OMRON

3G3MV

quick start guide

020 8450 4646
General telephone enquiries and technical support

020 8450 0173
24hr technical helpsheet/datasheet faxback service

020 8233 1468
Factory automation technical support

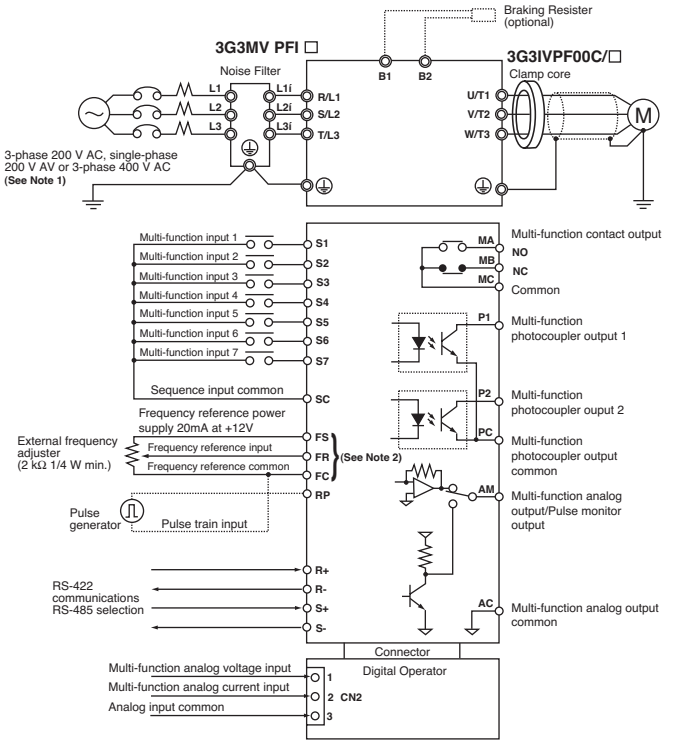
oeeuk_sales@eu.omron.com
Direct e-mail address for sales enquiries

020 8450 8087
Fax number

www.omron.co.uk
UK website

1 Apsley Way, Staples Corner, London, NW2 7HF

Standard Connections



Note: Connector on CN2 wiring side:
3G3MV PCN-CN2

Note 1: Connect single-phase 200 V AC to terminals R/L1 and S/L2 of the 3G3MV-AB.
Note 2: By using pin 2 of SW2, voltage input or current input can be selected as a frequency reference input.

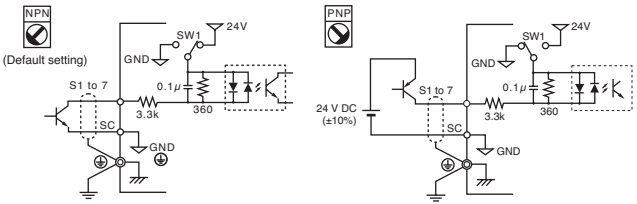
Control Circuit Terminals

Symbol		Name	Specification
Input	S1	Multi-function input 1 (Forward/Stop)	Photocoupler 8mA at 24 V DC (See note 2,3)
	S2	Multi-function input 2 (Reverse/ Stop)	
	S3	Multi-function input 3 (External fault: Normally open)	
	S4	Multi-function input 4 (Fault reset)	
	S5	Multi-function input 5 (Multi-step speed reference 1)	
	S6	Multi-function input 6 (Multi-step speed reference 2)	
	S7	Multi-function input 7 (Inching frequency command)	
	SC	Sequence input common	
	FS	Frequency reference power supply output	20mA at 12 V DC
	FR	Frequency reference input	0 to 10 V DC (20W)
	FC	Frequency reference common	
	RP	Pulse train input	Response frequency: 0 to 33 kHz (30% to 70% ED) H: 3.5 to 13.2 V L: 0.8 V max.
Output	MA	Multi-function contact output (Normally open: Fault)	Relay output 1A max. at 30 V DC 1A max. at 250 V DC
	MB	Multi-function contact output (Normally closed: Fault)	
	MC	Multi-function contact output common	
	P1	Multi-function photocoupler output 1 (During Operation)	Open collector output 50mA max. at 48 V DC
	P2	Multi-function photocoupler output 2 (At Speed)	
	PC	Multi-function photocoupler output common	
	AM	Multi-function analog output (Output Freq.)	
	AC	Multi-function analog output common	2mA max. at 0 to 10 V DC

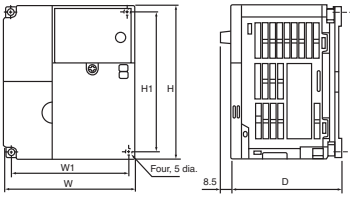
Note 1: Functions in parentheses are default settings

Note 2: To provide an external power supply and wire the terminals through a common positive line, set SW1 to PNP and use a 24 V DC + 10% power supply

Note 3: NPN is the default setting for these terminals. However by using SW1, NPN or PNP input can be selected as shown below.



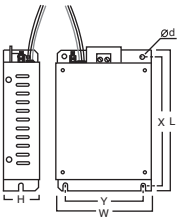
Installation

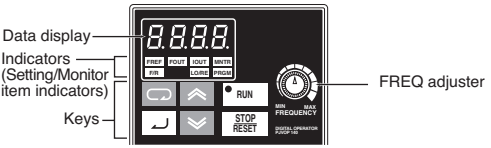


Rated Voltage	Model 3G3MV-	Dimensions					Supply Recommendations	
		H	H1	W	W1	D	MCCB (A)	Wire (mm2)
Single Phase 200 VAC	**AB001**	128	118	68	56	76	5	2
	AB002	128	118	68	56	76	5	2
	AB004	128	118	68	56	131	10	2
	AB007	128	118	108	96	140	20	3.5
	AB015	128	118	108	96	156	20	5.5
	AB022	128	118	140	128	163	40	5.5
	AB040	128	118	170	158	180	50	8
3-Phase 400 VAC	**A4002**	128	118	108	96	92	5	2
	A4004	128	118	108	96	110	5	2
	A4007	128	118	108	96	140	5	2
	A4015	128	118	108	96	156	10	3.5
	A4022	128	118	108	96	156	10	3.5
	A4030	128	118	140	128	143	20	5.5
	A4040	128	118	140	128	143	20	5.5
	A4055	260	244	180	164	170	30	5.5
	A4075	260	244	180	164	170	30	5.5

Noise Filter Specifications

Model 3G3MV	Filter 3G3MV	L	W	H	X	Y	d
AB001 AB002 AB004	PFI1010-E	169	71	45	156	51	M5
AB007 AB015	PFI1020-E	169	111	50	156	91	M5
AB022	PFI1030-E	174	144	50	161	120	M5
AB040	PFI1040-E	174	175	50	161	150	M5
A4002 A4004	PFI3005-E	169	111	45	156	91	M5
A4007 A4015 A4022	PFI3010-E	169	111	45	156	91	M5
A4030 A4040	PFI3020-E	174	144	50	161	120	M5
A4055 A4075	PFI3030-E	304	184	56	288	150	M6





Appearance	Name	Function
8.8.8.8.	Data display	Displays relevant data items, such as frequency reference, output frequency and parameter set values.
MIN FREQ MAX	FREQ adjuster	Sets the frequency reference within a range between 0Hz and the maximum frequency.
FREF	FREF indicator	The frequency reference can be monitored or set while this indicator is lit.
FOUT	FOUT indicator	The output frequency of the Inverter can be monitored or set while this indicator is lit.
IOUT	IOUT indicator	The output current of the inverter can be monitored while this indicator is lit.
MNTR	MNTR indicator	The values set in U01 through U18 are monitored while this indicator is lit.
F/R	F/R indicator	The direction of rotation can be selected while this indicator is lit when operating the Inverter with the RUN Key.
LO/RE	LO/RE indicator	The operation of the Inverter through the Digital Operator or according to the set parameteres is selectable while this indicator is lit. **Note:** The status of this indicator can be only monitored while the Inverter is in operation. Any RUN command input is ignored while this indicator is lit.
PRGM	PRGM indicator	The parameter in n01 through to n179 can be set or monitored while this indicator is lit. **Note:** While the Inverter is in operation, the parameters can be only monitored and only some parameters can be changed. Any RUN command input is ignored while this indicator is lit.
	Mode Key	Switches the setting and monitor item indicators in sequence. Parameter being set will be cancelled if this key is pressed before entering the setting.
	Increment Key	Increases multi-function monitor numbers, parameter numbers and parameter set values.
	Decrement Key	Decreases multi-function monitor numbers, parameter numbers and parameter set values.
	Enter Key	Enters multi-function monitor numbers, parameter numbers and internal data values after they are set or changed.
RUN	RUN Key	Starts the Inverter running when the 3G3MV is in operation with the Digital Operator.
STOP RESET	STOP/RESET Key	Stops the Inverter unless parameter n007 is not set to disable the STOP Key.

Quick Start Parameter List (Refer to manual for complete list)

Parameter No.	Description	Range	Default	Manual Ref. Page
n001	Parameter Access: 1 - Limited Parameter access 4 - Full Parameter access 8 - Factory Parameter Initialise	0 to 9	1	3-12 5-2
n003	RUN command selection: 0 - Stop/Reset key or Keypad enabled 1 - Multi-function terminal input is enabled	0 to 5	0	5-11
n004	Freq. Ref. Selection: 0 - Digital Operator 1 - Speeds from Digital Inputs (n24 - n31) 2 - Analogue Freq. Ref. (0-10volt) 3 - Analogue Freq. Ref. (4-20mA) 5 - Pulse train Input	0 to 9	0	5-12
n011	Maximum Frequency	50 to 400	60	5-7
n012	Maximum Voltage	0.1 to 255 (0.1 to 510)	200 (400)	5-7
n013	Maximum Voltage Frequency	0.2 to 400	60	5-7
n019	Acceleration time 1	0 to 6000	10	5-25
n020	Deceleration time 1	0 to 6000	10	5-25
n024	Frequency Reference 1	0 to max. freq.	6	5-18
"	"	"	0	5-18
n031	Frequency Reference 8	0 to max. freq.	0	5-18
n036	Rated motor current	0 to 150% of rated Inverter output current	Varies with Inverter model	5-5 5-7
n050	Multi-function input 1 (S1)	1 to 25	1	5-30
n051	Multi-function input 2 (S2)	1 to 25	2	5-30
n052	Multi-function input 3 (S3)	1 to 25	3	5-30
n053	Multi-function input 4 (S4)	1 to 25	5	5-30
n054	Multi-function input 5 (S5)	1 to 25	6	5-30
n055	Multi-function input 6 (S6)	1 to 25	7	5-30
n056	Multi-function input 7 (S7)	1 to 25,34,35	10	5-30
n057	Multi-function output (MA-MB-MC)	0 to 19	0	5-34
n058	Multi-function output (P1-PC)	0 to 19	1	5-34
n059	Multi-function output (P2-PC)	0 to 19	2	5-34
n066	Multi-function analogue output	0 to 5	0	5-36
n080	Carrier Frequency	1 to 4	3	6-26
n089	DC Injection Braking Current	0 to 100%	50%	6-29
n090	DC Injection Braking at Stop Time	0 to 25.5s	0.5	6-29
n091	DC Injection Braking at Start Time	0 to 25.5s	0	6-29
n092	Stall pevention during deceleration: 0 = Stall prevention enabled 1 = Braking Resistor Effective	0 to 1	0	6-31

Multi-function Inputs

Value	Function
1	Forward/Stop
2	Reverse/Stop
3	External fault (NO)
4	External fault (NC)
5	Fault reset
6	Multi-step speed reference 1
7	Multi-step speed reference 2
8	Multi-step speed reference 3
9	Multi-step speed reference 4
10	Inching command
12	External base block (NO)
13	External base block (NC)
17	Local/Remote selection

Multi-function Outputs

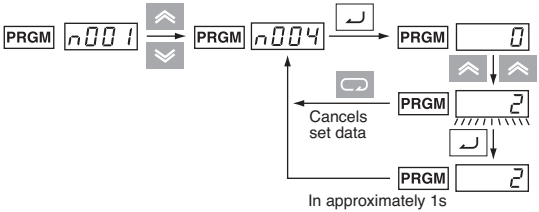
Value	Function
0	Fault output
1	During RUN
2	Frequency agree
6	Overtorque being monitored (NO)
12	RUN mode
13	Inverter ready
15	Undervoltage in progress

Analogue Output Functions

Value	Function
0	Multi-step speed reference 3
1	Multi-step speed reference 4
2	Inching command
3	External base block (NO)

Note: Refer to Section 5-10/11 for full set value listings

Example of Parameter Settings



Key sequence	Indicator	Display example	Explanation
	FREF	0.00	Power ON
RESET	PRGM	n001	Press the Mode Key repeatedly until the PRGM indicator is lit.
▲ ▼	PRGM	n004	Use the Increment or Decrement Key to set the parameter number.
ENTER	PRGM	0	Press the Enter Key. The data of the selected parameter number will be displayed.
▲ ▼	PRGM	2	Use the Increment or Decrement Key to set the data. At that time the display will flash.
ENTER	PRGM	2	Press the Enter Key so that the set value will be entered and the data display will be lit. (see note 1)
In approx. 1s	PRGM	n004	The parameter number will be displayed.

Note 1: To cancel the set value, press the Mode Key instead. The parameter number will be displayed.

Note 2: There are parameteres that cannot be changed while the Inverter is in operation. Refer to the list of parameters. When attempting to change such parameters, the data display will not change by pressing the Increment or Decrement Key.

Protective and Diagnostic Functions

Fault Display	Fault name and meaning	Possible cause and remedy
OC	**Overcurrent** Output current is higher than 250% of Inverter rated current.	Check output for short circuit or ground fault. The Load is too large, reduce it or use larger Inverter. Check motor FLA rating compared to Inverter and V/F setting.
OV	**Overvoltage** DC bus voltage has exceeded detection level.	Load inertia is too large and the motor is regenerating. Increase deceleration time (n020 or n022). Connect an external braking resistor and set n092 to 1. Check braking resistor and wiring.
uV1	**Main circuit undervoltage** DC bus voltage is below detection level.	Check mains power supply voltage and connections. Check correct supply for Inverter being used. Monitor for mains dips or interuptions.
OH	**Unit overheated** Temperature inside the inverter has exceeded 110°C.	Refer to manual for installation guidelines and recommendations. Check cooling fan (if fitted). Check V/F characteristic or reduce Carrier frequency.
OL1	**Motor overload** The Inverter is protecting the motor from overload based on an internal I≈T calculation using n036 setting.	Check and reduce the load. Check V/F characteristic (Vmax and Fmax). Increase the running speed of the motor. Increase acceleration/deceleration times.
EF*	**External fault** An external fault has been input.	Check your control terminal wiring. A multi-functional digital input has been set to 3 or 4. Run signal must be removed before this can be reset.
SER (flashing)	**Sequence error** Sequence input when Inverter running.	Inverter must be stopped when Local/Remote switching attempted. Inverter must be stopped when Comms/Remote switching attempted.
bb (flashing)	**External baseblock** An external baseblock command has been input.	Check your control terminal wiring. A multi-function digital input has been set to 12 or 13.
EF (flashing)	**Sequence error has occurred**	Forward and reverse run signal have been applied simultaneously.
oP1 (flashing)	**Operation error** Parameter setting error.	The values in n050 through n056 for multi-function inputs 1 through 7 have been duplicated - check and correct the values.

Note: Refer to Section 8-2 for full fault code listings

Improper procedures can result in personal injury or equipment damage. Use the Quick Start Guide only if you are familiar with standard safety precautions common to variable speed drives. See Operation Manual I527 for further details.