HITACHI

ADJUSTABLE FREQUENCY CONTROLS

J300 series

SENSORLESS VECTOR CONTROL

Dual Rating

J300
IGBT Inverter

60.0

MGi
Technologies Inc.
mgitech.com

HITACHI

J300 series

- **Sensor/Sensorless Vector Control**
- **Dual current rated for constant and variable torque**
- **Auto tuning to any 3 phase induction motor**
- **150% torque minimum at 1Hz open loop**
- **Full torque at zero speed closed loop**

Options include
- **PID**
- **Encoder feedback**
- **Serial communication with over 30 PLC & Bus protocol including software**
- **Relay output**
- **Dynamic braking**
- **Analog input/output**
- **Digital input/output**

MGi Technologies Inc. mgitech.com

Standard Specifications

Item			200-220V/200-230V 3 Phase								
Model name (type)	J300-		055LFU	075LFU	110LFU	150LFU	220LFU	300LFU	370LFU	450LFU	550LFU
Enclosure			IP20 Excluding cooling fan				IP00				
Applicable motor rating (4P, max. HP)*1	Constant torque		5.5/7.5	7.5/10	11/15	15/20	22/30	30/40	37/50	45/60	55/75
	Variable torque*2		7.5/10	11/15	15/20	22/30	30/40	37/50	45/60	55/75	75/100
Continuous output (kVA)	Constant torque	200V	8.3	11	16	22	33	42	50	63	76
		230V	10	13	18	25	38	48	58	73	88
	Variable torque	200V	9	12	18	25	37	47	56	71	86
		230V	11	14	21	29	43	54	65	82	99
Rated AC input power supply			3-phase (3 wire) 575V ±10%, 60Hz ±5%								
Rated output voltage*3			3-phase 575V (corresponding to input voltage)								
Rated output current (A)	Constant torque		24	32	46	64	95	121	145	182	220
	Variable torque (US version)		27	36	52	72	107	136	163	205	248
Carrier frequency (kHz)	Constant torque		16	16	16	16	12	10	10	6	6
	Variable torque (US version)		16	16	16	16	12	10	10	6	6
Control system			Sensorless flux vector PWM								
Output frequency range*4			0.1~400Hz								
Frequency accuracy			With reference to maximum frequency, ±0.01% in digital setting and ±0.1% in analog setting (25 ± 10°C)								
Frequency resolution			Digital setting: 0.01 Hz/60 Hz, analog setting: maximum frequency/1000								
Voltage/frequency characteristic			V/F optionally variable, V/F control (constant torque, reduced torque), sensorless vector control								
Overload current rating			150%, 1 minute (VC, SLV), 115%, 30 sec (VP1 to VP3)								
Accelerating/decelerating time			0.01 to 3,000 sec. (optionally settable in straight line or curve, and each acceleration and deceleration independently settable), second acceleration/deceleration rate settable								
Starting torque*5			150% or more (at 1 Hz)								
Average braking torque	Dynamic braking (short duration)*6		Approx. 20 to 10% at capacitor feedback (types 055/075LF incorporate Dynamic braking circuit, and other types (from 110LF onward) employ separate installation of braking unit.								
	DC braking		Operates at below minimum frequency at start or deceleration, or in response to external input signal (minimum frequency, operating frequency, time and brake force all adjustable)								
Input signal	Frequency setting	Digital operator	Setting by ▲ ▼								
		External signal	Variable resistor of 500Ω to 2kΩ, 2W, 0 to 5V, 0 to 10V DC <nominal>(input impedance 30 kΩ), 4 to 20mA <nominal>(input impedance 250Ω)								
	Forward/reverse run and stop	Digital operator	Run/stop (forward or reverse run selected by command)								
		External signal	Forward run/stop (1a contact)[reverse run specifiable at terminal assignment (1a/1b selectable)]								
	Intelligent input terminal		RV (reverse run command), FRS (free run stop command), CF1 to 3 (multistage speed setting), USP (unattended start protection setting), JG (jogging command), CH1 (2-stage acceleration/deceleration command), DB (external dynamic brake command), RS (reset input), STN (initial setting), CS (commercial source changeover), SFT (soft lock), AT (current input selection), SET (2nd setting selection), EXT (external trip), UP (remote control, acceleration), DOWN (remote control, deceleration)								
Output signal	Intelligent output terminal		FA1 (frequency arrival signal), RUN (running signal), OTQ (overtorque signal)								
	Frequency monitor		Analog meter (0 to 10V DC, 1 mA full scale) digital frequency signal, analog current monitor or analog torque monitor selectable by remote operator								
Alarm output contact			ON at inverter alarm (1C contact output)								
Other functions			AVR function, process inching, data batch setting, V/F characteristic changeover, curved acceleration/deceleration, upper and lower limiters, 8-stage speed, fine adjustment of start frequency, carrier frequency change (2 to 16 kHz), frequency jump, electronic thermal level adjustment, fuzzy acceleration/deceleration, auto tuning, gain and bias setting , retry function, trip history monitor (up to 3 trips storable in memory), etc.								
Protective function			Overcurrent, overvoltage, undervoltage, electronic thermal level adjustment, abnormal temperature, ground fault current at start*7, overload limit, overvoltage supply, braking resistor overload, etc.								
General specifications	Ambient temperature/humidity	Constant torque	-10 to 50°C (14 to 122°F)/20 to 90% RH (non-condensing)								
		Variable torque	-10 to 40°C (14 to 104°F)/20 to 90% RH (non-condensing)								
	Vibration		5.9m/s²(0.6G) 10~55Hz 2m/s²(0.2G) 10~55Hz								
	Installation site		Altitude 1,000m or lower, indoor (excessive corrosive gas and dust unallowable)								
	Coating color		Munsell 9.1Y7.4/0.6 semi-gloss, cooling fins in base color of aluminum								
Option			A variety of application PC boards (PID control communication, digital I/F relay output, high resolution, etc.), remote operator, copy unit, cable for each operator, braking resistor, power factor improvement reactor, noise filter for inverter, fixture for positioning fins outside of cubicle, etc.								
Approx. mass (kg/lbs)			7.5/10.5	7.5/16.5	13/29	13/29	21/46	37/82	37/82	51/113	51/113

Notes

*1 Applicable motors indicate Hitachi standard three-phase motors. When using other motors, the rated corrent of the motor (at 50 Hz) must not exceed the rated output current of inverter.

*2 Applicable motor rating at variable torque is valid with the condition that output current does not exceed the ratings at variable torque.

*3 A maximum output voltage drops in response to a fall in line voltage.

*4 For motor operation beyond 50/60 Hz, consult with the motor manufacturer.

*5 At the rated voltage when using a Hitachi standard 3-phase, 4-pole motor. (When selecting high starting torque flux vector control).

*6 Braking torque at capacitor feedback represents average deceleration torque when a motor alone has decelerated in the shortest time period (has stopped from operation at 50/60 Hz). It does not stand for continuous deceleration torque. Also, the average deceleration torque varies with motor loss. The torque value is reduced during operation beyond 50/60 Hz. Remember that no braking resistor is incorporated in the inverter. when a large regeneration torque is needed, therefore , the optional braking resistor should be used.

*7 An internal ground fault protection circuit is applied to prevent damage to the inverter and is not intended for safeguarding personnel. It is therefore recommended to install an external ground fault detection device on the input circuit.

MGi Technologies Inc. mgitech.com

Standard Specifications

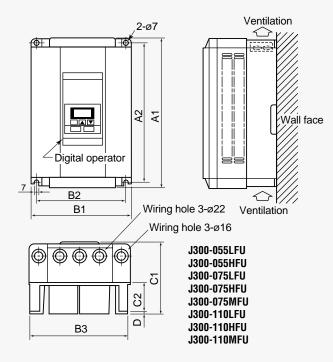| Item			380-415V/400-460V 3 Phase														
Model name (type)	J300-		055HFU	075HFU	110HFU	150HFU	220HFU	300HFU	370HFU	450HFU	550HFU	750HFU	900HFU	1100HFU	1320HFU	1600HFU	2200HFU
Enclosure			IP20 Excluding cooling fan IP00				IP00										
Applicable motor rating (4P, max. HP)*1	Constant torque		5.5/7.5	7.5/10	11/15	15/20	22/30	30/40	37/50	45/60	55/75	75/100	90/120	110/150	132/200	160/250	220/300
	Variable torque*2		7.5/10	11/15	15/20	22/30	30/40	37/50	45/60	55/75	75/100	90/120	110/150	132/200	160/250	220/300	260/350
Continuous output (kVA)	Constant torque	380V	8.6	10.5	15	21	32	38	49	59	72	89	103	137	158	207	250
		400V	9.0	11	16	22	33	40	52	62	76	94	108	144	166	218	263
		460V	10.4	12.7	18	25	38	46	60	72	88	108	124	166	191	251	303
	Variable torque	380V	9.6	11.8	17	24	36	43	55	66	82	103	118	158	199	250	286
		400V	10.1	12.5	18	25	37	45	58	70	86	108	118	166	209	263	301
		460V	11.6	14.3	21	29	43	52	67	80	99	124	143	191	241	303	347
Rated AC input power supply			3-phase (3 wire) 380 to 415/400 to 460V ±10%, 50/60Hz ±5%														
Rated output voltage*3			3-phase 380 to 460V (corresponding to input voltage)														
Rated output current (A)	Constant torque		13	16	23	32	48	58	75	90	110	135	156	208	240	315	380
	Variable torque		14.6	18	26	36	54	65	84	101	124	156	180	240	302	380	435
Carrier frequency (kHz)*4	Constant torque		16	16	16	16	12	10	10	6	6	3	3	3	2	2	2
	Variable torque		16	16	16	16	12	10	10	6	6	2	2	2	2	2	2
Control system			Sensorless flux vector PWM														
Output frequency range*5			0.1~400Hz														
Frequency accuracy			With reference to maximum frequency, ±0.01% in digital setting and ±0.1% in analog setting (25 ± 10°C)														
Frequency resolution			Digital setting: 0.01 Hz/60 Hz, analog setting: maximum frequency/1000														
Voltage/frequency characteristic			V/F optionally variable, V/F control (constant torque, reduced torque), sensorless vector control														
Overload current rating			150%, 1 minute (VC, SLV), 115%, 30 sec (VP1 to VP3)														
Accelerating/decelerating time			0.01 to 3,000 sec. (optionally settable in straight line or curve, and each acceleration and deceleration independently settable), second acceleration/deceleration rate settable														
Starting torque*6			150% or more (at 1 Hz)														
Average braking torque	Dynamic braking (short duration)*7	European version (055/075HF)	Approx. 60 to 50% (Types 055/075HF incorporate resistor for regenerative braking)														
		Other models	Approx. 20 to 10% at capacitor feedback (types 055/075HF incorporate regenerative braking circuit, and other types (from 110HF onward) employ separate installation of regenerative braking unit.)														
	DC braking		Operates at below minimum frequency at start or deceleration, or in response to external input signal (minimum frequency, operating frequency, time and brake force all adjustable)														
Input signal	Frequency setting	Digital operator	Setting by ▲ ▼														
		External signal	Variable resistor of 500Ω to 2kΩ, 2W, 0 to 5V, 0 to 10V DC <nominal>(input impedance 30 kΩ), 4 to 20mA <nominal>(input impedance 250Ω)														
	Forward/reverse run and stop	Digital operator	Run/stop (forward or reverse run selected by command)														
		External signal	Forward run/stop (1a contact)[reverse run specifiable at terminal assignment (1a/1b selectable)]														
	Intelligent input terminal		RV (reverse run command), FRS (free run stop command), CF1 to 3 (multistage speed setting), USP (unattended start protection setting), JG (jogging command), CH1 (2-stage acceleration/deceleration command), DB (external dynamic brake command), RS (reset input), STN (initial setting), CS (commercial source changeover), SFT (soft lock), AT (current input selection), SET (2nd setting selection), EXT (external trip), UP (remote control, acceleration), DOWN (remote control, deceleration)														
Output signal	Intelligent output terminal		FA1 (frequency arrival signal), RUN (running signal), OTQ (overtorque signal)														
	Frequency monitor		Analog meter (0 to 10V DC, 1 mA full scale) digital frequency signal, analog current monitor or analog torque monitor selectable by remote operator														
Alarm output contact			ON at inverter alarm (1C contact output)														
Other functions			AVR function, process inching, data batch setting, V/F characteristic changeover, curved acceleration/deceleration, upper and lower limiters, 8-stage speed, fine adjustment of start frequency, carrier frequency change (2 to 16 kHz), frequency jump, electronic thermal level adjustment, fuzzy acceleration/deceleration, auto tuning, gain and bias setting, retry function, trip history monitor (up to 3 trips storable in memory), etc.														
Protective function			Overcurrent, overvoltage, undervoltage, electronic thermal level adjustment, abnormal temperature, ground fault current at start*8, overload limit, overvoltage supply, braking resistor overload, etc.														
General specifications	Ambient temperature/humidity	Constant torque	-10 to 50°C (14 to 122°F)/20 to 90% RH (non-condensing)														
		Variable torque	-10 to 40°C (14 to 104°F)/20 to 90% RH (non-condensing)														
	Vibration		5.9m/s²(0.6G) 10~55Hz				2m/s²(0.2G) 10~55Hz										
	Installation site		Altitude 1,000m or lower, indoor (excessive corrosive gas and dust unallowable)														
	Coating color		Munsell 9.1Y7.4/0.6 semi-gloss, cooling fins in base color of aluminum														
Option			A variety of application PC boards (PID control communication, digital I/F relay output, high resolution, etc.), remote operator, copy unit, cable for each operator, braking resistor, power factor improvement reactor, noise filter for inverter, fixture for positioning fins outside of cubicle, etc.														
Approx. mass (kg/lbs)			7.5/16.5	7.5/16.5	13/29	13/29	21/46	36/79	36/79	46/102	46/102	70/154	70/154	80/176	130/286	130/286	130/286

Notes

*1 Applicable motors indicate Hitachi standard three-phase motors. When using other motors, the rated corrent of the motor (at 50 Hz) must not exceed the rated output current of inverter.

*2 Applicable motor rating at variable torque is valid with the condition that output current does not exceed the ratings at variable torque.
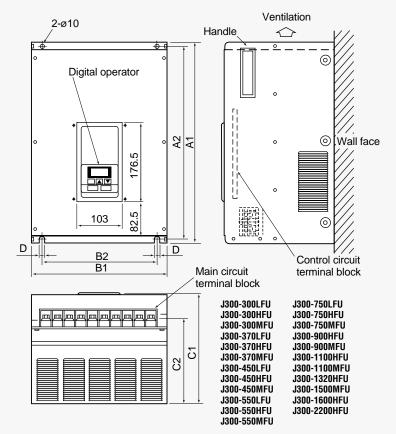
*3 A maximum output voltage drops in response to a fall in line voltage.

*4 Harmonically compensated line and load reactors are recommended for reliable system operation.

*5 For motor operation beyond 50/60 Hz, consult with the motor manufacturer.

*6 At the rated voltage when using a Hitachi standard 3-phase, 4-pole motor. (When selecting high starting torque flux vector control).
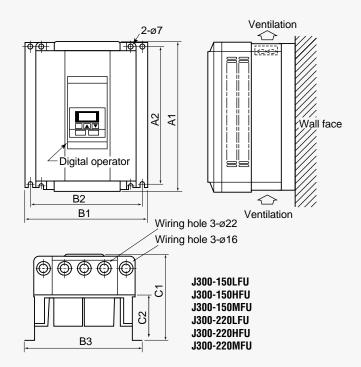
*7 Braking torque at capacitor feedback represents average deceleration torque when a motor alone has decelerated in the shortest time period (has stopped from operation at 50/60 Hz). It does not stand for continuous deceleration torque. Also, the average deceleration torque varies with motor loss. The torque value is reduced during operation beyond 50/60 Hz. Remember that no braking resistor is incorporated in the inverter. when a large regeneration torque is needed, therefore , the optional braking resistor should be used.

*8 An internal ground fault protection circuit is applied to prevent damage to the inverter and is not intended for safeguarding personnel. It is therefore recommended to install an external ground fault detection device on the input circuit.

MGi Technologies Inc. mgitech.com

Standard Specifications

Item		575 Volt 3 Phase											
Model name (type)	J300-	075MFU	110MFU	150MFU	220MFU	300MFU	370MFU	450MFU	550MFU	750MFU	900MFU	1100MFU	1500MFU
Enclosure		IP20 Excluding cooling fan				IP00							
Applicable motor rating (4P, max. HP)[1]	Constant torque	10	15	20	30	40	50	60	75	100	125	150	200
	Variable torque[2]	15	15	25	30	50	60	75	100	125	150	200	250
Continuous output (kVA)	Constant torque	13	16	23	32	48	58	75	90	110	135	156	208
	Variable torque	14.6	18	26	36	54	65	84	101	124	156	180	240
Rated AC input power supply		3-phase (3 wire) 575V ±10%, 60Hz ±5%											
Rated output voltage[3]		3-phase 575V (corresponding to input voltage)											
Rated output current (A)	Constant torque	13	16	23	32	48	58	75	90	110	135	156	208
	Variable torque	14.6	18	26	36	54	65	84	101	124	156	180	240
Carrier frequency (kHz)[4]		16	16	16	16	12	10	10	6	6			
Control system		Sensorless flux vector PWM											
Output frequency range[5]		0.1~400Hz											
Frequency accuracy		With reference to maximum frequency, ±0.01% in digital setting and ±0.1% in analog setting (25 ± 10°C)											
Frequency resolution		Digital setting: 0.01 Hz/60 Hz, analog setting: maximum frequency/1000											
Voltage/frequency characteristic		V/F optionally variable, V/F control (constant torque, reduced torque), sensorless vector control											
Overload current rating		150%, 1 minute (VC, SLV), 125%,1 minute (VP1 to VP3)											
Accelerating/decelerating time		0.01 to 3,000 sec. (optionally settable in straight line or curve, and each acceleration and deceleration independently settable), second acceleration/deceleration rate settable											
Starting torque[6]		150% or more (at 1 Hz)											

Average braking torque	Regenerative braking (short duration)[7]	European version (055/075HF)	Approx. 60 to 50% (Types 055/075MFU incorporate resistor for regenerative braking)	
		Other models	Approx. 20 to 10% at capacitor feedback (types 055/075MFU incorporate regenerative braking circuit, and other types (from 110MFU onward) employ separate installation of regenerative braking unit.)	
	DC braking		Operates at below minimum frequency at start or deceleration, or in response to external input signal (minimum frequency, operating frequency, time and brake force all adjustable)	
Input signal	Frequency setting	Digital operator	Setting by ▲ ▼	
		External signal	Variable resistor of 500Ω to 2kΩ, 2W, 0 to 5V, 0 to 10V DC <nominal>(input impedance 30 kΩ), 4 to 20mA <nominal>(input impedance 250Ω)	
	Forward/reverse run and stop	Digital operator	Run/stop (forward or reverse run selected by command)	
		External signal	Forward run/stop (1a contact)[reverse run specifiable at terminal assignment (1a/1b selectable)]	
	Intelligent input terminal		RV (reverse run command), FRS (free run stop command), CF1 to 3 (multistage speed setting), USP (unattended start protection setting), JG (jogging command), CH1 (2-stage acceleration/deceleration command), DB (external dynamic brake command), RS (reset input), STN (initial setting), CS (commercial source changeover), SFT (soft lock), AT (current input selection), SET (2nd setting selection), EXT (external trip), UP (remote control, acceleration), DOWN (remote control, deceleration)	
Output signal	Intelligent output terminal		FA1 (frequency arrival signal), RUN (running signal), OTQ (overtorque signal)	
	Frequency monitor		Analog meter (0 to 10V DC, 1 mA full scale) digital frequency signal, analog current monitor or analog torque monitor selectable by remote operator	
Alarm output contact			ON at inverter alarm (1C contact output)	
Other functions			AVR function, process inching, data batch setting, V/F characteristic changeover, curved acceleration/deceleration, upper and lower limiters, 8-stage speed, fine adjustment of start frequency, carrier frequency change (2 to 16 kHz), frequency jump, electronic thermal level adjustment, fuzzy acceleration/deceleration, auto tuning, gain and bias setting , retry function, trip history monitor (up to 3 trips storable in memory), etc.	
Protective function			Overcurrent, overvoltage, undervoltage, electronic thermal level adjustment, abnormal temperature, ground fault current at start[8], overload limit, overvoltage supply, braking resistor overload, etc.	
General specifications	Ambient temperature/humidity	Constant torque	-10 to 50°C (14 to 122°F)/20 to 90% RH (non-condensing)	
		Variable torque	-10 to 40°C (14 to 104°F)/20 to 90% RH (non-condensing)	
	Vibration		5.9m/s²(0.6G) 10~55Hz 2m/s²(0.2G) 10~55Hz	
	Installation site		Altitude 1,000m or lower, indoor (excessive corrosive gas and dust unallowable)	
	Coating color		Munsell 9.1Y7.4/0.6 semi-gloss, cooling fins in base color of aluminum	
Option			A variety of application PC boards (PID control communication, digital I/F relay output, high resolution, etc.), remote operator, copy unit, cable for each operator, braking resistor, power factor improvement reactor, noise filter for inverter, fixture for positioning fins outside of cubicle, etc.	

Approx. mass (kg/lbs)	7.5/16	7.5/16	13/29	13/29	21/46	36/79	36/79	46/102	46/102	70/154	70/154	80/176

Notes

*1 Applicable motors indicate Hitachi standard three-phase motors. When using other motors, the rated corrent of the motor (at 50 Hz) must not exceed the rated output current of inverter.

*2 Applicable motor rating at variable torque is valid with the condition that output current does not exceed the ratings at variable torque.

*3 A maximum output voltage drops in response to a fall in line voltage.

*4 Harmonically compensated line and load reactors are recommended for reliable system operation.

*5 For motor operation beyond 50/60 Hz, consult with the motor manufacturer.

*6 At the rated voltage when using a Hitachi standard 3-phase, 4-pole motor. (When selecting high starting torque flux vector control).

*7 Braking torque at capacitor feedback represents average deceleration torque when a motor alone has decelerated in the shortest time period (has stopped from operation at 50/60 Hz). It does not stand for continuous deceleration torque. Also, the average deceleration torque varies with motor loss. The torque value is reduced during operation beyond 50/60 Hz. Remember that no braking resistor is incorporated in the inverter. when a large regeneration torque is needed, therefore , the optional braking resistor should be used.

*8 An internal ground fault protection circuit is applied to prevent damage to the inverter and is not intended for safeguarding personnel. It is therefore recommended to install an external ground fault detection device on the input circuit.

Dimensions

Ventilation
Wall face
Digital operator
2-ø7
Wiring hole 3-ø22
Wiring hole 3-ø16
Ventilation

J300-055LFU
J300-055HFU
J300-075LFU
J300-075HFU
J300-075MFU
J300-110LFU
J300-110HFU
J300-110MFU

Model	A1	A2	B1	B2	B3	C1	C2	D
055LFU	340	317	220	195	213	195	56.5	4.5
055HFU	340	317	220	195	213	195	56.5	4.5
075LFU	340	317	220	195	213	195	56.5	4.5
075HFU	340	317	220	195	213	195	56.5	4.5
075MFU	340	317	220	195	213	195	56.5	4.5
110LFU	340	317	245	228	245	215	80	3
110HFU	340	317	245	228	245	215	80	3
110MFU	340	317	245	228	245	215	80	3

Ventilation
Wall face
Digital operator
2-ø7
Wiring hole 3-ø22
Wiring hole 3-ø16
Ventilation

J300-150LFU
J300-150HFU
J300-150MFU
J300-220LFU
J300-220HFU
J300-220MFU

Model	A1	A2	B1	B2	B3	C1	C2	D
150LFU	440	415	250	220	243	220	81	7
150HFU	440	415	250	220	243	220	81	7
150MFU	440	415	250	220	243	220	81	7
220LFU	440	415	290	260	290	245	105	3
220HFU	440	415	290	260	290	245	105	3
220MFU	440	415	290	260	290	245	105	3

2-ø10
Handle
Ventilation
Digital operator
176.5
103
82.5
Wall face
Control circuit terminal block
Main circuit terminal block

J300-300LFU   J300-750LFU
J300-300HFU   J300-750HFU
J300-300MFU   J300-750MFU
J300-370LFU   J300-900HFU
J300-370HFU   J300-900MFU
J300-370MFU   J300-1100HFU
J300-450LFU   J300-1100MFU
J300-450HFU   J300-1320HFU
J300-450MFU   J300-1500MFU
J300-550LFU   J300-1600HFU
J300-550HFU   J300-2200HFU
J300-550MFU

Model	A1	A2	B1	B2	C1	C2	D
300LF	450	430	300	255	250	192	10
300HF	450	430	300	255	250	192	10
300MFU	450	430	300	255	250	192	10
370LF	620	600	390	300	330	278	10
370HF	620	600	390	300	330	278	10
370MFU	620	600	390	300	330	278	10
450LF	620	600	390	300	330	278	10
450HF	620	600	390	300	330	278	10
450MFU	620	600	390	300	330	278	10
550LF	700	670	480	380	330	275	12
550HF	700	670	480	380	330	275	12
550MFU	700	670	480	380	330	275	12
750HF	700	670	480	380	330	275	12
750MFU	700	670	480	380	330	275	12
900HF	700	670	480	380	330	275	12
900MFU	700	670	480	380	330	275	12
1100HF	780	756	550	380	270	–	12
1100MFU	780	756	560	380	330	–	–
1320HFU	780	756	550	380	270	–	–
1500MFU	780	756	550	380	270	–	–
1600HF	995	965	680	580	360	–	15
2200HF	995	965	680	580	360	–	15

MGi Technologies Inc. mgitech.com

Protective functions

Name	Description		Digital Operator indication	Remote operator/copy unit indication ERR1 ****
Overcurrent protection (Note 1)	Detects a current by AC CT between the power module and output terminals (U,V,W). If the motor is locked or abruptly decelerated, a large current would flow to the inverter, thereby causing troubles. The AC CT thus detects a current greater than specified and cuts off the output. The current is also detected in the power module. (See E31, E32, E33, and E34 below.)	At constant speed	E01	OC. Drive
		At deceleration	E02	OC. Decel
		At acceleration	E03	OC. Accel
		At stop	E04	Over. c
Overload protection (Note 1)	The electronic thermal incorporated in the inverter supervises the inverter output current and, if the motor has overloaded, cuts off the inverter output.		E05	Over. L
Braking resistor overload protection	If the duty rating for the regenerative braking resistor has been exceeded, an overvoltage is detected by stopping BRD (regenerative braking unit) operation and the inverter output is turned off.		E06	OL. BRD
Overvoltage protection	If, when the regenerative energy from the motor or the receiving voltage is high, the converter voltage has risen higher than specified, the protective circuit is acuated and turns off the inverter output.		E07	Over. V
EEPROM error	Turns off the output if EEPROM in the inverter has gone abnormal on account of external noise, excessive temperature rise, etc.		E08	EEPROM
Undervoltage protection	If the inverter receiving voltage drops, the control circuit would not function properly, the motor would overheat and the torque would reduce. Turns off the output if the receiving voltage has dropped to 150-160V (low voltage) or 300-420V (high voltage).		E09	Under. V
CT error	Turns off the ouput if CT in the inverter has become abnormal.		E10	CT
CPU error	Turns off the inverter if the incorporated CPU has operated erratically or gone abnormal.		E11	CPU
External trip	If any external device or equipment has become abnormal, the inverter fetches that signal and turns off the output (provided external trip function is selected).		E12	EXTERNAL
USP error	Error indication when power has been turned on while the inverter is running (provided USP function is selected).		E13	USP
Ground fault protection	Detects grounding between the inverter output section and motor when turning on power, thereby protecting the inverter.		E14	GND. Flt.
Overvoltage receiving protection	Turns off the output upon detecting the received voltage is higher than specified 5 seconds after turning on. Detects a level above F11 motor receiving voltage setting. If a voltage beyond 280V or 560V has been input, it exceeds the rated value of employed parts whereby they could not be protected and might break.		E15	OV. SRC
Instantaneous power failure	Turns off the output if power failure has lasted beyond 15 msec. If the power failure time is long, the error signal will be reset. If restart is selected, the machine will restart when a run command remains.		E16	Inst. P-F
Option connecting section error (Note 2)	For when option connecting section (connector, etc.) has malfunctioned.	Option 1	E17	NG. OP1
		Option 2	E18	NG. OP2
Optional circuit board error (Note 2)	Error message delivered from optional circuit board itself.	Option 1	E19	OP1
		Option 2	E20	OP2
Waiting on account of undervoltage	Waiting with the output turned off because the inverter receiving voltage has dropped.		E23	UV. WAIT
Phase loss protection	Turns off the output if a phase loss has been detected on the inverter power receiving side (R,S,T) or (L1,L2,L3).		E24	PH. Fail
Power module protection	Actuated by the detector incorporated in the power module. If the inverter output is short-circuited or the motor is locked, a large current would flow to the inverter, thereby causing troubles. Turns off the output if the current in the power module or temperature of the main semiconductors has become higher than specified.	At constant speed	E31	PM. Drive
		At deceleration	E32	PM. Decel
		At acceleration	E33	PM. Accel
		At stop	E34	PM. ERR

Notes
1. Press the reset key 10 seconds after the alarm has occurred.
2. Valid when the application circuit board (option) is installed.

Alarm monitor method (▢ _ _ appears in case of no trip)

d10 →[FUNC.] E07 →[FUNC.] 75A →[FUNC.] 39u

Trip cause | Trip current | P-N voltage at trip (Note 3)

Note 3: The example for P-N voltage on the left indicates 390-399 V.

Alarm history monitor method (▢ _ _ appears in case of no trip)

d10 →[FUNC.] E07 →[FUNC.] 75A

Last trip cause | Trip casue two times before

[FUNC.]