

GESI SERIES

INVERTER QUICK MANUEL



GMTCNT

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Introduction

This guide contains information on external connections, terminal connections, keypad, quick start-up, basic parameters, general error codes and solutions, and product dimensions for GESI series drives.

For more information, please visit our website at www.gmtcontrol.com.



Caution

This guide contains basic commissioning information. Failure to comply with safety instructions during installation and commissioning may result in product damage, personal injury, or death. Commissioning and other operations should only be performed by trained and authorised personnel.



Dangerous

Do not perform any wiring, inspection or part replacement while the device is powered. Before performing these operations, switch off the device and wait long enough for the drive model. The minimum waiting time is 10 minutes.

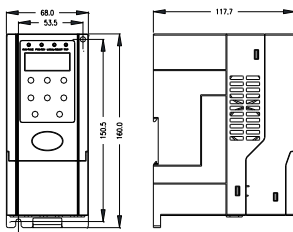
GESI Inverter Family

Model	kW	Current (A)
Mono phase 220 V $\pm$ 15%		
GESI-00040S	0.4	2.3
GESI-00075S	0.75	4
GESI-00150S	1.5	7
GESI-00220S	2.2	9.6
Three phase 380 V $\pm$ 15%		
GESI-00075H	0.75	2.1
GESI-00150H	1.5	3.8
GESI-00220H	2.2	6
GESI-00370H	4	9
GESI-00550H	5.5	13
GESI-00750H	7.5	17

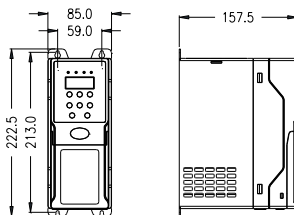
Technical Specifications

Input	Input voltage range	1AC 220 V $\pm$ 15%, 3AC 380 V $\pm$ 15%
	Input frequency range	47–63 Hz
	Output voltage range	0–Nominal input voltage
Output	Output frequency range	V/f control: 0–3200 Hz Sensorless vector control: 0–320 Hz
Control	Control mode	V/f control, Sensorless vector control, Torque control
	Command execution mode	Panel control, Terminal control, Serial communication control
	Frequency setting method	Digital setting, analog quantity setting, pulse frequency setting, serial communication setting, multi-speed setting, simple PLC setting, PID setting, etc., enabling combination of setting modes and mode switching.
	Overload capacity	G type: 150% rated current for 60 seconds, 180% rated current for 10 seconds, 200% rated current for 3 seconds
	Starting torque	0.5 Hz/%150 (SVC), 1 Hz/%150 (V/f)
	Speed range	1:100 (SVC), 1:50 (V/f)
	Carrier frequency	1.0–16.0 kHz, automatically adjustable according to temperature and load characteristics
	Frequency resolution	Numerical setting: 0.01 Hz, analog setting: maximum frequency $\times$ 0.05%
	Torque boost	Automatic torque boost, manual torque boost range: 0.1%–30.0%
	Acceleration/deceleration method	Straight line / S curve; four acceleration/deceleration times ranging from 0.1 seconds to 3600.0 seconds
	DC braking	DC braking at start and stop. DC braking frequency: 0.0 Hz–maximum frequency, braking time: 0.0 seconds–100.0 seconds
	Jog operation	Jogging operating frequency: 0.0 Hz–maximum frequency Jogging acceleration/deceleration time: 0.1 s–3600.0 s
	Simple PLC and multi-stage operation	A maximum of 16-stage speed operation can be achieved via internal PLC or control terminals.
	Built-in PID	Closed-loop control system that can easily control process variables (such as pressure, temperature and flow)
	Automatic voltage regulation	When the mains voltage changes, it can automatically keep the output voltage constant.
	Torque control	Torque control without PG
	Torque limit	Automatic torque limitation
	Functions	Time/length/counter function
	Fault protection function	It has protection functions for more than 30 faults, such as overcurrent, overvoltage, undervoltage, overheating, phase loss, overload, and short circuit. It also can keep detailed records of the inverter's operating status when a fault occurs and has a fault automatic reset function.
I/O	Input terminal	5 programmable digital inputs 1 programmable analog input: 0–10 V voltage or 0–20 mA selectable
	Output terminal	Relay Output: 1 Analog Output: 1, selectable 0–20 mA or 0–10 V
	Communication terminal	Supports RS485 MODBUS-RTU communication.
HMI	Display	It can display parameters such as setting frequency, output frequency, output voltage, output current, etc.
	Multi-function button	The QUICK/JOG button can be used as a multi-function button.
Environmental Conditions	Temperature	The temperature range is -10°C to 40°C. If the temperature exceeds 40°C, derating is required, provided that the maximum allowable temperature does not exceed 50°C. For every 1°C increase above 40°C, derating is required at a rate of 4%.
	Humidity	$\leq$ 90
	Altitude	$\leq$ 1000 m: rated power output is maintained; >1000 m: output power is reduced.
	Storage temperature	-20°C–60°C
	Storage conditions	Keep indoors, away from direct sunlight, dust, corrosive gas, flammable gas, oil mist, steam, dripping water, salt or vibration.

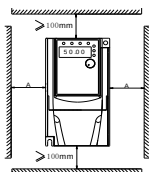
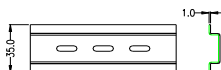
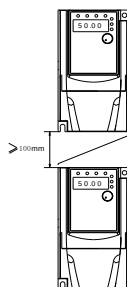
Dimensions (mm)



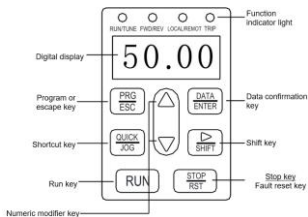
Mono phase 220V 0.4-2.2kW
Three phase 380V 0.75-2.2kW



Three phase 380V 3.7-7.5kW

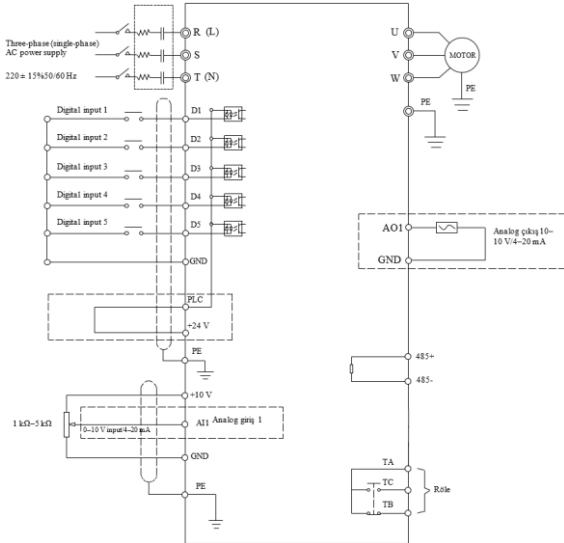


Keypad and Display

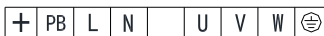


Status Led	Instructions	
RUN	Working status indicator light: The light goes off when the inverter is stopped, and it turns on when the inverter is running.	
FWD/REV	Forward and reverse indicator light: The light is off during forward rotation and on during reverse rotation.	
LOCAL/REMOT	Control mode indicator light: The light is off when the keypad is in control mode, on when the terminal is in control mode, and flashing when the remote communication is in control mode.	
TUNE/TRIP	Overload pre-warning indicator: The light illuminates in torque control mode, flashes slowly in self-learning mode, and flashes quickly in the event of a fault.	
Button	Instructions	
PRG/ESC	Programming Button	First level menu entry or exit
DATA/ENTER	Confirm Button	Enter the menu screen step by step, set parameters and confirm
	Incremental key	Incrementing of data or function code
	Descending key	Decrement of data or function code
	Shift key	Under the stop display interface and the operation display interface, display parameters can be cyclically selected; when modifying parameters, the specific digit position to be modified can be chosen.
RUN	Run key	In keyboard operation mode, it is used to run the operation
STOP/RST	Stop/Reset	During the running state, pressing this key can be used to stop the running operation; in the fault alarm state, it can be used to reset the operation. The characteristics of this key are restricted by function code P7-02.
QUICK/JOG	Multi-function selection key	Select function switch according to P7-01

Connection Ports



Power Input Terminals



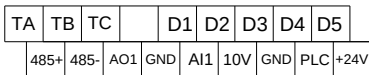
Mono phase 220V 0.4–2.2 kW



Three phase 3.7-7.5kW

Terminal	
L, N	Single Phase power input terminal
R, S, T	Three Phase power input terminal
(+), PB	Brake resistor connection terminals
U, V, W	Motor output terminals
⊕	Ground terminals

Control Terminals



Terminals			
Power	+10 V–GND	+10 V	Internal + 10V power supply
	+24 V–GND	+24 V	Internal + 24VDC power supply Maximum current 200mA
	PLC	External power supply	Factory default connection +24 V When external signals are used to operate D1–D6, HDI, the PLC must be connected to an external power supply and the +24 V PLC short-circuit jumper wire must be removed.
	AO1–GND	Analog input 1	1. Input range: DC 0 V–10 V/4 mA–20 mA, selection is determined by the J1 jumper on the control board.
Digital input	D1	Digital inputs	Digital input terminals. Voltage Range: 9V-30V
	D2		
	D3		
	D4		
Analog output	AO1–GND	Analog output 1	Analogue Output. Range: 0–10V/0–20mA. Current or Voltage selection is set via jumper.
Relay output 1	TB-TA	NC	AC 250 V, 3 A / DC 30 V, 1 A
	TC-TA	NO	
Communications	485+	RS485 +	Modbus RTU RS485 communications
	485-	RS485 -	

Basic Operating Parameters

The symbols in the function table are explained as follows:

“○”: indicates that the parameter setting value can be changed while the inverter is stopped or running;

“⊗”: indicates that the parameter setting value cannot be changed while the inverter is running;

“▲”: indicates that the parameter value is the actual detected value and cannot be changed.

P0 Group Parameters

Parameters	Explanation	Fab.	
P0-01	Control Mode 0: Sensorless Vector Control 2: V/F control	2	⊗
P0-02	Start command source (This parameter determines where the device will start from) 0: Keypad 1: Device input terminals 2: Communication with	1	⊗
P0-03	Primary frequency source selection (This parameter determines where the device's speed information is obtained from) 0: Keypad (Unregistered) The initial value is the same as P0-08. The inverter frequency setting can be adjusted using the '▲' and '▼' keys on the keypad (the Up and Down keys on the terminal). Unstored means that when the inverter's power is cut off and then restored, the frequency set value returns to the value in P0-08. It does not continue from where it left off. 1: Keypad (Stored) The initial value is the same as P0-08. Saved means that when the inverter's power is cut off and then restored, the frequency set value continues from where it left off. The frequency setting is the same as it was before the inverter was turned off. 2: Analogue input terminal AI1 6: Multi-Speed (Constant Speed) 7: Simple PLC 8: PID 9: Communication	2	⊗
P0-04	B frequency source selection Contains the same settings as P0-03.	0	⊗
P0-05	Frequency command source B reference 0: Maximum frequency 1: A frequency source	0	○
P0-06	Frequency command source B percentage 0%~150%	100%	○
P0-07	Frequency source selection method Units digit: Frequency source selection 0: Main frequency source A 1: Primary and secondary results (The operation relationship is determined by the tens digit) 2: Switch between main frequency source A and auxiliary frequency source B 3: Switch between main frequency source A and main and auxiliary operation results 4: Switch between auxiliary frequency source B and primary and auxiliary process results Tens digit: Primary auxiliary process relationship of the frequency source 0: A + B 1: A - B 2: Max. (A, B) 3: Min. (A, B)	00	○
P0-08	Keypad setting frequency 0.00 Hz~P0-10 (max. frequency)	50 Hz	○
P0-09	Running direction selection 0: Forward 1: Reverse	0	○

P0-10	Maximum frequency	50 Hz–300.00 Hz	50 Hz	⊗
P0-11	Frequency source upper limit	0: P0-12 1: AI1 5: Communication	0	⊗
P0-12	Frequency upper limit	P0-14 (Frequency lower limit)–P0-10 (max frequency)	50 Hz	○
P0-13	Frequency upper limit offset	0.00 Hz–P0-10 (max frequency)	0.00 Hz	○
P0-14	Frequency lower limit	0.00 Hz–P0-12 (Fre. Upper limit)	0.30 Hz	○
P0-15	Carrier frequency	1.0 kHz–16.0 kHz		○
P0-16	Carrier frequency adjusting according to temperature	0: No 1: Yes	0	○
P0-17	Acceleration time 1	0.01 s–36000 s		○
P0-18	Deceleration time 1	0.01 s–36000 s		○
P0-19	ACC/DEC time unit	0: 1 s 1: 0.1 s 2: 0.01 s	1	⊗
P0-21	Auxiliary frequency source offset frequency when combination	0.00 Hz–P0-10 (max. fre.)	0.00 Hz	○
P0-22	Frequency command resolution	1: 0.1 Hz 2: 0.01 Hz	2	⊗
P0-23	Digital setting frequency storage selection when stop	0: No memory No memory means that the frequency set by the keyboard after the inverter stops returns to P0-08 (preset frequency), and the frequency correction made by the keyboard ▲, ▼ keys or UP, DOWN terminals is reset. 1: Memory Memory means that the frequency set by the keyboard after the inverter stops will be maintained as the frequency set at the last stop time, and the frequency correction made by the keyboard ▲, ▼ keys or UP, DOWN terminals will remain valid.	1	○
P0-25	ACC/DEC time reference frequency	0: P0-10 (max. frequency) 1: Setting frequency 2: 100 Hz	0	⊗
P0-26	Running frequency command UP/DN reference	0: Running frequency 1: Setting Freq.	0	⊗
P0-27	Command source combination with frequency source	Units place: Operation panel command binding frequency source selection 0: No setting 1: Keypad setting frequency 2: AI1 6: Multi-speed 7: Simple PLC 8: PID Tens place: Terminal command binding frequency source selection Hundreds place: Communication command binding frequency source selection Thousands place: Automatic binding frequency source selection	0000	○

P1 Parameter Group

P1-00	Motor type	0: Asynchronous motor 1: Variable frequency motor	0	⊗
P1-01	Rated power	0.1–1000 kW		⊗
P1-02	Rated voltage	1–380 V		⊗
P1-03	Rated current	0.01 A–655.35 A		⊗
P1-04	Rated frequency	0.01 Hz–P0-10 (max. frequency)		⊗
P1-05	Rated speed	1 rpm–36000 rpm		⊗
P1-06	Stator resistance	0.001 Ω–65.535 Ω		⊗
P1-07	Rotor resistance	0.001 Ω–65.535 Ω		⊗
P1-08	Leakage inductance	0.01 Mh–655.35 Mh		⊗
P1-09	Mutual inductance	0.1 Mh–6553.5 Mh		⊗
P1-10	No-load current	0.01 A–P1-03 (rated current of motor)		⊗
P1-37	Autotuning process (Learning of engine parameters by the device)	0: No operation 1: Autotuning without rotating the motor shaft 2: Autotuning by rotating the motor shaft 11: Autotuning without rotating the variable frequency motor shaft 12: Autotuning by rotating the variable frequency motor shaft	0	⊗

P2 Parameter Group

P2-09	Torque upper limit source selection in speed control mode	0: P2-10 1: AI1 5: Communication	0	o
P2-10	Torque upper limit digital setting	0.0%~200.0%	150.0%	o

P3 Parameter Group

P3-01	Torque boost	0.0%: (Auto) 0.1%~30.0%		o
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P4 Parameter Group

P4-00	D1 terminal function	0: No function 1: Forward operation 2: Reverse operation 3: 3-wire connection (STOP) 4: Forward Jog 5: Reverse Jog 6: Terminal UP 7: Terminal DN 8: Free Stop 9: Fault Reset (RESET) 10: Pause 11: External fault (normally open) The device can be switched to external fault by triggering the digital input. E-15 (external fault) 12: Multi-speed terminal 1 13: Multi-speed terminal 2 14: Multi-speed terminal 3 15: Multi-speed terminal 4 16: Acceleration and deceleration time selection terminal 1 17: Acceleration and deceleration time selection terminal 2 18: Frequency source switching Used to select different frequency sources. According to the setting of the frequency source selection function code (P0-07), when two specific frequency sources are set to be switched as frequency sources, this terminal is used to switch between the two frequency sources. 19: UP/DN setting reset (Terminal, keyboard) When the frequency is set to digital frequency, this terminal can clear the frequency value changed by terminal UP/DOWN or keyboard UP/DOWN, so that the given frequency returns to the value set by P0-08. 20: Command switch terminal operation When the command source is set to terminal control (P0-02=1), this terminal can be used to switch between terminal control and keyboard control. When the command source is set to communication control (P0-02=2), this terminal can be used to switch between communication control and keyboard control. 21: ACC/DEC disabled 22: PID pause 23: PLC status reset 24: Wobble frequency pause 25: Counter input 26: Counter reset 27: Length count input 28: Length reset 29: Torque control disabled 32: DC braking command 33: External fault (Normally closed) 34: Frequency modification enabled 35: PID operating direction change	1	⊗
P4-01	D2 terminal function		2	⊗
P4-02	D3 terminal function		12	⊗
P4-03	D4 terminal function		13	⊗
P4-04	D5 terminal function		18	⊗
			0	⊗
			9	⊗

		36: External stop terminal 37: Control command terminal 2 38: PID integral stop 39: Jump from A frequency source to set frequency 40: Jump from B frequency source to set frequency 43: PID parameter change 44: Defined fault 1 45: Defined fault 2 46: Speed/Torque Control mode switch 47: Emergency Stop 48: External stop terminal 2 49: DC Braking with Deceleration 50: Run time reset 51: 2-Wire / 3 Wire mode switch 52: Forbid reverse direction frequency 54: UP / DOWN terminal activation		
P4-10	Terminal filter time	0.000 s–1.000 s	0.010s	o
P4-11	Terminal command mode	Units digit: 0: Two-wire mode 1 1: Two-wire mode 2 2: Three-wire mode 1 3: Three-wire mode 2	00	⊗
P4-12	Terminal UP/DN change rate	0.001Hz/s–65.535Hz/s	1.00Hz/s	o
P4-13	AI 1 minimum input voltage	0.00 V–P4-15	0.00 V	o
P4-14	AI 1 minimum input percentage	-100.0%–+100.0%	0.0%	o
P4-15	AI 1 maximum input voltage	P4-13–+10.00V	10.00 V	o
P4-16	AI 1 maximum input percentage	-100.0%–+100.0%	100.0%	o
P4-17	AI1 filter time	0.00 s–10.00 s	0.10s	o
P4-37	AI input voltage/current selection	Units place: AI1 Tens place: Reserved 0: Voltage input 1: Current input	10	⊗

P5 Parameter Group

PS-02	Relay T1 output selection	0: No output 1: Inverter running 2: Fault output (fault shutdown) 3: Frequency level detection FDT1 output 4: Frequency arrival 5: Zero speed operation (no output when stopped) 6: Motor overload pre-alarm 7: Inverter overload pre-alarm 8: Adjustment for the arrival of the recording value 9: Specified recording value reached 11: PLC cycle completed 12: Total running time reached 13: Frequency limiting 14: Torque limiting 15: Ready to run 16: AI1 > AI2 17: Upper frequency limit reached 18: Lower frequency limit reached (operation related) 19: Low voltage status output 20: Communication settings 21: Positioning completed (reserved) 22: Positioning proximity (reserved) 23: Zero speed operation 2 (also outputs when stopped) 24: Accumulated power-on time reached 25: Frequency level detection FDT2 output 26: Frequency 1 arrival output 27: Frequency 2 arrival output 28: Current 1 limit reached 29: Current 2 limit reached 30: Timing arrival output 31: AI1 input exceeds limit 33: Reverse operation 34: Zero current status 35: Module temperature reached 36: Output current exceeds limit 37: Lower limit frequency reached (also output during shutdown) 38: Alarm output (continue operation) 39: Motor overheat pre-warning 40: Operation time expired	2	o

PS-07	AO1 output function selection	0: Working frequency 0-Maximum output frequency 1: Setting frequency 0-Maximum output frequency 2: Output current 0-2 times the rated current of the motor 3: Output torque 0-2 times the rated torque of the motor 4: Output power 0-2 times the rated power 5: Output voltage 0-1.2 times the rated voltage of the inverter 6: HDI high-speed pulse input (100% corresponds to 100.0 kHz) 0.01 kHz-100.00 kHz 7: AI1 0 V-10 V 10: Length 0-Maximum setting length 11: Record (count) value 0-Maximum count 12: Communication settings 0.0%-100.0% 13: Motor speed Corresponding rotation speed between 0 and maximum output frequency 14: Output current (100.0% 1000.0A corresponds to) 0.0 A-1000.0 A 15: Output voltage (100.0% corresponds to 1000.0V) 0.0 V-1000.0 V		
			0	o
PS-10	AO1 offset coefficient	-100.0%-+100.0%	0.0%	o
PS-11	AO1 gain	-10.00-+10.00	1.00	o
PS-22	Output terminal valid status selection	0: Positive logic 1: Negative logic Ones place: - Tens place: Relay 1 Hundreds place: -	000	o
PS-23	AO current output selection	Ones place: AO1 Tens place: - 0: 0-20 mA 1: 4-20 mA	00	⊗

P6 Parameter Group

P6-03	Start frequency	0.00 Hz–50 Hz	0.00 Hz	○
P6-04	Start frequency holding time	0.0 s–100.0 s	0.0 s	⊗
P6-05	DC braking current before start/pre-excitation current	0%–100%	50%	⊗
P6-06	DC braking time before start/pre-excitation time	0.0 s–100.0 s	0.0s	⊗
P6-07	ACC/DEC (Acceleration / Deceleration) mode	0: Linear ACC/DEC 1: S-curve ACC/DEC A 2: S-curve ACC/DEC B	0	⊗
P6-08	Time of the beginning of the S curve	0.0%–(100.0%–P6-09)	30.0%	⊗
P6-09	Time of the end segment of the S curve	0.0%–(100.0%–P6-08)	30.0%	⊗
P6-10	Stop Mode	0: Deceleration Stop Mode 1: Coast Stop Mode	0	○
P6-11	DC braking starting frequency after stopping	0.00 Hz–P6-10 (max. frequency)	0.00 Hz	○
P6-12	DC braking delay time after stopping	0.0 s–100.0 s	0.0s	○
P6-13	DC braking current at standstill	0%–100%	50%	○
P6-14	DC braking time during stopping	0.0 s–100.0 s	0.2s	○
P6-15	Braking usage rate	0%–100%	100%	○
P6-21	Demagnetization time	0.00 s–5.00 s	0.5 s	○
P6-22	Minimum output frequency	0.00 Hz–P6-11 (DC braking starting frequency during stopping)	0.00 Hz	○

P7 Parameter Group

P7-00	Display function expansion 1	Units place 0: DC bus voltage 1: AC input voltage	00000	⊗
P7-01	QUICK/JOG button function selection	0: QUICK/JOG key is invalid. 1: Switches between the operation panel command channel and remote command channels (terminal command channel or communication command channel). 2: Forward/reverse switch 3: Forward jog Forward jog is activated by pressing the QUICK/JOG key on the keyboard. 4: Reverse jog 5: Display mode switch (normal display mode and changed parameter display mode).	0	⊗
P7-02	STOP/RST button function	0: Only in keyboard operation mode, STOP/RST key stop function is effective 1: In any operation mode, STOP/RST key stop function is effective	1	○
P7-03	Working status display parameter 1	0000~FFFF Bit00: Working frequency 1 (Hz) Bit01: Setting frequency (Hz) Bit02: Bus voltage (V) Bit03: Output voltage (V) Bit04: Output current (A) Bit05: Output power (kW) Bit06: Output torque (%) Bit07: DI input status Bit08: DO output status Bit09: AI1 voltage (V) Bit10: Reserved Bit11: Radiator temperature Bit12: Count value Bit13: Length value Bit14: Load speed display Bit15: PID setting	01F	○
P7-04	Working status display parameter 2	0000~FFFF Bit00: PID feedback Bit01: PLC stage Bit02: HDI input pulse frequency (kHz) Bit03: Operating frequency 2 (Hz) Bit04: Remaining operating time Bit05: AI1 pre-calibration voltage (V) Bit06: Reserved Bit07: Reserved Bit08: Linear speed Bit09: Current power-on time (Hour) Bit10: Current operating time (Minute) Bit11: HDI input pulse frequency (Hz) Bit12: Communication preset value Bit13: Reserved Bit14: Main frequency A display (Hz) Bit15: Auxiliary frequency B display (Hz)	0	○

P7-05	Display parameters in stop state	0000~FFFF Bit00: Frequency setting (Hz) Bit01: Bus voltage (V) Bit02: DI terminal input status Bit03: DO output status Bit04: AI1 voltage (V) Bit05: Reserved Bit06: Radiator temperature Bit07: Count value Bit08: Length value Bit09: PLC stage Bit10: Load speed Bit11: PID setting Bit12: HDI input pulse frequency (kHz)	33	○
P7-06	Load speed indicator coefficient	0.0001~6.5000	1.000	○
P7-07	IGBT module temperature	0.0°C~100.0°C		●
P7-08	Speed control nominal voltage	1 V~2000 V		●
P7-09	Total runtime	0 h~65535 h	-	●
P7-12	Decimal place selection for load speed display	0: 0 ondalık hane 1: 1 ondalık hane 2: 2 ondalık hane 3: 3 ondalık hane	1	○
P7-13	Total device on time	0 h~65535 h	-	●

P8 Parameter Group

P8-00	Jog operating frequency	0.00Hz~P0-10 (max. frequency)	2.00 Hz	o
P8-01	Jog acceleration ramp	0.1s~6500.0s	20.0s	o
P8-02	Jog deceleration ramp	0.1s~6500.0s	20.0s	o
P8-03	Acceleration time 2	0.1s~6500.0s		o
P8-04	Deceleration time 2	0.1s~6500.0s		o
P8-05	Acceleration time 3	0.1s~6500.0s		o
P8-06	Deceleration time 3	0.1s~6500.0s		o
P8-07	Acceleration time 4	0.1s~6500.0s		o
P8-08	Deceleration time 4	0.1s~6500.0s		o
P8-14	Action when setting frequency lower than frequency lower limit	0: Running at frequency lower limit 1: Stop 2: Zero-speed running	1	o
P8-16	Accumulated power-on arrival time	0.1h~65000h	0h	o
P8-17	Accumulated running arrival time	0.1h~65000h	0h	o
P8-18	Power-on running command valid protection selection	0: No protection (Receives "Run" command at power-up) 1: Protection (Does not receive "Run" command at power-up)	0	o
P8-19	Frequency detection value (FDT1)	0.00 Hz~P0-10 (max. frequency)	50 Hz	o
P8-20	Frequency detection lagging value (FDT1)	0.0%~100.0% (FDT1 level)	5.0%	o
P8-21	Frequency arrival detection amplitude	0.0%~100.0% (max. frequency)	0.0%	o
P8-31	Any arrival frequency detection amplitude 1	0.0%~100.0% (max. frequency)	0.0%	o
P8-42	Timing function selection	0: Invalid 1:Valid	0	o
P8-43	Timing running time selection	0: P8-44 setting 1: A1	0	o
P8-44	Timing running time	0.0 Min~6500.0 Min	0.0 Min	o
P8-48	Cooling Fan Control method	0: Fan works when running 1: Fan works continuously 2: Fan works when temperature threshold is reached	0	o
P8-53	Setting the reach working time	0.0 Min~6500.0 Min	0.0 Min	o
P8-57	Temperature setting for fan operation	0°C~999°C	30°C	o

P9 Parameter Group

P9-00	Motor overload protection	0: OFF 1: ON	1	o
P9-13	Output phase protection selection	0: OFF 1: ON	1	o
P9-14	The first fault type	0: No error 2: Overcurrent during acceleration 3: Overcurrent during deceleration 4: Overcurrent during constant speed 5: Overvoltage during acceleration 6: Overvoltage during deceleration 7: Overvoltage during constant speed 9: Insufficient voltage 10: Inverter overload 11: Motor overload 12: Phase error on input side 13: Phase error on output side 14: Module overheat 15: External error 16: Communication error 17: Contactor error 18: Current detection error 19: Motor auto-tuning error 21: Parameter R/W error 22: Inverter hardware error 23: Motor ground short circuit error 26: Run time arrival 27: Customized error 1 28: Customized error 2 29: Power-on arrival time 30: Turn off load 31: PID feedback loss during operation 40: Fast current limit time overshoot 42: Speed deviation dimension overshoot 43: Motor speed overshoot	-	•
P9-15	The second fault type		-	•
P9-16	The third (latest) fault type		-	•
P9-17	Frequency at third error	-	-	•
P9-18	Current at third fault	-	-	•
P9-19	Bus voltage at third fault	-	-	•
P9-20	Input terminal status at third fault	-	-	•
P9-21	Output terminal status at third fault	-	-	•
P9-22	Inverter status at third fault	-	-	•
P9-23	Opening time at third fault	-	-	•
P9-24	Operating time at third fault	-	-	•
P9-27	Frequency at second fault	-	-	•
P9-28	Current at second fault	-	-	•
P9-29	Bus voltage at second fault	-	-	•
P9-30	Input terminal status at second fault	-	-	•
P9-31	Output terminal status at second fault	-	-	•
P9-32	Inverter status at second fault	-	-	•
P9-33	Opening time at second fault	-	-	•
P9-34	Operating time at second fault	-	-	•
P9-37	Frequency at first fault	-	-	•
P9-38	Current at first fault	-	-	•
P9-39	Bus voltage at first fault	-	-	•
P9-59	Instantaneous power-off action selection	0: Invalid 1: Deceleration 2: Dec-to-stop	0	o

PC Parameter Group

PC-00	Multi-step command 0	-100.0%~100.0%	10.0%	o
PC-01	Multi-step command 1	-100.0%~100.0%	30.0%	o
PC-02	Multi-step command 2	-100.0%~100.0%	50.0%	o
PC-03	Multi-step Command 3	-100.0%~100.0%	80.0%	o
PC-04	Multi-step Command 4	-100.0%~100.0%	100.0%	o
PC-05	Multi-step Command 5	-100.0%~100.0%	0.0%	o
PC-06	Multi-step Command 6	-100.0%~100.0%	0.0%	o
PC-07	Multi-step Command 7	-100.0%~100.0%	0.0%	o
PC-08	Multi-step Command 8	-100.0%~100.0%	0.0%	o
PC-09	Multi-step Command 9	-100.0%~100.0%	0.0%	o
PC-10	Multi-step Command 10	-100.0%~100.0%	0.0%	o
PC-11	Multi-step Command 11	-100.0%~100.0%	0.0%	o
PC-12	Multi-step Command 12	-100.0%~100.0%	0.0%	o
PC-13	Multi-step Command 13	-100.0%~100.0%	0.0%	o
PC-14	Multi-step Command 14	-100.0%~100.0%	0.0%	o
PC-15	Multi-step Command 15	-100.0%~100.0%	0.0%	o
PC-16	Simple PLC running mode	0: Stop after 1 full cycle 1: Continue from last frequency after 1 full cycle 2: Circular continuous operation	0	o
PC-17	Simple PLC storage selection when power-down	Units place: memory selection when power is off 0: do not save 1: Save Tens place: memory selection when stopped 0: do not save 1: Save	00	o
PC-18	0th phase running time	0.0 s (h)~6500.0 s (h)	0.0 s (h)	o
PC-19	0th phase ACC/DCC time selection	0~3	0	o
PC-20	1st phase running time	0.0 s (h)~6500.0 s (h)	0.0 s (h)	o
PC-21	1st phase ACC/DCC time selection	0~3	0	o
PC-22	2nd phase running time	0.0 s (h)~6500.0 s (h)	0.0 s (h)	o
PC-23	2nd phase ACC/DCC time selection	0~3	0	o
PC-24	3rd phase running time	0.0 s (h)~6500.0 s (h)	0.0 s (h)	o
PC-25	3rd phase ACC/DCC time selection	0~3	0	o
PC-26	4th phase running time	0.0 s (h)~6500.0 s (h)	0.0 s (h)	o
PC-27	4th phase ACC/DCC time selection	0~3	0	o
PC-28	5th phase running time	0.0 s (h)~6500.0 s (h)	0.0 s (h)	o
PC-29	5th phase ACC/DCC time selection	0~3	0	o
PC-30	6th phase running time	0.0 s (h)~6500.0 s (h)	0.0 s (h)	o
PC-31	6th phase ACC/DCC time selection	0~3	0	o
PC-32	7th phase running time	0.0 s (h)~6500.0 s (h)	0.0 s (h)	o
PC-33	7th phase ACC/DCC time selection	0~3	0	o
PC-34	8th phase running time	0.0 s (h)~6500.0 s (h)	0.0 s (h)	o
PC-35	8th phase ACC/DCC time selection	0~3	0	o
PC-36	9th phase running time	0.0 s (h)~6500.0 s (h)	0.0 s (h)	o
PC-37	9th phase ACC/DCC time selection	0~3	0	o
PC-38	10th phase running time	0.0 s (h)~6500.0 s (h)	0.0 s (h)	o
PC-39	10th phase ACC/DCC time selection	0~3	0	o
PC-50	Timing unit (Simple PLC mode)	0: s (second) / 1: h (hour)	0	o
PC-51	Multi-step command 0 given mode	0: PC-00 1: AI1 5: PID 6: Keypad setting frequency (P0-08), can be modified via UP/DN	0	o

Pd Parameter Group

Pd-00	Baud rate	2: 1200BPS 3: 2400BPS 4: 4800BPS 5: 9600BPS 6: 19200BPS 7: 38400BPS	5	o
Pd-01	Data format	0: No parity (8-N-2) 1: Even parity (8-E-1) 2: Odd parity (8-O-1) 3: No parity (8-N-1)	3	o
Pd-02	Device ID	1-247, 0 as broadcast	1	o
Pd-03	Response Delay	0 ms-20 ms	2	o
Pd-04	Communication timeout	0.0 (geçersiz), 0.1 s-60.0 s	0.0	o
Pd-06	Communication read current resolution	0: 0.01 A 1: 0.1 A	0	o

PP Parameter Group

PP-00	User password	0-65535	0	o
PP-01	Factory settings	0: No action 1: Restore factory default, but not including motor parameters 2: Clear the record	0	⊗
PP-02	Function parameter group display selection	Units place: U0 group display selection 0: No display 1: Display Tens place: A0 group display selection 0: No display 1: Display	10111	⊗

AO Parameter Group

AO-00	Speed/torque control mode selection	0: Speed control 1: Torque control	0	⊗
AO-01	Torque setting source selection in torque control mode	0: Keypad (AO-03) 1: AI1 5: Communication	0	⊗
AO-03	Torque setting through keypad in torque control mode	-200.0%-200.0%	150.0%	o
AO-04	Torque filter time	0.00 s-10.00 s	0.00s	o
AO-05	Forward maximum frequency in torque control mode	0.00 Hz-P0-10 (maximum frequency)	50 Hz	o
AO-06	Reverse maximum frequency in torque control mode	0.00 Hz-P0-10 (maximum frequency)	50 Hz	o
AO-07	Reverse maximum frequency in torque control mode	0.00 s-65535 s	0.00 s	o

Modbus Map

Hex Adres	Address Description
1000	Frequency write address via communication (-10000-10000) (decimal)
1001	Operating frequency
1002	Bus voltage
1003	Output voltage
1004	Output current
1005	Output power
1006	Output torque
1007	Operating speed
1008	DI input status
1009	DO output status
100A	AI1 voltage
100C	Radiator temperature
100D	Count value input
100E	Length value input
100F	Load speed
1010	PID setting
1011	PID feedback
1012	PLC operating process
1014	Feedback speed (unit: 0.1 Hz)
1015	Remaining operating time
1016	AI1 pre-calibration voltage value
1019	Linear speed
101A	Current power remaining time
101B	Current operating time
101D	Communication setting value
101E	Feedback speed
2000	<p>If you write the commands (numbers) listed below to address '2000', the operating conditions described in the explanations below will be executed.</p> <p>0001: Forward operation 0002: Reverse operation 0003: Forward jog 0004: Reverse jog 0005: Instant stop 0006: Deceleration stop 0007: Error reset</p>

Factory Settings Communication Settings: 9600, 8, None, 1.

Error Codes and Descriptions

E-01	Motor short circuit
E-02	Overcurrent error
E-03	Check the motor and cable connections.
E-04	Enter the motor parameters correctly. Increase the acceleration and deceleration time. Make the motor and driver bigger.
E-05	Overvoltage error
E-06	Increase acceleration and deceleration times.
E-07	Check input voltage. Add braking resistor.
E-08	Power supply error Check the input voltage.
E-09	Low voltage error Check the supply voltage. If the problem persists, send the device to service.
E-10	Inverter overload error Load is too heavy or there is a problem that prevents the motor shaft from rotating
E-11	Motor overload error Set P9-01 parameter appropriately. Make the motor and driver bigger.
E-12	Input phase loss error Check the speed controller input supply voltages.
E-13	Output phase loss error The wiring between the motor and the speed controller should be checked. The speed controller motor driver card may be faulty.
E-14	High temperature error in IGBT module Ambient temperature may not be suitable for operating temperature. The cooling fans of the driver may be dirty or not working, in this case send the driver to service.
E-15	External error An external error function may be defined for any of the digital inputs.
E-16	Communication error
E-18	Current reading error. Fault in the driver circuit. Send the driver to service.
E-19	Autotuning error Motor plate may not be adjusted correctly. Pay attention to the wiring between the motor and the speed controller.
E-23	Ground short circuit fault Motor – ground short circuit Replace cables and motor.
E-26	Total run time reached. Reset the relevant parameter.
E-29	Total energy retention time reached. Reset the relevant parameter.
E-31	PID feedback error The value set in PA-26 is smaller than the PID feedback.
E-40	Current limiting error The load is heavy; reduce the load. The speed control device power is insufficient. Use a speed control device with higher power.

Maintenance and Repair

Device maintenance and repair should be carried out by trained technical personnel. Unauthorised intervention may result in personal injury and/or damage to the device. Please contact our company for the repair of faulty devices.

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