

VARIATOR LM	VARIATOR TM							
200-240VAC series	015J*	022J	030J*	040J	055J*	075J		
Power (kVA) at 230 V	3.1	4.3	5.4	7.2	9.6	12		
Output current I CONT (A)	7.8	11	13.7	18.2	24.2	31		
Max. output current 1min (A)	10.6	15	18.6	24.7	32.9	42.2		
380-500VAC series 007F*	015F*	022F	030F*	040F	055F*	075F	110F*	150F
Power (kVA) at 400 V 1.5	2.8	4.0	5.4	7.2	9.0	12	16	22
Output current I CONT (A) 2.3	4.1	5.8	7.8	10.5	13	17.6	24.2	33
Max. output current 1min (A) 3.1	5.6	7.9	10.6	14.3	17.7	24	32.9	44.9
Overloadability	170 % of motor nominal torque for 60s, 200 % of motor nominal torque for 2s							
Maximum output voltage	Equal to supply voltage							
Supply								
Voltage	200V -10 % to 240V +10 %							
	380V -10 % to 500 V +10 %							
Frequency	50Hz ±5 % or 60Hz ±5 %							
Control features								
Modulation	Sine wave PWM							
Control method	Open loop flux vector control							
Frequency control range	0-60Hz							
Frequency command	Potentiometer, motor potentiometer, 2-5 step controller or 0-10V analog signal							
Limit switch function	Stop limit inputs inboth directions and slowdown limit input							
Speed control range	Variator TM : $s_N \dots 10\%$; Variator LM : 4Hz...100 % (s_N = motor nominal slip)							
Speed accuracy								
Frequency control :	Proportional to the slip of motor							
Speed control :	± 1/2 of motor nominal slip at speed below 20 % ± 2 % of nominal speed at speed range 20...100 %							
Braking torque	125 %							
Acceleration/decekeration	Linear or S-curve, ramp time according to application							
Protection								
Stall prevention	During acceleration and constant speed							
Motor overload protection	Thermistor based temperature measurement							
Inverter overload protection	Thermal protection against overcurrent							
Undervoltage protection	Fault is detected in case of undervoltage							
Overvoltage protection	Fault is detected in case of overvoltage							
Inverter overtemperature	Thermal protection against overheating							
Mechanical brake	Protected by a circuit breaker in models 040J- 075J and 075F-150F							
Short circuit protection	Between output phases, between output phases and earth, on internal supply outputs							
Phase loss protection	Detects loss of input phase and loss of output phase							
Overspeed /stall/speed difference supervision	Independent measurement using pulse wheel (Variator LM)							
Ambient conditions								
Ambient temperature	-10°C... +50°C (14°F...122°F)							
Storage temperature	-25°C... +65°C (-13°F...149°F)							
Altitude	1000m with no derating. Above this derate the current by 1 % per each 100m							
Vibration resistance	Conforming to IEC 68-2-6 : * 1.5mm peak from 2 to 13Hz * 1gn from 13 to 200 Hz							
Shock resistance	Conforming to IEC 68-2-27 : * 15gn, 11ms							
Max.relative humidity	93 % without condensation or dripping water conforming to IEC 68-2-3							
Operating position	Vertical							

* VARIATOR LM only

Global Experience -Local Support

(Verlindé operates from over 200 location in over 30 countries throughout the world to give the very best customer service. By analyzing your material handling process and utilizing the most extensive range of components and know-hox, our experts

can provide a solution for virtually any application. Our skilled technicians install our equipment and provide service agreements to ensure a prompt return on hour investment.

We are just a phone call away.

VARIATOR[®] LM VARIATOR[®] TM



Variable speed system for lifting and travelling



2, boulevard de l'Industrie - B.P. 20059 - 28509 Vernouillet cedex - France

Téléphone : (33) 02 37 38 95 95 - Télécopieur : (33) 02 37 38 95 99

Internet : www.verlinde.com

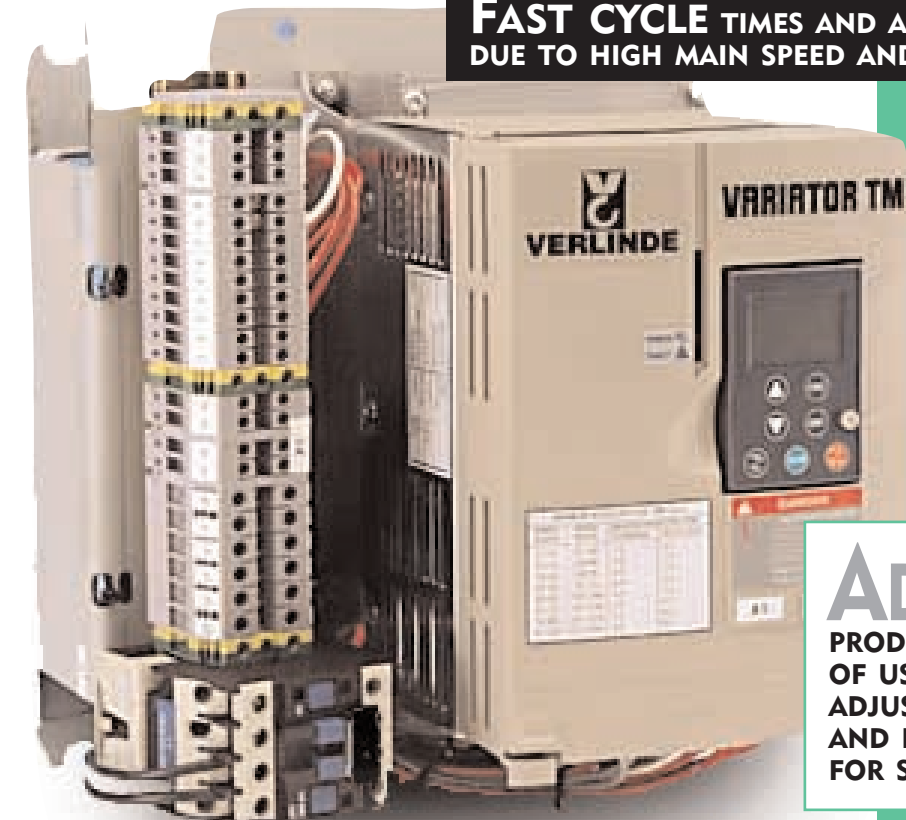
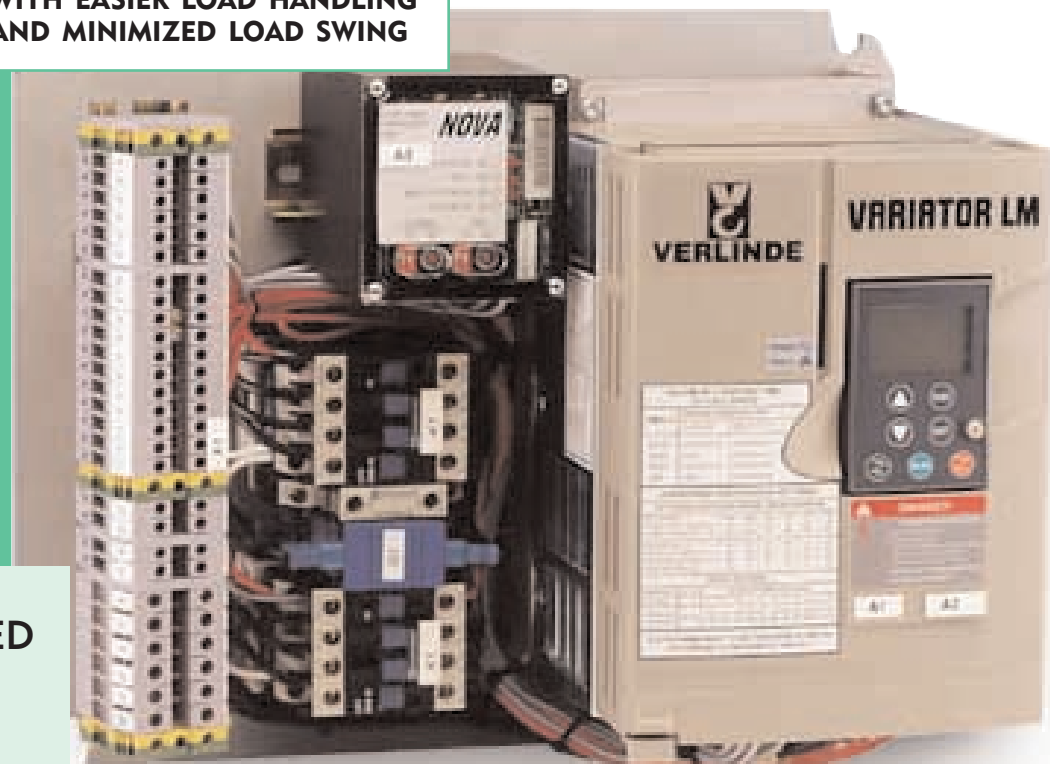
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Stepless Speed Control Systems for Higher Productivity

PRODUCTIVITY WITH A WIDE RANGE OF STEPLESS SPEEDS

SAFETY WITH EASIER LOAD HANDLING AND MINIMIZED LOAD SWING

FAST CYCLE TIMES AND ACCURATE LOAD POSITIONING DUE TO HIGH MAIN SPEED AND VERY LOW CREEP SPEED



IMPROVED RELIABILITY THROUGH REDUCED MECHANICAL STRESSES

ADDITIONAL PRODUCTIVITY AND EASE OF USE WITH SEPARATELY ADJUSTABLE ACCELERATION AND DECELERATION RAMPS FOR SPECIFIC CRANE USE

REDUCED MAINTENANCE COSTS DUE TO LOWER COMPONENT WEAR

Speed control solutions gave substantial impact on crane productivity, safety and reliability. When these are your requirements, the best solution is Verlinde Variator stepless speed control systems.

VARIATOR LM for hoisting and VARIATOR TM for travelling are complete speed control systems.

VARIATOR LM and VARIATOR TM are based on the latest inverter and vector control technology designed specifically for crane applications. Software features and all hardware components are engineered to meet the requirements for both new and existing cranes. Excellent torque and

OPTIMAL CHOICE FOR NEW CRANES AND MODERNIZATIONS

construction with necessary user interface for a wide range of crane applications are only some of the specific features.

Stepless speed control produces significant benefits in every application, whether it is a new crane, a performance upgrade or a modernization of an existing crane. The investment in stepless speed control systems is quickly recovered with increased productivity and reduced maintenance costs.

ADDITIONAL SAFETY PROVIDED BY A SEPARATE AND INDEPENDENT HOISTING SPEED SUPERVISION CONTROL

VARIATOR LM utilizes open loop flux vector control with type-tested motors and hoisting speed feedback system specifically designed for VARIATOR LM applications. The motors incorporate a pulse sensor and a pulse wheel in the hoisting brake assembly. Guarantee optimal driving characteristics and safety, only type-tested motor and Variator LM combinations are used.

The speed supervision unit NOVA monitors the actual speed of the hoisting motor. This safety circuit is separate from the inverter and not dependent on software. In case of overspeed, stall or speed difference error, the NOVA speed supervision unit stops the motion immediately.

EASY INSTALLATION AND QUICK START-UP DUE TO STANDARDIZED CRANE USER INTERFACE AND SETUP FUNCTIONS

SMOOTH AND EASY DRIVING CHARACTERISTICS RESULT IN HIGHER SAFETY AND REDUCED LOAD DAMAGE

EXCELLENT TORQUE MANAGEMENT DUE TO LATEST INVERTER AND VECTOR CONTROL TECHNOLOGY