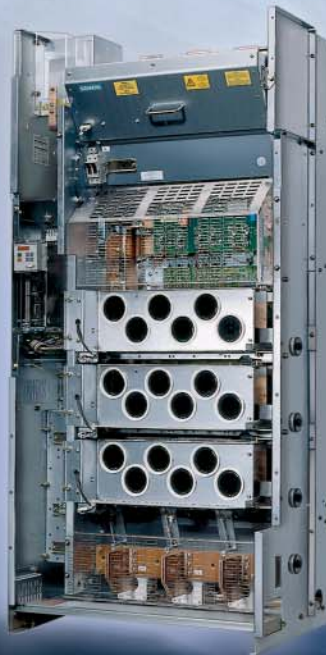


# Variable Speed Drives for ...

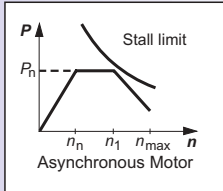
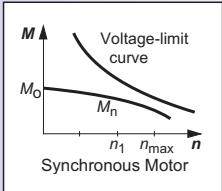
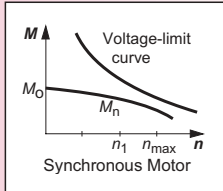
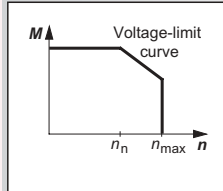
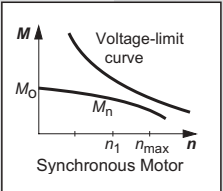
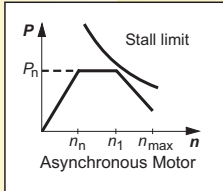
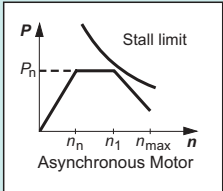
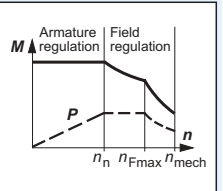


# production machines



**SIEMENS**

# Variable Speed Drives for Production Machines

	SIMOVERT MASTERDRIVES		SIMODRIVE			SIMODRIVE POSMO			MICROMASTER		COMBIMASTER	SIMOREG
	Vector Control	Motion Control	611 universal	611 digital	611 analog	POSMO A	POSMO SI	POSMO CD/CA	MM 410/420	MM 440	CM 411	DC MASTER
Order No.	6SE70/71		6SN11..	6SN11..	6SN11..	6SN21..	6SN24/5..	6SN27..	6SE6420..	6SE6440..	1UA1..	6RA70/6RM70
Catalog	DA 65.10	DA 65.11		NC 60			DA 65.4		DA 51.2		DA 51.3	DA 21.1/DA 22
Supply Range $V_{supply}$	3-ph, 380 – 690 V AC 510 – 930 V DC 50/60 Hz	3-ph, 380 – 480 V AC 510 – 650 V DC 50/60 Hz		3-ph, 400 – 480 V AC		24 V DC $\pm$ 20% 48 V DC $\pm$ 20%	600 V DC	600 V DC (CD) 400 V AC (CA)	1-ph, 100 – 240 V AC 3-ph, 200 – 600 V AC 50/60 Hz		3-ph, 400 V AC	3-ph, 400 – 830 V AC
Power Range	0.55 – 6000 kW 0.75 – 8000 HP	0.55 – 250 kW 0.75 – 335 HP		5 – 120 kW 6.7 – 160 HP		75 W 300 W	1.9 – 5.7 kW 2.5 – 7.6 HP	5 kW/6.7 HP (9 A) 10 kW/13.4 HP (18 A)	0.12 – 11 kW 0.16 – 15 HP	0.12 – 250 kW 0.16 – 335 HP	0.37 – 3 kW 0.5 – 4 HP	6.3 – 1900 kW 8 – 2550 HP
Output Voltage	3-ph, 0 V – 1.0 x $V_{supply}$	3-ph, 0 V – 0.86 x $V_{supply}$		3-ph, 0 – 430 V AC		–	–	3-ph, 0 – 430 V AC	0 V – 0.92 x $V_{supply}$		–	1/2 Q : DC = 1.2 x AC 4 Q : DC = 1.05 x AC
Output Frequency	0 – 500 Hz V/Hz 0 – 300 Hz Vector	0 – 400 Hz		up to 1400 Hz (Depending on the Control Board)		–	–	–	0 – 650 Hz		0 – 140 Hz	–
Type of Control	V/Hz with/without Encoder Open/Closed Loop Vector	V/Hz Vector Servo Control		Closed Loop Vector, Servo Control		Simple, Servo Control	Closed Loop Vector, Servo Control		V/Hz Flux Current Control (FCC)	V/Hz Flux Current Control (FCC) Open/Closed Loop Vector	V/Hz	Speed / Current / Torque
Dynamic Response	Speed rise time = 20 ms Torque rise time = 5 ms	Speed rise time $\leq$ 2 ms Torque rise time $\leq$ 0.5 ms		Speed rise time ~ 2 ms Torque rise time ~ 375 $\mu$ s		Speed rise time ~ 7.5 ms Torque rise time ~ 1.5 ms	Speed rise time ~ 2 ms Torque rise time ~ 375 $\mu$ s		–	–	–	Speed rise time ~ 25 ms Torque rise time ~ 6 ms
Typical curve characteristics for P/n (Power/Speed) M/n (Torque/Speed)												
Motors that can be connected	<ul style="list-style-type: none"> <li>Asynchronous – without Encoder</li> <li>Pulse Encoder (HTL, TTL)</li> <li>SIEMOSYN (multi-motor)</li> </ul>	<ul style="list-style-type: none"> <li>Asynchronous – Pulse Encoder (HTL, TTL)</li> <li>Encoder (Sin-Cos)</li> <li>Absolute Encoder (Multi-turn)</li> <li>Resolver</li> <li>Synchronous – Resolver</li> <li>Encoder (Sin-Cos)</li> <li>Absolute Encoder (Multi-turn)</li> </ul>	<ul style="list-style-type: none"> <li>Asynchronous</li> <li>Synchronous</li> <li>Linear</li> </ul>	<ul style="list-style-type: none"> <li>Asynchronous</li> <li>Synchronous</li> <li>Linear</li> </ul>	<ul style="list-style-type: none"> <li>Asynchronous</li> <li>Synchronous</li> </ul>	–	<ul style="list-style-type: none"> <li>Synchronous</li> </ul>	<ul style="list-style-type: none"> <li>Asynchronous</li> <li>Synchronous</li> <li>Linear</li> </ul>	<ul style="list-style-type: none"> <li>Asynchronous – Without Encoder</li> </ul>	<ul style="list-style-type: none"> <li>Asynchronous – Without Encoder</li> <li>Pulse Encoder (HTL/TTL)</li> <li>SIEMOSYN</li> </ul>	<ul style="list-style-type: none"> <li>Asynchronous – Without Encoder</li> <li>Motor is integrated with the Drive</li> </ul>	<ul style="list-style-type: none"> <li>DC Motors (GM)</li> <li>– with Tachometer</li> <li>– Pulse Encoder</li> <li>– without Encoder (Voltage Regulation)</li> </ul>
Technology Functions	BICO (Logic Functions) to create simple Winder, Brake Control	BICO (Logic Functions) Brake Control Friction Characteristics Cam Controller Positioning	Depending on the Control Board: Positioning Brake Control Cam Controller Synchronization Teach In	Only used with SINUMERIK	–	Automatic Program Backlash Limitation Brake Control On-the-fly Measurement On-the-fly Referencing Positioning	–	Positioning Cam Controller Synchronization Teach In Brake Control	Flying Restart "Catch up" Function Kinetic Buffering	–	–	BICO Technology
– Standard												
– Optional	Freely Programmable, Synchronization, Winder... using Technology Boards T100, T300, T400	Angular Synchronization, Electronic Gearbox, Cam Profile and Automatic Program with Technology Function F01							No	No	–	Freely Programmable, Angular Synchronization, and Winder with Technology Boards T100, T300, T400
Tools for		PATH PLUS	NCS D Konfigurator	NCS D Konfigurator			NCS D Konfigurator		SIZER			SIZER LD
– Sizing			SIDIM	SIDIM								
– Commissioning/Diagnostics		Drive ES DriveMonitor	Drive ES SimoCom U			Drive ES SimoCom A	Drive ES SimoCom U		Drive ES, DriveMonitor Starter		Drive ES, DriveMonitor Starter	Drive ES, DriveMonitor Starter
General Application Guideline	Continuous motion i.e. Web Handling; Sectional Drive Systems; High closed-loop speed + torque performance Modular Design	Centralized or Decentralized; Single, multi-axis, or coordinated systems requiring high dynamic, position control; "Master-Slave" configuration to perform functions such as Synchronization; Extensive Logic and Technology inside the drive; Modular Design	Coordinated, high dynamic motion control for use in conjunction with a central motion controller, i.e. SIMOTION C, P; FM Motion Module; SINUMERIK; Mainly for positioning; Can be used as a stand-alone, positioning drive	Developed to fit seamlessly with the SINUMERIK family; High dynamic, multi-axis servo application; Predominately used for Machine Tool and Handling processes		Simple positioning motor/drive system for decentralized applications, i.e. Machine setup and limits adjustments	Decentralized drives for coordinated, high-dynamic motion control; Works in conjunction with a central controller, i.e. SIMOTION C, P, FM Motion Module; For general motion control; Closed-Loop control performance is similar to the SIMODRIVE 611 universal		Simple, Open/Closed Loop variable speed drive; Optimized for stand-alone applications requiring less demanding technologies		Simple, variable speed drive for decentralized drive applications	Continuous motion with technology inside the drive; Networking; Stand-alone drives for high performance applications; Technology functions; Proven drive technology with a large installed base

The technical data are intended for general information. Please observe the operating instructions and the references indicated on the products for installation, operation and maintenance. The technical data, selection and ordering data (order numbers), accessories and availability are subject to alteration.