

## 3G3JV

### quick start guide



020 8450 4646

General telephone enquiries and technical support

020 8233 1468

Factory automation technical support

020 8450 8087

Fax number

020 8450 0173

24hr technical helpsheet/datasheet faxback service

oeuk\_sales@eu.omron.com

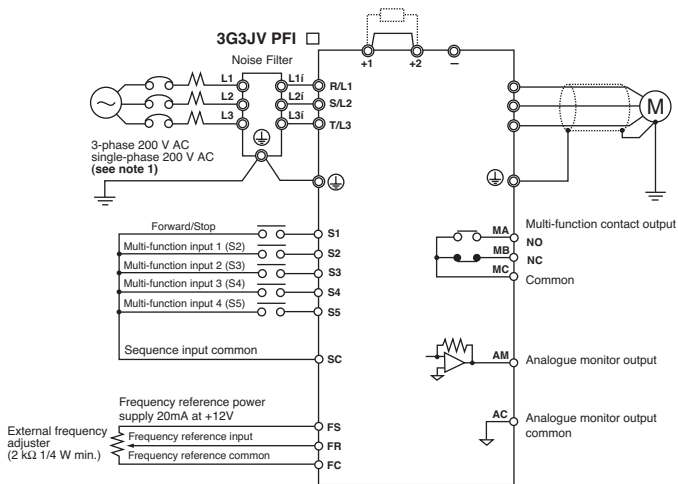
Direct e-mail address for sales enquiries

www.omron.co.uk

UK website

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

## Standard Connections



**Note 1:** Connect single-phase 200 V AC to terminals R/L1 and S/L2 of the 3G3JV-AB □.

**Note 2:** The braking resistor cannot be connected because no braking transistor is incorporated.

## Control Circuit Terminals

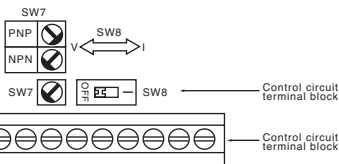
Symbol	Name	Function	Signal Level		
Input	S1	Forward/Stop	Forward at ON/Stops at OFF	Photocoupler 8 mA at 24VDC  <b>Note:</b> NPN is the default setting for these terminals. No external power supply is required. Refer to connections shown below.	
	S2	Multi-function Input 1	Set by parameter n36 (Reverse/Stop)		
	S3	Multi-function input 2	Set by parameter n37 (External Fault: NO)		
	S4	Multi-function input 3	Set by parameter n38 (Fault Reset)		
	S5	Multi-function input 4	Set by parameter n39 (Multi-step reference 1)		
	SC	Sequence Input Common	Common for S1 through S5		
	FS	Frequency reference Power Supply	DC power supply for frequency reference use		20mA at 12VDC
	FR	Frequency Reference Input	Input terminal for frequency reference use		0 to 10VDC (20Kohms)
	FC	Frequency Reference Common	Common for frequency reference use		4 to 20mA 0 to 20mA
Output	MA	Multi-function output: NO	Set by parameter n40 (during running)	Relay output 1A max. at 30VDC and 250 VAC	
	MB	Multi-function output: NC	Common for MA and MB use		
	MC	Multi-function output Common	Common for MA and MB use		
	AM	Analogue Monitor output	Set by parameter n44 (Output frequency)	12mA max. at 0 to 10VDC	
	AC	Analogue Monitor output Common	Common for AM use		

**Note:** Functions in parentheses are default settings.

### Selecting Input Method

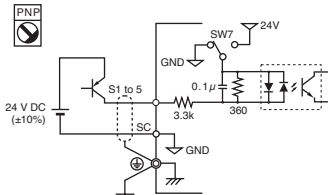
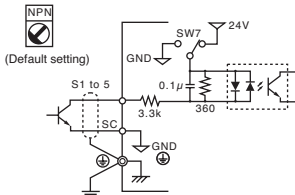
Switches SW7 and SW8, both of which are located above the control circuit terminals, are used for input method selection.

Remove the front cover and optional cover to use these switches.

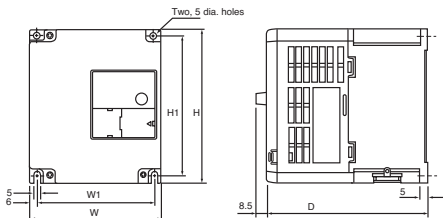


### Selecting Sequence Input Method

By using SW7, NPN or PNP input can be selected as shown below.



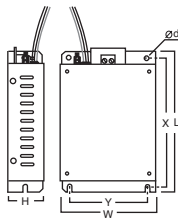
# Installation

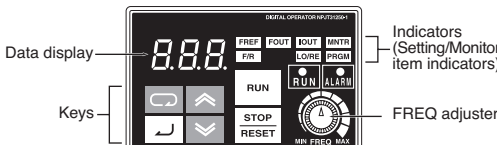


Rated Voltage	Model 3G3JV-	Dimensions					Supply Recommendations	
		H	H1	W	W1	D	MCCB (A)	Wire (mm <sup>2</sup> )
Single Phase 200 VAC	AB001	128	118	68	56	70	5	2
	AB002	128	118	68	56	70	5	2
	AB004	128	118	68	56	112	10	2
	AB007	128	118	108	96	129	20	3.5
	AB015	128	118	108	96	154	20	5.5
	A4002	128	118	108	96	81	5	2
	A4004	128	118	108	96	99	5	2
	A4007	128	118	108	96	129	5	2
	A4015	128	118	108	96	154	10	3.5
	A4022	128	118	108	96	154	10	3.5
	A4030	128	118	140	128	161	20	5.5
A4040	128	118	140	128	161	20	5.5	

# Noise Filter Specifications

Model 3G3JV	Filter 3G3JV	L	W	H	X	Y	d
AB001	PFI1010E	169	71	45	156	51	5
AB002	PFI1010E	169	71	45	156	51	5
AB004	PFI1010E	169	71	45	156	51	5
AB007	PFI1020E	169	111	50	156	91	5
AB015	PFI1020E	169	111	50	156	91	5
A4002	PFI3005E	169	111	50	156	91	M5
A4004	PFI3005E	169	111	50	156	91	M5
A4007	PFI3010E	169	111	50	156	91	M5
A4015	PFI3010E	169	111	50	156	91	M5
A4022	PFI3010E	169	111	50	156	91	M5
A4030	PFI3020E	174	144	50	161	120	M5
A4040	PFI3020E	174	144	50	161	120	M5





Appearance	Name	Function
	Data display	Displays relevant data items, such as frequency reference, output frequency and parameter set values.
	FREQ adjuster	Sets the frequency reference within a range between 0Hz and the maximum frequency.
	FREF indicator	The frequency reference can be monitored or set while this indicator is lit.
	FOUT indicator	The output frequency of the Inverter can be monitored or set while this indicator is lit.
	IOUT indicator	The output current of the inverter can be monitored while this indicator is lit.
	MNTR indicator	The values set in U01 through U10 are monitored while this indicator is lit.
	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 indicator	The operation of the Inverter through the Digital Operator or according to the set parameters is selectable while this indicator is lit. <b>Note:</b> 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 indicator	The parameter in n01 through to n79 can be set or monitored while this indicator is lit. <b>Note:</b> 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 Key	Starts the Inverter running when the 3G3JV is in operation with the Digital Operator.
	STOP/RESET Key	Stops the Inverter unless parameter n06 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
n01	Parameter Access: 0 - Limited Parameter access 1 - Full Parameter access 8 - Factory Parameter Initialise	0 to 9	1	5-2
n02	Operation Mode Selection: 0 - Stop/Reset key or Keypad enabled 1 - Multi-function terminal input is enabled	0,1	0	5-7
n03	Freq. Ref. Selection: 0 - Digital Operator 1 - Speeds from Digital Inputs (n21 - n28) 2 - Analogue Freq. Ref. (0-10V) 3 - Analogue Freq. Ref. (4-20mA) 4 - Analogue Freq. Ref. (0-20mA)	0 to 4	0	5-8
n09	Maximum Frequency (FMAX)	20 to 400	60	5-4
n10	Maximum Voltage (VMAX)	1 to 255V	200	5-4
n11	Maximum Voltage Frequency (FA)	0.2 to 400	60	5-4
n16	Acceleration time 1	0.0 to 999	10	5-15
n17	Deceleration time 1	0.0 to 999	10	5-15
n21	Frequency Reference 1	0.0 to FMAX	6	5-11
n22	Frequency Reference 2		0	5-11
"	"	"	"	"
n28	Frequency Reference 8		0	5-11
n32	Rated Motor Current		0 to 150% of rated inverter output current	5-3
n36	Multi-function input 1 (S2)	2 to 8, 10 to 22	2	5-19
n37	Multi-function input 2 (S3)	0.2 to 8, 10 to 22	5	5-19
n38	Multi-function input 3 (S4)	2 to 8, 10 to 22	3	5-19
n39	Multi-function input 4 (S5)	2 to 8, 10 to 22,34	6	5-19
n40	Multi-function output (MA/MB and MC)	0 to 7, 10 to 17	1	5-22
n44	Analogue Monitor Output: 0 - Output Frequency 1 - Output Current	0,1	0	5-24
n46	Carrier Frequency Selection	1 to 4, 7 to 9	Varies with the capacity	6-2
n52	DC Injection Braking Current	0 to 100%	50	6-5
n53	DC Injection Braking at Stop Time	0.0 to 25.5	0.5	6-5
n54	DC Injection Braking at Start Time	0.0 to 25.5	0	6-5
n55	Stall prevention during deceleration: 0 = Stall Prevention Enabled 1 = Braking Resistor Enabled	0,1	0	6-7

## Multi-function Inputs

Value	Function
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
10	Inching command
12	External base block (NO)
13	External base block (NC)
17	Local/Remote selection

## Multi-function Outputs

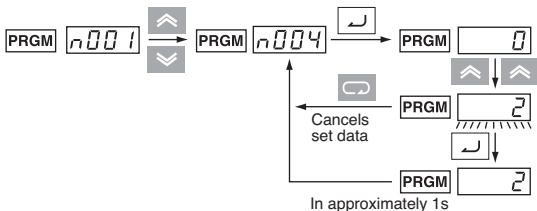
Value	Function
0	Fault output
1	During RUN
2	Frequency agree
6	Overtorque being monitored (NO)
12	RUN mode
13	Inverter ready
15	Undervoltage in progress

## Analogue Output Functions

Value	Function
0	Output frequency
1	Output current

**Note:** Refer to Section 5-20 to 24 for full set value listings

## Example of Parameter Settings



Key sequence	Indicator	Display example	Explanation
	FREF	00	Power ON
	PRGM	n001	Press the Mode Key repeatedly until the PRGM indicator is lit.
	PRGM	n003	Use the Increment or Decrement Key to set the parameter number.
	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.
	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	n003	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 parameters 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	<b>Overcurrent</b> 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	<b>Overvoltage</b> 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	<b>Main circuit undervoltage</b> 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 interruptions.
OH	<b>Unit overheated</b> 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	<b>Motor overload</b> The Inverter is protecting the motor from overload based on an internal $I \approx T$ 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*	<b>External fault</b> 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)	<b>Sequence error</b> 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)	<b>External baseblock</b> 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)	<b>Sequence error has occurred</b>	Forward and reverse run signal have been applied simultaneously.

**Note:** Refer to Section 7-2 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 I528 for further details.**