

Innovating Energy Technology

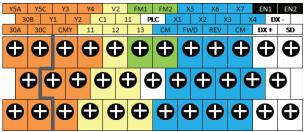
FRENIC-MEGA Quick Start Guide

Multi-Function Keypad TP-G1 (W)-J1



- A. LED display.
- B. LED monitor bar.
- C. RUN/STOP indicator.
- D. Run direction/stop indicator bar.
- E. Local Remote indicator bar.
- F. Hand and Jog mode indicator bars.
- G. Program button for calling menu screen and returning to home screen.
- H. Shift button for moving cursor or quick navigation through function code menus.
- Reset button for clearing alarm codes or returning to previous screen.
- J. Up/Down scroll buttons.
- K. Remote Local toggle.
- L. Function Data key for storing data and advancing in menus.
- M. Stop key for local control, E-Stop for remote control.
- N. Run direction control for local mode.
- O. Run indicator green LED.

Control Card Terminals



Orange = Outputs, Yellow = Analog Inputs, Blue = Digital Inputs

• FWD, Rev, plus 7 Digital inputs. Configurable for Source or Sink.

Item		Min.	Max.
Operating Voltage	ON level	OV	2V
(Sink)	Off level	22V	27V
Operating Voltage	ON level	22V	27V
(Sink)	Off level	OV	2V

- 2 0-10VDC analog inputs.
- 4-20mA analog input.
- · 4 Transistor outputs.

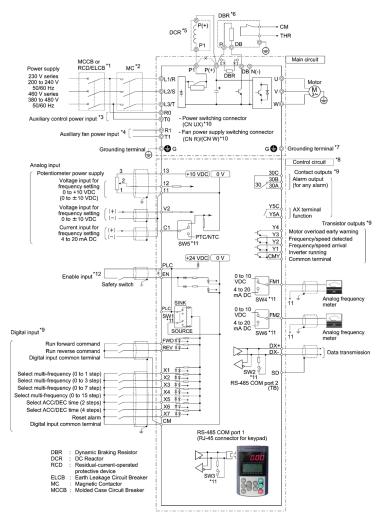
Item		Max.
Operating	ON level	2V
Voltage	Off level	27V
Maximum Current at on.		50m A

- 2 0-10V or 4-20mA analog outputs.
- · Form A contact relay
- o (250VAC 0.3A, cosØ=0.3), (48VDC, .5A). • Form C contact relay
- o (250VAC 0.3A, cosØ=0.3), (48VDC, .5A).
- 24VDC max 200mA DC output power.
- 10VDC output power for potentiometer.
- 2 Source only, safe torque off Enable Inputs.
- · RS-485 wiring connections.

Other Control Terminal

- RJ-45 keypad connection port.
- USB Type B connection port when using USB keypad (TP-E1U).
- 3 Option card expansion ports.

SINK Mode Input by Factory Default



*1 Install a recommended molded case circuit breaker (MCCB) or residual-current-operated protective device (RCD)/earth leakage circuit breaker (ELCB) (with overcurrent protection function) in the primary circuit of the inverter to protect wiring. Ensure that the circuit breaker capacity is equivalent to or lower than the recommended capacity.

*2 Install a magnetic contactor (MC) for each inverter to separate the inverter from the power supply, apart from the MCCB or RCD/ELCB, when necessary.

Connect a surge absorber in parallel when installing a coil such as the MC or solenoid near the inverter. *3 The R0 and T0 terminals are provided for inverters of 2 HP or above.

To retain an alarm output signal ALM issued on inverter's programmable output terminals by the protective function or to keep the keypad alive even if the main power has shut down, connect these terminals to the power supply lines. Without power supply to these terminals, the inverter can run.

*4 Normally no need to be connected. Use these terminals when the inverter is equipped with a high power-factor, regenerative PWM converter (RHC series).

*5 When connecting an optional DC reactor (DCR), remove the jumper bar from the terminals P1 and P(+). The FRN100G1S-2/4U and higher types come with a DCR. Be sure to connect the DCR.

Use a DCR when the capacity of the power supply transformer exceeds 500 kVA and is 10 times or more the inverter rated capacity, or when there are thyristor-driven loads in the same power supply line. The DCR built-in type has no DCR at this location.

*6 Inverters of 15 HP or below have a built-in braking resistor (DBR) between the terminals P(+) and DB. When connecting an external braking resistor (DBR), be sure to disconnect the built-in one. *7 A grounding terminal for a motor. Use this terminal if needed.

*8 For control signal wires, use twisted or shielded-twisted wires. When using shielded-twisted wires, connect the shield of them to the common terminals of the control circuit. To prevent malfunction due to noise, keep the control circuit wiring away from the main circuit wiring as far as possible (recommended: 3.9 inches (10 cm) or more). Never install them in the same wire duct. When crossing the control circuit wiring with the main circuit wiring, set them at right angles.

*9 The connection diagram shows factory default functions assigned to digital input terminals [X1] to [X7], [FWD] and [REV], transistor output terminals [Y1] to [Y4], and relay contact output terminals [Y5A/C] and [30A/B/C].

*10 Switching connectors in the main circuits. For details, refer to " Switching connectors" later in this section. *11 Slide switches on the control printed circuit board (control PCB). Use these switches to customize the inverter operations. For details, refer to Section 2.3.6 "Setting up the slide switches."

*12 When using the Enable input function, be sure to remove the jumper wire from terminals [EN] and [PLC]. For opening and closing the hardware circuit between terminals [EN] and [PLC], use safety components such as safety relays and safety switches that comply with EN954-1, Category 3 or higher. Be sure to use shielded wires exclusive to terminals [EN] and [PLC]. (Do not put them together with any other control signal wire in the same shielded core.)

Ground the shielding layer. For details, refer to Chapter 9, Section 9.4 "Compliance with EN954-1, Category 3."

When not using the Enable input function, keep the terminals between [EN] and [PLC] short-circuited with the jumper wire (factory default).



Innovating Energy Technology

Quick Start Menus

0. Q	uick set			
	ata Set			
	ata Check			
	peration m	onitor		
_		lonitor		
	0 Check aintenanci			
		e		
	arm Info			
	arm Cause	2		
	ata Copy			
	oad Factor			
	Userset			
11.0	Comm Deb	ug		
		1.Data Se	et 2. Data Check	
F. Fu	indamenta	l Codes		
E. Ex	tension Co	odes		
C. Co	ontrol Fund	tions		
P. M	lotor Parar	neters		
н. н	igh Perforr	nance Functions		
J. Ap	plication F	unctions		
A. M	lotor 2 Para	ameters		
b. M	lotor 3 Para	ameters		
r. M	otor 4 Para	meters		
d. Ap	oplication	Functions 2		
	nk Functio			
-		le Logic Functions		
		3. Oper	ation Monitor	
	Fot1		Before slip compensation	
	Fot2		after slip compensation	
	lout	Out put Current		
	Vout	Output Voltage		
	vout			
		Calculated Output	Torque	
	TRQ	Calculated Output Frequency Specifie		
	TRQ Fref		ed by a Frequency command	
	TRQ Fref FWD	Frequency Specifie	ed by a Frequency command Forward	
	TRQ Fref FWD Rev		ed by a Frequency command Forward Reverse	
	TRQ Fref FWD Rev (Blank)	Frequency Specifie Run Direction	ed by a Frequency command Forward	
	TRQ Fref FWD Rev (Blank) IL	Frequency Specifie Run Direction Current Limiting	ed by a Frequency command Forward Reverse Stop	
	TRQ Fref FWD Rev (Blank)	Frequency Specifie Run Direction Current Limiting Under voltage det	ed by a Frequency command Forward Reverse Stop	
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4. I/0 Check			
1.	Input signal	FWD,Rev, X1-X7 EN1, EN2	
2.	Input signal via communication signal	FWD,Rev, X1-X7,XF,XR, RST	
3.	Output signals	Y1-Y4, Y5AC, 30 ABC	
	I/O Signals (hexadecimal)	Di Link	
		Do Link	
		LNK	
	Analog Input signals	12=Voltage on terminal 12	
5.		C1=Current on terminal C1	
		V2=Voltage on terminal V2	
	Analog Output signals	FM1 (Volts)	
		FM1 (AMPS)	
		FM2 (Volts)	
		FM2 (AMPS)	
	Input signal	Di-o	
	Output signals	do-o	
	Pulse train input	Х7	
8.	PG Pulse rate	P1=p/s of A/B phase	
		Z1=p/s of Z phase	
		P1=p/s of A/B phase	
		Z2=p/s of Z phase	
	I/O Signal of input (option card)	32=Voltage on terminal 32	
q		C2=Input current on terminal C2	
		A0 Output voltage on terminal A0	
		A0 Output voltage on terminal CS	

	-	5. Maintenance
	Time	Cumulative run time
	EDC	DC link bus voltage
	тмрі	Max temperature inside the inverter every hour
	TMPF	Max temperature of the heat sink every hour
	Imax	Maximum current in RMS every hour
	САР	Capacitance of the DC link bus capacitor
	мтім	Cumulative motor run time
	REMT1	Remaining time before next maintenance for motor 1
	ТСАР	Cumulative run time of electrolytic capacitors
	TFAN	Cumulative run time of the cooling fan
	NST	Number of startups
4.	Wh	Input watt-hours
	PD	Input watt-hour data
	REMN1	Remaining startup times before next maintenance
	NRR1	Number of RS-485 errors
	NRR2	Error code of RS-485
	NRO	Count of option errors
6.	MAIN	Rom version of Inverter
0.	КР	Rom version of Keypad
	OP1	Rom version of option 1
	OP2	Rom version of option 2
	OP3	Rom version of option 3
	тмрім	Temperature inside the inverter real time value
8.	TMPFM	Temperature of the heat sink real time value
	САРЕН	Lifetime of DC link capacitor
	CAPRH	Lifetime of DC link capacitor
	MTIM1	Cumulative run time of motor 1
	MTIM2	Cumulative run time of motor 2
	MTIM3	Cumulative run time of motor 3
	MTIM4	Cumulative run time of motor 4
	NST1	Number of startups motor 1
	NST2	Number of startups motor 2
	NST3	Number of startups motor 3
	NST4	Number of startups motor 4
11.	LALM1	Light alarm latest
	LALM2	Light alarm last
	LALM2	Light alarm 2nd last
	LALM3	Light alarm 3rd last
	LALM4	Light alarm 4th last
	NROA	Number of errors Option 1
12.	NROB	Number of errors Option 2
	NROC	Number of errors Option 3

0/1 Lat	Latest Alarm				
-1 Las	-1 Last Alarm				
-2 2n	-2 2nd Last Alarm				
-3 3rc	-3 3rd Last Alarm				
		6. Alarm Info			
Fot1	Output Frequer	ncy			
lout	Output Current				
Vout	Output Voltage				
TRQ	Calculated Torc	ງບອ			
Fref	Reference Freq	uency			
FWD		Forward			
Rev	Run Direction	Reverse			
(Blank)		Stop			
IL	Current limiting				
LU	Under voltage				
VL	Voltage limiting				
TL	Torque limiting				
TIME	Cumulative run	time			
SL	Speed limit				
M1-M4	Motor being selected				
VF		V/F control without slip compensation			
DTV		Dynamic torque vector control			
VF-SC	Drive Control	V/F control with slip compensation			
VF-PG		Dynamic torque vector control speed sensor			
VC-PG		Vector control without speed sensor			
VC-PG		Vector control with speed sensor			
NST	Number of starts				
EDC	DC link bus Voltage				
TMPI	Temperature inside the inverter				
TMPF	Temperature inside the heat sink				
TRM	Input signals of Control circuit				
LNK	Input signals of Communication link				
-	Output Signals				
3	Multiple Alarm				
2	Multiple Alarm				
SUB	Error sub-code				
SOB	Error sub-code				



	9.Load factor	
Hours SET		
Start->Stop		

10. User set Select the function codes for quick start menu

Fuji Electric Corp. of America

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