

**VS1MX  
AC Micro Drive**



**1/2 thru 1.5 Hp**  
**1/2 thru 3 Hp**  
**2 thru 5 Hp**  
**1 thru 10 Hp**

**115 VAC**  
**230 VAC**  
**230 VAC**  
**460 VAC**

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

**Applications:** Applications that require a washdown or harsh duty enclosure. Ideal for environments where dust, oil mist or water is prevalent. Variable torque, constant torque or constant horsepower applications. Target stand alone applications where a local disconnect is required. New installations, replacements and original equipment manufactures (OEM).

**Features:** Volts per Hertz Control with peak overload capacity of 175%. Flexible mounting options NEMA 12, NEMA 4X, Input Disconnect models and EMC Filter models. Integral keypad, operator interface and local speed control. Speed potentiometer and F-O-R switch on input disconnect models only. Basic set of less than forty programming parameters. Power ratings up to 10 Hp in 460V versions.

<b>Performance Features</b>	Control Modes	V/Hz
	Operator Interface Module	Integral Drive Mounted
	Display Lines	6-Character LED Display
	Programmable Preset Speeds	Four
	Analog Outputs	One (0-10 VDC)
	Auto Restart	Yes – Up to 5 attempts
	Frequency Avoidance	One Band
	Fault History	Last Four Faults
	Digital Inputs	Three Configurable Inputs
Digital Inputs Type	Pull-Up	
<b>Drive Specifications</b>	Analog Inputs: Two	0-10VDC or 4 to 20mA
	Relay Outputs: One	One Built-in Form C Relay
	Analog Outputs / Digital Output	0-10 VDC: One Analog Usable for Meter (Freq., Current, Voltage) or Digital Output
	Maximum Load	10 Hp @ 460 VAC
	Overload Capacity	Drive Output 150% for one minute and 175% for 2 seconds
	Input Voltage Ranges	115 VAC (99-126); 230 VAC (198-264); 460 VAC (342-528)
	Rated Input Frequency	50-60Hz (±5%)
	Carrier Frequency	4-32 kHz (8 kHz default)
	Operating Temperature	-10° to 40°C
	Snubber (Dynamic Braking)	Built-in Transistor on Frames 2 and 3 only
	Dynamic Braking External	Up to 150% Dynamic Braking with appropriately sized resistor
	DC Injection Braking	Included
	Volts/Hz	Linear V/Hz, Energy Optimizer Function
	Frequency Control Range	0 - 500Hz
	Accel/Decel	Independently adjustable accel. & decel. ramps
	Time Range	0.1 to 600.0 Seconds
	Keypad Speed Control	Yes
	Sink/Source Inputs	Selectable, 24 VDC Logic
Electronic Overload Trip	Electronic Motor Overload Inverse 150% for 1 minute or 175% for 2	
Communications	Built-in MODBUS-RTU (RS-485) Communications	
PI Control	Built-in	
<b>Protective Features</b>	Under Voltage	Level Depends on Voltage Class (240, 480, or 575)
	Output Short Circuit	Phase-to-Phase on Drive Output
	Over Temperature	Heatsink Monitor
	DC Bus Overvoltage	DC Bus Level Trip
	Drive Overload	Exceed Drive rating of 150% for One Minute or 175% for 2 seconds
	Over Current	Over-current/short-Circuit protection
	Output Phase	Trips on open Output Phase
	Loss of Reference	Trips on Loss of Speed Command Signal
	Comm. Error	Detects a communication error (fault)
<b>Agency Certifications</b>	UL, cUL, CE, CCC, C-tick	
<b>Service Conditions</b>	Altitude	1,000 m (3,300 ft.), derate by 1% per 100m up to 2,000m maximum
	Ambient Temperature	IP20: -10°C (14°F) to 40°C (102°F)
	Storage Temperature	-40°C (-40°F) to 60°C (140°F)
	Relative Humidity	10% to 95%, non-condensing
	Intermittent Overload	150% overload capacity for up to 1 minute, 175% overload capacity for up to 2 seconds

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 Starters & Dynamic Brakes

**BALDOR • RELIANCE**

**VS1MX – 115V, 50/60 Hz, 1-Phase Input (230V, 3-Phase Output) – NEMA 4X/12 (White Enclosure)**

Catalog Number	Disconnect *	Frame	Hp	Output Current	List Price	Mult. Sym.
VS1MX10P5-4	No	A	0.5	2.3	680	EA
VS1MX10P5-4D	Yes	A	0.5	2.3	747	EA
VS1MX11-4	No	A	1	4.3	705	EA
VS1MX11-4D	Yes	A	1	4.3	776	EA
VS1MX11P5-4T	No	B	1.5	5.8	883	EA
VS1MX11P5-4TD	Yes	B	1.5	5.8	971	EA

**VS1MX – 115V, 50/60 Hz, 1-Phase Input (230V, 3-Phase Output) – NEMA 12 (Green Enclosure)**

Catalog Number	Disconnect *	Frame	Hp	Output Current	List Price	Mult. Sym.
VS1MX10P5-2	No	A	0.5	2.3	625	EA
VS1MX10P5-2D	Yes	A	0.5	2.3	687	EA
VS1MX11-2	No	A	1	4.3	649	EA
VS1MX11-2D	Yes	A	1	4.3	714	EA
VS1MX11P5-2T	No	B	1.5	5.8	812	EA
VS1MX11P5-2TD	Yes	B	1.5	5.8	893	EA

**VS1MX – 230V, 50/60 Hz, 1-Phase Input (230V, 3-Phase Output) – NEMA 4X/12 (White Enclosure)**

Catalog Number	Disconnect *	Frame	Hp	Output Current	List Price	Mult. Sym.
VS1MX80P5-4	No	A	0.5	2.3	591	EA
VS1MX80P5-4D	Yes	A	0.5	2.3	650	EA
VS1MX81-4	No	A	1	4.3	613	EA
VS1MX81-4D	Yes	A	1	4.3	674	EA
VS1MX82-4	No	A	2	7	767	EA
VS1MX82-4D	Yes	A	2	7	844	EA
VS1MX82-4T	No	B	2	7	853	EA
VS1MX82-4TD	Yes	B	2	7	938	EA
VS1MX83-4T	No	B	3	10.5	886	EA
VS1MX83-4TD	Yes	B	3	10.5	973	EA

**VS1MX – 230V, 50/60 Hz, 1-Phase Input (230V, 3-Phase Output) – NEMA 12 (Green Enclosure)**

Catalog Number	Disconnect *	Frame	Hp	Output Current	List Price	Mult. Sym.
VS1MX80P5-2	No	A	0.5	2.3	543	EA
VS1MX80P5-2D	Yes	A	0.5	2.3	598	EA
VS1MX81-2	No	A	1	4.3	565	EA
VS1MX81-2D	Yes	A	1	4.3	621	EA
VS1MX82-2	No	A	2	7	706	EA
VS1MX82-2D	Yes	A	2	7	777	EA
VS1MX82-2T	No	B	2	7	784	EA
VS1MX82-2TD	Yes	B	2	7	863	EA
VS1MX83-2T	No	B	3	10.5	815	EA
VS1MX83-2TD	Yes	B	3	10.5	896	EA

**NOTE:** For EMC filtered units, refer to catalog CA769 (Baldor Drives and Capabilities).  
 \* Disconnect models include speed potentiometer and F-O-R switch.

Farm Duty  
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200 & 575 Volt  
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IEC Frame  
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50 Hertz  
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Inverter/Vector  
Motors & Controls

DC Motors  
and Controls

Soft Start & Dynamic  
Brakes

## VS1MX – 230V, 50/60 Hz, 3-Phase Input (230V, 3-Phase Output) – NEMA 4X/12 (White Enclosure)

Catalog Number	Disconnect *	Frame	Hp	Output Current	List Price	Mult. Sym.
VS1MX20P5-4	No	A	0.5	2.3	607	EA
VS1MX20P5-4D	Yes	A	0.5	2.3	668	EA
VS1MX21-4	No	A	1	4.3	668	EA
VS1MX21-4D	Yes	A	1	4.3	690	EA
VS1MX22-4	No	A	2	7	691	EA
VS1MX22-4D	Yes	A	2	7	760	EA
VS1MX22-4T	No	B	2	7	768	EA
VS1MX22-4TD	Yes	B	2	7	844	EA
VS1MX23-4T	No	B	3	10.5	797	EA
VS1MX23-4TD	Yes	B	3	10.5	876	EA
VS1MX25-4T	No	C	5	18	1,136	EA
VS1MX25-4TD	Yes	C	5	18	1,250	EA

## VS1MX – 230V, 50/60 Hz, 3-Phase Input (230V, 3-Phase Output) – NEMA 12 (Green Enclosure)

Catalog Number	Disconnect *	Frame	Hp	Output Current	List Price	Mult. Sym.
VS1MX20P5-2	No	A	0.5	2.3	557	EA
VS1MX20P5-2D	Yes	A	0.5	2.3	613	EA
VS1MX21-2	No	A	1	4.3	578	EA
VS1MX21-2D	Yes	A	1	4.3	636	EA
VS1MX22-2	No	A	2	7	635	EA
VS1MX22-2D	Yes	A	2	7	699	EA
VS1MX22-2T	No	B	2	7	706	EA
VS1MX22-2TD	Yes	B	2	7	776	EA
VS1MX23-2T	No	B	3	10.5	733	EA
VS1MX23-2TD	Yes	B	3	10.5	806	EA

## VS1MX – 460V, 50/60 Hz, 3-Phase Input (460V, 3-Phase Output) – NEMA 4X/12 (White Enclosure)

Catalog Number	Disconnect *	Frame	Hp	Output Current	List Price	Mult. Sym.
VS1MX41-4	No	A	1	2.2	739	EA
VS1MX41-4D	Yes	A	1	2.2	813	EA
VS1MX42-4	No	A	2	4.1	893	EA
VS1MX42-4D	Yes	A	2	4.1	983	EA
VS1MX42-4T	No	B	2	4.1	992	EA
VS1MX42-4TD	Yes	B	2	4.1	1,092	EA
VS1MX43-4T	No	B	3	5.8	1,034	EA
VS1MX43-4TD	Yes	B	3	5.8	1,136	EA
VS1MX45-4T	No	B	5	9.5	1,284	EA
VS1MX45-4TD	Yes	B	5	9.5	1,413	EA
VS1MX47-4T	No	C	7.5	14	1,658	EA
VS1MX47-4TD	Yes	C	7.5	14	1,824	EA
VS1MX410-4T	No	C	10	18	1,966	EA
VS1MX410-4TD	Yes	C	10	18	2,163	EA

**NOTE:** For EMC filtered units, refer to catalog CA769 (Baldor Drives and Capabilities).

\* Disconnect models include speed potentiometer and F-O-R switch.

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MotorsInverter/Vector  
Motors & ControlsDC Motors  
and ControlsSoft Starters &  
Dynamic Brakes

**VS1MX – 460V, 50/60 Hz, 3-Phase Input (460V, 3-Phase Output) – NEMA 12 (Green Enclosure)**

Catalog Number	Disconnect *	Frame	Hp	Output Current	List	Mult. Sym.
VS1MX41-2	No	A	1	2.2	680	EA
VS1MX41-2D	Yes	A	1	2.2	747	EA
VS1MX42-2	No	A	2	4.1	821	EA
VS1MX42-2D	Yes	A	2	4.1	904	EA
VS1MX42-2T	No	B	2	4.1	912	EA
VS1MX42-2TD	Yes	B	2	4.1	1,004	EA
VS1MX43-2T	No	B	3	5.8	950	EA
VS1MX43-2TD	Yes	B	3	5.8	1,045	EA
VS1MX45-2T	No	B	5	9.5	1,181	EA
VS1MX45-2TD	Yes	B	5	9.5	1,300	EA

**NOTE:** For EMC filtered units, refer to catalog CA769 (Baldor Drives and Capabilities).  
\* Disconnect models include speed potentiometer and F-O-R switch.

**Mounting Dimensions - NEMA 12 (IP55)**

Frame	Height Inches (mm)	Width Inches (mm)	Depth Inches (mm)
A	7.87 (200)	5.51 (140)	6.54 (166)
B	12.2 (310)	6.5 (165)	7.09 (180)

**Mounting Dimensions - NEMA 4X (IP66)**

Frame	Height Inches (mm)	Width Inches (mm)	Depth Inches (mm)
A	9.13 (232)	6.34 (161)	6.89 (175)
B	10.12 (257)	7.40 (178)	7.30 (185.5)
C	12.01 (305)	8.29 (210.5)	8.97 (227.8)

**VS1MX Accessories**

**VS1MX Dynamic Braking Resistors**

VS1MX Frame B and C drives include built-in braking transistors to aid in applications requiring the ability to stop rapidly. The resistor kit is designed for the VS1MX and mount external to the drive.

Description	Catalog Number	List Price	Mult. Sym.
DB Resistor 50 Ohm, 200 Watt	VS1MX-R50W200	339	EA

**VS1MX IP55 Padlock**

VS1MX IP55 Drives with a built in disconnect switch can be locked out using the padlock below.

Description	Catalog Number	List Price	Mult. Sym.
VS1MX IP55 Padlock	VS1MX-ILOCK	34	EA

## VS1MX Accessories Continued...

### VS1MX RJ45 Copycat Loader

This device allows uploading of drive parameters. Simply insert the device into the RJ45 port on the front of the VS1MX, press the upload button and you are done. Parameters are stored in memory and can be downloaded later or used to duplicate drive setup across a number of drives. Can also be used with VS1ST.

Catalog Number	Description	List Price	Mult. Sym.
VS1ST-CCL	RJ45 Copycat Loader	27	EA

### VS1MX Remote Keypad

The VS1ST-RKEY3 Remote Keypad can be panel mounted for remote control or display of drive parameters. The kit comes standard with a 9 foot (3 meter) cable and is suitable for IP54 mounting. Depending on the requirement of the application, VS1ST-RKEY3 can be used point to point or with multiple drives. This keypad can be used with either the VS1ST or the VS1MX.

Catalog Number	Description	List Price	Mult. Sym.
VS1ST-RKEY3	Remote Keypad with 3m cable	106	EA

### VS1MX Cable Kits

To support a basic serial network, option cable assemblies and splitters are available.

Catalog Number	Description	List Price	Mult. Sym.
VS1ST-J45SP	RJ45 Cable Splitter	22	EA
VS1ST-CBLOP5	1.5 ft. (0.5m) RJ45 Cable	11	EA
VS1ST-CBL1	3 ft. (1m) RJ45 Cable	11	EA
VS1ST-CBL3	9 ft. (3m) RJ45 Cable	11	EA

### VS1MX Field Bus Gateways

The Field Bus Gateways incorporate the Anybus Communicator and can connect a VS1MX to industrial networks. The communicator performs an intelligent conversion between the drive's serial protocol and the chosen industrial network. Can also be used with VS1ST.

Catalog Number	Description	List Price	Mult. Sym.
VS1ST-PBUS	Profibus Gateway Head	925	EA
VS1ST-DNET	DeviceNet Gateway Head	925	EA

### VS1MX Relay & Control Board Option Cards

To provide additional capabilities for the VS1MX, add on option cards are available. These include both I/O expansion and 115 or 230VAC control logic interface boards. Can also be used with VS1ST.

Catalog Number	Description	List Price	Mult. Sym.
VS1ST-2ROUT	Provides one additional relay output for the drive	148	EA
VS1ST-HVAC	Provides two relays for "drive running" & "drive tripped"	148	EA
VS1ST-LOGHV-11	115 VAC control logic input card	127	EA
VS1ST-LOGHV-23	230 VAC control logic input card	127	EA