30.00	D	170X80X183	S6-C29	
1500	4500	2900	18.6	46.50	180X180	44.7	MS1H3-29C15CB-yn3zR-INT	SV670PT012I-FS-INT	01053956	12.00	30.00	D	170X80X183	S6-C39	
3000	6000	3000	9.8	29.40	130X130	6.4	MS1H2-30C30CB-yn3zR-INT	SV670PT012I-FS-INT	01053956	12.00	30.00	D	170X80X183	S6-C29	
3000	6000	4000	12.6	37.80	130X130	9	MS1H2-40C30CB-yn3zR-INT	SV670PT017I-FS-INT	01053993	17.00	42.50	E	250X90X230	S6-C29	
1500	4500	4400	28.4	71.10	180X180	64.9	MS1H3-44C15CB-yn3zR-INT	SV670PT017I-FS-INT	01053993	17.00	42.50	E	250X90X230	S6-C39	
3000	6000	5000	15.8	47.40	130X130	11.6	MS1H2-50C30CB-yn3zR-INT	SV670PT021I-FS-INT	01053957	21.00	52.50	E	250X90X230	S6-C29	
1500	4500	5500	35	87.60	180X180	86.9	MS1H3-55C15CB-yn3zR-INT	SV670PT021I-FS-INT	01053957	21.00	52.50	E	250X90X230	S6-C39	
1500	4500	7500	48	119.00	180X180	127.5	MS1H3-75C15CB-yn3zR-INT	SV670PT026I-FS-INT	01053958	26.00	65.00	E	250X90X230	S6-C39	

Notes:

“yn” can be:

A3: 23 bit absolute single/multi-turn encoder; V3: Batteryless 23 bit absolute single/multi-turn encoder

“z” can be (not in all models):

0: W/O oil seal, W/O brake; 1: With oil seal, W/O brake; 2: W/O oil seal, with brake; 4: With oil seal, with brake

* Indicates that this model is not available with brake

For more detailed information about MS1 servomotors please refer to the corresponding brochure or the selection guide



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