



AMX

SERIES DRIVES

Cutting-edge technology for robust and versatile applications
AMX48: 1.5kW to 55kW, 3-phase, 230V to 480V





CG AMX Drive is suitable for general-purpose industrial applications and operates seamlessly and reliably in challenging environments.



Performance, Monitoring, and Speed

The AMX Drive enhances quality and efficiency with user-friendly control. It is a dedicated industrial drive that provides accurate and efficient motor control across a wide range of general-purpose applications.

Built-in features for reliable performance and monitoring:

- Suitable for 50°C ambient temperature operation without deration
- Conformal-coated boards with 3C3 category rating for protection against harsh environmental conditions
- High overload capacity of 180% for 2 seconds, ensuring the best performance under peak load conditions
- Wide tolerance to voltage and frequency fluctuations, ensuring stable operation under unstable input conditions

The result is a powerful and versatile solution that improves process efficiency and quality in a cost-effective package.

AMX Series Drives: Cutting-Edge technology for Robust & Versatile Applications



The AMX series VFDs deliver high-performance and compact solutions for wide range of industrial applications. Designed to drive both induction and permanent magnet motors, the AMX offers advanced V/F and field-oriented control for precise speed regulation, fast torque response, and improved low-frequency performance in demanding industrial environments.

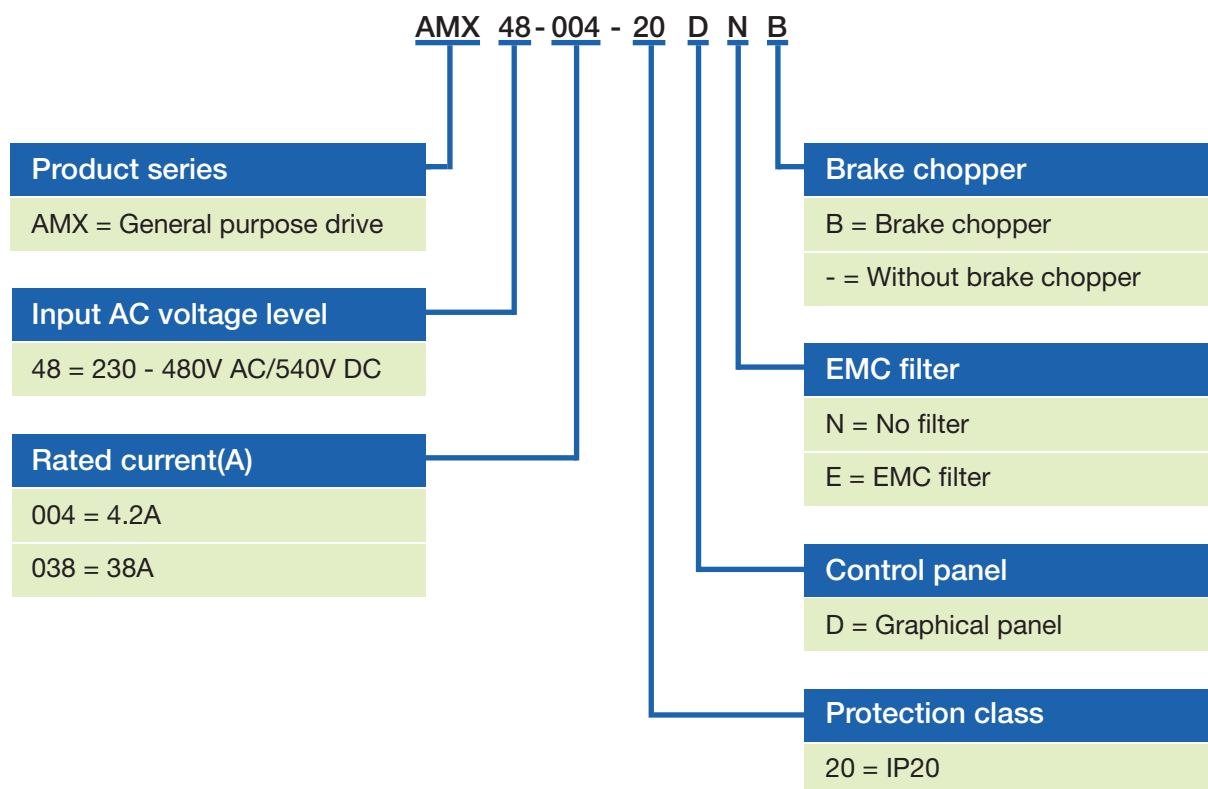
The AMX drives feature a compact design that optimizes installation space while ensuring reliable operation under elevated ambient temperatures. AMX is a versatile, general-purpose drive suitable for both variable and constant torque applications.

Main features

- **Power that delivers** – High starting torque characteristics and reliable performance under heavy-load startup conditions
- **Built for extreme environments** – Robust drive with conformal coating, engineered to withstand hot, humid, and harsh operating conditions
- **Cleaner, safer installations** – Optional C3 category EMC/EMI filter ensures superior electromagnetic compatibility
- **Smarter logic control** – Load monitoring, timers, counters, and virtual I/Os enable flexible in-built logic without the need for external hardware
- **Intuitive operation** – User-friendly GUI with advanced debug tools, robust software, and streamlined parameter configuration
- **Real-time visualization** – Graphical PPU with oscilloscope for instant monitoring and waveform analysis
- **Hassle-free updates** – USB Type-C firmware upgrade (mobile/laptop compatible); fast, convenient, and adapter-free
- **Advanced braking control** – Built-in brake chopper (up to 45kW) and integrated vector braking for quick, safe, and controlled stops
- **Intelligent load monitoring** – Standard load monitor function provides precise insight into operational demands
- **Streamlined configuration** – Detachable control panel with parameter copy function and the ability to set parameters directly in process units (e.g., m/sec, tons/h, cycles/min)
- **Energy efficiency** – Built-in energy-saving function automatically pauses the motor when operation is not required
- **Specialized application macros** – Pre-configured settings for brake control and multi-pump systems to simplify complex setups

Model explanation

The model shown on the product nameplate contains the information below.



Types and ratings - AMX series

Typical motor power at 3-phase mains voltage 230V - 480V:

AMX Model	Max. output current [A*]	Normal duty (120%, 1 min every 10 min)			Heavy duty (150%, 1 min every 10 min)			Frame size
		Power [kW]	Power [HP]	Rated current [A]	Power [kW]	Power [HP]	Rated current [A]	
AMX48-004-20DEB	5	1.5	2	4.2	0.75	1	2.5	X1
AMX48-006-20DEB	6.6	2.2	3	5.5	1.5	2	4.2	
AMX48-009-20DEB	11	3.7	5	9.1	2.2	3	5.5	
AMX48-013-20DEB	15.6	5.5	7.5	13	3.7	5	9.1	X2
AMX48-017-20DEB	20	7.5	10	17	5.5	7.5	13	
AMX48-025-20DEB	30	11	15	25	7.5	10	17	X3
AMX48-032-20DEB	38.5	15	20	32	11	15	25	
AMX48-038-20DEB	44.5	18.5	25	38	15	20	32	
AMX48-045-20DEB**	54	22	30	45	18.5	25	38	X4
AMX48-060-20DEB**	72	30	40	60	22	30	45	
AMX48-075-20DEB**	90	37	50	75	30	40	60	X5
AMX48-092-20DEB**	110.4	45	60	92	37	50	75	
AMX48-112-20DEB**	134.4	55	75	112	45	60	92	

Rated data at 50 °C ambient temperature

* Available for a limited time and as long as drive temperature permits.

** Upcoming Range

General specifications of AMX drives

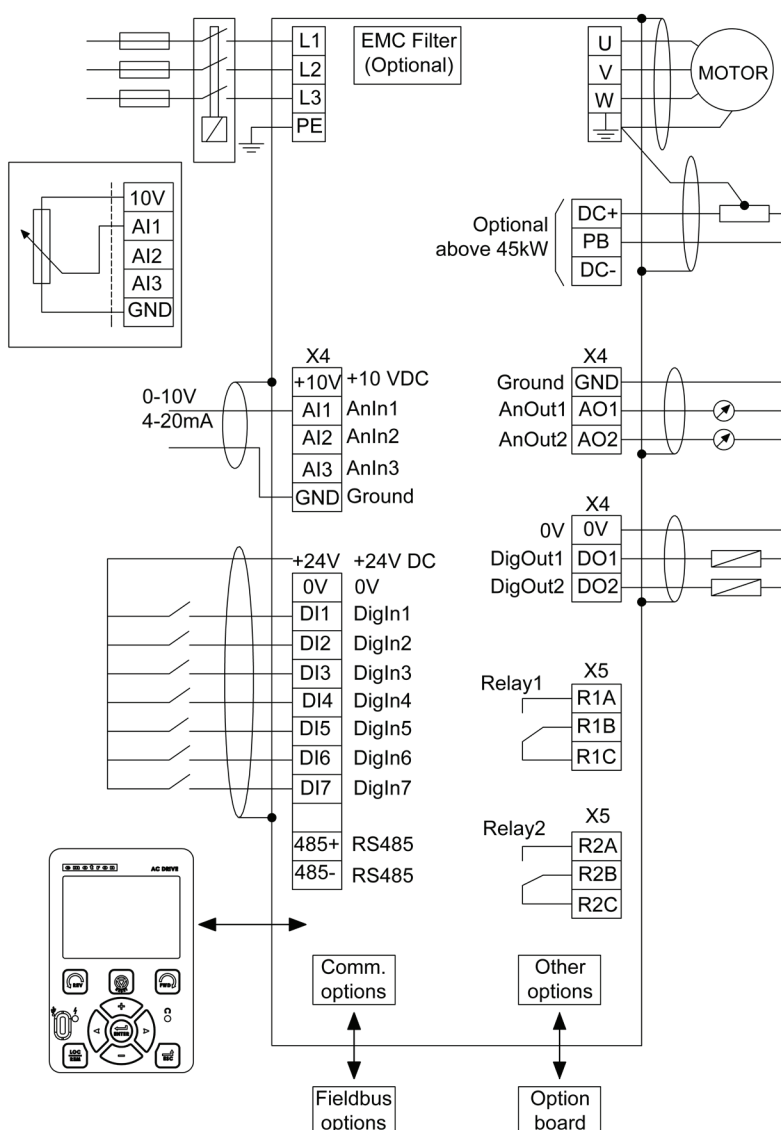
Power input	Rated input voltage (V)	3-phase, 230V - 480V
	Rated input frequency (Hz)	45 - 65Hz
Power output	Power range	1.5 to 55 kW / 2 to 75 HP
	Output voltage (V)	0 - Rated input voltage
	Output frequency (Hz)	0 - 599 Hz, resolution 0.01 Hz
Control characteristics	Control mode	V/F control, Field-oriented control
	Speed control range	1:1500, closed loop vector control (Minimum speed : Nominal speed, 4-pole machine) 1:200, open loop vector control (Minimum speed : Nominal speed, 4-pole machine)
	Speed accuracy	FOC: Close loop = 0.01% of Nnom Open loop = 0.1% of Nnom
	Speed response	80ms (Dynamic)
	Torque response	5ms (Dynamic)
	Starting Torque	200%
Basic functions	Overload capability	ND: 120% for 60s. HD: 180% for 2s, 200% for 0.5s
Applicable motors	Asynchronous motor, permanent magnet synchronous motor	
IP class	IP20	
Input total power factor	0.95	
Brake chopper	Up to 45 kW: In-built above 45 kW: optional	
EMC filter	C3 (optional)	
Switching frequency	1.5-6kHz (Default: 4 kHz up to 45kW, 3kHz above 45kW)	
Efficiency	97% for models 004 to 032, 98% for models 038 to 112	
Protection function	Motor I ² t Protection, motor lost, locked rotor, overcurrent, overvoltage, undervoltage, overtemperature, short-circuit, thermal protection of motor, motor phase loss, earth fault.	
IT-net	Yes	
Standard options	I/O board Encoder board PTC/PT100/PT1000	
Serial communication option	RS232, RS485	
Communication options (upcoming)	EtherNet/IP Modbus TCP/IP Profinet	
CE certification	All sizes	

Environmental conditions

Parameter	Normal operation
Operating Environment	Indoors, no direct sunlight, free from dust, corrosive gases, flammable gases, oil mist, water vapour, water drops, and salt, etc.
Altitude	0 to 1000m De-rate 1% /100m of rated current up to 2000 m
Storage temperature	-20°C to +60°C (-4 to +140 °F)
Ambient temperature	-10°C to 50°C Derating 1%/°C up to 55°C
Relative humidity	Max. 95% and no condensing and no formation of ice
Vibration	According to IEC 60068-2-6, Sinusoidal vibrations: $10 \leq f \leq 57$ Hz, 0.075 mm; $57 < f \leq 150$ Hz, 1g
Contamination, according to IEC 60721-3-3	No electrically conductive dust allowed. Cooling air must be clean and free from corrosive materials. Chemical gases, coated boards 3C3. Solid particles, class 3S2.
Atmospheric pressure	86 to 106 kPa (12.5 - 15.4 PSI)

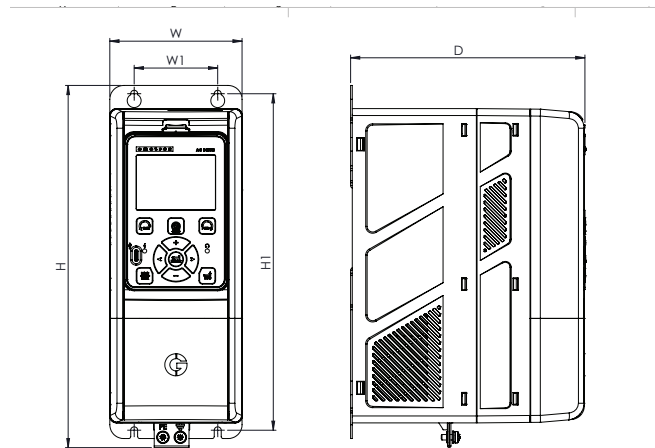
Wiring diagram

AMX48 (1.5 ~ 55 kW)

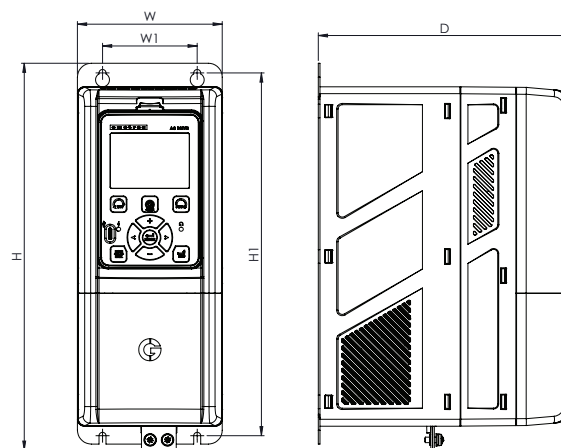


Model mounting & design

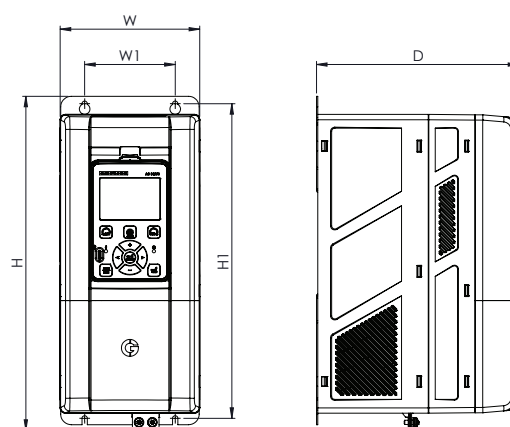
1.5 ~ 4 kW dimensions and wall mounting dimensions



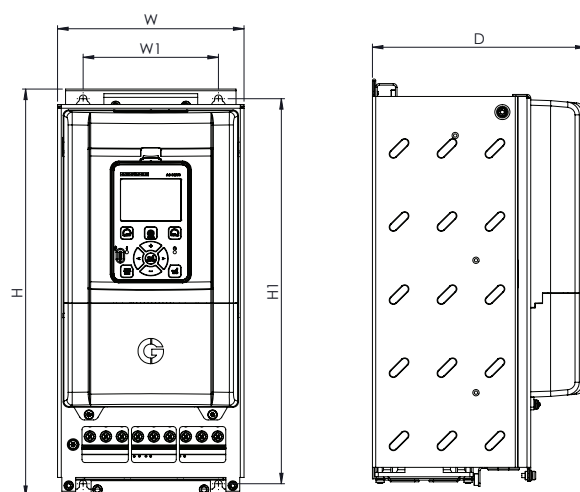
5.5 ~ 7.5 kW dimensions and wall mounting dimensions



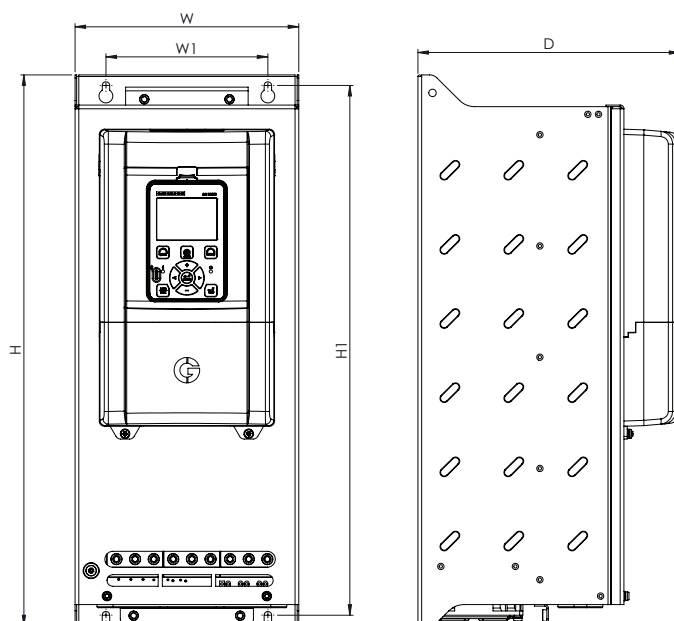
11 ~ 18.5 kW dimensions and wall mounting dimensions



22 ~ 30 kW dimensions and wall mounting dimensions



37 ~ 55 kW dimensions and wall mounting dimensions



Mechanical specifications for the AMX model

Model No.	External and installation dimensions (mm)						Weight (kg)	Flow Rate m ³ /h (ft ³ /min)
	W	H	D	W1	H1	Mounting hole		
AMX48-004-20DEB	95	262	168	60	243	Φ5	1.5	50 (29.4)
AMX48-006-20DEB								
AMX48-009-20DEB								
AMX48-013-20DEB	104	279	181	68	262	Φ5	2.5	50 (29.4)
AMX48-017-20DEB								
AMX48-025-20DEB	131	315	190	85	297	Φ5	3.4	89.0 (52.4)
AMX48-032-20DEB							3.5	
AMX48-038-20DEB							3.6	135 (79.4)
AMX48-045-20DEB	175	385	201	127	364	Φ7	Coming soon	
AMX48-060-20DEB								
AMX48-075-20DEB	210	520	246	152	500	Φ7	Coming soon	
AMX48-092-20DEB								
AMX48-112-20DEB								

Control Terminals of AMX48

Control signals	
DI	7 channels (DI1 - DI7), DI7- high-speed channel
DO	2 channels (DO1, DO2), DO1- high speed channel
AI	3 channels (AI1 - AI3)
AO	2 channels (AO1, AO2)
RO	2 channels (R1, R2)

I/O options	
Option 1:	5 extra relay outputs (250VAC/8A NO/NC) Maximum 2 relay boards can be built in per AC drive.
Option 2:	4 extra AnIn (bipolar -10V to +10V or 0/4 to 20mA) 2 extra AnOut (unipolar 0 to +10V or 0/4 to +20mA) 4 + 2 extra DigIn (24V PNP/NPN logic programmable, 2 high-speed) Maximum 1 I/O board can be installed per AC drive.

Encoder board (From frame X2 and onwards)

- Incremental Encoder board: Differential encoder input suitable for 5 V (TTL) or 24 V (HTL) incremental encoders, range 5-16384 pulses/revolution. Inputs min 9 k Ω . Max frequency = 100 kHz. For single ended or differential type of encoders (A/B/Z, A'/B'/Z'). Selectable encoder supply voltage output 5 VDC or 24 VDC.
 - Sin-Cos Encoder board: Differential encoder input sin-cos encoders, range 1-65535 pulses/revolution. Max frequency = 350 kHz. For differential type of encoders (A/B/C/D/Z, A'/B'/C'/D'/Z'). Selectable encoder supply voltage output 5 VDC or 12 VDC or 24 VDC.
 - Resolver board: Differential encoder input, input voltage 7 Vrms 20 kHz, For differential type of encoders (A/B/Z, A'/B'/Z').
- Maximum 1 encoder board can be installed per AC drive.

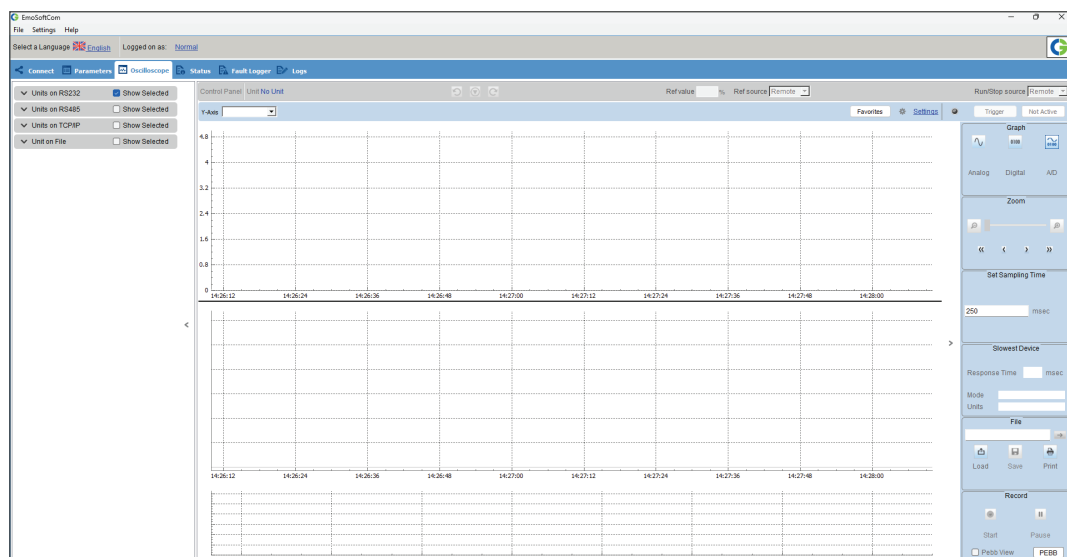
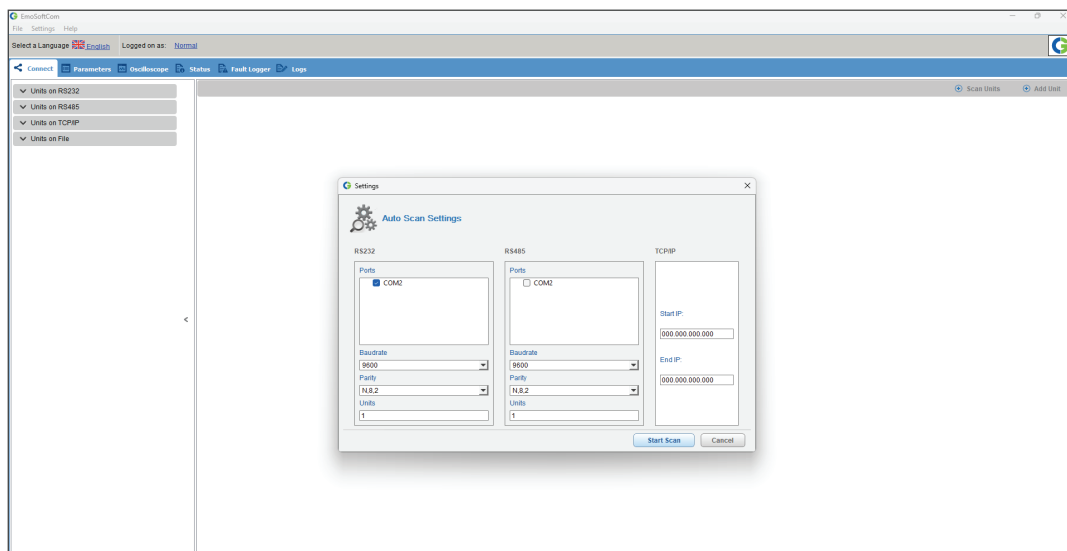
PTC/PT100/PT1000 board

1 PTC isolated input conforming DIN 44081/44082. Max 6 PTC thermistors can be connected in series to PTC input. Also including 3 PT100/PT1000 inputs, 2/3/4-wire, conforming EN 60751.

Maximum 1 PTC/PT100/PT1000 board can be installed per AC drive.

Application Software

Connect a computer to the front control panel using a standard RS232 cable. With EmoSoftCom PC software, you can record signals and save or load backup settings, which is useful during service or maintenance. The software offers user-friendly tools for viewing, managing, and exchanging data with the drive.



LCD graphical keypad in AMX drive

- Quick and easy parameter setting through a high-resolution 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
- USB Type-C port enables flashing of display and control firmware
- USB Type-C port enables application configuration
- User-friendly operation
- 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 direction



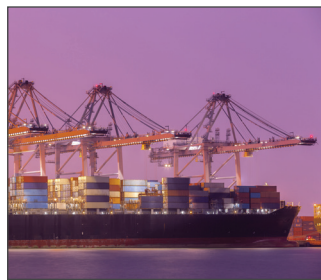
Product compliance

- CE (Conformité Européenne)
- Low Voltage Directive 2014/35/EU, EN(IEC) 61800-5-1:2007+A1:2017+A11:2021
- Machinery Directive 2006/42/EC, EN 61800-5-2: 2007
- EMC Directive 2014/30/EU, EN 61800-3: 2018
- RoHS II directive 2011/65/EU
- Waste electrical and electronic equipment directive (WEEE) 2012/19/EU
- Eco-design Directive 2009/125/EC

Applications



FMCG



Port and Shipping



Infrastructure



Cement



Electronics



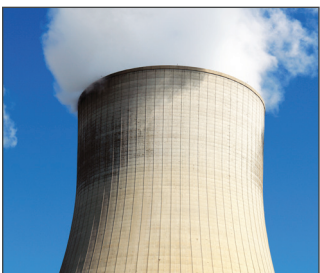
Chemicals



Textiles



Renewables



Thermal Power



Oil and Gas



Automobiles



Paper

AMX series drives can be used in a wide range of general-purpose machine applications, delivering high performance and precise control beyond the listed applications.

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