

SIEMENS

Ingenuity for life



SINAMICS V90

The performance-optimized and easy-to-use servo drive system

The servo drive system comprises the SINAMICS V90 servo drive and SIMOTICS S-1FL6 servomotor. The system features eight servo drive frame sizes and seven motor shaft heights to cover a performance range from 0.05 kW to 7.0 kW for operation in single-phase and three-phase networks. The SINAMICS V90 servo drive system enables a wide range of simple Motion Control tasks to be implemented cost-efficiently and conveniently with the focus being on dynamic motion and processing.



Pulse train version (PTI)

PROFINET version (PN)

Highlights of the SINAMICS V90 and SIMOTICS S-1FL6 servo drive system



Optimized servo performance

- Advanced one-button tuning and real-time auto tuning enables machines to achieve a high dynamic performance
- Automatic suppression of machine resonances
- 1 MHz high-frequency pulse train input and up to 100Mbit/s transfer rate on PROFINET
- Different encoder types to address the requirements of your applications

Cost effective

- Integrated pulse train positioning, internal positioning, speed and torque control in PTI version
- Integrated speed control and basic positioner EPos in PROFINET version
- Integrated braking resistor in all frame sizes
- Integrated holding brake switch (for the 400 V version), no external relay necessary

Easy to use

- Simple connection to a control system
- Easy, all from a single source
- Easy servo tuning and machine optimization
- Easy commissioning with SINAMICS V-ASSISTANT
- Parameter cloning
- Easy integration via PTI, PROFINET, USS, Modbus RTU

Reliable operation

- High-quality motor bearings
- All motors have IP65 degree of protection and are equipped with oil seal
- Integrated Safe Torque Off (STO)

SINAMICS V90 and SIMOTICS S-1FL6

Optimized servo drive solution for motion control applications

SINAMICS V90 servo drive system 1AC/3AC 200 V... 240 V Low Inertia for high dynamic performance		SINAMICS V90 servo drive system 3AC 380 V... 480 V High Inertia for smooth operational performance	
SINAMICS V90 servo drive		SINAMICS V90 servo drive	
Line supply and power:	1AC 200 V ... 240 V (–15%/+10%), 0.05 kW ... 0.75 kW 3AC 200 V ... 240 V (–15%/+10%), 0.05 kW ... 2 kW	Line supply and power:	3AC 380 V ... 480 V (–15%/+10%), 0.4 kW ... 7 kW
Pulse train (PTI) version Control mode:	Positioning with pulse train, internal positioning, speed, torque	Pulse train (PTI) version Control mode:	Positioning with pulse train, internal positioning, speed, torque
PROFINET (PN) version Control mode:	Speed control, basic positioner EPos IP20	PROFINET (PN) version Control mode:	Speed control, basic positioner EPos IP20
Degree of protection:		Degree of protection:	
SIMOTICS S-1FL6 servomotor		SIMOTICS S-1FL6 servomotor	
4 shaft heights:	20 mm, 30 mm, 40 mm, 50 mm	3 shaft heights:	45 mm, 65 mm, 90 mm
Rated torque:	0.16 Nm up to 6.37 Nm	Rated torque:	1.27 Nm up to 33.40 Nm
Rated/max. speed:	3000 rpm / 5000 rpm	Rated/max. speed:	2000 rpm / 3000 rpm
Encoder:	Incremental encoder TTL 2500 ppr**; Absolute encoder single-turn 21-bit*	Encoder:	Incremental encoder TTL 2500 ppr; Absolute encoder 20-bit + 12-bit multi-turn
Degree of protection:	IP65, natural cooling	Degree of protection:	IP65, natural cooling
Additional advantages:		Additional advantages:	
<p>High dynamic performance: High acceleration for shorter cycle times as a result of the very low moment of inertia</p> <p>High speed: Maximum speed up to 5000 rpm can increase machine productivity</p> <p>Compact size: The reduced motor length/height compared to High Inertia variants and compact drive size can address critical mounting requirements</p>		<p>Smooth operation: Higher torque accuracy and low speed ripple as a result of the higher moment of inertia ensures a better product quality</p> <p>Robust design: High-quality metal connector and standard motor oil seal can withstand harsh environment</p> <p>Sufficient torque output: Wide range of rated torques up to 33.4 Nm</p>	
Application examples		Application examples	
Electronic assembly industry, for example	<ul style="list-style-type: none"> • Pick and place machine • Stencil cutting machine • PCB assembly machine • IC handling machine • Chip sorting machine • Bonding machine 	Metal forming machinery, for example	<ul style="list-style-type: none"> • Punching machine • Engraving machine • Edging press
Converting/printing industry, for example	<ul style="list-style-type: none"> • Labeling machine • Slitter machine • Laminating/coating machine • Screen printing machine 	Converting/printing industry, for example	<ul style="list-style-type: none"> • Winders • Slitter machine • Laminating/coating machine • Screen printing machine • Wire drawing machine
Packaging industry, for example	<ul style="list-style-type: none"> • Filling and sealing machine • Blister machine (pharmaceutical packaging) • Bag packing machine 	Packaging industry, for example	<ul style="list-style-type: none"> • Filling machine • Blister machine (pharmaceutical packaging) • Bag packing machine
Material handling machinery, for example	<ul style="list-style-type: none"> • Automatic palletizers 	Material handling machinery, for example	<ul style="list-style-type: none"> • Storage and warehouse systems • Conveyor systems

* Absolute encoder single-turn 21-bit available in the 1st half of 2017

** For very low speed, high accuracy or high dynamic application TTL encoder is not recommended