

BALDOR • RELIANCE

VS1SP Inverter/Encoderless Vector Drive

1 thru 3 Hp	115/230 VAC	1 Phase - 50/60 Hz
1 thru 75 Hp	230 VAC	3 Phase - 50/60 Hz
1 thru 300 Hp	460 VAC	3 Phase - 50/60 Hz
1 thru 300 Hp	575 VAC	3 Phase - 50/60 Hz



Applications: Constant torque, variable torque or constant horsepower applications. New installations, replacements and original equipment manufacturers (OEM).

Features: NEMA 1 and NEMA 4 enclosure. Output frequency 0 to 500 Hz with peak overload capacity of 175%. Separate accel/decl rates and controlled reversing. Built-in two and three input PID process control loop.

Input Ratings	Voltage	115	230	230	460	575
	Voltage Range	95-130	180-264	180-264	340-528	515-660
	Phase	Single Phase		Three Phase (single phase with derating)		
	Frequency	50/60Hz +5%				
	Impedance	1% minimum from mains connection				
Output Ratings	Horsepower	1-3 Hp @ 115/230VAC, 1PH; 1-75 Hp @ 230VAC, 3PH; 1-300 Hp @ 460VAC, 3PH; 1-300 Hp @ 575VAC, 3PH				
	Overload Capacity	Heavy Duty (Constant Torque) = 150% for 60 seconds, 175% for 3 seconds Normal Duty (Variable Torque) = 115% for 60 seconds				
	Frequency	0-500Hz				
	Voltage	0 to maximum input voltage (RMS) (Note: 0 to 230 V for 115 V Single Phase Units)				
Protective Features	Trip	Missing control power, over current, over voltage, under voltage, over temperature (motor or control), output shorted or grounded, motor overload				
	Stall Prevention	Over voltage suppression, overcurrent suppression				
	External Output	LED trip condition indicators, 4 assignable logic outputs, 2 assignable analog outputs				
	Short Circuit	Phase to phase, phase to ground				
	Electronic Motor Overload	Meets UL508C (IFT)				
Environmental Conditions	Temperature	-10 to 45°C. Derate 3% per °C to maximum ambient temperature of 55°C.				
	Cooling	Forced air				
	Enclosure	NEMA 1		NEMA 4X		
	Altitude	Sea level to 3300 Feet (1000 Meters) Derate 2% per 1000 Feet (303 Meters) above 3300 Feet				
	Humidity	NEMA 1: 10 to 90% RH Non-Condensing		NEMA 4X: To 100% RH Condensing		
	Shock / Vibration	1G / 0.5G at 10Hz to 60Hz				
	Storage Temperature	-10 to +65°C				
Keypad Display	Display	LCD Graphical 128x64 Pixel				
	Keys	14 key membrane with tactile feedback				
	Functions	Output status monitoring, Digital speed control, Parameter setting and display, Diagnostic and Fault log display, Motor run and jog, Local/Remote toggle				
	LED Indicators	Forward run command, Reverse run command, Stop command, Jog active				
	Remote Mount	200 feet (60.6m) maximum from control, NEMA 4 Rated				
	Trip	Separate message and trace log for each trip, last 10 trips retained in memory				
	Control Specifications	Control Method	Microprocessor controlled PWM output, selectable encoderless vector or V/Hz inverter			
PWM Frequency		Adjustable 1.5-5kHz STD, 5-16 kHz quiet				
Frequency Setting		±5 VDC, 0-5 VDC ±10 VDC, 0-10 VDC, 4-20 mA or 0-20 mA; digital (keypad), Serial Comms/USB 2.0, and Modbus RTU standard				
Accel/Decel		0-3600 seconds				
V/Hz Ratio		Linear to squared reduced, base frequency, output voltage, minimum frequency limit, maximum frequency limit				
Torque Boost		0-30% of input voltage; automatic with manual override				
Brake Torque		20% standard on Sizes AA and B, 1% standard on Size C, D				
Skip Frequency		Three zones 0-Max frequency				
PC Setup Software		MINT® WorkBench Software available using the USB 2.0 port for commissioning wizard, firmware download, parameter viewer, scope capture and cloning				
Maximum Output Frequency		500 Hz				
Selectable Operating Modes		Keypad, Standard Run, 2-Wire, Standard Run 3-Wire, 15 Preset Speeds, Fan Pump 2-Wire, Fan Pump 3-Wire, Process Control, 3-SPD ANA 2-Wire, 3-SPD ANA 3-Wire, Electronic Pot 2-Wire, Electronic Pot 3-Wire, Network Profile Run, Bipolar				
Analog Inputs		One Differential	±5VDC, ±10VDC, 4-20 mA and 0-20 mA, 11-bit + sign			
	One Single Ended	0 - 10 VDC, 11-bit				
	Input Impedance	80 kOhms (Volt mode); 500 Ohms (Current mode)				
Analog Outputs	Analog Outputs	2 Assignable				
	Full Scale Range	AOUT1 (0-5V, 0-10V, 0-20mA or 4-20mA), AOUT2 (+5V, +10V)				
	Source Current	1 mA maximum (volt mode), 20mA (current mode)				
	Resolution	9 bits				
Digital Inputs	Opto-isolated Inputs	8 Assignable, 1 dedicated input (Drive Enable)				
	Rated Voltage	10 - 30 VDC (closed contacts std)				
	Input Impedance	4.71 k Ohms				
	Leakage Current	10 mA maximum				
	Update Rate	16 msec				
Digital Outputs (2 Opto Outputs)	Rated Voltage	5 to 30VDC				
	Maximum Current	60 mA Maximum				
	ON Voltage Drop	2 VDC Maximum				
	OFF Leakage Current	0.1 mA Maximum				
	Output Conditions	25 Conditions				
Digital Outputs (2 Relay Outputs)	Rated Voltage	5 to 30VDC or 240VAC				
	Maximum Current	5A Maximum non-inductive				
	Output Conditions	25 Conditions				

Farm Duty Motors

Definite Purpose Motors

Unit Handling

Brake Motors

200 & 575 Volt Motors

IEC Frame Motors

50 Hertz Motors

Inverter/Vector Motors & Controls

DC Motors and Controls

Soft Start & Dynamic Brakes