

BALDOR • RELIANCE

VS1PF Pump and Fan Bypass AC Drive

**7.5 thru 40 Hp
7.5 thru 125 Hp**

**230 VAC
460 VAC**

**3 Phase - 50/60 Hz
3 Phase - 50/60 Hz**

Applications: Pump and Fan AC Drive Applications from 7.5 to 125 Hp, where System Bypass capability is required.

Features: Nema 1 type enclosure, Circuit Breaker with lockable Disconnect, Line Reactor rated at 3%, Surge Suppression, VS1PF control, Thermostat Input, Class 10 Motor Overload, Hand-Off-Auto selector switch, ASD-Bypass-Test Selector Switch, Manual Potentiometer for Hand mode, Analog input voltage or current for Auto mode, Power on, Fault, ASD Bypass indicating light. PID control - Internal and External, Flying Start, Sleep/Wake, Sensorless Vector Control, Energy Savings.

Options: Fused Drive Input, Load Reactor, Communication Boards



VS1PFB – 230V, 50/60 Hz, 3-Phase

Catalog Number	Frame	Hp (Normal Duty)	Output Current	List Price	Mult. Sym.
VS1PFB27-1	B2	7.5	24	3,899	E1
VS1PFB210-1	B2	10	32	4,086	E1
VS1PFB215-1	B2	15	46	5,207	E1
VS1PFB220-1	C2	20	60	5,933	E1
VS1PFB225-1	C2	25	74	6,928	E1
VS1PFB230-1	E2	30	88	8,008	E1
VS1PFB240-1	E2	40	115	10,259	E1

VS1PFB – 460V, 50/60 Hz, 3-Phase

Catalog Number	Frame	Hp (Normal Duty)	Output Current	List Price	Mult. Sym.
VS1PFB47-1	B4	7.5	12	3,928	E1
VS1PFB410-1	B4	10	16	3,975	E1
VS1PFB415-1	B4	15	24	4,753	E1
VS1PFB420-1	C4	20	30	5,709	E1
VS1PFB425-1	C4	25	39	6,522	E1
VS1PFB430-1	E4	30	45	7,529	E1
VS1PFB440-1	E4	40	61	9,542	E1
VS1PFB450-1	G4	50	75	11,024	E1
VS1PFB460-1	G4	60	91	12,060	E1
VS1PFB475-1	H4	75	110	14,613	E1
VS1PFB4100-1	L4	100	152	19,212	E1
VS1PFB4125-1	L4	125	183	20,417	E1

NOTE: Above Bypass Units available with optional fused Drive Input and Load Reactors. Contact your local Baldor•Reliance District Office.

Farm Duty Motors

Definite Purpose Motors

Unit Handling Motors

Brake Motors

200 & 575 Volt Motors

IEC Frame Motors

50 Hertz Motors

Inverter/Vector Motors & Controls

DC Motors and Controls

Soft Start & Dynamic Brakes

VS1PF – Accessories

VS1PF NEMA 1 Kit

Description	Catalog Number	List Price	Mult. Sym.
NEMA 1 Kit for 20Hp & 25Hp Without Built-In DC Link Inductor	VS1PF-NM1C	60	EB
NEMA 1 Kit for 20Hp & 25Hp With Built-In DC Link Inductor	VS1PF-NM1D	68	EB
NEMA 1 Kit for 30Hp & 40Hp Without Built-In DC Link Inductor	VS1PF-NM1E	79	EB
NEMA 1 Kit for 30Hp & 40Hp With Built-In DC Link Inductor	VS1PF-NM1F	88	EB
NEMA 1 Kit for 50Hp to 75Hp Without Built-In DC Link Inductor	VS1PF-NM1GH	119	EB
NEMA 1 Kit for 50Hp to 75Hp With Built-In DC Link Inductor	VS1PF-NM1JK	119	EB
NEMA 1 Kit for 100Hp & 125Hp Without Built-In DC Link Inductor	VS1PF-NM1L	159	EB
NEMA 1 Kit for 100Hp & 125Hp With Built-In DC Link Inductor	VS1PF-NM1M	159	EB

VS1PF Drive Keypad

Description	Catalog Number	List Price	Mult. Sym.
VS1PF Drive Keypad 7.5-40 Hp	VS1PF-RKEY	98	EB
VS1PF Drive Keypad 50-700 Hp	VS1PF-RKEY-M	98	EB

VS1PF NEMA 4X Keypad

A NEMA 4X Keypad is available for remote mounting. Use the cables listed in the VS1PF remote keypad cables table below for mounting the NEMA 4X keypad.

Description	Catalog Number	List Price	Mult. Sym.
VS1PF NEMA 4X Remote Keypad	VS1PF-RKEYN4	206	EB

VS1PF Remote Keypad Extension Cable

The VS1PF Keypad can be removed and remote mounted to door of a host enclosure. To remote mount the VS1PF Keypad, an extension cable is needed.

Description	Catalog Number	List Price	Mult. Sym.
VS1PF Remote Keypad 2m cable	VS1PF-CBL2	54	EB
VS1PF Remote Keypad 3m cable	VS1PF-CBL3	68	EB
VS1PF Remote Keypad 5m cable	VS1PF-CBL5	83	EB

VS1PF Remote Keypad Extender Kit

This kit allows a remote keypad to be located up to 4000 feet from the PF device.

Description	Catalog Number	List Price	Mult. Sym.
VS1PF Remote Keypad Extender Kit	VS1PF-KPEXT	1,021	EB

VS1PF Communication Options

Several Communication Option Boards are available & planned for the VS1PF.

Description	Catalog Number	List Price	Mult. Sym.
DeviceNet Option Board for VS1PF	VS1PF-DNET	320	EB
MODBUS-RTU Option Board for VS1PF	VS1PF-MBUS	272	EB
Profibus Option Board for VS1PF	VS1PF-PBUS	491	EB
MODBUS TCP/IP Option Board for VS1PF	VS1PF-MBTCP	582	EB
LONWORKS Option Board for VS1PF	VS1PF-LON	462	EB
BACNET TCP/IP Option Board for VS1PF	VS1PF-BAC	462	EB
Metasys-N2 Option Board for VS1PF	VS1PF-METV2	462	EB
Siemens P1 Communications Bridge	VS1PF-P1B	857	EB

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VS1PF mA Output Board

This kit allows the ability for the VS1PF to provide a 0-20mA output signal.

Description	Catalog Number	List Price	Mult. Sym.
VS1PF mA Output Board	VS1PF-MAOUT	206	EB

VS1 USB to RS485 Converter Kit

This kit allows communications between a USB port on a computer and the VS1PF Drive RS485 control terminals.

Description	Catalog Number	List Price	Mult. Sym.
VS1 USB to RS485 Converter Kit	VS1-COMMUSB	513	EA

VS1PF Extended I/O Function Board

This kit allows the ability to provide a second analog voltage reference input (V2) to the PF drive.

Description	Catalog Number	List Price	Mult. Sym.
VS1PF Extended I/O Function Board	VS1PF-EXTIO	125	EB

Pressure-to-Electrical Transducer Kit

This kit converts a 3-15 psig pressure sensor signal into an electrical signal which the PF drive can follow.

Description	Catalog Number	List Price	Mult. Sym.
PTE Transducer Kit	VS1PF-PET	550	EB

DriveView Software

DriveView communications software for Baldor VS1PF Drives is available at no charge by downloading from the Baldor VS Drives web site at www.baldor.com.

VS1PF Dynamic Braking Units and Resistors

Input Volts	Dynamic Braking Unit Selection **					Recommended Dynamic Braking Resistors					
	Hp	Dynamic Braking Unit Catalog Number	List Price (Each)	Mult. Sym.	Minimum Allowable Ohms	Maximum Continuous Braking Wattage	Resistor Catalog Number	List Price (Each)	Mult. Sym.	Ohms	Wattage
230	7.5	VS1PF-T220	612	EB	8.5	3,200	VS1-R20W800	306	EB	20	800
	10	VS1PF-T220	612	EB	8.5	3,200	VS1-R15W1200	370	EB	15	1,200
	15	VS1PF-T220	612	EB	8.5	3,200	VS1-R10W2400	489	EB	10	2,400
	20	VS1PF-T220	612	EB	8.5	3,200	VS1-R10W2400	489	EB	10	2,400
	25	VS1PF-T230	685	EB	5.7	4,800	VS1-R8W2400	489	EB	8	2,400
	30	VS1PF-T230	685	EB	5.7	4,800	VS1-R8W2400	489	EB	8	2,400
	40	VS1PF-T250	1,348	EB	4.2	6,400	VS1-R5W3600	881	EB	5	3,600
	50	VS1PF-T250	1,348	EB	4.2	6,400	VS1-R5W3600	881	EB	5	3,600
	60	VS1PF-T275	1,543	EB	2.8	9,600	VS1-R8W2400 *	489	EB	4	4,800
460	7.5	VS1PF-T420	612	EB	33.9	3,200	VS1-R85W1000	346	EB	85	1,000
	10	VS1PF-T420	612	EB	33.9	3,200	VS1-R60W1200	370	EB	60	1,200
	15	VS1PF-T420	612	EB	33.9	3,200	VS1-R40W2000	465	EA	40	2,000
	20	VS1PF-T420	612	EB	33.9	3,200	VS1-R40W2000	465	EA	40	2,000
	25	VS1PF-T430	685	EB	22.8	4,800	VS1-R30W2400	489	EB	30	2,400
	30	VS1PF-T430	685	EB	22.8	4,800	VS1-R30W2400	489	EB	30	2,400
	40	VS1PF-T450	1,348	EB	16.9	6,400	VS1-R20W3600	881	EB	20	3,600
	50	VS1PF-T450	1,348	EB	16.9	6,400	VS1-R20W3600	881	EB	20	3,600
	60	VS1PF-T475	1,543	EB	11.4	9,600	VS1-R30W2400 *	489	EB	15	4,800
	75	VS1PF-T475	1,543	EB	11.4	9,600	VS1-R30W2400 *	489	EB	15	4,800
100	VS1PF-T4100	1,591	EB	8.4	12,800	VS1-R20W3600 *	881	EB	10	7,200	

* Use two resistors in parallel to provide the recommended ohms and wattage.

** Enclosure = IP20

The Dynamic Braking Unit and resistors must be mounted separate from the VS1PF drive. See the VS1PF Manual for additional details.

Farm Duty Motors

Definite Purpose Motors

Unit Handling Motors

Brake Motors

200 & 575 Volt Motors

IEC Frame Motors

50 Hertz Motors

Inverter/Vector Motors & Controls

DC Motors and Controls

Soft Start & Dynamic Brakes



Packaged Baldor V*S Drives provide custom solutions for customer applications. Packaged Baldor V*S Drives are available for VS1PF drives from 7.5 to 700HP. Standard packaged options are shown in this catalog including NEMA 1, 12, 4, 4X & 3R enclosures, Input fusing & circuit breakers, door mounted operators, input/output contactors, bypass, line/load reactors, control transformers, dynamic braking as well as many other peripheral equipment options. If you don't see the option you need, please contact the factory via your Local Baldor District Sales Office, and we will custom engineer it for you.

The Baldor Drives Center is a UL508A shop and can provide you with UL508A panels.



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Motors & Controls**

DC Motors
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VS1PF Packaged Drives

VS1PF 230 VAC Base Drive Model Number

Inverter	VS1PF 27-1	VS1PF 210-1	VS1PF 215-1	VS1PF 220-9	VS1PF 225-9	VS1PF 230-9	VS1PF 240-9
Base Drive List	1,277	1,489	1,649	1,915	2,447	3,191	3,723
HP Rating (Variable Torque)	7.5	10	15	20	25	30	40
FLA (Normal Duty)	24	32	46	60	74	88	115
Enclosure Options							
NEMA 1 Cabinet Ventilated	1147	1440	1440	1440	1678	1678	1678
NEMA 12 Cabinet Ventilated	1193	1492	1492	1492	1743	1743	1743
NEMA 12 Cabinet with A/C	2457	3096	3096	3096	3744	3744	3744
NEMA 4 Cabinet with A/C	3690	3888	3888	3888	4536	4536	4536
NEMA 4X Cabinet with A/C	3978	4779	4779	4779	6156	6156	6156
NEMA 3R Rainproof	1519	1777	1777	1777	1890	1890	1890
Input Protection & Disconnect Options							
Input Fuses Only	158	178	178	245	317	317	611
Fused Disconnect Switch & Rotary Handle	403	438	438	505	757	757	1,208
Circuit Breaker Only	752	865	865	865	865	865	911
Circuit Breaker Disconnect & Rotary Handle	1018	1131	1131	1131	1131	1131	1177
Door Mounted Operator Devices							
Door Mounted OIM (Remote Keypad)	75	75	75	75	75	75	75
Maintained Start/Stop Switch	105	105	105	105	105	105	105
Momentary Start/Stop Push Buttons	180	180	180	180	180	180	180
E-Stop Push Button (Mushroom Head)	120	120	120	120	120	120	120
Jog Push Button	90	90	90	90	90	90	90
2 or 3 Position Selection Switch	90	90	90	90	90	90	90
Pilot Light(1)	85	85	85	85	85	85	85
Manual Potentiometer	120	120	120	120	120	120	120
Contactors, Overloads, Starters, Control Transformers & Line Reactors							
Input Contactor(1)	220	450	450	450	450	800	800
Output Contactor(1)	220	450	450	450	450	800	800
Drive Bypass Control(1)	1160	1850	1850	1850	1850	2900	2900
Motor Overload Relay	200	200	250	250	250	310	310
Blower Motor Starter(1,4)	180	180	180	180	180	180	180
Control Transformer: 460:120 VAC, 250VA (2)	275	275	275	275	275	275	275
3% Impedance Input Line or Load Reactor	498	595	631	665	706	824	1069
Other peripheral equipment							
Space Heater (100W)	120	120	120	120	120	120	120
Analog Input or output Isolator	980	980	980	980	980	980	980
Shunt Trip device	280	280	280	280	280	280	280
Undervoltage Release Device	355	355	355	355	355	355	355
RF/EMI filter	590	810	810	980	980	980	1170
DC Power Supply	210	210	210	210	210	210	210
MOV surge protection	100	100	100	100	100	100	100
Input IEEE 519-1992 Harmonic Filter	5210	6270	7210	7700	7920	9910	9940
Dynamic Braking - Transistor + Resistor							
1200W resistors	849	849	849	849	849	849	849
2400W resistors	1299	1299	1299	1299	1299	1299	1299
4800W resistors	2107	2107	2107	2107	2107	2107	2107

(1) Requires Control Transformer option
 (2) Add \$100 for each 100VA over 250VA
 (3) Add \$100 for each 100W over the first 100W
 (4) Required on TEBC motors

Farm Duty Motors

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VS1PF Packaged Drives

VS1PF 460 VAC Base Drive Model Number

Inverter	VS1PF 47-1	VS1PF 410-1	VS1PF 415-1	VS1PF 420-9	VS1PF 425-9	VS1PF 430-9	VS1PF 440-9	VS1PF 450-9	VS1PF 460-9	VS1PF 475-9	VS1PF 4100-9
Base Drive List	1,223	1,489	1,596	1,979	2,340	3,085	3,723	4,468	5,745	6,915	7,766
HP Rating (Variable Torque)	7.5	10	15	20	25	30	40	50	60	75	100
FLA (Normal Duty)	12	16	24	30	39	45	61	75	91	110	152

Enclosure Options

NEMA 1 Cabinet Ventilated	1147	1147	1147	1147	1678	1678	1678	1678	1755	1755	2083
NEMA 12 Cabinet Ventilated	1193	1193	1492	1492	1743	1743	1743	1743	2164	2164	2480
NEMA 12 Cabinet with A/C	2457	2457	3096	3096	3744	3744	3744	3744	4392	4392	4968
NEMA 4 Cabinet with A/C	3690	3690	3888	3888	4536	4536	4536	4536	5508	5508	6318
NEMA 4X Cabinet with A/C	3978	3978	4779	4779	6156	6156	6156	6156	7209	7209	7938
NEMA 3R Rainproof	1519	1519	1777	1777	1890	1890	1890	1890	2902	2902	3881

Input Protection & Disconnect Options

Input Fuses Only	158	178	178	245	285	285	285	300	300	550	550
Fused Disconnect Switch & Rotary Handle	403	438	438	505	757	757	1,208	1208	1440	1440	1,440
Circuit Breaker Only	752	865	865	865	865	865	911	911	1100	1100	1100
Circuit Breaker Disconnect & Rotary Handle	1018	1131	1131	1131	1131	1131	1177	1177	1360	1360	1360

Door Mounted Operator Devices

Door Mounted OIM (Remote Keypad)	75	75	75	75	75	75	75	75	75	75	75
Maintained Start/Stop Switch	105	105	105	105	105	105	105	105	105	105	105
Momentary Start/Stop Push Buttons	180	180	180	180	180	180	180	180	180	180	180
E-Stop Push Button (Mushroom Head)	120	120	120	120	120	120	120	120	120	120	120
Jog Push Button	90	90	90	90	90	90	90	90	90	90	90
2 or 3 Position Selection Switch	90	90	90	90	90	90	90	90	90	90	90
Pilot Light(1)	85	85	85	85	85	85	85	85	85	85	85
Manual Potentiometer	120	120	120	120	120	120	120	120	120	120	120

Contactors, Overloads, Starters, Control Transformers & Line Reactors

Input Contactor(1)	220	220	220	460	460	460	460	450	450	800	800
Output Contactor(1)	220	220	220	460	460	460	460	450	450	800	800
Drive Bypass Control(1)	1160	1160	1160	1880	1880	1880	1880	1400	1400	2100	2100
Motor Overload Relay	200	200	250	250	250	310	310	310	310	420	420
Blower Motor Starter(1,4)	180	180	180	180	180	180	180	180	220	220	220
Control Transformer: 460:120 VAC, 250VA (2)	275	275	275	275	275	275	275	275	275	275	275
3% Impedance Input Line or Load Reactor	362	499	522	823	875	875	704	980	869	869	1130

Other peripheral equipment

Space Heater (100W)	120	120	120	120	120	120	120	120	120	120	120
Analog Input or output Isolator	980	980	980	980	980	980	980	980	980	980	980
Shunt Trip device	280	280	280	280	280	280	280	280	280	280	280
Undervoltage Release Device	355	355	355	355	355	355	355	355	355	355	355
RFI/EMI filter	590	810	810	980	980	980	1170	1170	1170	1170	4590
DC Power Supply	210	210	210	210	210	210	210	210	210	210	210
MOV surge protection	100	100	100	100	100	100	100	100	100	100	100
Input IEEE 519-1992 Harmonic Filter	3160	3260	5210	6270	7210	7210	7700	7700	7920	9910	9940

Dynamic Braking - Transistor + Resistor

1200W resistors	849	849	849	849	849	849	849	849	849	849	849
2400W resistors	1299	1299	1299	1299	1299	1299	1299	1299	1299	1299	1299
4800W resistors	2107	2107	2107	2107	2107	2107	2107	2107	2107	2107	2107

(1) Requires Control Transformer option
 (2) Add \$100 for each 100VA over 250VA
 (3) Add \$100 for each 100W over the first 100W
 (4) Required on TEBC motors

Farm Duty Motors

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DC Motors and Controls

Soft Starters & Dynamic Brakes

VS1PF Packaged Drives

VS1PF 460 VAC Base Drive Model Number

Inverter	VS1PF 4125-9	VS1PF 4150-9L	VS1PF 4200-9L	VS1PF 4250-9L	VS1PF 4300-9L	VS1PF 4350-9L	VS1PF 4400-9L	VS1PF 4500-9	VS1PF 4600-9	VS1PF 4700-9
Base Drive List	9,574	11,064	12,766	14,894	18,085	21,277	29,787	34,043	42,553	51,064
HP Rating (Variable Torque)	125	150	200	250	300	350	400	500	600	700
FLA (Normal Duty)	183	223	264	325	413	432	547	613	731	877
Enclosure Options										
NEMA 1 Cabinet Ventilated	2315	2315	2625	2625	3856	3856	4280	4280	4280	4280
NEMA 12 Cabinet Ventilated	2756	2756	3224	3224	3224	Contact Baldor				
NEMA 12 Cabinet with A/C	5520	5520	6560	6560	6560					
NEMA 4 Cabinet with A/C	7020	7020	8640	8640	8640					
NEMA 4X Cabinet with A/C	8820	8820	10080	10080	10080					
NEMA 3R Rainproof	4313	4313	5725	5725	5725					
Input Protection & Disconnect Options										
Input Fuses Only	550	550	550	900	900	Contact Baldor				
Fused Disconnect Switch & Rotary Handle	1440	1440	1440	1810	1810					
Circuit Breaker Only	1400	1400	1400	1725	1725	3135	7420	7420	9280	12210
Circuit Breaker Disconnect & Rotary Handle	1625	1625	1625	1970	1970	3485	7770	7770	9630	12560
Door Mounted Operator Devices										
Door Mounted OIM (Remote Keypad)	75	75	75	75	75	Contact Baldor				
Maintained Start/Stop Switch	105	105	105	105	105					
Momentary Start/Stop Push Buttons	180	180	180	180	180					
E-Stop Push Button (Mushroom Head)	120	120	120	120	120					
Jog Push Button	90	90	90	90	90					
2 or 3 Position Selection Switch	90	90	90	90	90					
Pilot Light(1)	85	85	85	85	85					
Manual Potentiometer	120	120	120	120	120					
Contactors, Overloads, Starters, Control Transformers & Line Reactors										
Input Contactor(1)	1050	1050	1050	2500	2500	Contact Baldor				
Output Contactor(1)	1050	1050	1050	2500	2500					
Drive Bypass Control(1)	2600	2600	2600	5500	5500	18750	20690	25050	28485	32085
Motor Overload Relay	420	550	550	550	550	Contact Baldor				
Blower Motor Starter(1,4)	220	220	220	220	220					
Control Transformer: 460:120 VAC, 250VA (2)	275	275	275	275	275					
3% Impedance Input Line or Load Reactor	362	499	522	823	875					
Other peripheral equipment										
Space Heater (100W)	120	120	120	120	120	Contact Baldor				
Analog Input or output Isolator	980	980	980	980	980					
Shunt Trip device	280	280	280	280	280					
Undervoltage Release Device	355	355	355	355	355					
RF/EMI filter										
DC Power Supply	210	210	210	210	210					
MOV surge protection	100	100	100	100	100					
Input IEEE 519-1992 Harmonic Filter										
Dynamic Braking - Transistor + Resistor										
1200W resistors	849	849	849	849	849	Contact Baldor				
2400W resistors	1299	1299	1299	1299	1299					
4800W resistors	2107	2107	2107	2107	2107					

(1) Requires Control Transformer option
 (2) Add \$100 for each 100VA over 250VA
 (3) Add \$100 for each 100W over the first 100W
 (4) Required on TEBC motors

The bypass option includes:
 - bypass contactor - reduced voltage starter (digital soft start) - additional bay (for bypass contactor, digital soft start, and wiring)

