



3G3MX2-□-E Multi-function Compact Inverter

INSTRUCTION MANUAL

Thank you for purchasing 3G3MX2 Inverter.
To ensure the safe operation, please be sure to read the safety precautions provided in this document along with all of the user manuals for the inverter. Please be sure you are using the most recent versions of the user manuals. Keep this instruction manual and all of the manuals in a safe location and be sure that they are readily available to the final user of the products.

Manual Name	Cat.No.
MX2 Series User's Manual	I570-E2

OMRON Corporation

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Names of Parts



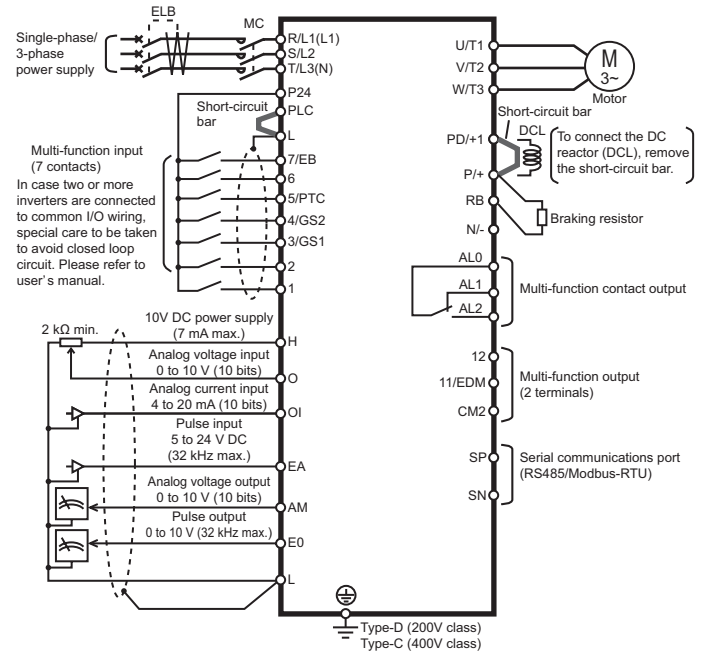
Installation and Wiring

Dimensions



3G3MX2-	W	W1	H	H1	D
AB001-E, AB002-E A2001-E, A2002-E	68	56	128	118	109
AB004-E A2004-E					122.5
A2007-E A4004-E					145.5 143.5
AB007-E, AB015-E, AB022-E A2015-E, A2022-E, A4007-E A4015-E, A4022-E, A4030-E	108	96	128	118	170.5
A2037-E A4040-E					170.5
A2055-E, A2075-E A4055-E, A4075-E	140	122	260	248	155
A2110-E A4110-E, A4150-E	180	160	296	284	175
A2150-E	220	192	350	336	175

Standard Connection Diagram



×Connect a single-phase 200V AC input to terminals R/L1 and T/L3(N).
×Factory default settings for relay output are NC contact for AL1 and NO contact for AL2.

Keys

Name	Description
Mode key	Switches the function code group to next when function code is displayed. Switches to function code without data settings when data is displayed. Status transition
Increment key	Changes the set values, parameters and Commands
Decrement key	
RUN	RUN key Starts the operation. Forward / Reverse rotation depends on the 'F004' setting.
STOP/RESET	STOP/RESET key Stops the operation. Functions as the Reset key if an error occurs.
Enter key	Enter key Enters and stores the data.

Parameter No.	Function name	Monitor or data range
d001	Output frequency monitor	0.00 to 400.0
d002	Output current monitor	0.0 to 655.3
d003	Rotation direction monitor	F: forward /o: stop /r: reverse
d004	PID feedback value monitor	0.00 to 9999.
d007	Output frequency monitor (after conversion)	0.00 to 9999.
d008	Real frequency monitor	-400. to 400.
d009	Torque reference monitor	-200. to +200.
d010	Torque bias monitor	-200. to +200.
d012	Output torque monitor	-200. to +200.
d013	Output voltage monitor	0. to 600.
d014	Input power monitor	0.0 to 100.0
d015	Integrated power monitor	0.0 to 9999.
d016	Total RUN time	0.0 to 9999.
d017	Power ON time	0.0 to 9999.
d018	Fin temperature monitor	-20.0 to 150.0
d029	Position command monitor	-268435455 to 268435455 (Displays MSB 4 digits including)
d030	Current position monitor	-268435455 to 268435455 (Displays MSB 4 digits including)
d080	Fault counter	0. to 9999.
d081 to d086	Fault monitor1 (latest) ~ Fault monitor6	Error code (condition of occurrence) →Output frequency →Output current →Internal DC voltage →RUN time →ON time
d090	Warning monitor	Warning code
d102	DC voltage monitor	0.0 to 999.9
d103	Regenerative braking load rate monitor	0.0 to 100.0
d104	Electronic thermal monitor	0.0 to 100.0
F001	Output frequency setting	Starting frequency to max. frequency
F002	Acceleration time1	0.01 to 3600.
F003	Deceleration time1	0.01 to 3600.
F004	Operator rotation direction selection	00: forward 01: reverse
A001	Frequency reference selection	00: Digital Operator(volume) (Enable when 3G3AX-OP01 is used) / 01: Terminal /02: Digital Operator(F001) / 03: Modbus communication /04: Option / 06: Pulse train frequency /07: Drive Programming /10: Frequency operation result
A002	RUN command selection	01: Terminal /02: Digital Operator / 03: Modbus communication /04: Option
A003	Base frequency	30.0 to max. frequency
A004	Maximum frequency	Base frequency to 400.
A005	O/OI selection	00: Switch between O and OI terminals 02: Switch between O terminal and keypad potentiometer /03: Switch between OI terminal and keypad potentiometer
A019	Multi-step speed selection	00: Binary (16-step selection with 4 terminals) 01: bit (8-step selection with 7 terminals)
A020	Multi-step speed reference 0	0.00, /Starting frequency to max. frequency
A021 to A035	Multi-step speed reference 1 to 15	0.00, /Starting frequency to max. frequency
A038	Jogging frequency	Starting frequency to 9.99
A039	Jogging stop selection	00: Free running on jogging stop, Disabled in operation /01: Deceleration stop on jogging stop, Disabled in operation /02: DC injection braking on jogging stop, Disabled in operation /03: Free running on jogging stop, Enabled in operation /04: Deceleration stop on jogging stop, Enabled in operation /05: DC injection braking on jogging stop, Enabled in operation
A045	Output voltage gain	20. to 100.
A097/A098	Acceleration / Deceleration pattern selection	00: Linear /01: S-shape curve /02: U-shape curve /03: Inverted U-shape curve / 04: EL-S-shape curve
b001	Retry selection	00: Alarm /01: 0Hz start /02: Frequency matching start /03: Trip after frequency matching deceleration stop /04: Active Frequency matching
b002	Allowable momentary power interruption time	0.3 to 25.0
b083	Carrier frequency	2.0 to 15.0 / 10.0
b084	Initialization selection	00: Disabling /01: Clearing the trip history / 02: Initializing the data /03: Clearing the trip history and initializing the data /04: Clearing the trip history and initializing the data and Drive Programming
b130	Overvoltage LAD stop function	00: Disable /01: DC voltage kept constant / 02: Acceleration enabled
b131	Overvoltage LAD stop function level	200V class: 330. to 395. 400V class: 660. to 790.

Parameter No.	Function name	Monitor or data range
C001 to C007	Multi-function input 1 to 7 selection	00:FW(forward RUN/Stop) /01:RV(reverse RUN/Stop) /02:CF1(Multi-speed Select, Bit0(LSB)) / 03:CF2(Multi-speed Select, Bit1) /04: CF3 (Multi-speed Select, Bit2) /05:CF4(Multi-speed Select, Bit3(MSB)) / 06:JG(jogging) /07:DB(External DC braking) /08:SET(Set (select) 2nd Motor Data) /09:2CH(2-stage Acceleration and Deceleration) /11:FRS (Freerun Stop) /12:EXT(External Trip) /13:USP(Unattended Start Protection) /14:CS(Commercial power source switchover) /15:SFT (Software Lock) /16:AT(Analog Input Voltage/Current Select) /18:RS (Reset Inverter) /19:PTC(PTC thermistor Thermal Protection(C005 only)) /20:STA(Start(3-wire interface)) /21:STP(Stop(3-wire interface)) / 22:F/R(FWD, REV(3-wire interface) /23:PID(PID Disable) /24:PIDC (PID Reset) /27:UP(UP/DWN function accelerated) /28:DWN(UP/DWN function decelerated) /29:UDC(Remote Control Data Clearing) / 31:OPE(Operator Control) /32:SF1(Multi-speed Selection, Bit operation Bit1) /33:SF2(Multi-speed Selection, Bit operation Bit2) /34:SF3 (Multi-speed Selection, Bit operation Bit3) /35:SF4(Multi-speed Selection, Bit operation Bit4) /36:SF5(Multi-speed Selection, Bit operation Bit5) /37:SF6(Multi-speed Selection, Bit operation Bit6) / 38:SF7(Multi-speed Selection, Bit operation Bit7) /39:OLR(Overload Restriction Source Changeover) /40:TL(Torque Limit Selection) / 41:TRQ1(Torque limit switch1) /42:TRQ2(Torque limit switch2) / 44:BOK(Brake confirmation) /46:LAC(LAD cancellation) /47:PCLR (Pulse counter clear) /50:ADD(ADD frequency enable) /51:F-TM (Force Terminal Mode) /52:ATR(Enable torque command Input) / 53:KHC(Clearance of cumulative power data) /56:M11(General purpose input1) /57:M12(General purpose input2) /58:M13(General purpose input3) /59:M14(General purpose input4) /60:M15(General purpose input5) /61:M16(General purpose input6) /62:M17(General purpose input7) /65:AHd(Analog command hold) /66:CP1(Multistage-position switch1) /67:CP2(Multistage-position switch2) /68:CP3 (Multistage-position switch3) /69:ORL(Limit signal of homing) / 70:ORG(Trigger signal of homing) /73:SPD(Speed/position changeover) /77:GS1(GS1 input(C003 only)) /78:GS2(GS2 input (C004 only)) /81:485(Start EzCOM) /82:PRG(Executing Drive Programming) /83:HLd(Retain output frequency) /84:ROK(Permission of Run command) /85:EB(Rotation direction detection(C007 only)) / 86:DISP(Display limitation) /91:PSET(Preset)
C011 to C017	Multi-function input terminal operation selection	00: NO 01: NC
C021 to C022	Multi-function output 11-12 selection	00:RUN(RUN Signal) /01:FA1(Frequency Arrival Type 1-Constant Speed) /02:FA2(Frequency Arrival Type 2-Over frequency) /03:OL (Overload Advance Notice Signal1) /04:OD(Output Deviation for PID Control) /05:AL(Alarm Signal) /06:FA3(Frequency Arrival Type 3-Set frequency) /07:OTQ(Over/under Torque Signal) /09:UV(Undervoltage) / 10:TRQ(Torque Limited Signal) /11:RNT(RUN Time Expired) /12:ONT (Power On time Expired) /13:THM(Thermal Warning) /19:BRK(Brake Release Signal) /20:BER(Brake Error Signal) /21:ZS(Zero Hz Speed Detection Signal) /22:DSE(Speed Deviation Excessive) /23:POK (Positioning Completion) /24:FA4(Frequency Arrival Type 4-Over frequency) /25:FA5(Frequency Arrival Type 5-Set frequency) /26:OL2 (Overload Advance Notice Signal2) /27:ODc(Analog Voltage Input Disconnect Detection) /28:OIDc(Analog Current Output Disconnect Detection) /31:FBV(PID Second Stage Output) /32:NDc(Network Disconnect Detection) /33:LOG1(Logic Output Function1) /34:LOG2 (Logic Output Function2) /35:LOG3(Logic Output Function3) /39:WAC (Capacitor Life Warning Signal) /40:WAF(Cooling Fan Warning Signal) / 41:FR(Starting Contact Signal) /42:OHF(Heat Sink Overheat Warning) / 43:LOC(Low load detection) /44:MO1(General Output1) /45:MO2 (General Output2) /46:MO3(General Output3) /50:IRDY(Inverter Ready Signal) /51:FWR(Forward Rotation) /52:RVR(Reverse Rotation) / 53:MAJ(Major Failure Signal) /54:WCO(Window Comparator for Analog Voltage Input) /55:WCOI(Window Comparator for Analog Current Input) /58:FREF(Frequency Command Source) /59:REF(Run Command Source) /60:SETM(2nd Motor Selection) /62:EDM(STO (Safe Torque Off) Performance Monitor(C021 only)) /63:OPO(Option card output)
C031 to C032, C036	Multi-function Relay output	00:NO contact at 11, 12, AL2, NC contact at AL1 01:NC contact at 11, 12, AL2, NO contact at AL1
H003	Motor Capacity	0.1 / 0.2 / 0.4 / 0.55 / 0.75 / 1.1 / 1.5 / 2.2 / 3.0 / 3.7 / 4.0 / 5.5 / 7.5 / 11.0 / 15.0 / 18.5 [kW]
H004	Motor pole number	2 / 4 / 6 / 8 / 10 / 12 / 14 / 16 / 18 / 20 / 22 / 24 / 26 / 28 / 30 / 32 / 34 / 36 / 38 / 40 / 42 / 44 / 46 / 48 [pole]

