

## CHAPTER 6 FUNCTIONS AND PARAMETER SUMMARY

### 0 System Parameter

★= This parameter cannot be set during operation.

	Parameter	Functions	Settings	Factory Setting	User
★	0-00	Identity Code	Based on the model type	Read Only	
★	0-01	Rated Current Display	Based on the model type	Read Only	
★	0-02	Parameter Reset	10: Parameter reset for 60Hz, 230V or 460V field 9: Parameter reset for 50Hz, 220V or 380V field 8: Parameter reset for 60Hz, 220V or 380V field 7: Parameter reset for 50Hz, 230V or 460V field	8	
	0-03	Password Input for unlock	0~9999	0	
	0-04	Password Setting for lock/unlock	0~9999	0	
	0-05	Parameter Locking	Bit 0=1: Parameters cannot be read Bit 1=1: Disable Frequency Command changes. Bit 2=1: Disable run command from keypad	b00000	
	0-06	Start-up Display of the Drive	0: F (Master frequency command) 1: H (Output frequency) 2: A (Output current) 3: U (multi-function display of Pr. 0-07)	0	
	0-07	Definitions of the Multi-Function Display	0: Motor speed (rpm) 1: DC-BUS voltage 2: Output voltage 3: Voltage command 4: PID feedback value 5: Multi-step speed (0~15Steps) 6: Dwell (Sleep) time 7: Remaining number of times for the "restart after fault" feature 8: (Factory Reserved) 9: (Factory Reserved) 10: Power factor $\pm 1.000$ 11: Counter value 12: Over-torque accumulated time 13: (Factory Reserved) 14: Dwell Time at Start-up 15: Dwell Time during a STOP 16: DC Braking Time at Start-up 17: DC Braking Time during a STOP 18: Execution time of the multi-step speed 19: (Factory Reserved) 20: (Factory Reserved)	0	

			21: Day (power-up time) 22: Hour, Minute (power-up time) 23: (Factory Reserved) 24: Execution step of the multi-step speed 25: (Factory Reserved) 26: (Factory Reserved) 27: (Factory Reserved) 28: (Factory Reserved) 29: AVI (0~10V) 30: ACI (4~20mA) 31: (Factory Reserved) 32: (Factory Reserved) 33: (Factory Reserved) 34: Over-torque level 35: Torque compensation gain 36: (Factory Reserved) 37: (Factory Reserved) 38: Stall level limitation 39~52: (Factory Reserved) 53: Output power (kW) 54: Output (kVA) 55 : (Reserved) 56: OH1 temperature 57: OH2 temperature 58: (Factory Reserved) 59: (Factory Reserved) 60: Overload accumulated time 61 : (Factory Reserved) 62: Compensated voltage 63: (Factory Reserved) 64: DC voltage upon a fault 65: Output AC voltage upon a fault 66: Output frequency upon a fault 67: Frequency command upon a fault 68: Current value upon a fault		
	0-08	User-Defined Coefficient Setting	0~39 (no use) 40~60000 (relative to Pr1-00)	0	
	0-09	Number of the decimal places	0~3	0	
	0-10	Software Version	Read-only	x.xx	
	0-11	EPROM store settings	Bit0=1: FWD/REV direction command not memorized Bit1=1: PU frequency command not memorized Bit2=1: RS-485 frequency command not memorized Bit3=1: Up/down pin frequency command not memorized Bit4=1: Parameter not memorized	b00000	

	0-12	Optimal Acceleration / Deceleration Setting	0: Linear acceleration/deceleration	0	
			1: Auto acceleration, linear deceleration		
			2: Linear acceleration, auto deceleration		
			3: Auto acceleration/deceleration		
			4: Linear acceleration/deceleration, but conduct the stall prevention throughout the auto acceleration/deceleration function.		
★	0-13	Time unit for Acceleration Deceleration and S curve	0: Unit 0.01 Sec	0	
			1: Unit 0.1 Sec		
			2: Unit 1 Sec		
	0-14	Carrier Frequency Upper Bound	0 : 0.7kHz 1 ~ 18kHz	10	
	0-15	Carrier Frequency Lower Bound	0 : 0.7kHz 1 ~ 18kHz	10	
	0-16	Auto Voltage Regulation (AVR) Function	0: AVR function enabled	0	
			1: AVR function disabled		
			2: AVR function disabled during deceleration		
	0-17	Automatic Energy-Saving Operation (AESO)	Bit0=0: Disable AESO	b00000	
			Bit 0=1: Enable AESO		
			Bit 1=0: Maximum output voltage could be higher than the input power voltage		
			Bit 1=1: Maximum output voltage equals to the input power voltage		
			Bit 2=0: OL (100%) constant torque operation		
			Bit 2=1: OL (120%) variable torque operation		
			Bit 3=0: Regen torque without slip compensation		
			Bit 3=1: Regen torque with slip compensation		
			Bit 4=0: Low noise mode operation		
			Bit 4=1: Quiet mode operation		
	0-18	Source of the Frequency Command	0: The digital keypad	0	
			1: The RS485 communication port input		
			2: The external analog input		
			3: The external up/down pins		
	0-19	Source of the Operation Command	0: The RS485 communication port / digital Keypad	0	
			1: The external terminal / digital Keypad operation		
			2: The digital keypad operation		
			3: The external terminal operation		
	0-20	Stop Methods	Bit 0=0: Ramp to stop	b00000	
			Bit 0=1: Coast to stop		
			Bit 1=0: Not restart after reset		

			Bit 1=1: Restart after reset		
			Bit 2=0: Line Start Lockout is enabled		
			Bit 2=1: Line Start Lockout is disabled		
			Bit3=0: zero speed intervals enabled		
			Bit3=1: zero speed intervals disabled		
			Bit4=0: linear accel and decel at high speed zone		
			Bit4=1: S-curve accel and decel at high speed zone		
	0-21	Reverse Operation	0: REV enabled	0	
			1: REV disabled		
			2: FWD disabled		
	0-22	Stop timer	0.00~60.00sec	0.00	
	0-23	Fan control	Bit 0=0: when power is applied, the fan will turn on	b00000	
			Bit 0=1: When the run command is given, the fan will turn on		
	0-24	Setting resolution of frequency dial on PU	0=0.01 Hz	1	
			1=0.10Hz		
			2=1.00Hz		
			3=10.00 Hz		

## 1 Basic Parameter

	Para- meter	Functions	Settings		Factory Setting	User
★	1-00	Maximum Operation Frequency	50.0~600.00Hz		60.00/50.00	
★	1-01	Maximum Voltage frequency (Base Frequency)	0.00~600.00Hz		60.00/50.00	
	1-02	Maximum Output Voltage	230V models: 0.0~255.0	460V models: 0.0~510.0V	230V:220.0 460V:440.0	
★	1-03	Upper Midpoint Output Frequency	0.00~600.00Hz		0.50	
	1-04	Upper Midpoint Output Voltage	230V models: 0.0~255.0	460V models: 0.0~510.0V	230V:5.0 460V:10.0	
★	1-05	Lower Midpoint Output Frequency	0.00~600.00Hz		0.50	
	1-06	Lower Midpoint Output Voltage	230V models: 0.0~255.0	460V models: 0.0~510.0V	230V:5.0 460V:10.0	
	1-07	0Hz Output Voltage	230V models: 0.0~255.0	460V models: 0.0~510.0V	0.0	
	1-08	Startup Frequency	0.00~600.00Hz		0.50	
	1-09	Upper Bound Frequency	0.0~150.0%		110.0	
	1-10	Lower Bound Frequency	0.0~100.0%		0.0	
	1-11	The 1st Acceleration Time	0.00~60000 Sec		10.00/60.00	
	1-12	The 1st Deceleration Time	0.00~60000 Sec		10.00/60.00	
	1-13	The 2nd Acceleration Time	0.00~60000 Sec		10.00/60.00	
	1-14	The 2nd Deceleration Time	0.00~60000 Sec		10.00/60.00	

	1-18	1st/2nd Acceleration/Deceleration Frequency	0.00~600.00Hz	0.000	
	1-19	S-Curve for Acceleration Departure Time	0.00~12000 Sec	0.00	
	1-20	S-Curve for Acceleration Arrival Time	0.00~12000 Sec	0.00	
	1-21	S-Curve for Deceleration Departure Time	0.00~12000 Sec	0.00	
	1-22	S-Curve for Deceleration Arrival Time	0.00~12000 Sec	0.00	
★	1-23	Skip Frequency 1 (upper limit)	0.00~600.00Hz	0.00	
★	1-24	Skip Frequency 1 (lower limit)	0.00~600.00Hz	0.00	
★	1-25	Skip Frequency 2 (upper limit)	0.00~600.00Hz	0.00	
★	1-26	Skip Frequency 2 (lower limit)	0.00~600.00Hz	0.00	
★	1-27	Skip Frequency 3 (upper limit)	0.00~600.00Hz	0.00	
★	1-28	Skip Frequency 3 (lower limit)	0.00~600.00Hz	0.00	
	1-29	Offset voltage at decel	230V models: -50.0~50.0 V	460V models: -100.0~100.0V	0.0

## 2 Digital Output/Input Parameters (Need Optional I/O card)

	Para- meter	Functions	Settings	Factory Setting	User
★	2-00	2-Wire/3-Wire Operation Control	0: 2-Wire (1) 1: 2-Wire (2) 2: 3-Wire (MI1)	0	
★	2-01	Multi-Function Input Command 1 (MI1)	1: multi-step speed command 1	1	
★	2-02	Multi-Function Input Command 2 (MI2)	2: multi-step speed command 2	2	
★	2-03	Multi-Function Input Command 3 (MI3)	3: multi-step speed command 3	3	
★	2-04	Multi-Function Input Command 4 (MI4)	4: multi-step speed command 4	4	
			5: Reset ( NO )	5	
			6: clear counter	14	
			7: the 1st, 2nd acceleration/deceleration time selection		
			8: acceleration/deceleration speed inhibit		
			9: operation speed command form AVI		
			10: operation speed command form ACI		
			12: Emergency Stop		
			13: PID function disabled		
			14: EF input		
			15: B.B. traces from the bottom upward		
			16: B.B. traces from the top downward		
			17: Operation Command selection		

			18: Cancel the setting of the optimal acceleration/ deceleration time		
			22: Disable PLC RUN		
			23: Pause PLC RUN		
			24: Digital Up command		
			25: Digital Down command		
			26: Zero speed is replaced by DC current control		
			27: Pause Stop		
			28: Disable Dwell function		
			29: Disable Interfere jump function		
			30: Cancel Speed search		
			31: EEPROM write function disable		
			32: input the counter value		
	2-07	UP/DOWN key mode	0 UP/DOWN following the acceleration/ deceleration time	b00000	
			1 UP following the constant speed, and DOWN following the deceleration time following the deceleration time		
			2 UP following the acceleration time, and DOWN following the constant speed		
			3 UP/DOWN following the constant speed		
	2-08	The Acceleration /Deceleration Speed of the UP/DOWN Key with Constant Speed	0.01~1.00Hz/msec	0.01	
	2-09	Digital Input Responding Time	0.001~30.000 Sec	0.005	
	2-10	Digital Input Operation Direction	00000~000FF	h00000	
	2-11	Pre-set target Counter Values Achieved	0~65500	0	
	2-12	Pre-warn Counter Value Achieved	0~65500	0	
	2-14	Pre-set Arrival Frequency 1	0.00~600.00Hz	60.00/50.00	
	2-15	Pre-set Arrival Frequency 1 band width	0.00~600.00Hz	2.00	
	2-16	Pre-set Arrival Frequency 2	0.00~600.00Hz	60.00/50.00	

	2-17	Pre-set Arrival Frequency 2 band width	0.00~600.00Hz	2.00	
	2-18	Multi-Function Output Direction	Bit 0~Bit 3 separate setting	b00000	
	2-19	Multi-Function Output 1 R1A, R1B, R1C (Relay 1)	1: Drive running	11	
			2: Master frequency attained 1 (Both Forward and Reverse)	1	
	2-21	Multi-Function Output 3 (MO1)	3: Master frequency attained 2 (Both Forward and Reverse)	5	
			4: Pre-set speed attained 1 (Both Forward and Reverse)	9	
			5: Pre-set speed attained 1 (Forward only)		
			6: Pre-set speed attained 2 (Both Forward and Reverse)		
			7: Pre-set speed attained 2 (Forward only)		
			8 : Drive in decel		
			9: Drive ready for use		
			10: Low voltage alarm (LV)		
			11: Fault Indication		
			12: Base block (B.B.) Indication		
			13: Zero Speed (including shutdown)		
			14: Zero speed (while in run)		
			15: Pre-set target Count Value Attained		
			16: Pre-warn Count Value Attained		
			17: PLC RUN Command		
			18: PLC RUN paused		
			19: A step of PLC RUN completed		
			20: PLC RUN completed		
			21: Heatsink over-heat indication		
			22: Gear Gap Accel/Decel interruption		
			23: Operation Mode indication		
			24: over-torque (ot)		
			26: Software braking output(MO1, Pr2-21 only)		
			27: Auxiliary Motor no. 1		
			28: Auxiliary Motor no. 2		
			29: Auxiliary Motor no. 3		
			32~47: PLC RUN step indication		
			48~63: Multi-step indication		

### 3 Analog Output/Input Parameters (Need optional I/O card)

	Parameter	Functions	Settings	Factory Setting	User
	3-00	Addition Function of the Analog Inputs	0: enable addition function 1: disable addition function (AVI,ACI)	0	
	3-01	Analog Input Noise Filter	0.00~2.00 Sec	0.10	
	3-02	AVI Analog Input	0: no functions 1: frequency command 2: Acceleration/deceleration time gain 3: Over-current stall prevention level during operation 4: Over-current stall prevention level during Acceleration 5: Over-torque current level 6: Torque compensation gain 7: AVI auxiliary frequency 8: ACI auxiliary frequency 9: (Factory Reserved) 10: Auxiliary frequency of master frequency 11: PID feedback 12: PID offset 13 : DC level (same as Pr6-00) 14 : Torque adjust during run. (AVI only)	1	
	3-03	AVI Analog Input Bias	-10.00~ 10.00V	0.00	
	3-04	AVI Analog Input Gain	-500.0~ +500.0%	100.0	
	3-05	AVI Positive/Negative Bias Mode Mode	0: zero bias 1: value lower than bias = bias 2: value higher than bias = bias 3: the absolute value of the bias voltage while serving as the center	0	
	3-06	ACI Analog Input	Same as Pr. 03-02	0.00	
	3-07	ACI Analog Input Bias	0.00~20.00Ma	4.00	
	3-08	ACI Analog Input Gain	-500.0~ +500.0%	100.0	
	3-09	ACI Positive/Negative Bias Mode	0 : zero bias 1: value lower than bias = bias 2: value higher than bias = bias 3: the absolute value of the bias voltage while serving as the center	1	
	3-10	Loss of the ACI signal	0: disabled 1: continue operation at last known frequency 2: decelerate to a stop 3: stop immediately and display ACI	0	



	3-15	AVO Analog Output 1 Selection	0: output frequency	0	
			1: command frequency		
			2: Speed		
			3: Current		
			4: Output voltage		
			5: DC BUS voltage		
			6: Power factor		
			7: Power		
			8: AVI		
			9: ACI		
			13: voltage command		
			14: counter		
			15: Analog Output Value (Pr. 3-21)		
	3-17	AVO Analog Output Gain	-900.0~900.0%	100.0	
	3-19	AVO Analog Output Bias Voltage	-10.00~10.00V	0.00	
	3-21	Analog Output Value	0.0~100.0%	0.0	

#### 4 Multi-Step Speed Run (MSS Run) and Process Control Run (PLC Run)

	Parameter	Functions	Settings	Factory Setting	User
	4-00	The 1st Step Speed	0.00~600.00Hz	0.00	
	4-01	The 2nd Step Speed	0.00~600.00Hz	0.00	
	4-02	The 3rd Step Speed	0.00~600.00Hz	0.00	
	4-03	The 4th Step Speed	0.00~600.00Hz	0.00	
	4-04	The 5th Step Speed	0.00~600.00Hz	0.00	
	4-05	The 6th Step Speed	0.00~600.00Hz	0.00	
	4-06	The 7th Step Speed	0.00~600.00Hz	0.00	
	4-07	The 8th Step Speed	0.00~600.00Hz	0.00	
	4-08	The 9th Step Speed	0.00~600.00Hz	0.00	
	4-09	The 10th Step Speed	0.00~600.00Hz	0.00	
	4-10	The 11th Step Speed	0.00~600.00Hz	0.00	
	4-11	The 12th Step Speed	0.00~600.00Hz	0.00	
	4-12	The 13th Step Speed	0.00~600.00Hz	0.00	
	4-13	The 14th Step Speed	0.00~600.00Hz	0.00	
	4-14	The 15th Step Speed	0.00~600.00Hz	0.00	
	4-15	Time Duration of the PLC RUN Master Speed	0.0~65500 Sec	0.0	
	4-16	Time Duration of PLC RUN Step 1	0.0~65500 Sec	0.0	
	4-17	Time Duration of PLC RUN Step 2	0.0~65500 Sec	0.0	
	4-18	Time Duration of PLC RUN Step 3	0.0~65500 Sec	0.0	

	4-19	Time Duration of PLC RUN Step 4	0.0~65500 Sec	0.0	
	4-20	Time Duration of PLC RUN Step 5	0.0~65500 Sec	0.0	
	4-21	Time Duration of PLC RUN Step 6	0.0~65500 Sec	0.0	
	4-22	Time Duration of PLC RUN Step 7	0.0~65500 Sec	0.0	
	4-23	Time Duration of PLC RUN Step 8	0.0~65500 Sec	0.0	
	4-24	Time Duration of PLC RUN Step 9	0.0~65500 Sec	0.0	
	4-25	Time Duration of PLC RUN Step 10	0.0~65500 Sec	0.0	
	4-26	Time Duration of PLC RUN Step 11	0.0~65500 Sec	0.0	
	4-27	Time Duration of PLC RUN Step 12	0.0~65500 Sec	0.0	
	4-28	Time Duration of PLC RUN Step 13	0.0~65500 Sec	0.0	
	4-29	Time Duration of PLC RUN Step 14	0.0~65500 Sec	0.0	
	4-30	Time Duration of PLC RUN Step 15	0.0~65500 Sec	0.0	
	4-31	The PLC RUN Time Multiplier	1~10	10	
	4-32	The PLC RUN Operation Direction	00000~07FFF ( 0 : forward ; 1 : reverse )	h00000	
	4-33	Process Control Operation Mode (PLC RUN)	Bit 0=0 : direction determined by Pr4-32 Bit 0=1 : direction determined by the master speed control Bit 1=0 : continuously execute the process control operation Bit 1=1 : zero speed intervals enabled Bit 2=0 : operate at zero speed upon time extension Bit 2=1 : operate at a constant speed upon time extension	b00000	
	4-34	Process Control operation Cycle (PLC RUN)	0: PLC RUN disabled 1~60000 cycle 60001 endless	0	
	4-35	What to do after Process Control Operation (PLC RUN) finished	0~15 : step speed 16 : stop	16	
	4-36	Multi-Step Speed Operation Mode (MSS RUN)	Bit 0=0 : direction determined by Pr4-32 Bit 0=1 : direction determined by the master speed Bit 1=0 : continuously execute multi-step speed Bit 1=1 : execute only one process control operation cycle Bit 2=0 : zero speed intervals disabled Bit 2=1 : zero speed intervals enabled Bit 3=0 : PID offset no use Bit 3=1 : multi-speed + PID offset	b00001	

## 5 Motor and Protection Parameter

	Parameter	Functions	Settings		Factory Setting	User
★	5-00	Full-Load Current of Motor	****A ( 10~120% )		A ( 100% )	
	5-01	Torque Compensation of Motor	0.0~25.0%		0.0	
	5-02	Slip Compensation of Motor	0.0~20.0%		0.0	
	5-03	Number of Poles for Motor	2~20		4	
	5-04	Line to Line resistance R1 of Motor	Ω		0	
★	5-05	auto-tuning	0= No function 1= Measure R1 by 5-00 current 2= reset		0	
★	5-06	Low Voltage Level	230V models: 160~220VAC	460V models: 320~440VAC	230V:180 460V:360	
	5-07	Over-Voltage Stall Prevention	230V models: 320~500VAC	460V models: 640~1000VAC	230V:380 460V:760	
	5-08	Software Setting of the Braking Level	230V models: 320~500VAC	460V models: 640~1000VAC	230V:373 460V:746	
	5-09	Phase-Loss Protection	0: Warn and keep operating (below 50%) 1: warn and ramp to stop 2: warn and coast to stop		0	
	5-10	Over-Current Stall Prevention during Acceleration	Amp (10~250%)		A(170%)	
	5-11	Over-Current Stall Prevention during Acceleration	Amp (0~250%)		A(120%)	
	5-12	Over-Current Stall Prevention during Operation	Amp (10~250%)		A(170%)	
	5-13	Over-Current Stall Prevention during Operation (Lower limit)	Amp (0~250%)		A(120%)	
	5-14	Over-Current Deceleration Time during Operation	0.05~600.00 Sec		3.00	
	5-15	Over-Torque Detection Selection	0 : disabled 1 : Over-torque detection during constant speed Operation, stop operation after detection. 2 : Over-torque detection during constant speed operation, continue to operate after detection. 3 : Over-torque detection during entire 4 : Over-torque detection during entire		0	
	5-16	Over-Torque Detection Level	Amp(20~250%)		A(150%)	
	5-17	Over-Torque Detection Time	0.0~60.0 Sec		0.1	

	5-18	Electronic Thermal Relay Selection	0 : Electronic thermal relay function disabled	0	
			1 : Inverter/vector motor		
			2 : Standard motor		
	5-19	Electronic Thermal Relay Time	30~600 Sec	60	
	5-20	Heat Sink Over-Heat Warning	0.0~110.0℃	85.0	
	5-21	Most Recent Fault Record	0: no fault	0	
	5-22	2nd Most Recent Fault Record	1: oc (over-current)	0	
	5-23	3rd Most Recent Fault Record	2: ov (over-voltage)	0	
	5-24	4th Most Recent Fault Record	3: GF (ground fault)	0	
			4: sc (IGBT failure)		
			5: oL (drive overload)		
			6: oL1 (electronic thermal relay)		
			7: ot (Over-Torque)		
			8: OCN (over-current during constant speed)		
			9: OCA (over-current during accel)		
			10: OCD (over-current during decel)		
			11: OCD (over-current during decel)		
			12: EP2 (EPROM error 2)		
			13: EF (external fault)		
			14: CT1 (current sensor 1)		
			15: CT2 (current sensor 2)		
			16: HPF (protection circuit fault)		
			17: oH1 (IGBT overheat)		
			18: oH2 (brake overheat)		
			19: Soft start (Inrush limit)		
			20: ACI (ACI error)		
			21: ASC (RS-485 error)		
			22: PID (PID error)		
			23: PU (KEYPAD communication overtime)		
			24: Tune (Motor auto tuning failure)		
			25: brake (braking transistor failure)		
			26: PG (PG loose wires)		
			27: PHL (Phase loss)		
			29: CPU (CPU error)		
			30: FAN (FAN failure)		
			31.ANI fault (Analog Input Error)		
			37.OVd (Decel over Voltage)		

			38.COPY Fault (Parameter Copy Error)		
			39: LV (Low Voltage)		
			40: BB (External Base Block )		

## 6 Special Parameters

	Para- meter	Functions	Settings	Factory Setting	User
	6-00	DC Braking Current Level	Amp (0 ~125%)	A(0%)	
	6-01	DC Braking Time at Start-up	0.00~60.00 Sec	0.00	
	6-02	DC Braking Time during stopping	0.00~60.00 Sec	0.00	
	6-03	Start-point for DC Braking	0.00~600.00Hz	0.00	
	6-04	Increasing Rate of the DC Voltage	0.01~300.00%	50.00%	
	6-05	Re-activate after Momentary Power Loss	0 : disable 1 : begins from command frequency 2 : begins from minimum output frequency	0	
	6-06	Maximum Allowable Power Loss Time	0.1~5.0 Sec	2.0	
	6-07	Base Block Time for Speed Search	0.1~5.0 Sec	0.5	
	6-08	Maximum Current Level for Speed Search	Amp(20~200%)	A(120%)	
	6-09	Deceleration Time for Speed Search	0.50~120.00 Sec	3.00	
	6-10	Auto Restart after Fault	0~10	0	
	6-11	Speed Search Type	0 : speed search disabled 1 : speed search through the frequency command 2 : FWD-speed search only (motor only runs in FWD direction) 3 : REV-speed search only (motor only runs in REV direction) 4 : FWD/REV speed search enabled in both directions (fwd first) 5 : REV/FWD speed search enabled in both directions (rev first)	0	
	6-12	Speed Search Frequency (FWD direction)	0.00~600.00Hz	60.00/50.00	
	6-13	Speed Search Frequency (REV direction)	0.00~600.00Hz	60.00/50.00	
	6-14	Gear Gap Acceleration-Interruption Time	0.00~60.00 Sec	0.00	
	6-15	Gear Gap Acceleration-Interruption Frequency	0.00~600.00Hz	6.00	
	6-16	Gear Gap Deceleration-Interruption Time	0.00~60.00 Sec	0.00	

6-17	Gear Gap Deceleration-Interruption Frequency	0.00~600.00Hz	6.00	
6-18	Gear Gap current	Amp (0~150%)	A(0%)	
6-19	Skip Frequency Width	0.00~100.00Hz	0.00	
6-20	Bias Frequency Width	0.00~200.00Hz	0.00	

## 7 High Performances and Communication Parameter

**A RS-485 serial port (option) is necessary for serial communication**

Para-meter	Functions	Settings	Factory Setting	User
7-00	Proportional Gain (P)	0.0~500.0%	80.0	
7-01	Integral Time (I)	0.00~100.00 Sec 0.00 : no integral	1.00	
7-02	Differential Time (D)	0.00~5.00 Sec	0.00	
7-03	Integration's Upper Bound Frequency	0.0~100.0%	100.0	
7-04	PID Frequency Output Command limit	0.0~100.0%	100.0	
7-05	PID Deviation Range	-100.0~+100.0%	0.0	
7-06	One-Time Delay	0.000~0.100 Sec	0.000	
7-07	Detection Time of the Feedback Error	0.0~6000.0 Sec	0.0	
7-08	Feedback Signal Fault Treatment	0: warn and keep operating 1: warn and RAMP to stop 2: warn and COAST to stop	0	
7-9	Keypad Transmission Fault Treatment	0: warn and RAMP to stop 1: warn and COAST to stop	0	
7-10	Keypad Transmission Fault detection	0.0 : Disable and keep operating 0.1~60.0 Sec	0.0	
7-11	Communication Address	1~254	1	
7-12	Transmission Speed of the Communication	1.2~125 k bit / Sec	9.6	
7-13	Transmission Fault Treatment	0: warn and keep operating 1: warn and RAMP to stop 2: warn and COAST to stop 3: no treatment and no display	3	
7-14	Overtime Detection	0.0 : disabled 0.1~60.0 Sec	0.0	
7-15	Communication Protocol	0 : 7 , N , 2 ASCII 1 : 7 , E , 1 ASCII 2 : 7 , O , 1 ASCII 3 : 7 , E , 2 ASCII 4 : 7 , O , 2 ASCII 5 : 8 , N , 1 ASCII	0	

			6 : 8 , N , 2 ASCII		
			7 : 8 , E , 1 ASCII		
			8 : 8 , O , 1 ASCII		
			9 : 8 , E , 2 ASCII		
			10 : 8 , O , 2 ASCII		
			11 : 8 , N , 1 RTU		
			12 : 8 , N , 2 RTU		
			13 : 8 , E , 1 RTU		
			14 : 8 , O , 1 RTU		
			15 : 8 , E , 2 RTU		
			16 : 8 , O , 2 RTU		

## 8 Control Parameters for Fan and Water Pump

	Parameter	Functions	Settings	Factory Setting	User
★	8-00	V/F Curve Selection	0: V/F Curve determined	0	
			1: 1.5 Power Curve		
			2: Square Curve		
	8-01	Start-Up Frequency of the Auxiliary Motor	0.00~600.00Hz	0.00	
	8-02	Start-Up Frequency width of the Auxiliary Motor	0.00~600.00Hz	5.00	
	8-03	Time Delay before Starting the Auxiliary Motor	0.0~6000.0Sec	0.00	
	8-04	Time Delay before Stopping the Auxiliary Motor	0.0~6000.0Sec	0.00	
	8-05	Dwell (sleep) frequency	0.00~600.00Hz	0.00	
	8-06	Revival Frequency	0.00~600.00Hz	0.00	
	8-07	Dwell (sleep) Period	0.0~6000.0 Sec	0.0	