

# MX2

### Born to drive machines

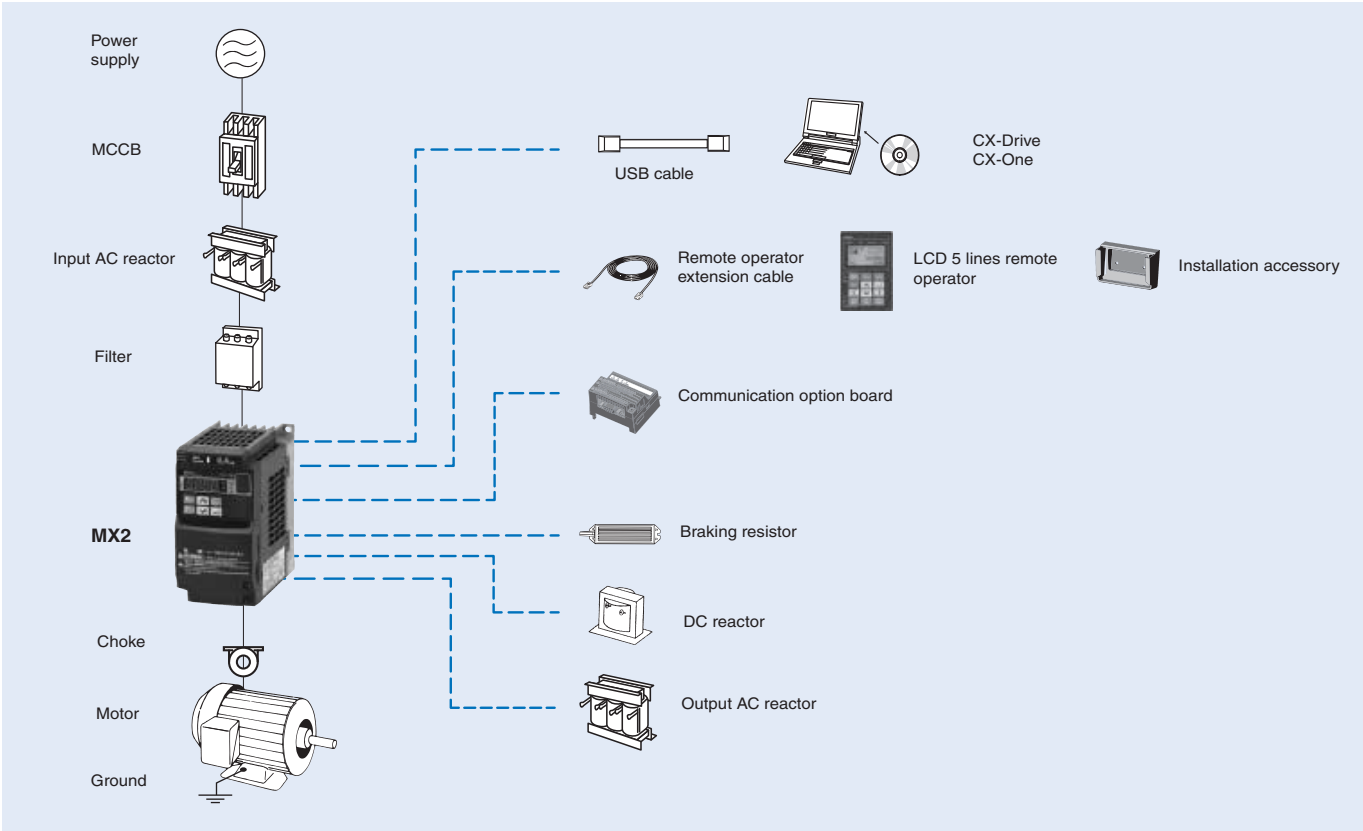
- Current vector control
- High starting torque: 200% at 0.5 Hz
- Double rating VT 120%/1 min and CT 150%/1 min
- IM & PM motor control
- Torque control in open loop vector
- Positioning functionality
- Built-in application functionality (i.e. Brake control)
- Built-in logic programming
- Safety embedded compliant with ISO13849-1 (double input circuit and external device monitor EDM)
- USB port for PC programming
- 24 VDC backup supply for control board
- Fieldbus communications: Modbus, DeviceNet, Profibus, CompoNet, EtherCAT, ML-II and EtherNet/IP
- PC configuration tool: CX-Drive
- RoHS, CE, cULus

### Ratings

- 200 V Class single-phase 0.1 to 2.2 kW
- 200 V Class three-phase 0.1 to 15.0 kW
- 400 V Class three-phase 0.4 to 15.0 kW

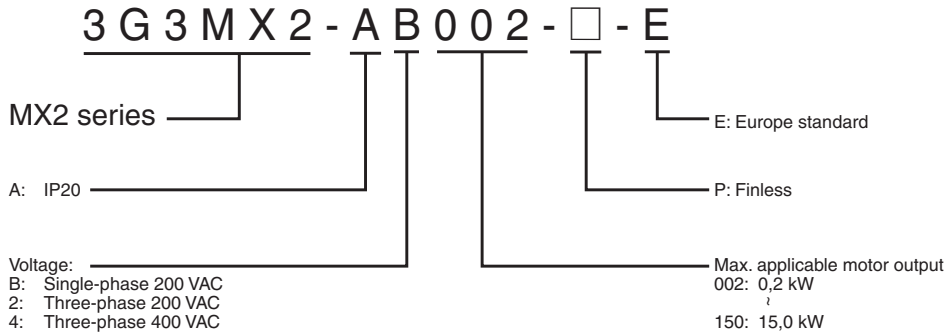


## System configuration



Specifications

Type designation



200 V class

Single-phase: 3G3MX2-□		B001	B002	B004	B007 <sup>1</sup>	B015	B022	-	-	-	-	-	
Three-phase: 3G3MX2-□		2001	2002	2004	2007	2015	2022	2037	2055	2075	2110	2150	
Motor kW <sup>2</sup>	For VT setting	0.2	0.4	0.55	1.1	2.2	3.0	5.5	7.5	11	15	18.5	
	For CT setting	0.1	0.2	0.4	0.75	1.5	2.2	3.7	5.5	7.5	11	15	
Output characteristics	Inverter capacity kVA	200 VT	0.4	0.6	1.2	2.0	3.3	4.1	6.7	10.3	13.8	19.3	23.9
		200 CT	0.2	0.5	1.0	1.7	2.7	3.8	6.0	8.6	11.4	16.2	20.7
		240 VT	0.4	0.7	1.4	2.4	3.9	4.9	8.1	12.4	16.6	23.2	28.6
		240 CT	0.3	0.6	1.2	2.0	3.3	4.5	7.2	10.3	13.7	19.5	24.9
	Rated output current (A) at VT		1.2	1.9	3.5	6.0	9.6	12.0	19.6	30.0	40.0	56.0	69.0
Rated output current (A) at CT		1.0	1.6	3.0	5.0	8.0	11.0	17.5	25.0	33.0	47.0	60.0	
Max. output voltage		Proportional to input voltage: 0..240 V											
Max. output frequency		400 Hz											
Power supply	Rated input voltage and frequency		Single-phase 200..240 V 50/60 Hz 3-phase 200..240 V 50/60 Hz										
	Allowable voltage fluctuation		-15%..+10%										
	Allowable frequency fluctuation		5%										
Braking torque	At short-time deceleration At capacitor feedback	100%: <50Hz 50%: <60Hz				70%: <50Hz 50%: <60Hz		Approx 20%		-			
		Self cooling					Forced-air-cooling						

1. Three phase model use forced-air-cooling but single phase model is self cooling.
2. Based on a standard 3-Phase standard motor.

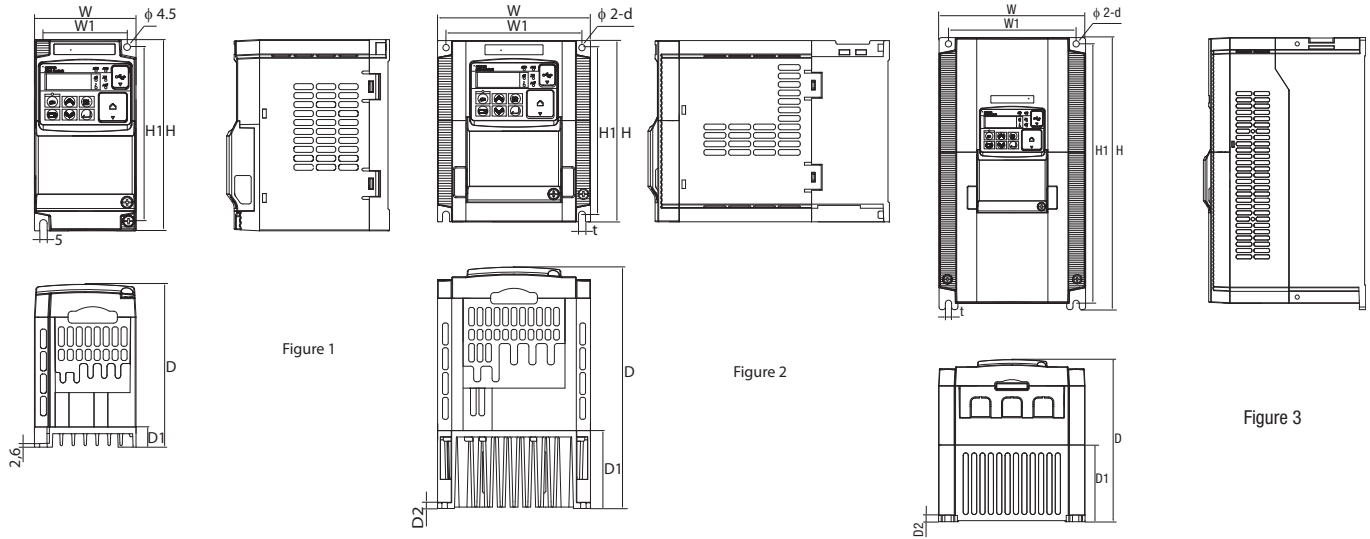
400 V class

Three-phase: 3G3MX2-□		4004	4007	4015	4022	4030	4040	4055	4075	4110	4150	
Motor kW <sup>1</sup>	For VT setting	0.75	1.5	2.2	3.0	4.0	5.5	7.5	11	15	18.5	
	For CT setting	0.4	0.75	1.5	2.2	3.0	4.0	5.5	7.5	11	15	
Output characteristics	Inverter capacity kVA	380 VT	1.3	2.6	3.5	4.5	5.7	7.3	11.5	15.1	20.4	25.0
		380 CT	1.1	2.2	3.1	3.6	4.7	6.0	9.7	11.8	15.7	20.4
		480 VT	1.7	3.4	4.4	5.7	7.3	9.2	14.5	19.1	25.7	31.5
		480 CT	1.4	2.8	3.9	4.5	5.9	7.6	12.3	14.9	19.9	25.7
	Rated output current (A) at VT		2.1	4.1	5.4	6.9	8.8	11.1	17.5	23.0	31.0	38.0
Rated output current (A) at CT		1.8	3.4	4.8	5.5	7.2	9.2	14.8	18.0	24.0	31.0	
Max. output voltage		Proportional to input voltage: 0..480 V										
Max. output frequency		400 Hz										
Power supply	Rated input voltage and frequency		3-phase 380..480 V 50/60 Hz									
	Allowable voltage fluctuation		-15%..+10%									
	Allowable frequency fluctuation		5%									
Braking torque	At short-time deceleration At capacitor feedback	100%: <50Hz 50%: <60Hz				70%: <50Hz 50%: <60Hz		-				
		Self cooling				Forced-air-cooling						

1. Based on a standard 3-Phase standard motor.

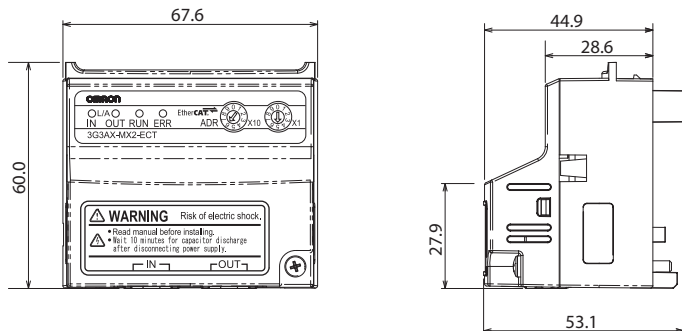
Dimensions

Standard models

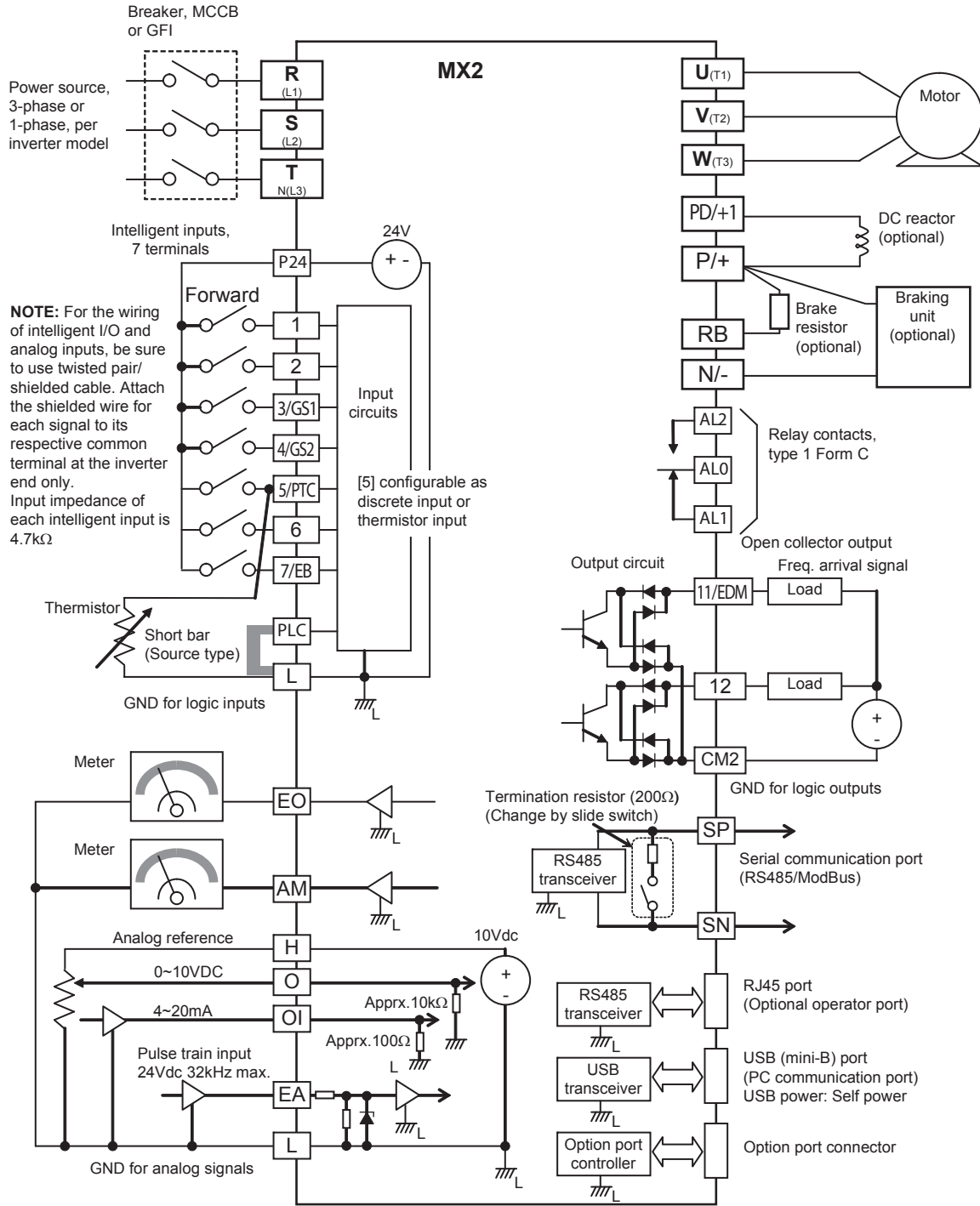


Voltage class	Inverter model 3G3MX2-A□	Figure	Dimensions in mm											
			W	W1	H	H1	t	D	D1	D2	d	Weight (kg)		
Single-phase 200 V	B001-E	1	68	56	128	118	-	109	13.5	-	-	1.0		
	B002-E							122.5	27			1.0		
	B004-E							122.5	27			1.1		
	B007-E	2	108	96	128	118	-	170.5	55	4.4	4.5	1.4		
	B015-E											1.8		
B022-E	1.8													
Three-phase 200 V	2001-E	1	68	56	128	118	-	109	13.5	-	-	1.0		
	2002-E							122.5	27			1.0		
	2004-E							122.5	27			1.1		
	2007-E	2	108	96	128	118	-	170.5	55	4.4	4.5	1.2		
	2015-E											1.6		
	2022-E	1.8												
	2037-E	3	140	128	128	118	5	170.5	55	4.4	-	-	2.0	
	2055-E						6	155	73.3	6			6	3.0
	2075-E						6	155	73.3	6			6	3.4
2110-E	3	180	160	296	284	7	175	97	5	7	5.1			
2150-E								84			7.4			
4004-E								28			1.5			
Three-phase 400 V	4007-E	2	108	96	128	118	-	143.5	28	-	-	1.6		
	4015-E							170.5	55			1.8		
	4022-E							170.5	55			1.9		
	4030-E	3	140	128	128	118	5	170.5	55	4.4	4.5	2.1		
	4040-E						6	155	73.3	6	6	3.5		
	4055-E						6	155	73.3	6	6	3.5		
	4075-E	3	180	160	296	284	7	175	97	5	7	4.7		
	4110-E								7			5.2		
4150-E	7								5.2					

Option board



Standard connections



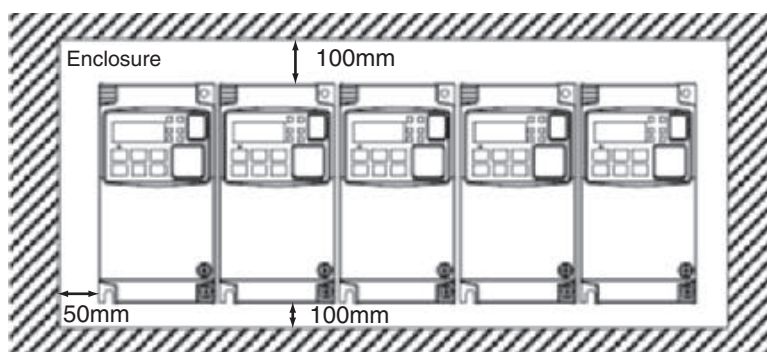
Terminal Block Specifications

Terminal	Name	Function (signal level)
R/L1, S/L2, T/L3	Main circuit power supply input	Used to connect line power to the drive. Drives with single-phase 200 V input power use only terminals R/L1 and N (T/L3), terminal S/L2 is not available for these units
U/T1, V/T2, W/T3	Inverter output	Used to connect the motor
PD/+1, P/+	External DC reactor terminal	Normally connected by the short-circuit bar. Remove the short-circuit bar between +1 and P/+2 when a DC reactor is connected.
P/+, N/-	Regenerative braking unit terminal	Connect optional regenerative braking units (If a braking torque is required)
P/+, RB	Braking resistor terminals	Connect option braking resistor (if a braking torque is required)
⊕	Grounding	For grounding (grounding should conform to the local grounding code.)

Control Circuit

Type	No.	Signal name	Function	Signal level
Digital input signals	PLC	Intelligent input common	Source type: connecting [P24] to [1]-[7] turns inputs ON Sink type: connecting [L] to [1]-[7] turns inputs ON	-
	P24	Internal 24 VDC	24 VDC, 30mA	24 VDC, 100 mA
	1	Multi-function Input selection 1	Factory setting: Forward/ Stop	27 VDC max
	2	Multi-function Input selection 2	Factory setting: Reverse/ Stop	
	3/GS1	Multi-function Input selection 3 / safe stop input 1	Factory setting: External trip	
	4/GS2	Multi-function Input selection 4 / safe stop input 2	Factory setting: Reset	
	5/PTC	Multi-function Input selection 5 / PTC thermistor input	Factory setting: Multi-step speed reference 1	
	6	Multi-function input selection 6	Factory setting: Multi-step speed reference 2	
	7/EB	Multi-function input selection 7 / Pulse train input B	Factory setting: Jog	
L	Multi-function Input selection common (in upper row)	--	--	
Pulse train	EA	Pulse train input A	Factory setting: Speed reference	32 kHz max 5 to 24 VDC
	EO	Pulse train output	LAD frequency	10 VDC 2 mA 32 kHz max
Analog input signal	H	Frequency reference power supply	10 VDC 10 mA max	
	O	Voltage frequency reference signal	0 to 10 VDC (10 kΩ)	
	OI	Current frequency reference signal	4 to 20 mA (250 Ω)	
	L	Frequency reference common (bottom row)	--	
Digital output signals	11/EDM	Discrete logic output 1 / EDM output	Factory setting: During Run	27 VDC, 50 mA max EDM based on ISO13849-1
	12	Discrete logic output 2	Factory setting: Frequency arrival type 1	
	CM2	GND logic output	--	
	AL0	Relay common contact	Factory setting: Alarm signal Under normal operation AL1 - AL0 Closed AL2 - AL0 Open	R load 250 VAC 2.5 A 30 VDC 3.0 A
	AL1	Relay contact, normally open		I load 250 VAC 0.2 A 30 VDC 0.7 A
AL2	Relay contact, normally closed			
Monitor Signal	AM	Analog voltage output	Factory setting: LAD frequency	0 to 10 VDC 1 mA
Comms	SP	Serial communication terminal	RS485 Modbus communication	
	SN			

Side by side mounting



Inverter heat loss

Single-phase 200 V class

Model 3G3MX2		AB001	AB002	AB004	AB007	AB015	AB022
Inverter capacity kVA	200V VT	0.4	0.6	1.2	2.0	3.3	4.1
	200V CT	0.2	0.5	1.0	1.7	2.7	3.8
	240V VT	0.4	0.7	1.4	2.4	3.9	4.9
	240V CT	0.3	0.6	1.2	2.0	3.3	4.5
Rated current (A) VT		1.2	1.9	3.4	6.0	9.6	12.0
Rated current (A) CT		1.0	1.6	3.0	5.0	8.0	11.0
Total heat loss		12	22	30	48	79	104
Efficiency at rated load		89.5	90	93	94	95	95.5
Cooling Method		Self cooling			Forced-air-cooling		