



Smart solutions.
Strong relationships.



VSX SERIES DRIVES

Cutting-Edge Solutions for Precision Control



VSX Series Drives:

Cutting-Edge Solutions for Precision Control.



The VSX series drives provide tailored solutions for specific applications within a remarkably compact design, incorporating cutting-edge technology capable of powering both Induction and Permanent magnet motors. VSX series by CG is an advanced drive tailored for mid-high market OEMs for a variety of general-purpose applications, featuring high performance, quality, and power density, it offers embedded SVC and V/F control, ensuring precise speed control, rapid torque response, and optimized low-frequency output for demanding industrial environments.

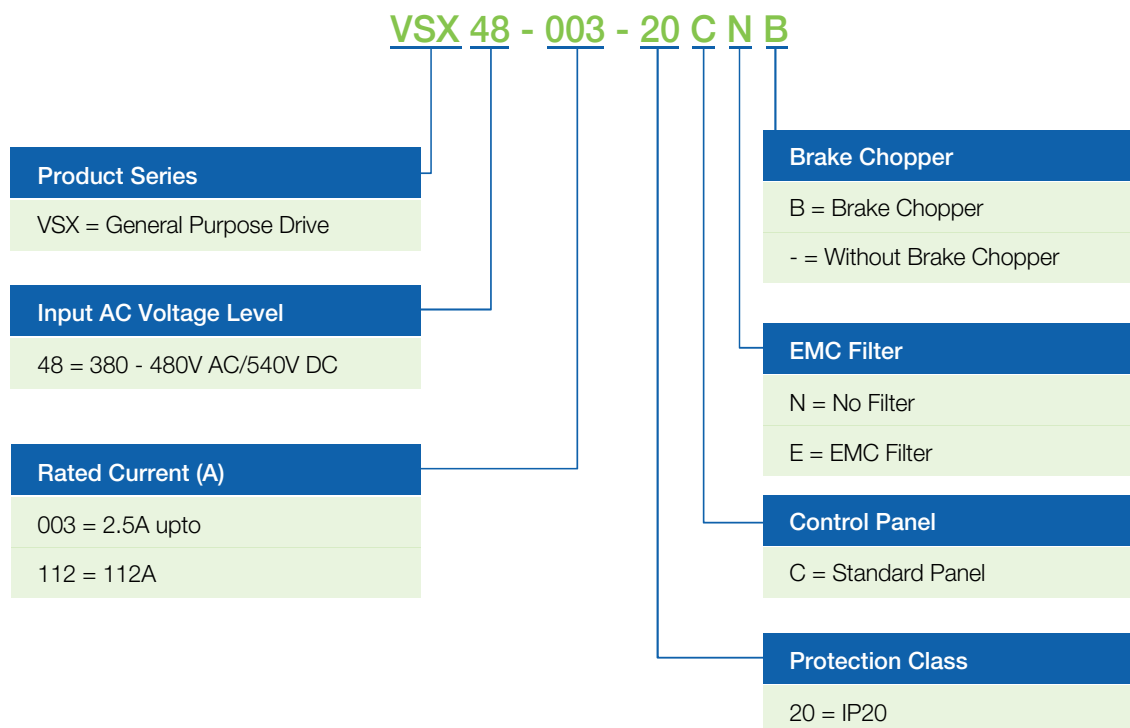
Main Features:

- Supports two groups of motor parameters.
- Comprehensive protection functions such as output-to-ground short circuit protection, fan drive circuit protection, motor overload protection, optional PT100/PT1000/PTC motor temperature protection function, etc.
- According to the severity of the fault type, it can be selected as pre-warning, fault stop, and continuous operation, it is convenient for maintenance.
- High-start torque characteristics.
- Enhanced adaptability and reduced motor parameter sensitivity.
- Automatic voltage compensation in case of overload.
- Features a strong background software with a user-friendly GUI, and convenient parameter debugging software.
- Having options for timer, counters and virtual IOs.
- Application macros like wire drawing, crane, high speed machinery.
- Optimized and compact structural design, with a cutting-edge technology platform.
- LCD graphical display with oscilloscope feature as option.
- The robust drive with conformal coating boards allows for installation in hot and humid climates.
- CE certification.



Model Explanation:

Model Shown on the Product Nameplate Showcases the Following Information.



Note: '-XS' suffix denotes drive with 7 segment LCD display

Types and Ratings - VSX Series 3-Phase, 380-480V:

Model No.	Normal duty (120%, 1min. every 10min.)			Heavy duty (150%, 1min. every 10min.)		
	Power [kW]	Power [hp]	Rated output current [A]	Power [kW]	Power [hp]	Rated output current [A]
VSX48-003-20CNB	1.5	2	4.2	0.75	1	2.5
VSX48-004-20CNB	2.2	3	5.5	1.5	2	4.2
VSX48-006-20CNB	3.7	5	9.5	2.2	3	5.5
VSX48-009-20CNB	5.5	7.5	13	3.7	5	9.5
VSX48-013-20CNB	7.5	10	17	5.5	7.5	13
VSX48-017-20CNB	11	15	25	7.5	10	17
VSX48-024-20CNB	15	20	32	11	15	25
VSX48-032-20CNB	18.5	25	37	15	20	32
VSX48-038-20CNB	22	30	45	18.5	25	37
VSX48-045-20CNB	30	40	60	22	30	45
VSX48-060-20CNB	37	50	75	30	40	60
VSX48-075-20CNB	45	60	91	37	50	75
VSX48-091-20CN-*	55	70	112	45	60	91
VSX48-112-20CN-*	75	100	150	55	70	112

Heavy duty: 150% Rated Current 60s, 180% Rated Current 10s, 200% Rated Current 1s.
Normal duty: 120% Rated Current 60s, 145% Rated Current 10s, 160% Rated Current 1s

Note: 230V option available on request

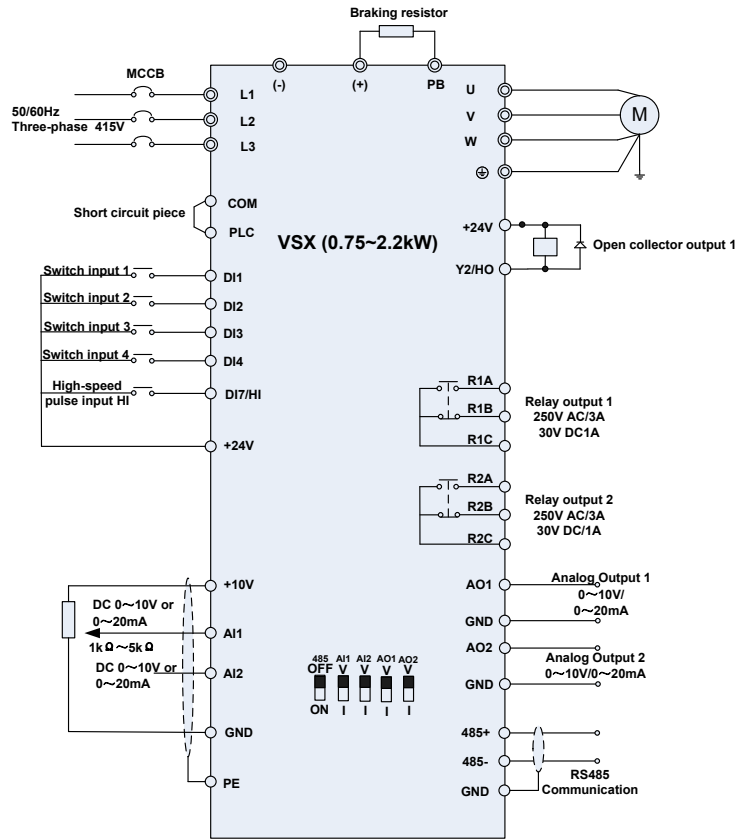
*Optional factory mounted brake chopper unit available

General Specifications of VSX Drives:

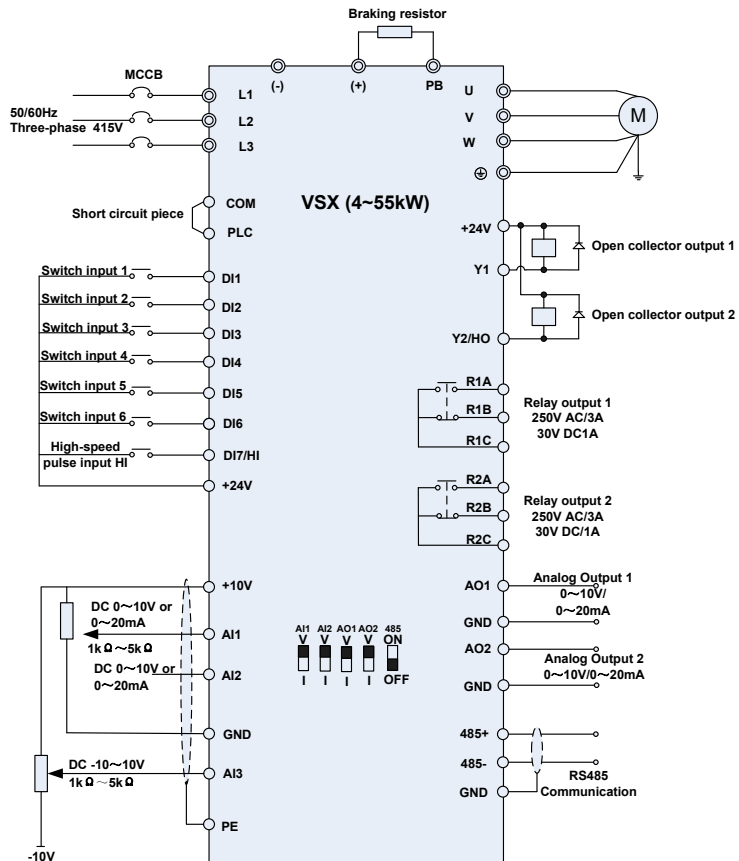
Function		Specifications
Power Input	Rated Input Voltage (V)	3-phase 380-480 VAC
	Rated Input Frequency (Hz)	50Hz/60Hz, tolerance $\pm 5\%$
Power Output	The Maximum Output Voltage (V)	0 ~ rated input voltage, error $\leq \pm 3\%$
	The Maximum Output Frequency (Hz)	0 ~ 590.00 Hz, resolution 0.01Hz
Control Characteristics	V/f Patterns	V/f control Sensor-less vector control 1 and 2
	Speed Range	1:50 (V/f control) 1:100 (sensor-less vector control 1) 1:200 (sensor-less vector control 2)
	Speed Accuracy	$\pm 0.5\%$ (V/f control) $\pm 0.2\%$ (sensor-less vector control 1 & 2)
	Speed Fluctuation	$\pm 0.3\%$ (sensor-less vector control 1 & 2)
	Torque Response	<10ms (sensor-less vector control 1 & 2)
Basic Functions	Overload Capability	Heavy duty: 150% Rated Current 60s, 180% Rated Current 10s, 200% Rated Current 1s. Normal duty: 120% Rated Current 60s, 145% Rated Current 10s, 160% Rated Current 1s.
Protection Function	Overcurrent, Overvoltage, Under Voltage, Over Temperature, Overload, etc. Protection.	
Environment	Place of Operation	Indoors, no direct sunlight, free from dust, corrosive gases, flammable gases, oil mist, water vapour, water drop, salt, etc.
	Altitude	0 ~ 2000m De-rate 1% for every 100m when the altitude is above 1000m
	Ambient Temperature	-10 °C ~ 50 °C without deration (40 °C for ND rating)
	Relative Humidity	5 ~ 95%, no condensation
	Vibration	Less than 5.9m/s ² (0.6g)
	Storage Temperature	-20 °C ~ +70 °C
Others	Efficiency	Rated power $\geq 93\%$
	Installation	Wall-mounted or flange-mounting
	IP Grade	IP20
	Cooling Method	Fan cooled

Wiring Diagram:

VSX (0.75~2.2kW)

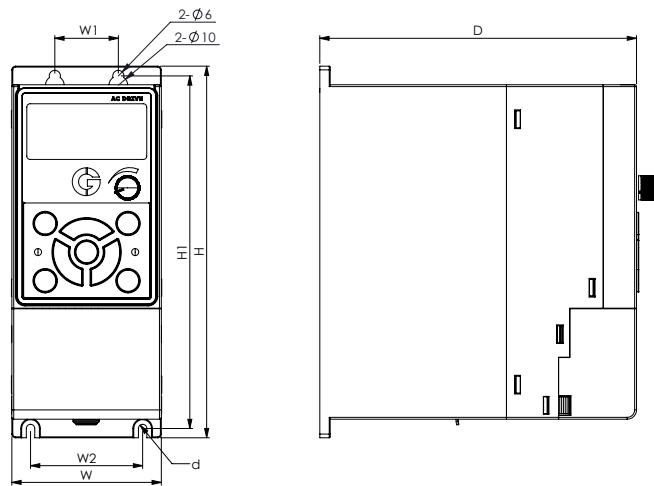


VSX (4~55kW)

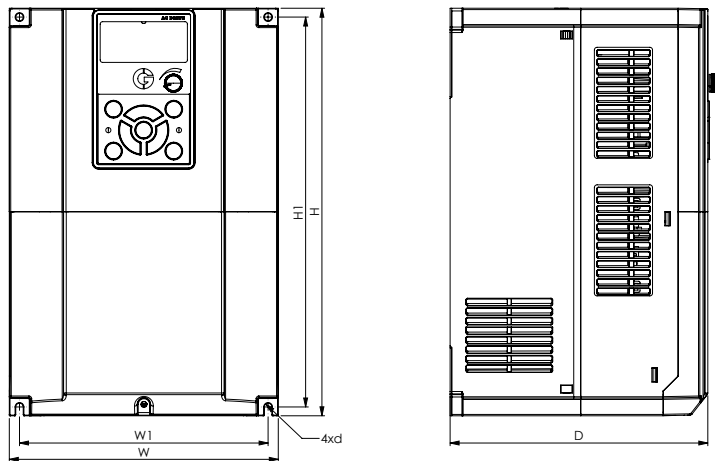


Model Mounting & Design:

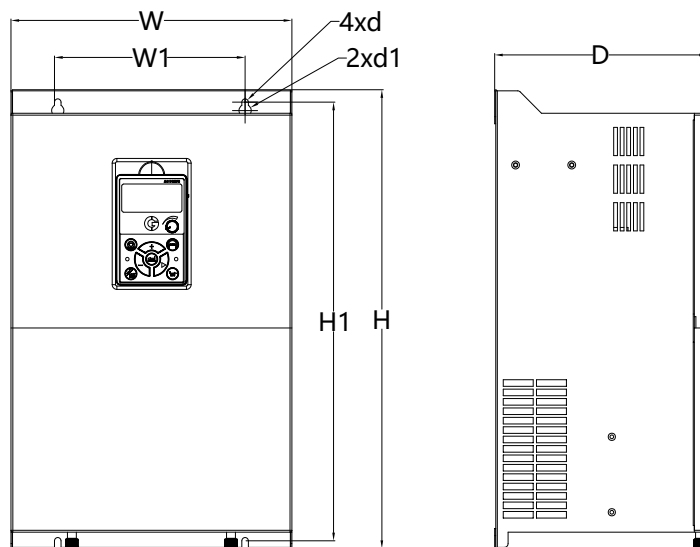
0.75 ~ 2.2kW Dimensions and Wall Mounting Dimensions



4 ~ 22kW Dimensions and Wall Mounting Dimensions



30 ~ 55kW Dimensions and Wall Mounting Dimensions



Mechanical Specifications for VSX Model:

Model No.	External and Installation Dimensions (mm)								Weight (kg)	Air Flow (CFM)
	W	H	D	W1	H1	W2	Install Hole (d)	Install Hole (d1)		
VSX48-003-20CNB	80	200	170	34	190	60	4.5	-	1.45	10
VSX48-004-20CNB										10
VSX48-006-20CNB										14
VSX48-009-20CNB	116.6	186.6	175	106.6	176.6	-	4.5	-	2.45	25
VSX48-013-20CNB									2.5	25
VSX48-017-20CNB	146	249	181.7	131	236	-	5.5	-	3.4	42
VSX48-024-20CNB									3.5	73
VSX48-032-20CNB	198	300	189.7	183	287	-	5.5	-	6.35	80
VSX48-038-20CNB									6.45	120
VSX48-045-20CNB									6.45	120
VSX48-060-20CNB	250	432	227	200	411	-	7.0	13	12.9	147
VSX48-075-20CNB									209	
VSX48-091-20CN-	300	485	226	200	466	-	7.0	13	15.0	209
VSX48-112-20CN-									216	

Note:

a) W1: Upside hole-to-hole width.

b) W2: Downside hole-to-hole width.

c) H1: Hole-to-hole height.

Terminals of VSX48:

Model	VSX48		Function Description
	0.75~2.2kW	4~55kW	
DI	5 (DI1~DI4, DI7)	7 (DI1~DI7)	Maximum input frequency: 200Hz (100 kHz for DI7) Impedance: 2.4kΩ Voltage range for level input: 9V~30V
DO	1 (Y2/HO)	2 (Y1, Y2/HO)	Voltage range: 0~24V (for Y1) Current range: 0~50mA (for Y1) Besides features of Y1, it can be used for high-speed pulse output channels. The maximum output frequency: 100kHz
AI	2 (AI1, AI2)	3 (AI1, AI2, AI3)	Input voltage range: DC 0~10V/0~ 20mA (DC -10~+10V for AI3) Impedance: 250 kΩ (voltage input), 250 Ω (current input)
AO	2 (AO1, AO2)	2 (AO1, AO2)	Output voltage range: DC 0~10V/0~ 20mA Impedance requirements ≥10kΩ
RO	2 (R1, R2)	2 (R1, R2)	Contact driving capacity: AC 250V, 3A, CosØ=0.4, DC 30V, 1A
RS485	1 (485+, 485-)	1 (485+, 485-)	Rate: 4800/9600/19200/38400/57600/115200bps

Accessories:

Standard Option	Part No.	Description	Connection Mode
Keypad - Standard	S-PPU-VS	LCD display	RJ45
Keypad - Graphic	G-PPU-VS	Graphical display	RJ45
Profibus Card	VSPROFIBUS-DP	Profibus card	DB9
Profinet Card*	VSPROFINET-2P	2- port profinet communication card	RJ45
VSX Temperature Card*	VSXTC	PTC/PT100/1000, KTY temp. sensor card	Terminal connection
The Differential Input PG Card*	VSX-PG01	The differential input PG card	Terminal connection
Open Collector, Push Input PG Card*	VSX-PG02	Open collector, push input PG card	Terminal connection
Rotary Transformer PG Card*	VSX-PG03	Rotary transformer PG card	DB9 interface
UWV Encoder PG Card*	VSX-PG04	UWV encoder PG card	Terminal connection
ECN1313 PG Card*	VSX-PG05	ECN1313 PG card	Terminal connection
Sin-Cos Encoder PG Card*	VSX-PG06	Sin-cos encoder PG card	DB15 interface
Multi-Pump Relay Card*	VSOPT-RL	Relay card	Terminal connection

*Available from $\geq 4.0kW$ rating

LCD Graphical Keypad as Option in VSX Drive:

- Quick and easy parameter setting with graphical LCD display.
- Provides clear, sharp visuals for better readability of data and settings.
- Multi-row display for the drive status.
- Displays motor speed, current, voltage, and frequency in real-time.
- Shows data trends, system performance, and waveforms graphically.
- User friendly operations
- Parameter backup and download options available.
- Detailed fault descriptions and alarm indicators for easy troubleshooting.
- Allows users to customize the screen to display preferred parameters.
- The forward and reverse buttons on the keypad allow the user to control the motor's rotation direction.



Application Software:

EmoWizard software helps in the easy commissioning and troubleshooting of VSX series drives, offering user-friendly tools for viewing, manipulation, and exchanging data with the drive. Statistics data can be plotted using the oscilloscope, and drive control with control panel.



Applications:



Air Handling Units



CNC Machines



Conveyors



Extruders



Pumps



Washing Machines



Circular Loom Machines



Scrap Crushers



Hoists

VSX series drives can also be used in a variety of general-purpose machine applications beyond these applications, offering high performance and precise control.

Other Products from CG Drives and Automation:



Emotron FDU & VFX 2.1

Variable / Constant Torque Drive Applications.

Rated Power	0.55-4,000 kW
Supply Voltage	230-690 V, 3-phase



Emotron Active Front End Drive (AFE)

Available as Low Harmonic or Regenerative Version.

Rated Power	55-2,200 kW (AC) / 200-4,000 kW
Supply Voltage	380-690 V (AC) / 380-690 V, 3-phase



Emotron VSS & VSM

Optimized Drive for Smaller Applications.

Rated Power	VSS23: 0.37–2.2 kW, 1-phase
	VSM48: 0.75–4 kW, 3-phase
Supply Voltage	230V 1-phase, 230-480V, 3-phase



Emotron VSR

Solar Drive with High Functionality.

Rated Power	VSR48: 0.75–55 kW, 3-phase
	VSRE48: 0.75–4 kW, 3-phase
	VSR23: 0.37-4 kW, 1-phase
	VSR11: 1.1 kW, 1-phase
Supply Voltage	110 / 230 V 1-phase, 380–480 V 3-phase



Emotron TSA

Starts, Stops and Protects.

Rated Power	5.5-1,000 kW
Supply Voltage	230-690 V, 3-phase



Emotron M20

Shaft Power Monitors

Rated Power	100-240/380-500/525-690 VAC
Supply Voltage	Up to 999A via current transformer

Registered Office

CG Power and Industrial Solutions Limited
CG House, 6th Floor, Dr. Annie Besant Road, Worli, Mumbai 400 030, Maharashtra, India
Phone: +91 022 2423 7700

Manufacturing Location

CG Drives and Automation
Plot#9, MPAKVN, Phase-2, New Industrial Area, Mandideep 462 046, M.P.
Phone: 0748 0426427 / 440 / 441 / 456 / 435

CG Drives & Automation Sweden AB
Morsaregatan 12, Box 222 25
SE-250 24 Helsingborg, Sweden
Tel: +46 42 16 99 00

Regional Sales Office

North: 4th Floor, Discovery Tower, Plot No. A-17, Sector 62, Noida, Gautam Budh Nagar, 210 309, India
Tel: +91 (0) 120 4229478
East: 50 Chowringhee Road, Kolkata 700 071, West Bengal, India, Tel: +91 (0) 33 2282 9681/85
West: CG House, 8th Floor, Dr. Annie Besant Road, Worli, Mumbai 400 030, Maharashtra, India
Tel: +91 (0) 22 2423 8940
South: No-3, Dr. MGR Salai (Kodambakkam High Road), Nungambakkam, Chennai 600 034, Tamil Nadu, India,
Tel: +91 (0) 44 4224 7500

Email: drives.mktg@cgglobal.com | drives.service@cgglobal.com
Econnect: <http://itapp.cgglobal.com/Econnect/>

Our All India Service Center Toll Free No: 1800 267 0505

For more information visit:

www.cgglobal.com | www.emotron.com

