

FUJI INVERTERS
FRENIC Series



INVERTER LINE-UP



FRENIC-VG



FRENIC-MEGA



FRENIC-Ace



FRENIC-Mini



FRENIC-HVAC



FRENIC-Eco

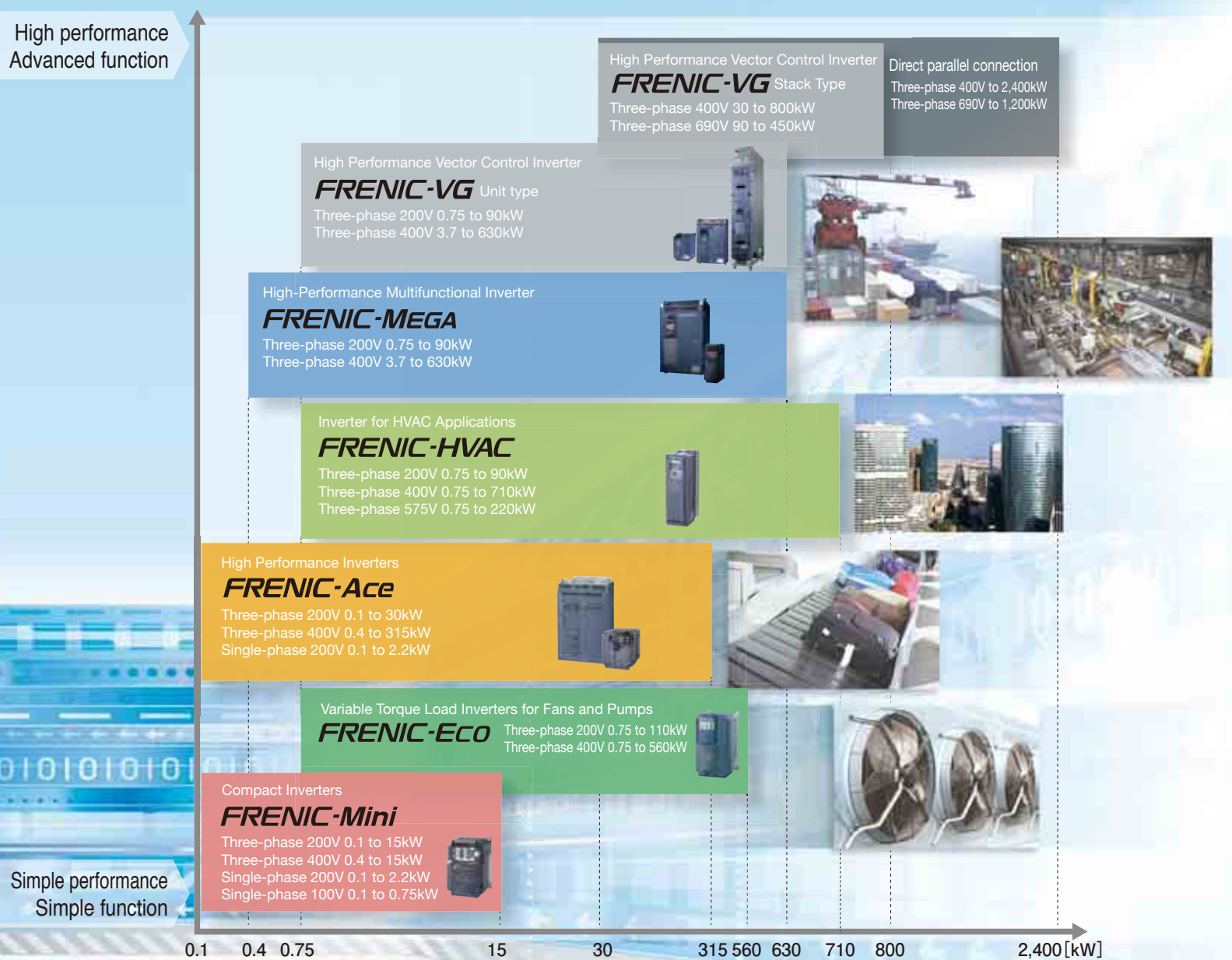
Fuji Inverter Family Consisting of a Diverse Lineup

Major features of Fuji inverters

- Environmentally-friendly long-life design (10 years) and compliance with RoHS directive *1
- A wide variety from simple performance models to high performance models
- Specialized models lined up that can maximize the performance for each application such as fan and pump application and crane application

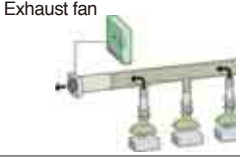


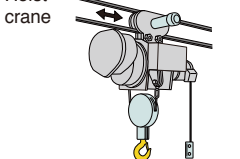
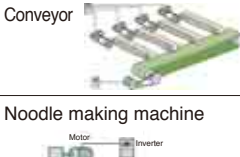
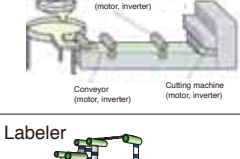
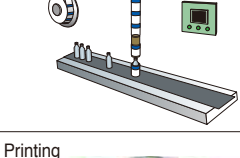

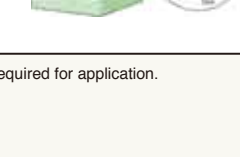
*1 Except for some models.

Fuji inverter series lineup



Diversifying Fuji inverter applications

◎ : Best suitable ○ : Suitable

Classification	Representative instrument image	Application example	FRENIC-Mini	FRENIC-ECO	FRENIC-Ace	FRENIC-HVAC	FRENIC-MEGA	FRENIC-VG
Fluid machine		Fan	○	◎	○	◎	◎	
		Pump	○	◎	○	◎	◎	
		Blower	○	◎	○	◎	◎	
		Compressor	○	◎	○	◎	◎	
		Gear pump			○		◎	
Machine tool		Drilling machine			○		◎	
		Turning machine			○		◎	
		Grinding machine			○		◎	
		Tool changer	○		◎			
		Milling machine					○	◎
		Machining centre					○	◎
Metal processing machine		Pressing machine					○	◎
		Winder					○	◎
		Wire drawing machine			○			◎
		Shearing machine			○			◎
		Dicer						◎
Conveyor machine (vertical)		Elevator			○		○	◎
		Escalator			○		○	◎
		Multi-level storage			○		○	◎
		Multi-level parking lot			○		○	◎
		Crane					○	◎
		Hoist crane			◎		○	◎
Conveyor machine (horizontal)		Conveyor transport	○		◎		◎	
		Chain transport	○		◎		◎	
		Ball screw	○		◎		◎	
Food processing machine		Noodle making machine	○		◎		◎	
		Confectionery machine	○		◎		◎	
		Tea making machine	○		◎		◎	
		Bread making machine	○		◎		◎	
		Mixer	○		◎		◎	
		Slicer	○		◎		◎	◎
Packing and bookbinding machine		Labeler	○		○		◎	◎
		Inner packing machine	○		○		◎	◎
		Outer packing machine	○		○		◎	◎
		Bookbinding machine	○		○		◎	◎
		Wrapping machine	○		○		◎	◎
		Paper machine	○		○		◎	◎
Printing machine		Winder			○		○	◎
		Slitter					○	◎
		Offset printing machine					○	◎
		Rotary printing machine					○	◎
Health, medical, welfare care instruments		Stair lift	○		◎			
		Treadmill	○		◎			
		Care bed	○		◎			
		Bubble bath	○	○	◎	○		
Others		Commercial laundry machine	○		○		◎	
		Car washing machine	◎		○			
		Food waste disposer	◎		○			
		Conveyor-belt sushi	◎		○			
		Stage installation			○			◎
		Pachinko ball feeder	◎		○		◎	

* Options may be required for application.

Major specifications of series

Series name	Input voltage class	Capacity range (application motor capacity) [kW]	Overload capability	Digital input X terminal including FWD/REV terminal	Digital input Y terminal	Analog input	Analog output	Output frequency range	
FRENIC-Mini	Three-phase 200V	0.1 to 15 kW	150% -1min. 200% -0.5sec.	5	1	2	1	0.1 to 400Hz	
	Three-phase 400V	0.4 to 15 kW							
	Single-phase 200V	0.1 to 2.2 kW							
	Single-phase 100V	0.1 to 0.75 kW							
FRENIC-Eco	Three-phase 200V	0.75 to 110 kW	120% -1min.	7	3	3	1	0.1 to 120Hz	
	Three-phase 400V	0.75 to 560 kW							
FRENIC-Ace	Three-phase 200V (ND)	0.1 to 30 kW	120% -1min.	7	2	2	1	0.1 to 500Hz	
	Three-phase 400V (HND)	0.4 to 315 kW							
	Single-phase 200V (HHD)	0.1 to 2.2 kW	150% -1min.						
FRENIC-HVAC	Three-phase 200V	0.75 to 90 kW	110% -1min.	9	4	3	2	0.1 to 120Hz	
	Three-phase 400V	0.75 to 710 kW							
	Three-phase 575V	0.75 to 220 kW							
FRENIC-MEGA	Three-phase 200V (HD)	0.4 to 90 kW	150% -1min. 200% -3sec.	11	4	3	1	0.1 to 500Hz	
	Three-phase 400V (HD)	0.4 to 630 kW							
	Three-phase 200V(LD)	7.5 to 110 kW	120% -1min.					0.1 to 120Hz	
	Three-phase 400V(LD)	7.5 to 710 kW							
FRENIC-VG	Unit Type	Three-phase 200V (HD)	0.75 to 90 kW	150% -1min. 200% -3sec.	11	4	3	1	0.1 to 150Hz
		Three-phase 400V (HD)	3.7 to 630 kW						
		Three-phase 400V (MD)	110 to 450 kW	150% -1min.					
		Three-phase 200V(LD)	37 to 110 kW	120% -1min.					
	Three-phase 400V(LD)	37 to 710 kW							
	StackType	Three-phase 400V (MD)	30 to 800 kW	150% -1min.					
		Three-phase 690V (MD)	90 to 450 kW	110% -1min.					
		Three-phase 400V(LD)	37 to 1000 kW						
Three-phase 690V (LD)		110 to 450 kW							

Control function																
Auto-restart after momentary power failure	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Slip compensation control	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
PID control	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Automatic energy saving operation	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Regeneration prevention control	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Overload prevention control	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Torque limiter	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Preventing condensation in motor	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Number of motor switching options	3	4	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Pick-up operation, draw operation	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Commercial power supply switching operation	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Customizable logic function	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Hit-and-stop control	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Dancer roll control	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Velocity zero control	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Servo lock	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Synchronous motor driving	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Calendar function	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Traceback function	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Online tuning	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Functional safety (STO)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Pattern operation, timer operation	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Pump control	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

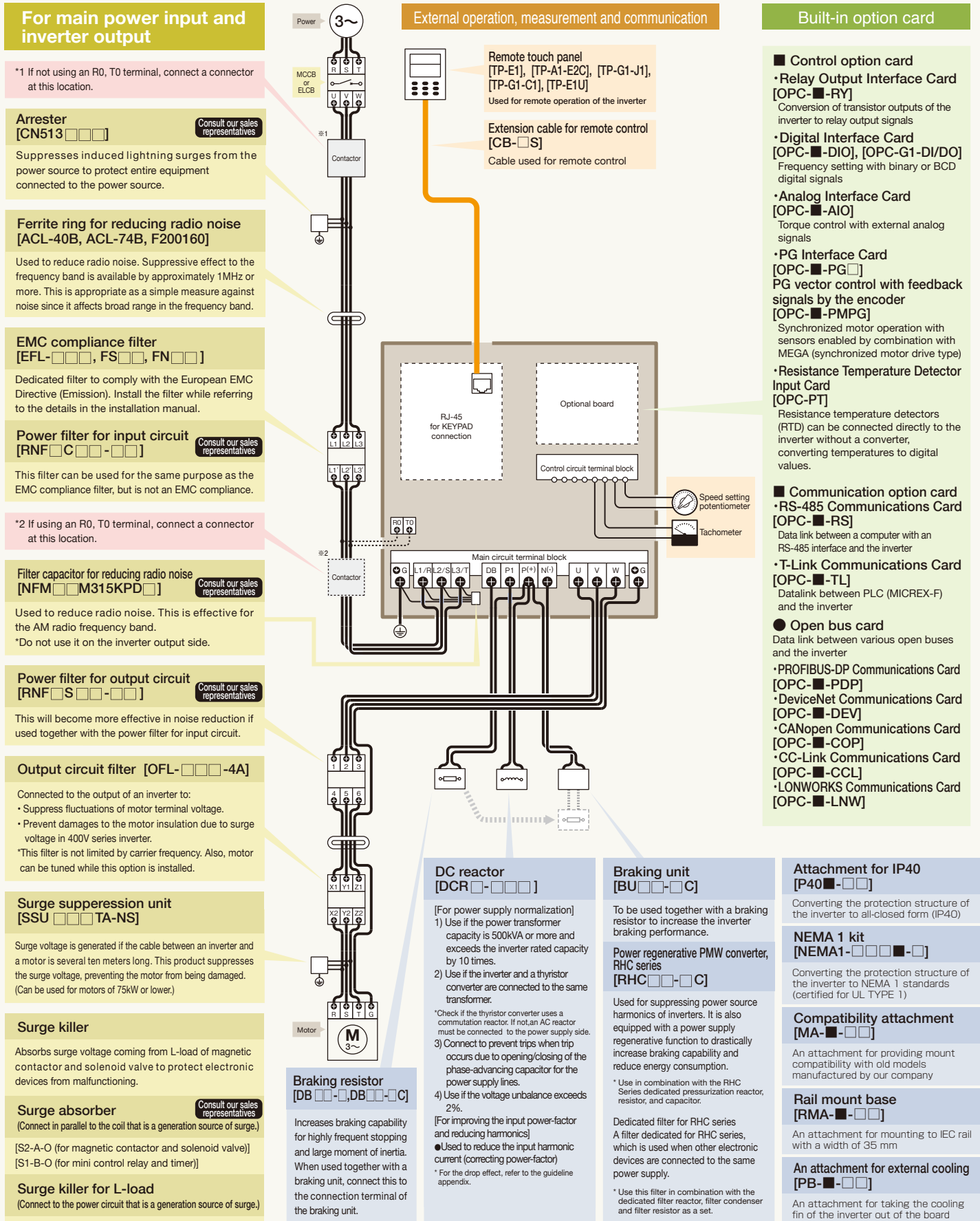
*1 The behavior of analog input and output can be switched by settings. Refer to the catalogue of each series.
 *2 Consult our sales representatives.

Special option

Applicable inverter		<i>FRENIC-Mini</i>	<i>FRENIC-ECO</i>	<i>FRENIC-Ace</i>	<i>FRENIC-HVAC</i>	<i>FRENIC-MEGA</i>	<i>FRENIC-VG</i>	
Item	Control option card	Relay Output Interface Card		○		○	○	
		Digital Interface Card			○		○	○
		Analog Interface Card			○	○	○	○
		PG Interface Card			○		○	○
		Analog Current Output Interface Card				○	○	
		Synchronize Interface Card						○
	Communication option card	RS-485 Communications Card	Built-in	○	Built-in ^{*1}	Built-in	Built-in	Built-in
		T-Link Communications Card					○	○
		SX-bus Communications Card					○	○
		E-SX-bus Communications Card						○
		PROFIBUS-DP Communications Card		○	○	○	○	○
		DeviceNet Communications Card		○	○	○	○	○
		CANopen Communications Card			○	○	○	
		CC-Link Communications Card		○	○	○	○	○
		LonWorks Communications Card		○		○		
		Ethernet Communications Card			○			
		Resistance Temperature Detector Input Card		○		○		
		ProfiNet-RT Communications Card			○			
		ProfiNet-IRT Communications Card						○
		User Programming Card (UPAC)						○
Functional Safety Card						○		
Software	Inverter support loader software	○	○	○	○	○	○	
Operation option	Remote touch panel	○	Standard	Standard				
	Remote touch panel with USB	○		○		Standard		
	Multifunctional touch panel		○	○	Standard	○	Standard	

*1 The number of connectors of the RS-485 port can be changed from 1 to 2 by mounting an option card.

Wiring diagram of peripheral equipment of inverter



For main power input and inverter output

*1 If not using an R0, T0 terminal, connect a connector at this location.

Arrester [CN513 □□□□]
 Suppresses induced lightning surges from the power source to protect entire equipment connected to the power source.

Ferrite ring for reducing radio noise [ACL-40B, ACL-74B, F200160]
 Used to reduce radio noise. Suppressive effect to the frequency band is available by approximately 1MHz or more. This is appropriate as a simple measure against noise since it affects broad range in the frequency band.

EMC compliance filter [EFL-□□□□, FS□□□□, FN□□□□]
 Dedicated filter to comply with the European EMC Directive (Emission). Install the filter while referring to the details in the installation manual.

Power filter for input circuit [RNF□□C□□-□□□]
 This filter can be used for the same purpose as the EMC compliance filter, but is not an EMC compliance.

*2 If using an R0, T0 terminal, connect a connector at this location.

Filter capacitor for reducing radio noise [NFM□□M315KPD□]
 Used to reduce radio noise. This is effective for the AM radio frequency band.
 *Do not use it on the inverter output side.

Power filter for output circuit [RNF□□S□□-□□□]
 This will become more effective in noise reduction if used together with the power filter for input circuit.

Output circuit filter [OFL-□□□□-4A]
 Connected to the output of an inverter to:
 • Suppress fluctuations of motor terminal voltage.
 • Prevent damages to the motor insulation due to surge voltage in 400V series inverter.
 *This filter is not limited by carrier frequency. Also, motor can be tuned while this option is installed.

Surge suppression unit [SSU □□□□ TA-NS]
 Surge voltage is generated if the cable between an inverter and a motor is several ten meters long. This product suppresses the surge voltage, preventing the motor from being damaged. (Can be used for motors of 75kW or lower.)

Surge killer
 Absorbs surge voltage coming from L-load of magnetic contactor and solenoid valve to protect electronic devices from malfunctioning.

Surge absorber
 (Connect in parallel to the coil that is a generation source of surge.)
 [S2-A-O (for magnetic contactor and solenoid valve)]
 [S1-B-O (for mini control relay and timer)]

Surge killer for L-load
 (Connect to the power circuit that is a generation source of surge.)
 [FSL-323 (for 3-phase)]
 [FSL-123 (for single -phase)]

External operation, measurement and communication

Remote touch panel [TP-E1], [TP-A1-E2C], [TP-G1-J1], [TP-G1-C1], [TP-E1U]
 Used for remote operation of the inverter

Extension cable for remote control [CB-□S]
 Cable used for remote control

RJ-45 for KEYPAD connection
Optional board
Control circuit terminal block

Main circuit terminal block
 G L1/R L2/S L3/T DB P1 P(+*) N(-) U V W G

Speed setting potentiometer
Tachometer

DC reactor [DCR □□-□□□□]

[For power supply normalization]
 1) Use if the power transformer capacity is 500kVA or more and exceeds the inverter rated capacity by 10 times.
 2) Use if the inverter and a thyristor converter are connected to the same transformer.
 *Check if the thyristor converter uses a commutation reactor. If not, an AC reactor must be connected to the power supply side.
 3) Connect to prevent trips when trip occurs due to opening/closing of the phase-advancing capacitor for the power supply lines.
 4) Use if the voltage unbalance exceeds 2%.

Braking resistor [DB □□-□□, DB □□-□□C]

Increases braking capability for highly frequent stopping and large moment of inertia. When used together with a braking unit, connect this to the connection terminal of the braking unit.

Braking unit [BU □□□□-□□C]

To be used together with a braking resistor to increase the inverter braking performance.

Power regenerative PMW converter, RHC series [RHC □□□□-□□C]

Used for suppressing power source harmonics of inverters. It is also equipped with a power supply regenerative function to drastically increase braking capability and reduce energy consumption.

* Use in combination with the RHC Series dedicated pressurization reactor, resistor, and capacitor.
 Dedicated filter for RHC series
 A filter dedicated for RHC series, which is used when other electronic devices are connected to the same power supply.

* Use this filter in combination with the dedicated filter reactor, filter condenser and filter resistor as a set.

Built-in option card

Control option card

- Relay Output Interface Card [OPC-□□-RY]
 Conversion of transistor outputs of the inverter to relay output signals
- Digital Interface Card [OPC-□□-DIO], [OPC-G1-DI/DO]
 Frequency setting with binary or BCD digital signals
- Analog Interface Card [OPC-□□-AIO]
 Torque control with external analog signals
- PG Interface Card [OPC-□□-PG□]
 PG vector control with feedback signals by the encoder [OPC-□□-PMPG]
 Synchronized motor operation with sensors enabled by combination with MEGA (synchronized motor drive type)
- Resistance Temperature Detector Input Card [OPC-PT]
 Resistance temperature detectors (RTD) can be connected directly to the inverter without a converter, converting temperatures to digital values.

Communication option card

- RS-485 Communications Card [OPC-□□-RS]
 Data link between a computer with an RS-485 interface and the inverter
- T-Link Communications Card [OPC-□□-TL]
 Datalink between PLC (MICREX-F) and the inverter
- Open bus card
 Data link between various open buses and the inverter
- PROFIBUS-DP Communications Card [OPC-□□-PDP]
- DeviceNet Communications Card [OPC-□□-DEV]
- CANopen Communications Card [OPC-□□-COP]
- CC-Link Communications Card [OPC-□□-CCL]
- LONWORKS Communications Card [OPC-□□-LNW]

Attachment for IP40 [P40 □□-□□□]

Converting the protection structure of the inverter to all-closed form (IP40)

NEMA 1 kit [NEMA1-□□□□□□-□□]

Converting the protection structure of the inverter to NEMA 1 standards (certified for UL TYPE 1)

Compatibility attachment [MA-□□-□□□]

An attachment for providing mount compatibility with old models manufactured by our company

Rail mount base [RMA-□□-□□□]

An attachment for mounting to IEC rail with a width of 35 mm

An attachment for external cooling [PB-□□-□□□]

An attachment for taking the cooling fin of the inverter out of the board

Peripheral and structure options

* The series names (C2, E2, G1, F1, VG1) are put in the place of ■ in the type names.

Fuji Inverter Family Contributing with a Diverse Lineup



Standard product



Semi-standard product

Compact Inverters

FRENIC-Mini

RoHS



- Series of compact inverters equipped with functions ideal for diverse small capacity needs
- Frequency setting volume control provided as standard equipment, allowing easy operation
- Dynamic torque-vector control, PDI control function, cooling fan ON/OFF control function and synchronous motor control provided

● Model variations



Standard type



Built-in EMC filter

● Major functions



Side-by-side installation



Frequency setting volume control



Synchronous motor driving

● International standards



EC Directive (CE marking)



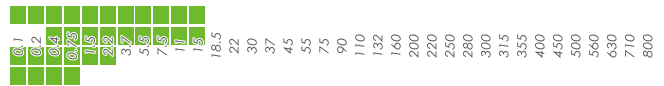
UL Standards (cUL Standards)



KC certification

● Input voltage class/capacity range

Three-phase 200V/0.1 to 15kW
 Three-phase 400V/0.4 to 15kW
 Single-phase 200V/0.1 to 2.2kW
 Single-phase 100V/0.1 to 0.75kW



Variable Torque Load Inverters for Fans and Pumps

FRENIC-ECO

RoHS



- Series of inverters developed exclusively for square reduction loads such as fans and pumps
- Equipped with various functions including new system of automatic energy saving, PID control, life expectancy prediction and commercial power supply operation switching sequence
- Ideal for air-conditioning systems, fans and pumps, for which conventional general-purpose inverters could not be used due to cost and function issues

● Model variations



Standard type

● Major functions



Side-by-side installation (5.5 kW or smaller)



Optimized minimum power control



Detachable keypad

● International standards



EC Directive (CE marking)



UL Standards (cUL Standards)

● Input voltage class/capacity range

Three-phase 200V/0.75 to 110kW
 Three-phase 400V/0.75 to 560kW



High Performance Inverters

FRENIC-Ace

RoHS



- Series of inverters applicable to diverse applications ranging from simple variable-speed applications to business sector-specific machines requiring high performance and multiple functions
- Capable of four load ratings according to applied load, optimizing total cost and offering space-saving performance^{*1}
- Customizable logic function provided as standard feature to allow up to 200 steps of programming

● Model variations



Standard type



Built-in EMC filter

● Major functions



Side-by-side installation



Synchronous motor driving



Detachable keypad



Pulse train input



Customizable logic



Four ratings



Functional safety STO

● International standards



EC Directive (CE marking)



UL Standards (cUL Standards)



KC certification^{*2}

● Input voltage class/capacity range

Three-phase 200V/0.1 to 30kW (ND)
 Three-phase 400V/0.4 to 315kW (HND)
 Single-phase 200V/0.1 to 2.2kW (HHD)



*1 Three-phase 400V only *2 FRN□□□E2S-○G●, FRN□□□E2S-○K and FRN□□□E2S-○J only

Standard Standard product **Semi-standard** Semi-standard product

Inverter for HVAC Applications **FRENIC-HVAC**

RoHS



- Series of inverters equipped with energy-saving and special functions required for air conditioning market and designed exclusively for specific market
- EMC filter and DC reactor (DCR) provided as standard equipment *1
- Compliance with the protective structure IP55 *2
- Equipped with functions suited for air conditioning applications including 4PID control, real time clock, torque-vector control, filter clogging prevention and linearization function

● Model variations

STD
Standard type

● Major functions

SMTW I@3.4
Calendar function

Linearization function

Customizable logic

Optimized minimum power control

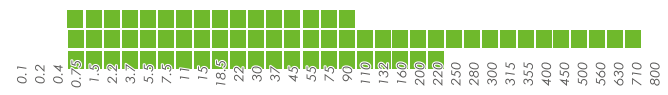
● International standards

CE EC Directive (CE marking)

UL LISTED UL Standards (cUL Standards)

● Input voltage class/capacity range

Three-phase 200V/0.75 to 90kW
Three-phase 400V/0.75 to 710kW
Three-phase 575V/0.75 to 220kW



*1 DC reactors of three-phase 200 V: 0.75 to 45 kW and three-phase 400 V: 0.75 to 90 kW are built in *2 Compatible with three-phase 200 V: 0.75 to 45kW and three-phase 400 V: 0.75 to 90 kW.

High Performance Multifunctional Inverters **FRENIC-MEGA**

RoHS



- Series of general-purpose inverters provided with best-in-class vector functions including vector control with and without speed sensor, PG vector control, dynamic torque vector control and V/f control
- Various functions suited for applications available such as improved brake signal, dancer control function, pulse train input function, ratio operation and customizable logic function
- Built-in USB board allowing management of various types of inverter information, facilitating maintenance

● Model variations

STD Standard type

EMC Built-in EMC filter

DCR Integrated DC reactor

PM Synchronous motor driving type

PS Position control type

SF Safety-enabled type

● Major functions

Optimized minimum power control

Detachable keypad

Built-in USB terminal

Pulse train input

Ratio operation

Customizable logic

Triple ratings

● International standards

CE EC Directive (CE marking)

UL LIST UL Standards (cUL Standards)

KC certification

● Input voltage class/capacity range

Three-phase 200V/0.4 to 90kW (HD)
Three-phase 400V/0.4 to 630kW (HD)



High Performance Vector Control Inverter **FRENIC-VG**

RoHS



- Fuji's highest-performance series of inverters bringing vector inverter technologies together
- Provided with vector control with and without speed sensor and V/f control
- Full-fledged maintenance functions enabled by calendar function and traceback
- Safety function (STO) compliant with functional safety standard EN61800-5-2 provided as standard feature
- Stack type three-phase 690 V 355 to 450 kW provided with new device (SiC hybrid module) capable of realizing significant reduction of generated loss as compared with conventional Si module
- A Marine standard compatible product lineup has been added as semi-standard products. (Certifying body: DNV GL classification societies)*1*2

● Model variations

STD
Standard type

● Major functions

Detachable keypad

UPAC

Synchronous motor driving

Triple ratings

Functional safety STO

Position control

Load compensating control

Calendar function

● International standard

CE EC Directive (CE marking)

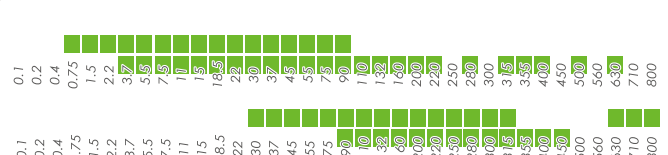
UL LIST UL Standards (cUL Standards)

KC certification (Stack type: pending certification)

● Input voltage class/capacity range

Unit Type
Three-phase 200V/0.75 to 90kW (HD)
Three-phase 400V/3.7 to 630kW (HD)

Stack Type
Three-phase 400V/30kW to 800kW (MD)
Three-phase 690V/90kW to 450kW (MD)



*1 Three-phase 690V stack type only. *2 Consult our sales representatives.

How To Read The Model Number

FRENIC-
Mini

FRN 0010 C 2 S - 2 A

Code	Series name
FRN	FRENIC Series

Code	Nominal applied motor capacity
0001	0.1kW
}	}
0060	15kW

Code	Application range
C	Compact

Code	Developed inverter series
2	2series

Code	Destination / Instruction Manual
A	Asia/English
E	Europe/English
U	USA/English
C	China/Chinese
J	Japan/Japanese

Code	Input power source
2	Three-phase 200V
4	Three-phase 400V
6	Single-phase 100V
7	Single-phase 200V

Code	Structure
S	Standard (IP20)
E	Built-in EMC filter (IP20)

FRENIC-
ECO

FRN 5.5 F 1 S - 2 A

Code	Series name
FRN	FRENIC Series

Code (kW)[HP]	Nominal applied motor capacity
0.75 [001]	0.75kW
}	}
560 [900]	560kW

Code	Application range
F	Fan and pump (for square reduction torque loads)

Code	Developed inverter series
1	1series

Code	Destination / Instruction Manual
A	Asia/English
E	Europe/English
U	USA/English
J	Japan/Japanese

Code	Input power source
2	Three-phase 200V
4	Three-phase 400V

Code	Structure
S	Standard (IP20/IP00)

FRENIC-
Ace

FRN 0004 E 2 S - 2 GB

Code	Series name
FRN	FRENIC Series

Code	Nominal applied motor capacity
0001	0.1kW
}	}
0590	315kW

Code	Application range
E	High-performance and multifunction type, for general industries

Code	Developed inverter series
2	2series

Code	Destination / Instruction Manual
GA, GB ^{*1}	Global/English
E	Europe/English
C	China/Chinese
K	Korea/Korean
J	Japan/Japanese

^{*1} Control terminals differ between GA model and GB model.
For details, please refer to the FRENIC-Ace catalog.

Code	Input power source
2	Three-phase 200V
4	Three-phase 400V
7	Single-phase 200V

Code	Structure
S	Standard
E	Built-in EMC filter

FRENIC-HVAC

FRN 3.7 AR 1 L - 4 A

Code	Series name	Code	Destination / Instruction Manual
FRN	FRENIC Series	A	Asia/English
		E	Europe/English
		U	USA/English
		J	Japan/Japanese
Code (kW)[HP]	Nominal applied motor capacity	Code	Input power source
0.75 [001]	0.75kW	2	Three-phase 200V
}	}	4	Three-phase 400V
710 [1000]	710kW	5	Three-phase 575V
Code	Application range	Code	Protective structure
AR	HVAC	L	IP55
		M	IP21
		S	IP00
Code	Developed inverter series		
1	1series		

FRENIC-MEGA

FRN 0.75 G 1 S - 2 A

Code	Series name	Code	Destination / Instruction Manual
FRN	FRENIC Series	A	Asia/English
		E	Europe/English
		U	USA/English
		C	China/Chinese
		T	Taiwan/English
		J	Japan/Japanese
Code (kW)[HP]	Nominal applied motor capacity	Code	Input power source
0.4 [001]	0.4kW	2	Three-phase 200V
}	}	4	Three-phase 400V
630 [900]	630kW		
Code	Application range	Code	Structure
G	High-performance and multifunction type	S	Standard
GX	Synchronous motor driving type	E	Built-in EMC filter
		H	Integrated DC reactor
Code	Developed inverter series		
1	1series		

FRENIC-VG

FRN 30 S VG 1 S - 4 E

Code	Series name	Code	Destination / Instruction Manual
FRN	FRENIC Series	E	English
		C	Chinese
		J	Japanese
Code	Nominal applied motor capacity	Code	Input power source
0.75	0.75kW	2	Three-phase 200V
}	}	4	Three-phase 400V
800	800kW	69	Three-phase 690V
Code	Form	Code	Structure
None	Unit type	S	Standard
S	Standard stack		
B	Stack by phase	Code	Developed inverter series
		1	1series
		Code	Application range
		VG	High performance vector control

Overseas service network

Service net expanding globally!!

For inquiries about services, be sure to consult your local Fuji service centers.



◆ Fuji service center

*Note: See the pages listed for detailed company and contact information.



USA, Canada and Latin America region

Canada

- Seattle
- Portland
- Chicago
- New York
- San Francisco
- San Jose
- Los Angeles
- Long Beach
- Houston
- Charlotte
- Norfolk
- Jacksonville

Mexico

Panama

- Panama City

Venezuela

Latin America

- Sao Paulo

na region

Japan

Sydney

Auckland

New Zealand

ania

Far East Asia & China Area



INV ≤ 22kW General Purpose Inverter, below 22kW		INV ≥ 30kW General Purpose Inverter, above 30kW		Medium Voltage Medium Voltage Inverter	
Vector Inv	Vector Inverter	Machine Tool Inv	Machine Tool Inverter	PLC PLC	POD POD
α Servo α	β Servo β	W Servo W	ALPHA5 ALPHA5	ALPHA5 Smart ALPHA5 Smart	Motor Motor

Far East Asia

Mark	Name	Address, Phone etc.	Business Hours	English	Applicable Products					
					Minor trouble			Major trouble		
					INV ≤ 22kW	INV ≥ 30kW	Medium Voltage	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage
1	Overseas Service Center	5520, Minamitamagaki-cho, Suzuka-City, Mie 513-8633, Japan • Phone : +81-59-383-8326 • Fax : +81-59-383-8874	08:30 ~ 17:15 (GMT +9hours)	Yes	Vector Inv	Machine Tool Inv	PLC POD	Vector Inv	Machine Tool Inv	PLC POD
					α β	W ALPHA5 ALPHA5 Smart	Motor	α β	W ALPHA5 ALPHA5 Smart	Motor
1a	CANA ELECTRIC CO., LTD.	Cana Bldg, 10-59, Yangjae-Dong, Seocho-Gu, Seoul, 137-887 Korea • Phone : +82-2-3462-0670 • Fax : +82-2-3462-0678	08:30 ~ 18:30 (GMT +9hours)	Yes	Vector Inv	Machine Tool Inv	PLC POD	Vector Inv	Machine Tool Inv	PLC POD
					α β	W ALPHA5 ALPHA5 Smart	Motor	α β	W ALPHA5 ALPHA5 Smart	Motor
1b	ELTA ELECTRICAL CO., LTD.	4F, No.32, Sec.3, Cheng The Rd., Taipei, Taiwan 103 • Phone : +886-2-2597-6458 • Fax : +886-2-2595-4571	08:30 ~ 17:30 (GMT +8hours)	Yes	Vector Inv	Machine Tool Inv	PLC POD	Vector Inv	Machine Tool Inv	PLC POD
					α β	W ALPHA5 ALPHA5 Smart	Motor	α β	W ALPHA5 ALPHA5 Smart	Motor
1c	Ching Tong Trading Co., Ltd.	16 Alley 4, Lane 78, Chang-An W. Rd., Taipei 10351, Taiwan • Phone : +886-2-2555-2121 • Fax : +886-2-2559-8666 • E-mail : service@ctkingdom.com	08:30 ~ 18:30 (GTM +8hours)	Yes	Vector Inv	Machine Tool Inv	PLC POD	Vector Inv	Machine Tool Inv	PLC POD
					α β	W ALPHA5 ALPHA5 Smart	Motor	α β	W ALPHA5 ALPHA5 Smart	Motor
1d	FULL KEY SYSTEM CO., LTD.	12F., No.111-8, Hsing-The Road, San-chung City, Taipei, Taiwan • Phone : +886-2-2995-2008 • Fax : +886-2-2995-2028	09:00 ~ 18:00 (GTM +8hours)	Yes	Vector Inv	Machine Tool Inv	PLC POD	Vector Inv	Machine Tool Inv	PLC POD
					α β	W ALPHA5 ALPHA5 Smart	Motor	α β	W ALPHA5 ALPHA5 Smart	Motor

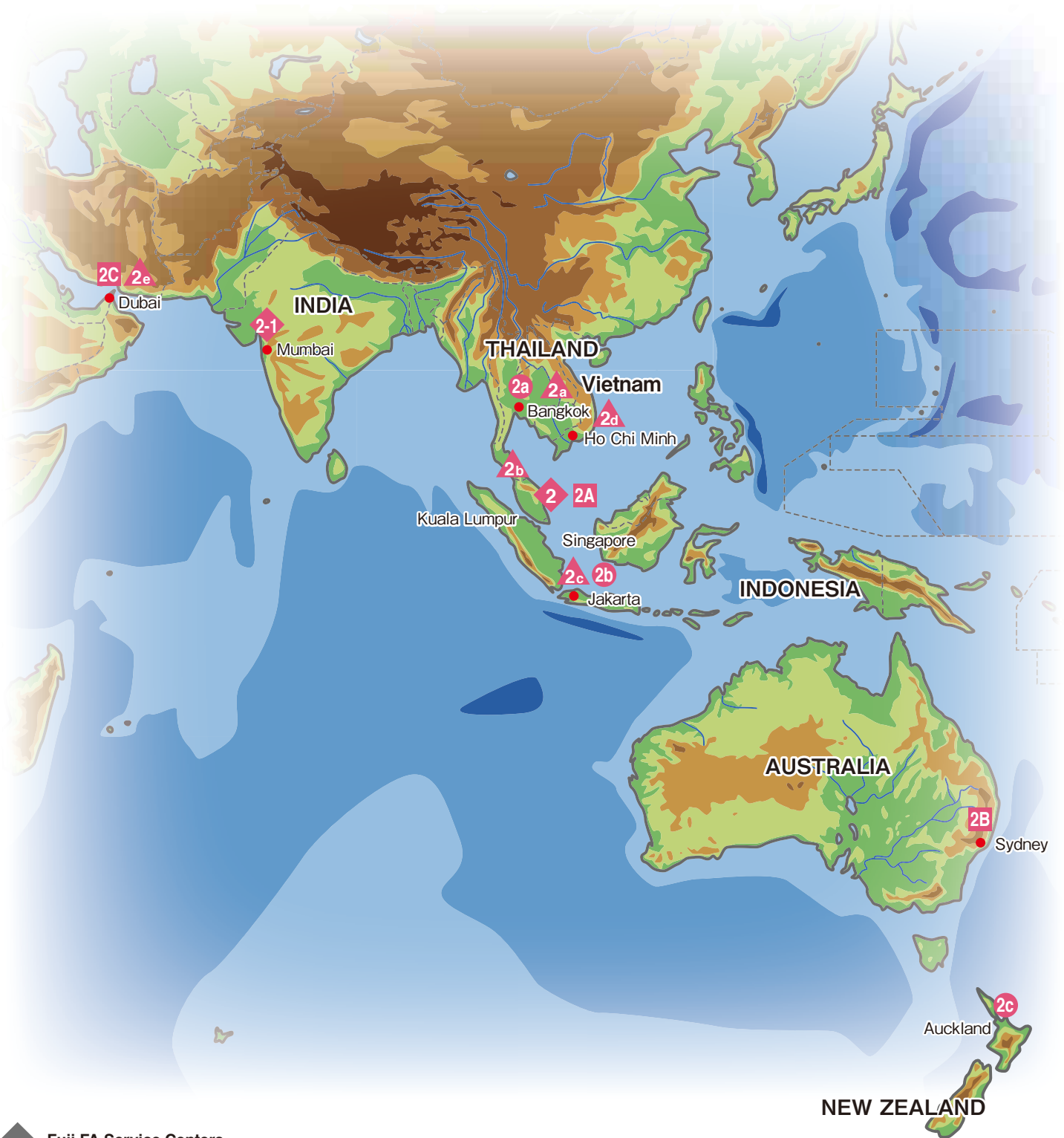
China

INV ≤ 22kW General Purpose Inverter, below 22kW		INV ≥ 30kW General Purpose Inverter, above 30kW		Medium Voltage Medium Voltage Inverter	
Vector Inv		Machine Tool Inv		PLC	POD
Vector Inverter		Machine Tool Inverter		PLC	POD
α Servo α	β Servo β	W Servo W	ALPHA5 ALPHA5	ALPHA5 Smart ALPHA5 Smart	Motor Motor

Mark	Name	Address, Phone etc.	Business Hours	English	Applicable Products											
					Minor trouble			Major trouble								
					INV ≤ 22kW	INV ≥ 30kW	Medium Voltage	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage						
3	FUJI ELECTRIC (CHINA) CO., LTD.	26F, Global Harbor Tower B, 1188 North Kaixuan Road, Putuo District, Shanghai 200062, R.P.CHINA • Phone : +86-21-5496-1177 • Fax : +86-21-5496-0189	09:00 ~ 17:35 (GMT +8hours)	No	Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD				
					α	β	W	ALPHA5	ALPHA5 Smart	Motor	α	β	W	ALPHA5	ALPHA5 Smart	Motor
3-1	Shenzhen Office	Room 2602, Han Tang Buliding, Oversea Chinese Town, Nanshan District, Shenzhen, CHINA (P.C.518052) • Phone : +86-755-8363-2248 • Fax : +86-755-8362-9785	09:00 ~ 17:35 (GMT +8hours)	No	Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD				
					α	β	W	ALPHA5	ALPHA5 Smart	Motor	α	β	W	ALPHA5	ALPHA5 Smart	Motor
3-2	Beijing Office	Unit 2007, Tower A Phoenix Place, 5A Shuguang Xili, Chaoyang District, Beijing, China (P.C.100028) • Phone : +86-10-5939-2250 • Fax : +86-10-5939-2251	09:00 ~ 17:35 (GMT +8hours)	No	Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD				
					α	β	W	ALPHA5	ALPHA5 Smart	Motor	α	β	W	ALPHA5	ALPHA5 Smart	Motor
3-3	Chengdu Office	Room 1708, Yanload Landmark, No.1, Section 2, Renmin South Road, 610016 Chengdu, China • Phone : +86-28-6210-1091 • Fax : +86-28-6210-1096	09:00 ~ 17:35 (GMT +8hours)	No	Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD				
					α	β	W	ALPHA5	ALPHA5 Smart	Motor	α	β	W	ALPHA5	ALPHA5 Smart	Motor
3a	Beijing Stone Automation Co., Ltd.	Floor 22, Kemao Canter Building, No.18, Xongguanchun Street, Haidian District, Beijing, China (P.C.100190) • Phone : +86-10-6256-1166, 8125 • Fax : +86-10-6264-1552	09:00 ~ 17:30 (GMT +8hours)	No	Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD				
					α	β	W	ALPHA5	ALPHA5 Smart	Motor	α	β	W	ALPHA5	ALPHA5 Smart	Motor
3b	Star Automation Equipment(Shenzhen) Co., Ltd.	Room916, Yin Long Zhan Ye Building, Shen Nan Rd, Che Gong Miao, FuTian District, Shenzhen City, GuangDong Province, P.R.China (P.C.518040) • Phone : +86-755-8347-9580 • Fax : +86-755-8347-9509	08:30 ~ 17:30 (GMT +8hours)	No	Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD				
					α	β	W	ALPHA5	ALPHA5 Smart	Motor	α	β	W	ALPHA5	ALPHA5 Smart	Motor
3c	Ruijiang Engineering Equipment Co.,Ltd.	No.401, Royal Villa Mingdi International Hotel, Jianhe Road No.668, Shanghai City, P.R.C. • Phone : +86-21-6321-7500 • Fax : +86-21-6321-8655	08:30 ~ 17:00 (GMT +8hours)	No	Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD				
					α	β	W	ALPHA5	ALPHA5 Smart	Motor	α	β	W	ALPHA5	ALPHA5 Smart	Motor
3d	Polytrade (Shanghai) Co., Ltd.	Rm.806,Enterprise Plaza, No.228 Mei Yuan Road, Shanghai, China (P.C. : 200070) • Phone : +86-21-6381-6236 • Fax : +86-21-6381-6760	09:00 ~ 18:00 (GMT +8hours)	Yes	Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD				
					α	β	W	ALPHA5	ALPHA5 Smart	Motor	α	β	W	ALPHA5	ALPHA5 Smart	Motor
3e	Shanghai Stone Trading Co.,Ltd.	Room 505, No.1, 600 Nong, Tianshan Road, Changning District, Shanghai, China • Phone : +86-21-6113-6333 • Fax : +86-21-6113-6555	09:00 ~ 16:30 (GMT +8hours)	No	Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD				
					α	β	W	ALPHA5	ALPHA5 Smart	Motor	α	β	W	ALPHA5	ALPHA5 Smart	Motor
3f	Wuxi Xinqiyuan Technology Co.,Ltd.	No.400, Wuxi (National) Industrial Design Park, Honggiao Road, Liyuan Economic Developing Zoon, Wuxi, Jiangsu, China • Phone : +86-510-8513-5390 • Fax : +86-510-8513-5391	08:30 ~ 17:00 (GMT +8hours)	Yes	Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD				
					α	β	W	ALPHA5	ALPHA5 Smart	Motor	α	β	W	ALPHA5	ALPHA5 Smart	Motor
3g	Shenzhen Guofang Science Technology Co.,Ltd.	6th floor, building 3, Yuehua Industrial Zone, Shangmeilin, Futian, Shenzhen, China • Phone : +86-755-8312-6171 • Fax : +86-755-8312-6175	08:30 ~ 17:30 (GMT +8hours)	No	Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD				
					α	β	W	ALPHA5	ALPHA5 Smart	Motor	α	β	W	ALPHA5	ALPHA5 Smart	Motor
3h	Shanghai Hui Chuang Industrial Co.,Ltd.	No.102, Guilin Science Park No.5 Buliding, Guiping Road No.333, Xuhui District, Shanghai City, P.R.C. • Phone : +86-21-6495-9251 • Fax : +86-21-2301-0459	08:30 ~ 12:00 13:00 ~ 17:30 (GMT +8hours)	No	Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD				
					α	β	W	ALPHA5	ALPHA5 Smart	Motor	α	β	W	ALPHA5	ALPHA5 Smart	Motor
3i	Hangzhou Sun Electric Co.,Ltd.	No.B406, Science Buliding, East Software Park, Wensan Road No.90, Hangzhou City, Zhejiang Province, P.R.C. • Phone : +86-571-8195-1299 • Fax : +86-571-8195-1211	08:30 ~ 17:30 (GMT +8hours)	No	Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD				
					α	β	W	ALPHA5	ALPHA5 Smart	Motor	α	β	W	ALPHA5	ALPHA5 Smart	Motor
3j	SHANGHAI LONGSTANDING ELECTROMECHANICAL CONTROL EQUIPMENT CO.,LTD.	4F, Buliding 11, Suide Road No.2 Nong, Shanghai City, P.R.C. • Phone : +86-21-5108-8777 • Fax : +86-21-5108-7802	08:30 ~ 12:00 13:00 ~ 17:30 (GMT +8hours)	Yes	Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD				
					α	β	W	ALPHA5	ALPHA5 Smart	Motor	α	β	W	ALPHA5	ALPHA5 Smart	Motor
3k	Zibo HuiKe Mechanical & Electrical Equipment Co.,Ltd.	No.3-06, The Area in Mechanical and Electrical Hardware City, Zhangdian District, Zibo City, Shandong Province, P.R.C. • Phone : +86-533-285-7971 (Hot Line : +86-400-600-3499) • Fax : +86-533-285-7972	08:40 ~ 11:30 13:30 ~ 17:30 (GMT +8hours)	No	Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD				
					α	β	W	ALPHA5	ALPHA5 Smart	Motor	α	β	W	ALPHA5	ALPHA5 Smart	Motor
3-1	Shanghai Angdian Industry Co., Ltd. Motor Reparative Factory	Make69, No.2031, Jiangchuan Road, Minhang District, Shanghai, China (P.C.201111) • Web : www.sh-angdian.com • Phone : +86-21-6430-1105 • Fax : +86-21-5475-8621	08:00 ~ 16:30 (GMT +8hours)	Yes	Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD				
					α	β	W	ALPHA5	ALPHA5 Smart	Motor	α	β	W	ALPHA5	ALPHA5 Smart	Motor

Contact your local Fuji Electric sales affiliate to request after-sales service (including spare parts for power distribution/control equipment).

Southeast Asia & Oceania



- ◆ Fuji FA Service Centers
- Contracted Service Companies
- Sub-contracted Companies
- ▲ Commission Service Companies

INV ≤ 22kW General Purpose Inverter, below 22kW		INV ≥ 30kW General Purpose Inverter, above 30kW		Medium Voltage Medium Voltage Inverter	
Vector Inv	Vector Inverter	Machine Tool Inv	Machine Tool Inverter	PLC PLC	POD POD
α Servo α	β Servo β	W Servo W	ALPHA5 ALPHA5	ALPHA5 Smart ALPHA5 Smart	Motor Motor

Mark	Name	Address, Phone etc.	Business Hours	English	Applicable Products											
					Minor trouble			Major trouble								
					INV ≤ 22kW	INV ≥ 30kW	Medium Voltage	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage						
2	South East & Oceania Service Centre	151 Lorong Chuan, #03-01/01A New Tech Park lobby A, Singapore 556741 · Phone : +65-6533-0010 · Fax : +65-6533-0021	08:45 ~ 17:30 (GTM +8hours)	Yes	Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD				
					α	β	W	ALPHA5	ALPHA5 Smart	Motor	α	β	W	ALPHA5	ALPHA5 Smart	Motor
2-1	Fuji Electric India Private Limited	503, A-wing, Dynasty Business Park, Andheri-Kurla Road And-heri (East), Mumbai-400 059, India · Web : www.fujielectric.co.in · Phone : +91-22-4010-4870	08:45 ~ 17:30 (GTM +5.5hours)	Yes	Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD				
					α	β	W	ALPHA5	ALPHA5 Smart	Motor	α	β	W	ALPHA5	ALPHA5 Smart	Motor
2A	Fuji Technical Centre (S'pore) Pte Ltd.	48 Toh Guan Road East #09-110, Enterprise Hub Singapore 608586 · Phone : +65-6515-5970, 5971 · Fax : +65-6515-5155	08:30 ~ 18:00 (GTM +8hours)	Yes	Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD				
					α	β	W	ALPHA5	ALPHA5 Smart	Motor	α	β	W	ALPHA5	ALPHA5 Smart	Motor
2a	Fuji Technical Centre (Thailand) Co., Ltd.	8 Soi Lasalle 77, Kwaeng Bangna, Khet Bangna, Bangkok 10260, Thailand · Phone : +66-2393-8904 ~ 6 · Fax : +66-2393-8909	08:30 ~ 17:30 (GTM +7hours)	Yes	Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD				
					α	β	W	ALPHA5	ALPHA5 Smart	Motor	α	β	W	ALPHA5	ALPHA5 Smart	Motor
2b	PT. Unitama Sentosa Gemilang	Jl. R. E. Martadinata Kompleks Permata Ancol Blok N -32 Jakarta Utara Indonesia · Web : www.unitama.co.id · Phone : +62-21-6451132 / 34 / 35 · Fax : +62-21-6451130	08:30 ~ 17:30 (GTM +7hours)	Yes	Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD				
					α	β	W	ALPHA5	ALPHA5 Smart	Motor	α	β	W	ALPHA5	ALPHA5 Smart	Motor
2B	CSE-UNISERVE PTY. LIMITED	10 Columbia Way Baulkham Hills NSW 2153 Australia · Web : www.cse-uniserve.com.au · Phone : +61-2-8853-4200 · Fax : +61-2-8853-4281	08:30 ~ 17:00 (GTM +10hours)	Yes	Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD				
					α	β	W	ALPHA5	ALPHA5 Smart	Motor	α	β	W	ALPHA5	ALPHA5 Smart	Motor
2c	CSE-Uniserve NZ Limited	Unit F, 55 Druces Road Manukau Clity, New Zealand · Web : www.cse-waf.co.nz · Phone : +64-9-271-3810 · Fax : +64-9-262-3292	08:30 ~ 17:00 (GTM +12hours)	Yes	Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD				
					α	β	W	ALPHA5	ALPHA5 Smart	Motor	α	β	W	ALPHA5	ALPHA5 Smart	Motor
2C	DUBAI ENGINEERING	P.O.Box:46818, Sharjah, U.A.E. · Web : www.dubai-engineering.com · Phone : +971-6-5551141 · Fax : +971-6-5551181	08:00 ~ 12:30 13:30 ~ 18:00 (GTM +4hours)	Yes	Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD				
					α	β	W	ALPHA5	ALPHA5 Smart	Motor	α	β	W	ALPHA5	ALPHA5 Smart	Motor
2a	S.T. Control Co., Ltd.	84/1, Soi Ramkhamhaeng 9 (Thararom), Ramkhamhaeng Road, Wangthonglang, Bangkok 10310. · Web : www.stcontrol.com · Phone : +66-2-319-2559 · Fax : +66-2-319-1800	08:00 ~ 17:00 (GTM +7hours)	Yes	Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD				
					α	β	W	ALPHA5	ALPHA5 Smart	Motor	α	β	W	ALPHA5	ALPHA5 Smart	Motor
2b	EITA Electric Sdn. Bhd.	Lot 4, Block A, Jalan SS137, Subang Jaya Industrial Estate, 47500 Subang Jaya, Selangor Darul Ehsan, Malaysia. · Web : www.eita.com.my · Phone : +60-3-5637 8088 · Fax : +60-3-5635 4719	08:30 ~ 18:00 (GTM +8hours)	Yes	Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD				
					α	β	W	ALPHA5	ALPHA5 Smart	Motor	α	β	W	ALPHA5	ALPHA5 Smart	Motor
2c	PT. DUTA FUJI ELECTRIC	JL. HAYAM WURUK 4F-H, JAKARTA 10120 · Web : www.dutafuji.com · Phone : +62-21-384-0834 · Fax : +62-21-352-1208,352-1207	08:00 ~ 17:00 (GTM +7hours)	Yes	Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD				
					α	β	W	ALPHA5	ALPHA5 Smart	Motor	α	β	W	ALPHA5	ALPHA5 Smart	Motor
2d	Hao Phuong Co.,Ltd.	7/31 Song Than Business Center, Di An Ward, Binh Duong Province, Vietnam · Web : www.haophuong.com · Phone : +84-650-3737619 · Fax : +84-650-3737620	08:00 ~ 12:00 13:30 ~ 17:00 (Sat.:08:00~12:00) (GMT +7hours)	Yes	Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD				
					α	β	W	ALPHA5	ALPHA5 Smart	Motor	α	β	W	ALPHA5	ALPHA5 Smart	Motor
2e	ELECTRONIC CONTROL IND. SERVICES LLC	Industrial No.15, Street No.105, W.H No.10, P.O.BOX 69408, SHARJAH (U.A.E) · Web : www.ecisuae.com · Phone : +971-6535-1971 · Fax : +971-6535-1972	08:00 ~ 18:00 (GMT +4hours)	Yes	Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD				
					α	β	W	ALPHA5	ALPHA5 Smart	Motor	α	β	W	ALPHA5	ALPHA5 Smart	Motor

Contact your local Fuji Electric sales affiliate to request after-sales service (including spare parts for power distribution/control equipment).

Europe, Middle East & Africa Area



INV ≤ 22kW General Purpose Inverter, below 22kW		INV ≥ 30kW General Purpose Inverter, above 30kW		Medium Voltage Medium Voltage Inverter	
Vector Inv		Machine Tool Inv		PLC	POD
α Servo α		β Servo β		W Servo W	ALPHA5 ALPHA5 Smart
				ALPHA5 Smart	Motor

Mark	Name	Address, Phone etc.	Business Hours	English	Applicable Products							
					Minor trouble			Major trouble				
4	EU Service Center	Goethering 58, 63067 Offenbach/Main Germany • WEB : www.fujielectric.de • Phone : +49-69-66-90-29-0 • Fax : +49-69-66-90-29-58	09:00 ~ 18:00 (GMT +1hour)	Yes	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage		
					Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD
					α	β	W	ALPHA5 Smart	Motor	α	β	W
4-1	Fuji Electric Europe GmbH, Spain Branch	Ronda Can Fatjó 5, Edifici D, Local B Parc Tecnològic del Vallès 08290 Cerdanyola, Barcelona, Spain • Phone : +34-93-5824-333 • Fax : +34-93-5824-344	09:00 ~ 18:00 (GMT +1hour)	Yes	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage		
					Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD
					α	β	W	ALPHA5 Smart	Motor	α	β	W
4-2	Fuji Electric Europe GmbH, Switzerland Branch	Park Altenrhein 9423 Altenrhein, Switzerland • Web : www.fujielectric.ch • Phone : +41-71-858-2949 • Fax : +41-71-858-2940	08:00 ~ 17:00 (GMT +1hour)	Yes	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage		
					Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD
					α	β	W	ALPHA5 Smart	Motor	α	β	W
4A	KEMPSTON CONTROLS	Shirley Road Rushden, Northamptonshire NN10 6BZ, U.K. • Web : www.kempstoncontrols.co.uk • Phone : +44-1933-411411 • Fax : +44-1933-410211	09:00 ~ 18:00 (GMT+1hour)	Yes	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage		
					Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD
					α	β	W	ALPHA5 Smart	Motor	α	β	W
4B	C.N.C. SERVICES	37, rue de Villeparisis-BP33 (République)-77290 Mirty-Mory, France • Web : www.cncservices.fr • Phone : +33-1-64-67-93-72 • Fax : +33-1-64-27-66-54	09:00 ~ 18:00 (GMT +1hour)	Yes	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage		
					Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD
					α	β	W	ALPHA5 Smart	Motor	α	β	W
4C	S.A.T. ENGINEERING S.R.L.	Via Palermo, 22 20090 Assago(MI), Italy • Web : www.satengineering.com • Phone : +39-2-4571-3516 • Fax : +39-2-4571-4435	09:00 ~ 18:00 (GMT +1hour)	Yes	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage		
					Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD
					α	β	W	ALPHA5 Smart	Motor	α	β	W
4D	GTS Gesellschaft für Technischen Service mbH	Arnold-Sommerfeld-Ring 10; 52499 Baesweiler, Deutschland • Web : www.GTSmbH.com • Phone : +49-2401-60-353-0 • Fax : +49-2401-60-353-13	24hours	Yes	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage		
					Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD
					α	β	W	ALPHA5 Smart	Motor	α	β	W
4a	SERVICIO INDUSTRIAL DE ELECTRONICA S.A.	Poligon Industrial Monguit C/Centelles S/N - Nave A y B 08480 L'Ametlla del Vallès (Barcelona) • Web : www.side.es • Phone : +34-902-88-45-61 • Fax : +34-902-88-45-59	—	Yes	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage		
					Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD
					α	β	W	ALPHA5 Smart	Motor	α	β	W
4b	Kontek Otomasyon A.S.	Beyit Sok. No.27 34775 Yukari Dudullu/ Umraniye/Istanbul Turkey • Web : www.kontekotomasyon.com.tr • Phone : +90-216-446-4700 • Fax : +90-216-466-2120	08:00 ~ 17:00 (GMT +2hour)	Yes	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage		
					Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD
					α	β	W	ALPHA5 Smart	Motor	α	β	W
4c	INDUSTRIAL ELECTRIC SYSTEMS	Leninskij prospect 121/1, korp 2, 119571 Moscow, Russia • Web : www.indels.ru • Phone : +7-495-781-0098	08:00 ~ 17:00 (GMT +4hour)	Yes	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage		
					Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD
					α	β	W	ALPHA5 Smart	Motor	α	β	W
4d	R.eB Impianti s.r.l	Contrada Molino, 17/N 46042 Castle Goffredo (MN) Italy • Phone : +39-376-171-5753	—	Yes	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage		
					Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD
					α	β	W	ALPHA5 Smart	Motor	α	β	W
4-1	BEN Buchele Elektromotorenwerke GmbH	Poppenreuther Straße 49a, D-90419 Nürnberg, Germany • Web : www.benbuechele.de • Phone : +49-911-37-48-0 • Fax : +49-911-37-48-138	—	Yes	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage		
					Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD
					α	β	W	ALPHA5 Smart	Motor	α	β	W
4-2	MOTOARE ELECTRICE SRL	Craiova-200633, Popoveni 7, Romania • Phone/Fax : +40-251-425-343	—	Yes	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage		
					Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD
					α	β	W	ALPHA5 Smart	Motor	α	β	W

Contact your local Fuji Electric sales affiliate to request after-sales service (including spare parts for power distribution/control equipment).

USA, Canada, Central & South America Area



Mark	Name	Address, Phone etc.	Business Hours	English	Applicable Products					
					Minor trouble			Major trouble		
5	USA SERVICE CENTER	47520 Westinghouse Drive, Fremont, CA 94539, USA • Phone : +1-510-440-1060 • Fax : +1-510-440-1063	09:00 ~ 17:00 (GMT -8hours)	Yes	INV ≤22kW	INV ≥30kW	Medium Voltage	INV ≤22kW	INV ≥30kW	Medium Voltage
					Vector Inv	Machine Tool Inv	PLC POD	Vector Inv	Machine Tool Inv	PLC POD
					α β	W ALPHAS	ALPHAS Smart Motor	α β	W ALPHAS	ALPHAS Smart Motor
5-1	CHICAGO SERVICE STATION	1827 Walden Office Square, Suite 300 Schaumburg, IL 60173, USA • Phone : +1-847-397-8040 • Fax : +1-847-925-9632	09:00 ~ 17:00 (GMT -6hours)	Yes	INV ≤22kW	INV ≥30kW	Medium Voltage	INV ≤22kW	INV ≥30kW	Medium Voltage
					Vector Inv	Machine Tool Inv	PLC POD	Vector Inv	Machine Tool Inv	PLC POD
					α β	W ALPHAS	ALPHAS Smart Motor	α β	W ALPHAS	ALPHAS Smart Motor
5-2	EAST COAST SATELLITE SERVICE STATION	816-D Post St., Greensboro, NC 27405, USA • Phone : +1-336-275-3113	08:00 ~ 17:00 (GMT -5hours)	Yes	INV ≤22kW	INV ≥30kW	Medium Voltage	INV ≤22kW	INV ≥30kW	Medium Voltage
					Vector Inv	Machine Tool Inv	PLC POD	Vector Inv	Machine Tool Inv	PLC POD
					α β	W ALPHAS	ALPHAS Smart Motor	α β	W ALPHAS	ALPHAS Smart Motor
5A	OESS CORPORATION NEW JERSEY (Head Office)	One Bridge Plaza N, Suite 180, Fort Lee, NJ 07024, USA • Phone : +1-201-585-8111 • Fax : +1-201-585-8777	08:00 ~ 17:00 (GMT -5hours)	Yes	INV ≤22kW	INV ≥30kW	Medium Voltage	INV ≤22kW	INV ≥30kW	Medium Voltage
					Vector Inv	Machine Tool Inv	PLC POD	Vector Inv	Machine Tool Inv	PLC POD
					α β	W ALPHAS	ALPHAS Smart Motor	α β	W ALPHAS	ALPHAS Smart Motor
5B	OESS CORPORATION LOS ANGELES	5550 Cerritos Ave. Suite H, Cypress, CA 90630, USA • Phone : +1-714-220-1878 • Fax : +1-714-220-1870	08:00 ~ 17:00 (GMT -8hours)	Yes	INV ≤22kW	INV ≥30kW	Medium Voltage	INV ≤22kW	INV ≥30kW	Medium Voltage
					Vector Inv	Machine Tool Inv	PLC POD	Vector Inv	Machine Tool Inv	PLC POD
					α β	W ALPHAS	ALPHAS Smart Motor	α β	W ALPHAS	ALPHAS Smart Motor
5C	INDUSTRIAL ELECTRONIC SOLUTIONS	816-D Post St., Greensboro, NC 27405, USA • Web : www.iesgso.com • Phone : +1-336-275-3426 • Fax : +1-336-378-1183	24hours	Yes	INV ≤22kW	INV ≥30kW	Medium Voltage	INV ≤22kW	INV ≥30kW	Medium Voltage
					Vector Inv	Machine Tool Inv	PLC POD	Vector Inv	Machine Tool Inv	PLC POD
					α β	W ALPHAS	ALPHAS Smart Motor	α β	W ALPHAS	ALPHAS Smart Motor
5D	HI-TEK MARINE	Via Simon Bolivar, Edificio Mil, No 225, Panama Republic of Panama • Phone : +1-507-229-2488 • Fax : +1-507-261-5780	24hours	Yes	INV ≤22kW	INV ≥30kW	Medium Voltage	INV ≤22kW	INV ≥30kW	Medium Voltage
					Vector Inv	Machine Tool Inv	PLC POD	Vector Inv	Machine Tool Inv	PLC POD
					α β	W ALPHAS	ALPHAS Smart Motor	α β	W ALPHAS	ALPHAS Smart Motor

INV ≤ 22kW General Purpose Inverter, below 22kW		INV ≥ 30kW General Purpose Inverter, above 30kW		Medium Voltage Medium Voltage Inverter	
Vector Inv	Vector Inverter	Machine Tool Inv	Machine Tool Inverter	PLC PLC	POD POD
α Servo α	β Servo β	W Servo W	ALPHA5 ALPHA5	ALPHA5 Smart ALPHA5 Smart	Motor Motor

Mark	Name	Address, Phone etc.	Business Hours	English	Applicable Products							
					Minor trouble			Major trouble				
5a	MALLOY ELECTRIC	809 West Russell St., Sioux Falls, SD 57104, USA • Phone : +1-605-336-3693 • Fax : +1-605-336-1545	24hours	Yes	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage		
					Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD
					α	β	W	ALPHA5	ALPHA5 Smart	Motor	α	β
5b	KELLER ELECTRICAL INDUSTRIES, INC.	1881 East University Drive, Phoenix, AZ 85034 • Web : www.kellerelectrical.com • Phone : +1-602-437-3015 • Fax : +1-602-437-8163	24hours	Yes	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage		
					Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD
					α	β	W	ALPHA5	ALPHA5 Smart	Motor	α	β
5c	CONTROL CONCEPTS, INC.	8748 Clay Road, Suite 320, Houston, TX 77080 • Web : www.cci-houston.com • Phone : +1-713-460-2516 • Fax : +1-713-939-7445	24hours	Yes	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage		
					Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD
					α	β	W	ALPHA5	ALPHA5 Smart	Motor	α	β
5d	SPECIALIZED ELECTRONIC SERVICES, INC.	10890 Alder Circle, Dallas, TX 75238 • Web : www.specializedelectronics.com • Phone : +1-972-460-9210 • Fax : +1-972-690-9200	24hours	Yes	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage		
					Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD
					α	β	W	ALPHA5	ALPHA5 Smart	Motor	α	β
5e	MSA CONTROL INDUSTRIA ELECTRICA LTDA.	Rua Iapo 334, - Casa Verde - Sao Paulo - SP - Brasil - CEP 02512-020 • Web : www.msacontrol.com.br • Phone : +55-11-3961-1171 • Fax : +55-11-3961-1171	24hours	Yes	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage		
					Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD
					α	β	W	ALPHA5	ALPHA5 Smart	Motor	α	β
5f	DYKMAN ELECTRICAL, INC.	2323 Federal Way, Boise, ID 83705 • Web : www.dykman.com • Phone : +1-208-336-3988 • Fax : +1-208-336-1506	24hours	Yes	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage		
					Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD
					α	β	W	ALPHA5	ALPHA5 Smart	Motor	α	β
5g	ELECTRONIC DRIVES AND CONTROLS INC.	17 Eastmans Road, Parsippany NJ, 07054 • Web : www.electronicdrives.com • Phone : +1-973-428-0500 • Fax : +1-973-428-0135	24hours	Yes	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage		
					Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD
					α	β	W	ALPHA5	ALPHA5 Smart	Motor	α	β
5h	LUCAPEL COMERCIAL LTDA.	Rua Issaco Coppini, 43 - Bairro Oswaldo Cruz - Sao Caetano do Sul - SP - Brasil - CEP : 09571-110 • Web : www.lucapel.com.br • Phone : +55-11-4232-3422 • Fax : +55-11-4232-3424	24hours	Yes	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage		
					Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD
					α	β	W	ALPHA5	ALPHA5 Smart	Motor	α	β
5-1	ANDO ELECTRIC MOTOR INC.	1999 W. Anaheim St. Long Beach, CA 90813, USA • Phone : +1-562-437-0445	08:00 ~ 16:00 (GMT -8hours)	Yes	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage		
					Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD
					α	β	W	ALPHA5	ALPHA5 Smart	Motor	α	β
5-2	INDUSTEQ, INC.	12807 Trinity Drive, Stafford, TX 77477, USA • Web : www.industeq.com • Phone : +1-281-565-8600 • Fax : +1-281-565-8601	08:30 ~ 17:00 (GMT -6hours)	Yes	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage		
					Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD
					α	β	W	ALPHA5	ALPHA5 Smart	Motor	α	β
5-3	CASCADE MACHINERY & ELECTRIC, INC.	4600 E.Marginal Way South, Seattle WA 98134, USA • Web : www.cascade-machinery.com • Phone : +1-206-762-0500 • Fax : +1-206-767-5122	08:00 ~ 16:30 (GMT -8hours)	Yes	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage		
					Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD
					α	β	W	ALPHA5	ALPHA5 Smart	Motor	α	β
5-4	ELECTRIC MOTOR AND CONTRACTING CO., INC.	3703 Cook Blvd. Chesapeake, VA 23323, USA • Web : www.emc-co.com • Phone : +1-757-487-2121 • Fax : +1-757-487-5983	24hours (GMT -5hours)	Yes	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage		
					Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD
					α	β	W	ALPHA5	ALPHA5 Smart	Motor	α	β
5-5	WESTSIDE ELECTRIC INC.	4031 Faye Rd. Jacksonville, FL 32226, USA • Web : www.westside-electric.com • Phone : +1-904-757-1126 • Fax : +1-904-757-6068	08:00 ~ 16:30 (GMT -5hours)	Yes	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage		
					Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD
					α	β	W	ALPHA5	ALPHA5 Smart	Motor	α	β
5-6	TALLERES INDUSTRIALES INTERNATIONAL	Calle 15, Avenida Central, Colon, Republic of Panama • Web : www.talleresindustriales.com • Phone : +1-507-445-1044 • Fax : +1-507-445-1104	08:00 ~ 17:00 (GMT -5hours)	Yes	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage		
					Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD
					α	β	W	ALPHA5	ALPHA5 Smart	Motor	α	β
5-7	LANCE CRANE REPAIR SERVICE	1002 Valley Avenue NW, Puyallup, WA 98371, USA • Phone : +1-253-848-9473 • Fax : +1-253-848-1790	24hours	Yes	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage	INV ≤ 22kW	INV ≥ 30kW	Medium Voltage		
					Vector Inv	Machine Tool Inv	PLC	POD	Vector Inv	Machine Tool Inv	PLC	POD
					α	β	W	ALPHA5	ALPHA5 Smart	Motor	α	β

Contact your local Fuji Electric sales affiliate to request after-sales service (including spare parts for power distribution/control equipment).



NOTES

When running general-purpose motors

• Driving a 400V general-purpose motor

When driving a 400V general-purpose motor with an inverter using extremely long cables, damage to the insulation of the motor may occur. Use an output circuit filter (OFL) if necessary after checking with the motor manufacturer. Fuji's motors do not require the use of output circuit filters because of their reinforced insulation.

• Torque characteristics and temperature rise

When the inverter is used to run a general-purpose motor, the temperature of the motor becomes higher than when it is operated using a commercial power supply. In the low-speed range, the cooling effect will be weakened, so decrease the output torque of the motor. If constant torque is required in the low-speed range, use a Fuji inverter motor or a motor equipped with an externally powered ventilating fan.

• Vibration

When the motor is mounted to a machine, resonance may be caused by the natural frequencies, including that of the machine. Operation of a 2-pole motor at 60Hz or more may cause abnormal vibration.

* Study use of tier coupling or dampening rubber.

* It is also recommended to use the inverter jump frequency control to avoid resonance points.

• Noise

When an inverter is used with a general-purpose motor, the motor noise level is higher than that with a commercial power supply. To reduce noise, raise carrier frequency of the inverter. High-speed operation at 60Hz or more can also result in more noise.

When running special motors

• Explosion-proof motors

When driving an explosion-proof motor with an inverter, use a combination of a motor and an inverter that has been approved in advance.

• Brake motors

For motors equipped with parallel-connected brakes, their braking power must be supplied from the primary circuit (commercial power supply). If the brake power is connected to the inverter power output circuit (secondary circuit) by mistake, problems may occur.

Do not use inverters for driving motors equipped with series-connected brakes.

• Geared motors

If the power transmission mechanism uses an oil-lubricated gearbox or speed changer/reducer, then continuous motor operation at low speed may cause poor lubrication. Avoid such operation.

• Single-phase motors

Single-phase motors are not suitable for inverter-driven variable speed operation. Use three-phase motors.

Environmental conditions

• Installation location

Use the inverter in a location with an ambient temperature range of -10 to 50°C.

The inverter and braking resistor surfaces become hot under certain operating conditions. Install the inverter on nonflammable material such as metal.

Ensure that the installation location meets the environmental conditions specified in "Environment" in inverter specifications.

Combination with peripheral devices

• Installing a molded case circuit breaker (MCCB)

Install a recommended molded case circuit breaker (MCCB) or an earth leakage circuit breaker (ELCB) in the primary circuit of each inverter to protect the wiring. Ensure that the circuit breaker capacity is equivalent to or lower than the recommended capacity.

• Installing a magnetic contactor (MC) in the output (secondary) circuit

If a magnetic contactor (MC) is mounted in the inverter's secondary circuit for switching the motor to commercial power or for any other purpose, ensure that both the inverter and the motor are fully stopped before you turn the MC on or off. Remove the surge killer integrated with the MC.

• Installing a magnetic contactor (MC) in the input (primary) circuit

Do not turn the magnetic contactor (MC) in the primary circuit on or off more than once an hour as an inverter fault may result. If frequent starts or stops are required during motor operation, use FWD/REV signals.

• Protecting the motor

The electronic thermal facility of the inverter can protect the general-purpose motor. The operation level and the motor type (general-purpose motor, inverter motor) should be set. For high-speed motors or water-cooled motors, set a small value for the thermal time constant to protect the motor.

If you connect the motor thermal relay to the motor with a long cable, a high-frequency current may flow into the wiring stray capacitance. This may cause the relay to trip at a current lower than the set value for the thermal relay. If this happens, lower the carrier frequency or use the output circuit filter (OFL).

• Discontinuance of power-factor correcting capacitor

Do not mount power factor correcting capacitors in the inverter (primary) circuit. (Use the DC REACTOR to improve the inverter power factor.) Do not use power factor correcting capacitors in the inverter output circuit (secondary). An overcurrent trip will occur, disabling motor operation.

• Discontinuance of surge killer

Do not mount surge killers in the inverter output (secondary) circuit.

• Reducing noise

Use of a filter and shielded wires are typical measures against noise to ensure that EMC Directives are met.

• Measures against surge currents

If an overvoltage trip occurs while the inverter is stopped or operated under a light load, it is assumed that the surge current is generated by open/close of the phase-advancing capacitor in the power system.

We recommend connecting a DC REACTOR to the inverter.

• Megger test

When checking the insulation resistance of the inverter, use a 500V megger and follow the instructions contained in the Instruction Manual.

Wiring

• Wiring distance of control circuit

When performing remote operation, use the twisted shield wire and limit the distance between the inverter and the control box to 20m.

• Wiring length between inverter and motor

If long wiring is used between the inverter and the motor, the inverter will overheat or trip as a result of overcurrent (high-frequency current flowing into the stray capacitance) in the wires connected to the phases. Ensure that the wiring is shorter than 50m. If this length must be exceeded, lower the carrier frequency or mount an output circuit filter (OFL).

When wiring is longer than 50m, and sensorless vector control or vector control with speed sensor is selected, execute off-line tuning.

• Wiring size

Select cables with a sufficient capacity by referring to the current value or recommended wire size.

• Wiring type

Do not use multicore cables that are normally used for connecting several inverters and motors.

• Grounding

Securely ground the inverter using the grounding terminal.

Selecting inverter capacity

• Driving general-purpose motor

Select an inverter according to the applicable motor ratings listed in the standard specifications table for the inverter. When high starting torque is required or quick acceleration or deceleration is required, select an inverter with a capacity one size greater than the standard.

• Driving special motors

Select an inverter that meets the following condition: Inverter rated current > Motor rated current.

Transportation and storage

When transporting or storing inverters, follow the procedures and select locations that meet the environmental conditions that agree with the inverter specifications.