

USER MANUAL

XIMA G SERIES

Version : 1.1

Contents

Introduction	3
Safety Tips	9
Device Installation	11
o Installation Location	11
o Motor	13
o Mechanical Installation	13
Electrical Installation	15
o General schematic of Xima	15
o Power Terminals	16
PLC	20
Serial Communication via Modbus RTU	21
Parameters	25
o 1-Pr	25
o 2-rE	27
o 3-ia	27
o 4-SE	33
o 5-AP	36
o 6-PF	38
o 7-Hi	39
o 8-ob	39

Figures

Figure 1 VFD label information	5
Figure 2 Physical specifications (0.4 Kw – 30 Kw).....	7
Figure 3 Allowable gap for the physical installation	11
Figure 4 Installation in alignment with the horizontal surface	14
Figure 5 Xima General schematic.....	15
Figure 7 Input and output control terminals	18
Figure 8 The configuration of serial communication	21

Tables

Table 1 Power Electrical Specifications	6
Table 2 Physical specifications (0.4 Kw – 30 Kw).....	7
Table 3 Technical specifications (0.4 – 30 Kw)	8
Table 4 Overload period toleration duration	10
Table 5 The physical installation characteristics	13
Table 6 Input / Output wire specifications	16
Table 7 Bits of address register 0x2000.....	22
Table 8 Bits of address register 0x2100.....	23
Table 9 Bits of address register 0x2106.....	23
Table 10 List of address registers.....	40
Table 11 Faults	48

Introduction

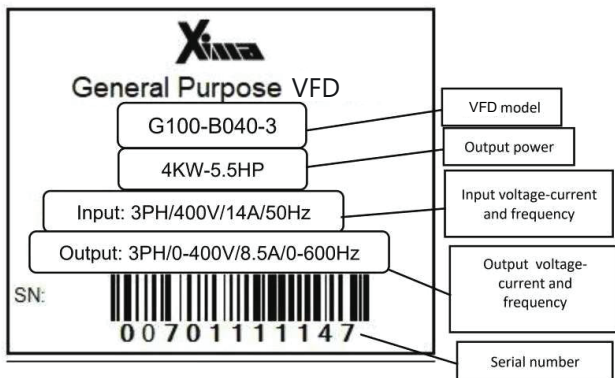
Thank you for choosing Xima . Please read the contents of this manual carefully not only to make a quick and safe installation but also to make use of our company's warranty services. In spite of the specialized terminology and concepts used in this manual, it is useful for those who have minimum information about installing power VFD devices.

Xima VFDs are designed and optimized based on the hardware and software requirements of manufacturers. Xima, also, has special attention to some important parameters including reasonable price, ease of installation, and cost-effective after-sales services.

Dear consumer! Getting help from you, we hope to improve the quality of our products day by day. Feel free to make any suggestions and criticisms; we appreciate that.

Our company's after-sales service center is always ready to answer your questions, and our experts will help you make a faster and easier installation and resolve your possible problems. For more information, visit our website:
www.Datis.in

VFD label information



P4.0-02-C1.7-02-T1.7-02

Power board version

Controller version

I/O terminals version

G100 B075-3

VFD model

VFD size

VFD power (divided by 10)

Input phases number

Figure 1 VFD label information

Table 1 Power Electrical Specifications

Model	size	Motor power	Voltage/phase	Nominal current	Input current	fuse	Brake resistance Power/resistance
		Kw/Hp	PH/V	A	A	A	OHM/ Watt
XIMAG100XYYY-Ph	A-B-C	Kw/Hp	PH/V	A	A	A	OHM/ Watt
XIMAG100A004-1	A	0.4/0.5	1/220	2	5	8	30~50/40
XIMAG100A008-1	A	0.75/1	1/220	4	10	16	30~100/75
XIMAG100A011-1	A	1.1/1.5	1/220	5	13	25	30~80/150
XIMAG100B015-1	B	1.5/2	1/220	7	18	32	30~60/200
XIMAG100B022-1	B	2.2/3	1/220	9	24	40	30~40/250
XIMAG100B030-1	B	3/4	1/220	12	32	50	30~60/350
XIMAG100B008-3	B	0.75/1	3/380	2	3.5	8	50~220/150
XIMAG100B015-3	B	1.5/2	3/380	4	6.5	16	50~220/150
XIMAG100B022-3	B	2.2/3	3/380	5	8	16	50~180/250
XIMAG100B030-3	B	3/4	3/380	7	10	16	50~120/300
XIMAG100B040-3	B	4/5.5	3/380	8.5	14	25	50~100/400
XIMAG100B055-3	B	5.5/7.5	3/380	12	18	32	50~80/600
XIMAG200C075-3	C	7.5/10	3/380	18	24	40	50~120/800
XIMAG200C110-3	C	11/15	3/380	24	36	50	50~160/1200
XIMAG200C150-3	C	15/21	3/380	32	50	80	20~30/1500
XIMAG200D185-3	D	18.5/25	3/380	40	45	100	10~20/2000
XIMAG200D220-3	D	22/30	3/380	47	54	125	10~20/2300
XIMAG200D300-3	D	30/40	3/380	63	72	150	10~20/3100

Table 2 Physical specifications (0.4 Kw – 30 Kw)

Model	W (mm)	H (mm)	D (mm)	W1 (mm)	H1 (mm)	t (mm)	Weight (gr)	IP
XIMA-A	95	155	139.5	84.0	144.0	11.5	1600<	20
XIMA-B	103	206	160	91.5	194.5	11.5	2200<	20
XIMA-C	128	293	178.0	117.5	282.5	11.5	3600<	20
XIMA-D	205	448	198	159	434	34	10800<	20

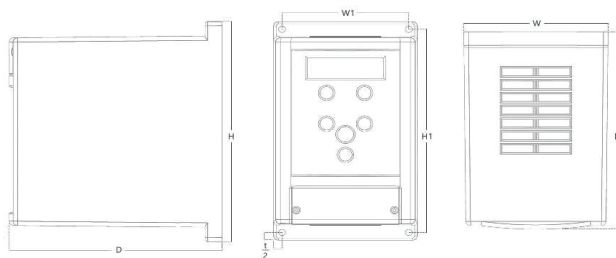


Figure 2 Physical specifications (0.4 Kw – 30 Kw)

Table 3 Technical specifications (0.4 – 30 Kw)

Output Frequency Range	0 – 1000.0 Hz
Frequency resolution	0.001Hz (0.1Hz display)
PWM Frequency	2.0 – 10.0 KHz
PWM modulation	Space vector
PWM resolution	>11bit
ADC resolution	12bit / 4Msps
DSP	32bit Motor control
Control sampling Frequency	1000Hz
Input Frequency	47 – 63 Hz
Input Voltage	200-260(1PH) / 330-460(3PH)
Output Voltage	0 – Input Voltage
Efficiency (PF=1, Vout=Vin)	>98%
Inrush Current	<10A
Phase Short circuit protection	To phase, Ground, +Bus, -Bus
Maximum Starting torque	150%
Brake	DC Brake, Dynamic Brake
Voltage limit threshold (if enabled)	380V(1PH) / 700V(3PH)
Brake ON Voltage	370V(1PH) / 690 V (3PH)
Brake OFF Voltage	365V(1PH) / 680 V (3PH)
Over Voltage fault	400V(1PH) / 720 V (3PH)
Current limit threshold	Adjustable
Over Current threshold	2 x VFD rated Current
Analog Voltage Input impedance	14.3Kohm

Analog Current Input impedance	150ohm
Digital Input impedance	9.5Kohm
12V output Voltage	12 – 14V
12V supply output impedance	5ohm (PTC protected)

Safety Tips

○ General Tips

Observance of safety tips not only will eliminate possible dangers during installation and use, but also will result in a longer lifetime and more continuous performance for the device. Non-compliance with these tips causes potential life-threatening or financial risks.

Note that the installation of this device requires expertise and specialization, and non-specialist personnel is never allowed to install and set up the device, and corresponding personal injury and material damage is the responsibility of the consumer.

○ Input / Output Voltage

The electrical input and output voltage in the power system is high (380 V) and dangerous for humans. When installing these systems, be sure that the power is disconnected and run all steps in the "[Electrical Installation](#)" section of this user manual.

○ Mechanical and Safety System

An VFD is essentially a part of a moving mechanical system that can be dangerous for people. Proper design of the mechanical system and other items are all important for providing a safe environment. Using safety buttons to cut off the power of the machine in emergency conditions or installing mechanical brakes for motors is required in some cases.

○ Fire

The speed control system is a part which is capable of igniting and should therefore be placed inside an appropriate panel with appropriate fire standards. **Any fire damage caused by the device is the responsibility of the consumer, and only damages regarding the speed control system, which originates from the device itself,** will be covered by the warranty service, and even if the fire of the device (even due to technical problems of the device itself) results in fire and damage to a system other than the device, it will not be the responsibility of the company.

○ Fuses and Protective Circuits

The use of fuses and protective circuits in the device input is mandatory, and not applying such parts will invalidate the warranty and increase the risk of personal injuries and material damages. Refer to Table 1 for the right choice of the protective circuit.

- **Overload range**

In normal conditions, the motor current must be less than the rated current of the VFD, and if the current is more than 110% of the rated current, the device enters the overload phase, and a fault will occur after a period. The duration after which the fault will occur depends on the amplitude of the current passing through the VFD. When an overload fault occurs, the system will require a restart before it can operate again.

If overload occurs when the motor is working normally, with a current less than or equal to the rated current, the duration of the fault will be shorter than the case in which the overload occurs at the beginning of the motor startup. In the following table, the duration of the overload fault in different conditions is presented.

If the current exceeds 200% of the rated current, the device will demonstrate an over-current fault right away.

Table 4 Durations in which the device tolerates the overload period

Overload output current to input current	Duration of overload fault from cold installation (seconds)	Duration of overload fault from rated load (seconds)
115%	190	80
120%	140	50
130%	100	30
150%	60	15
170%	40	10

Note:

If the average motor power is larger than the rated power of the device for a long time, it will demonstrate a low-power fault, which means that the device needs to be replaced with an VFD with larger rated power should be replaced. Note that all parameters, including faults, average and maximum temperature, current, voltage, etc., are stored in the memory of the device and will be evaluated for warranty validity.

Device Installation

○ Installation Location

One of the most important factors in the failure of the motor speed control system is the non-observance of the relevant principles at the installation location, which in some cases could result in warranty voidance.

- The device must be installed inside a standard metal control panel and this panel must have suitable ventilation.
- By implementing unsuitable closure of the control panel or lack of ventilation, not only there is the possibility of an excessive temperature fault, but also the lifetime of the device is significantly reduced.
- The panel should be in a covered area.
- There must be at least a 10 centimeters gap from the bottom, top, and sides between the device and the panel, and also there must be a pathway for fresh air inlet and hot air outlet (From the bottom of the panel upwards).

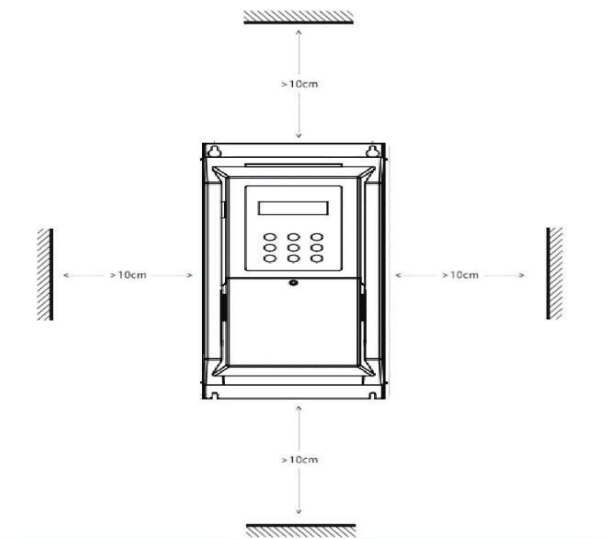


Figure 3 Allowable gap for the physical installation

– The use of an air filter in the air inlet of the control panel, especially in unclean and dusty areas is mandatory, and the excessive dust inside the device will invalidate the warranty.

– Any direct and dense humidity (such as dew) can cause a lot of damage to the device and this device will not be subject to the warranty of replacement and repair.

The use of heaters inside the panel, especially in the winter, and humid environments, and places where there is a potential for dew on surfaces, is mandatory, and in long term, it will result in considerable savings on the maintenance and repair cost of electronic devices.

– The installation location temperature should be within the range of -10 to +50 ° C and for the temperature range of 40 to 50 ° C, the rated power should be reduced by 2% per centigrade degree increase in temperature. Temperatures outside this range will significantly decrease the lifetime of the device and will invalidate its warranty.

The lifetime of the device's power capacitors will be halved for every 10 centigrade degrees being warmer. So, devices that operate in hot environments or under heavy-load conditions, will be required their power capacitors to be replaced in shorter time intervals.

– The installation location should not be subjected to severe and consistent vibrations. If it is necessary to install the device in such places, consult with our company's experts before installation.

–Direct sunlight will dramatically decrease the lifetime of the device's box and keyboard, and will also invalidate the warranty.

– If the altitude of the installation location is more than 1000 meters (above mean sea level), a 2% reduction in the power capacity of the device should be considered for every 100 meters above the 1000 meters above mean sea level, otherwise there is the possibility of the device heating in its rated load. In this case, it is required to install a device with larger power.

Note: Higher altitudes (above mean sea level) as well as warmer environments, reduces the lifetime of the power capacitors; because the air concentration decreases and the heat exchange of the capacitors with the environment decreases in both situations.

- Characteristics of Device Installation Location

The table below shows the required characteristics of the installation location for the stable and reliable operation of the device.

Note that non-observance of the following conditions will cause the device to function incorrectly, and possible consequences are beyond the responsibility of the company.

Table 5 The physical installation characteristics

Installation Location	Inside the control panel with suitable ventilation and filter, and in a covered area	
Temperature	-10 ~50 C	Above 40 ° C, for every 1 Celsius degree increase, consider a 2% reduction in the output power
Relative noncondensing humidity	h< 85%	If dew is possible to form, be sure to use a heater inside the panel.
Vibration	a < 0.5g	X, Y, Z Three axes
UV resistant	No	No exposure to sunlight
IP	20	No safety against water; No dust protection
Altitude (above mean sea level)	A < 2600m	For every 100 meters above 1000 meters, consider about 2% decrease in the rated power

- Motor

Before installing the device, remove the motor from the mechanical system, if possible. This is especially important where turning the motor in the reverse direction causes damages to the system.

Connect the motor case to the ground. Otherwise, in the case of a connection of the motor case to the coil, there is a possibility of extreme electrical injury and even death.

If the metal is used in the entire system and the body of the motor is connected to the system, you can connect any point of the system to the ground.

The motor power should never be larger than the rated power of the VFD. Otherwise, the device performance is not optimal and the warranty is invalidated.

- Mechanical Installation

To install the device inside the desired control panel, and according to the conditions described in the [installation location section](#), firstly mark the drilling spot in alignment by the stencil (which is available with the device) and drill this spot using a 3mm drill. Then, close the screws of the top of the device (6 screws of diameter 4mm are available with the device) and close the screws of the bottom of the device (do not completely close), and then tighten (completely close) the four screws as is necessary. Note that you should also use the washers with the screws.

To speed up the installation and to make it easy, it is better to be done by two people.

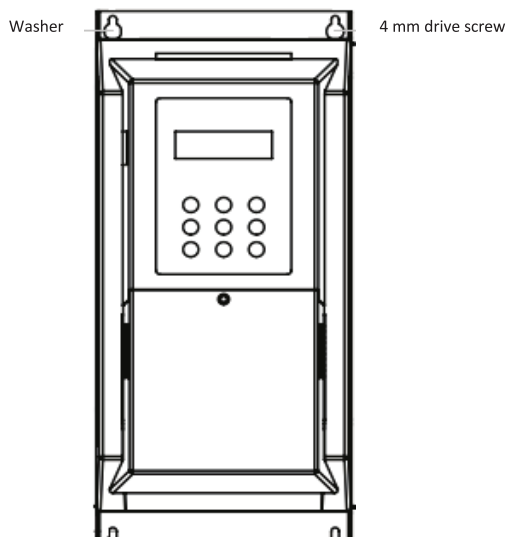


Figure 4 Installation in alignment with the horizontal surface

Electrical Installation

- General schematic of Xima

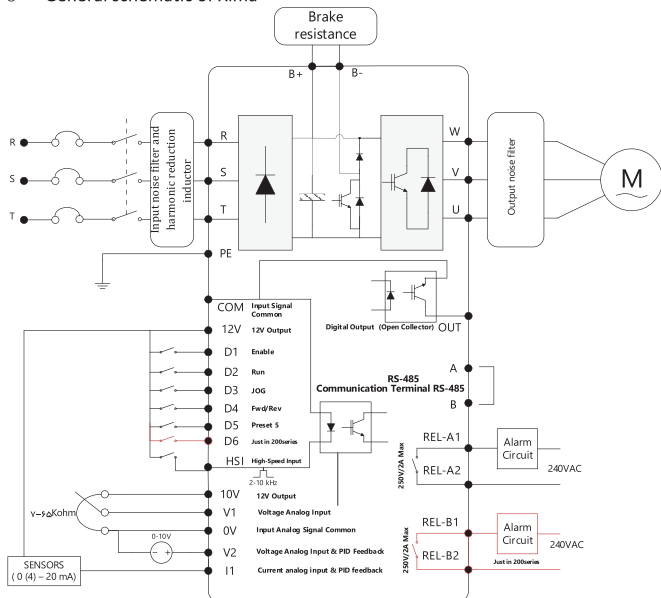


Figure 5 Xima General schematic

○ Power Terminals

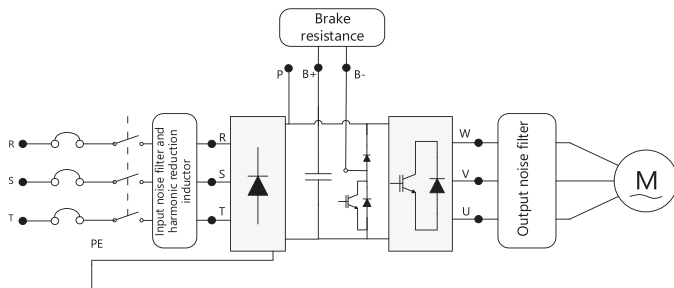


Figure 6 Input and output power terminals

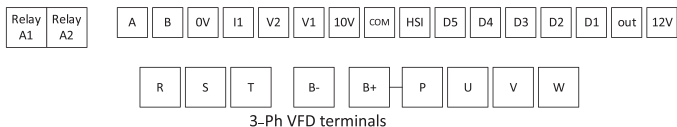
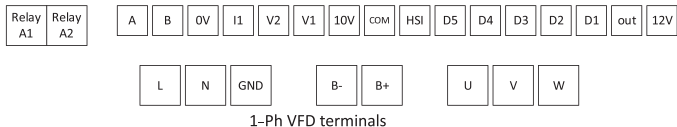
	1-ph (220V)	3-Ph(380V)
Input power	L, N	R, S, T
Output power	W, V, U	W, V, U

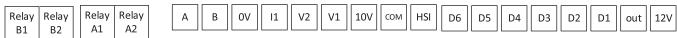
Table 6 Input / Output wire specifications

XIMAG100YYYY-Ph	kW/V	Input wire / output wire (mm ²)
XIMAG100A004-1	0.4/220v	1 / 1.5
XIMAG100A008-1	0.75/220v	1 / 1.5
XIMAG100A011-1	1.1/220v	1 / 1.5
XIMAG100B015-1	1.5/220v	1.5 / 2.5
XIMAG100B022-1	2.2/220v	2.5 / 4
XIMAG100B030-1	3.0/220v	4/ 6
XIMAG100B008-3	0.75/380v	1 / 1.5
XIMAG100B015-3	1.5/380v	1 / 1.5
XIMAG100B022-3	2.2/380v	1 / 1.5
XIMAG100B030-3	3/380v	1.5 / 2.5
XIMAG100B040-3	4/380v	2.5 / 2.5
XIMAG100B055-3	5.5/380v	2.5(4)/ 4
XIMAG100C075-3	7.5/380v	4 / 6
XIMAG200C110-3	11/380v	6/10
XIMAG200C150-3	15/380v	10/10
XIMAG200D185-3	18.5/380v	10/10
XIMAG200D220-3	22/380v	10/16
XIMAG200D300-3	30/380v	16/25

Important points	
1	Note that it is not necessary to connect the null to the N input.
2	Connect the ground wire to the PE terminal. In the three-phase model, use a wire with a maximum cross-section of 1.5 mm ² to connect the ground to the device.
3	Connect the brake resistance to the B+ and B- terminals with a 1.5 mm ² cable (The direction of the connection is not important). You can also use a thicker wire in the single-phase models.

Warnings	
1	Avoid connecting the null wire directly to the ground terminal.
2	Do not use any cable shoes. Using a cable shoe will increase the possibility of loosening the terminal screws.
3	Strip wires to a maximum length of 8 mm from the tip, such that the wires in the adjacent terminals couldn't be shorted to each other.
4	Avoid excessive tightening the terminal screws as the cost of replacing damaged terminals is not covered by the warranty.
5	Do not use a miniature or thermal switch on the output of the device.
6	Connect the ground input, if possible, in order to prevent the output noise and the possibility of electric shock.
7	It is not mandatory to use the harmonic reduction inductor and the input/output noise filter. (Except special cases)
Non-observance of the above points would cause damage to the device and invalidation of the warranty coverage.	





3-Ph VFD terminals, 200 series

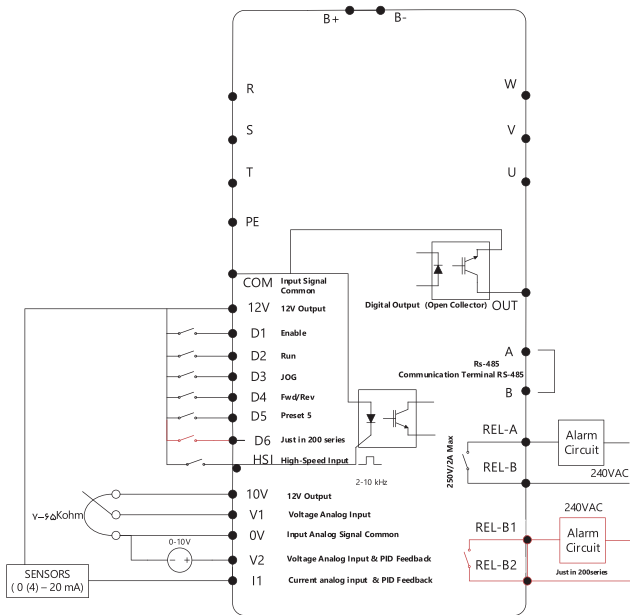
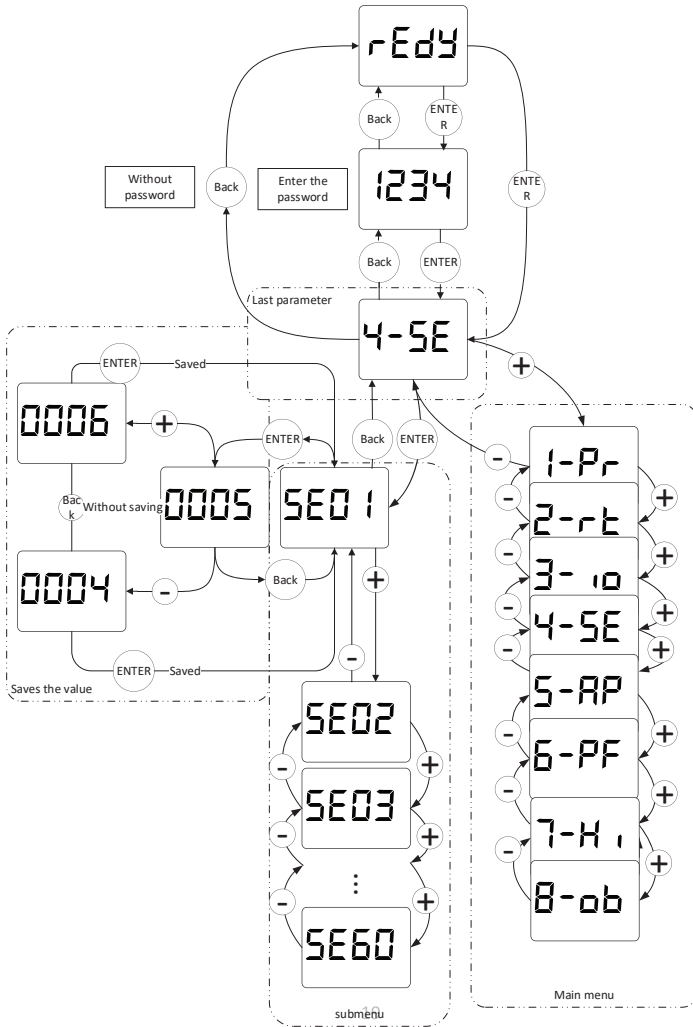


Figure 7 Input and output control terminals



PLC

Xima VFDs can execute simple repeating procedures including 7 different frequency steps in either direction.

Frequency steps

To define a simple procedure for the VFD, choose the number of required steps by parameter **SE46**. The frequency of each step is determined by parameters **Pr 11**, **Pr 12**, **Pr 13**, **Pr 14**, **Pr 15**, **Pr 26**, and **Pr 27**. To reverse the direction of any step, set its frequency to a negative value. The execution time of each step is defined by parameters **Pr 28**, **Pr 29**, **Pr 30**, **Pr 31**, **Pr 32**, **Pr 33**, and **Pr 34**, respectively. The time unit of the process is selected between minutes and seconds by parameter **SE44**.

PLC mode settings

To define the process repetition, parameters **SE42** and **SE49** determine the way the whole process is repeated.

It is possible to define a smaller cycle inside the main cycle, which can be executed a few times before the remaining steps of the main cycle. To define a smaller cycle inside the main cycle parameters **SE47**, **SE48**, and **SE45** should be set.

Whether the VFD resets or resumes the process at power ups is selected by parameter **SE43**.

Serial Communication via Modbus RTU

Xima VFDs can connect to automation instruments through serial communication. The devices supposed to connect to Xima via serial communication must support RS485 and Modbus RTU protocol. When the connection is set, it is possible to send commands to the VFDs separately, and, also, read and monitor different variables, such as the frequency and current of each VFD. Additionally, it is possible to monitor or change the parameters of each VFD through the serial connection.

Communication settings

Depending on the connection speed, parameter **5E2B** should be set. And, the slave address of each VFD should be set via parameter **5E29** of each VFD individually. The type of parity bit is defined by parameter **5E30**.

For defining the number of stop bits, the type of parity bit should be taken into consideration. If the parity bit is odd or even, the number of stop bits should be set to 1. And, if there are no parity bits defined in the connection, the number of stop bits should be set to 2.

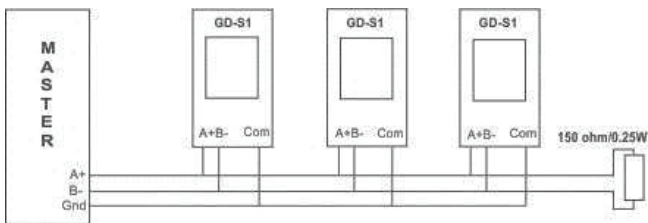


Figure 8 The configuration of serial communication

It is worthy of note that connecting the COM terminals and a 150Ω resistor to the end of the serial line is not necessary in short distances.

All the address registers associated with the parameters of Xima VFDs are introduced in Table 10 of this user manual. The command and monitoring registers are described in the following.

A) Command address registers (0x06)

The command address registers are introduced in this section. These address registers are only writable. In the following, these address registers are described.

1- Run state command (0x2000)

By writing on this address, the following commands will be sent to VFDs. The VFD will not execute this command if the parameter lo01 is not set to 16.

Table 7 Bits of address register 0x2000

11 – 15 (MSB)	10	9	8	7	6	5	4	3	2	1	0 (LSB)
-	local	Mode	Acc	Acc	P	P	P	JOG	F/R	run	Enable

The bits of this register are elaborated in the following.

Bit number 0: This bit refers to the Enable command.

Bit number 1: This bit refers to the run command.

Bit number 2: This bit refers to the direction of rotation.

Bit number 3: This bit activates the Jog function.

Bit numbers 4, 5, and 6: These bits are used to activate a preset frequency by a 3bit binary value.

Bit numbers 7 and 8: These bits are used to activate an acceleration setting by a 2bit binary value. Where 00 means acceleration and deceleration times are equal to the values set to parameters Pr03 and Pr04, respectively. And, other values choose the second or third acceleration times.

Bit number 9: By writing 1 on this bit, the control mode will switch to PID, and by writing 0 on this bit, the controller will switch back to the frequency control mode.

Bit number 10: By writing 1 on this bit, the setpoint value will be determined by analog voltage input V2, which varies between 0 to 10 volts.

2- Setpoint frequency (0x2001)

If the parameter lo05 is set to 6, the setpoint frequency is determined by this address register.

3- Setpoint (0x2002)

The setpoint of the closed loop system is determined by this address register.

4- Feedback (0x2003)

If the parameter lo15 is set to 4, the feedback of the closed loop system is determined by this address register.

B) Readable address registers (0x03)

The command address registers are introduced in this section. These address registers are only writable. In the following, these address registers are described.

1- Run status (0x2100)

By reading the value of this register, the state of run command can be monitored as described in Table 8 .

Table 8 Bits of address register 0x2100

10 – 15(MSB)	9	8	7	6	5	4	3	2	1	0 (LSB)
Flt	-	-	-	Jog	Dec	Acc	F/R	F/R	run	En

The bits of this register are elaborated in the following.

Bit number 0: This bit refers to the Enable status.

Bit number 1: This bit refers to the run status.

Bit number 2: This bit refers to the direction of rotation command.

Bit number 3: This bit refers to the current direction of rotation.

Bit number 4: When the VFD is accelerating, this bit is high.

Bit number 5: When the VFD is decelerating, this bit is high.

Bit number 6: When the VFD is in Jog function, this bit is high.

Bit numbers 10, 11, 12, 13, 14, and 15: These bits form a 6bit number which indicates the fault number of the VFD . If this register is 0, there are no faults on the VFD. Yet, if this number has a non-zero value, it shows the fault code described in Table 11 .

2- Frequency (0x2101)

The frequency currently being applied by the VFD can be monitored through this register.

3- The terminals status (0x2106)

By reading this register, the state of input and output terminals can be monitored as described in Table 9 .

Table 9 Bits of address register 0x2106

10 – 15(MSB)	9	8	7	6	5	4	3	2	1	0 (LSB)
Reserved		Relay	OUT	HSI	D6	D5	D4	D3	D2	D1

The bits of this register are elaborated in the following.

Bit number 0: This bit refers to the first digital input. If the D1 terminal is activated, this bit will be high.

Bit number 1: This bit refers to the second digital input. If the D2 terminal is activated, this bit will be high.

Bit number 2: This bit refers to the third digital input. If the D3 terminal is activated, this bit will be high.

Bit number 3: This bit refers to the fourth digital input. If the D4 terminal is activated, this bit will be high.

Bit number 4: This bit refers to the fifth digital input. If the D5 terminal is activated, this bit will be high.

Bit number 5: This bit refers to the sixth digital input. If the D6 terminal is activated, this bit will be high.

Bit number 6: This bit refers to the HSI digital input. If the HIS terminal is activated, this bit will be high.

Bit number 7: This bit refers to the digital output status. If the out terminal is activated, this bit will be high.

Bit number 8: This bit refers to the relay status. If the relay is activated, this bit will be high.

4- The analog voltage V1 value (0x2107)

By reading this register, the voltage on V1 terminal can be monitored. The value of this register is normalized by the first analog voltage range defined by the parameters `00B` and `034`.

5- The analog voltage V2 value (0x2108)

By reading this register, the voltage on V2 terminal can be monitored. The value of this register is normalized by the second analog voltage range defined by the parameters `009` and `035`.

6- The analog current I1 value (0x2109)

By reading this register, the current injecting to the I1 terminal can be monitored. The value of this register is normalized by the analog current range defined by the parameters `007` and `033`.

Parameters

Parameter Group Names	Parameter Group Indications
Primary Parameters	1-Pr
Motor Nominal Parameters	2-rt
Input/Output	3-io
Systematic Parameters	4-SE
Advanced Parameters	5-AP
Protection Parameters	6-PF
Fault History	7-H ₁
Monitoring	8-ob

○ 1-Pr

Parameter	Name	Setting range	Default	Mode
Pr 01	Min Frequency	0.0-Pr 02	0.0	R/W
Pr 02	Max Frequency	Pr 01-1000.0 Hz	50.0	R/W
Pr 03	Acceleration Time	0.4-999.9 (S/100Hz)	10.0	R/W
Pr 04	Deceleration Time	0.4-999.9 (S/100Hz)	10.0	R/W
Pr 05	Boost Voltage	0.00-20.00%	0.01	R/W
Pr 06	Boost end Frequency	0.0-Pr 02	10.0	R/W
Pr 07	JOG Frequency	0.1-Pr 16	5.0Hz	R/W
Pr 08	JOG Acceleration Time	0.4-999.9s	10.0s	R/W
Pr 09	JOG Deceleration Time	0.4-999.9s	10.0s	R/W
Pr 10	Fwd/Rev (Reverse Direction) Delay Time	0.0-240.0	0.0s	R/W
Pr 11	Preset Frequency 1	(-1)×Pr 16-Pr 16 (Hz)	10.0	R/W
Pr 12	Preset Frequency 2		20.0	R/W
Pr 13	Preset Frequency 3		30.0	R/W
Pr 14	Preset Frequency 4		40.0	R/W
Pr 15	Preset Frequency 5		50.0	R/W
Pr 16	Frequency Limit	0.0-Pr 02	50.0Hz	R/W
Pr 17	Setpoint Frequency	0-2	1	R/W
	Setpoint=Minimum Frequency		0	

Parameter	Name	Setting range	Default	Mode
	Setpoint=The last Frequency before Power off		1	
	Setpoint=Preset Frequency 5		2	
$P_r 18$	Up/Down setting Time	0.1-999.9 s/100Hz	10.0	R/W
$P_r 19$	ACCEL/DECEL pattern	0-1	0	R/W
	linear		0	
	S Curve		1	
If this pattern is selected, the parameters $AP22$, $AP23$, $AP24$, and $AP25$ will determine the pattern of acceleration and deceleration.				
$P_r 20$	Frequency Step	0.1-600.0	10	R/W
	This parameter defines the rate by which the setpoint frequency changes by +/- on the keypad. The frequency step is functional if $\alpha 05$ is set to 7.			
$P_r 25$	Access Level	1-7	7	R/W
	(P_r)			1
	$(P_r)+(ob)+(H \cdot i)$			2
	$(P_r)+(ob)+(H \cdot i)+(r \cdot t)$			3
	$(P_r)+(ob)+(H \cdot i)+(r \cdot t)+(\cdot \alpha)$			4
	$(P_r)+(ob)+(H \cdot i)+(r \cdot t)+(\cdot \alpha)+(5E)$			5
	$(P_r)+(ob)+(H \cdot i)+(r \cdot t)+(\cdot \alpha)+(5E)+(AP)$			6
All parameters			7	
$P_r 26$	Preset Frequency 6	0.0- $P_r 16$	50.0	R/W
$P_r 27$	Preset Frequency 7	0.0- $P_r 16$	50.0	R/W
$P_r 28$	Preset Time 1	0.0-1000	10	R/W
	The execution time of the first preset speed ($P_r 11$) is defined by this parameter.			
$P_r 29$	Preset Time 2	0.0-1000	10	R/W
	The execution time of the second preset speed ($P_r 12$) is defined by this parameter.			
$P_r 30$	Preset Time 3	0.0-1000	10	R/W
	The execution time of the third preset speed ($P_r 13$) is defined by this parameter.			
$P_r 31$	Preset Time 4	0.0-1000	10	R/W
	The execution time of the fourth preset speed ($P_r 14$) is defined by this parameter.			
$P_r 32$	Preset Time 5	0.0-1000	10	R/W
	The execution time of the fifth preset speed ($P_r 15$) is defined by this parameter.			
$P_r 33$	Preset Time 6	0.0-1000	10	R/W
	The execution time of the sixth preset speed ($P_r 26$) is defined by this parameter.			
$P_r 34$	Preset Time 7	0.0-1000	10	R/W
	The execution time of the seventh preset speed ($P_r 27$) is defined by this parameter.			

○ 2-rt

Parameter	Name	Setting range	Default	Mode
rt01	Motor Current	2.0-Drive Max Current	Nominal current	R/W
rt02	Motor RPM	100 - 9999 RPM	1500	R/W
rt03	Motor Voltage	100 - 500V	380(220)	R/W
rt04	MOTOR PF	0.40-1.00	0.85	R/W
rt05	Motor Frequency	20.0-1000.0Hz	50.0	R/W
rt06	Stator Resistance	0.0-20.0 OHM	Rated	R/W
rt07	Rotor Resistance	0.0-20.0 OHM	Rated	R/W
rt08	Rated Power	0.37-15		R/W
rt09	No load current	20-90%		R/W
rt10	Motor Default Direction	0-3	0	R/W
	Forward with direction change			0
	Reverse with direction change (Forward only)			1
	(Reverse only)			3
rt11	Auto Tune	0-2	0	R/W
	Deactivate			0
	(Press and hold Enter for Rs measurement)			1
	Sensorless control mode Before setting this parameter to 2, parameters rt01, rt02, rt03, rt04, rt05, and rt08 should be set according to the nameplate of the motor. After these settings, set SE12 to 1, and run the motor, and wait until the following messages are displayed respectively: donE2, donE4, and donE.			2
	This means that the autotune process is complete.			
rt12	Brake Resistance	30-300 Ohm	100	R/W
rt13	Brake Power	50-5000W	RATED	R/W
rt14	L sigma	0.01 - 0.3	0.1	R/W
rt15	Slip gain	0.5 -2.5	0.7	R/W

○ 3-10

Parameter	Name	Setting range	Default	Mode				
1001	Digital Input Configuration	0-19	18	R/W				
	1001	Digital inputs						
		D1	D2	D3	D4	D5	RUN	
		0	Enable	RUN	Jog	Fwd/Rev	Pre5	D2
1	Enable	RUN	Jog	Pre4	Pre5	D2		

2	Enable	Fwd RUN	Rev RUN	Jog	Pre5	D2/D3		
3	Enable	RUN	Pre3	Pre4	Pre5	D2		
4	Enable	Start(latch)	Stop(latch)	Fwd/Rev	Jog	D2		
5	RUN	Jog	Pre3	Pre4	Pre5	D1		
6	RUN	Jog	Fwd/Rev	Pre4	Pre5	D1		
7	RUN	Fwd/Rev	Pre3	Pre4	Pre5	D1		
8	RUN	Fwd(latch)	Rev(latch)	Jog	Pre5	D1		
9	RUN	Fwd(latch)	Rev(latch)	Pre4	Pre5	D1		
10	RUN	Pre2	Pre3	Pre4	Pre5	D1		
11	Enable (Key Mode)	Pre2	Pre3	Pre4	Pre5	Start		
12	Enable (Key Mode)	Fwd/Rev	Pre3	Pre4	Pre5	Start		
13	Enable (Key Mode)	Fwd/Rev	Jog	Pre4	Pre5	Start		
14	Enable (Key+DIR)	JOG	Pre3	Pre4	Pre5	Start		
15	Enable (Key Mode)	Fwd(latch)	Rev(latch)	Pre4	Pre5	Start		
16	Modbus							
17	Enable	Start (N.O Button)	Stop (N.C Button)	Jog	Pre5	D2		
18	--	Fwd RUN	Rev RUN	Jog	Pre5	D2/D3		
19	Fwd RUN	Rev RUN	Binary input			D2/D3		
20	Enable	Start(N.O latch Button)	Stop (N.C Button)	Fwd/Rev	Jog	D2		
21	Enable	Start\Fwd (N.O latch Button)	Start\Rev (N.O latch Button)	Stop (N.C Button)	Jog	D2/D3		
22	Enable	Fwd RUN	Rev RUN	Emergency Stop (N.C Button)	Jog	D2/D3		
23	PLC Run	PLC Pause (Latch)	Reset (Latch)	Command Signal (Latch)	Jog	D1		
For more information about internal PLC refer to page 20.								

1002	D4 Redefine Configuration		0-4	0	R/W
	Not defined			0	
	JOG			1	
	(Preset Frequency 4)			2	
	(2nd Acceleration/Deceleration Time Select)			3	
(Remote/Local Frequency Setup)			4		
1003	D5 Redefine Configuration		0-4	0	R/W
	(No redefinition)			0	
	(External fault)			1	
	(Preset Frequency 5)			2	
	(3rd Acceleration/Deceleration Time Select)			3	
(PID Remote Activation)			4		
1004	HSI Configuration		0-2	0	R/W
	(Preset Frequency 1)			0	
	(External fault)			1	
(2nd Enable)			2		
1005	Analog Input Configuration		0-7	0	R/W
	1005	Reference	Related Parameters		Page
	0	V1	1008 (V1 Voltage Range)		
	1	(V1+V2)/2	1008 (V1 Voltage Range) 1009 (V2 Voltage Range)		
	2	I1	1006 (I1 Input Range) 1007 (I1 Current Range)		
	3	HSI (Fmax = 1014)	1004 (HSI Conf.) 1014 (HSI Max Frequency)		
	4	Keypad (+/-)	Pr 17 (Setpoint Frequency) Pr 18 (Up/Down Setting Time)		
	5	Up=V1/ Down=V2	Pr 17 - Pr 18		
	6	MODBUS	SE28 - SE 29 - SE 30 SE 31 - SE32		
7	Keypad (Step Frequency)	Pr 20 - Pr 17 - Pr 18			
1006	I1 Input Range		0-1	1	R/W
	0	0- 1007mA			
	1	1033- 1007mA			
1007	I1 Current Range Maximum Value	0 - 21.0mA	20.00	R/W	
1008	V1 Voltage Range Maximum Value	0.00 -11.00 V	10.00	R/W	

1009	Maximum Value V2 Voltage Range	0.00 -11.00 V	10.00	R/W
1010	Indicating Value	0-8	0	R/W
	Frequency reference		0	
	Output frequency		1	
	Output current		2	
	Feedback percentage		3	
	output RPM with coefficient		4	
	Output RPM		5	
	Output power		6	
	DC bus capacitors voltage		7	
Heat sink temperature		8		
1011	RPM Coefficient	0.001-9.999	1.000	R/W
1012	Relay Mode	0-20	0	R/W
	(Active on fault)		0	
	(Active on zero Frequency)		1	
	(Active while VFD outputs are ho t)		2	
	(The end of Acceleration and Deceleration)		3	
	(Active on Overload condition)		4	
	Motor Stall		6	
	Over Voltage Trip		7	
	Low Voltage Trip		8	
	VFD Over -Heat		9	
	Command Loss		10	
	During Constant Run		13	
	Wait Time for run signal Input while enabled		14	
	Active when power is more than 1021		15	
	FDT-1		16	
	FDT-2		17	
	FDT-3		18	
FDT-4		19		
Feedback level		20		
1013	D _{out} Mode	0-20	0	R/W
	(Active on fault)		0	
	(Active on zero Frequency)		1	
	(Active on Start)		2	
	(The end of Acceleration and Deceleration)		3	
	$f(Dout)=(fout/Fmax) \times 10kHz$		4	
$f(Dout)=((Iout/1.5) \times r-t 0 I) \times 10kHz$		5		

	Motor Stall (Stall)		6	
	Over Voltage Trip		7	
	Low Voltage Trip		8	
	VFD Over -Heat		9	
	Command Loss		10	
	During Constant Run		13	
	Wait Time for run signal Input while enabled		14	
	Active when power is more than 102 l		15	
	FDT-1		16	
	FDT-2		17	
	FDT-3		18	
	FDT-4		19	
	Feedback level		20	
14	HSI Max Frequency	0.5-20kHz	10.0kHz	R/W
15	Feedback Selection	1-5	1	R/W
	11		1	Page
	V2		2	
	HSI		3	
	MODBUS		4	
	Output power		5	
16	Analog filter	0-2	1	R/W
	100hz		0	
	10hz		1	
	1hz		2	
17	12 Not Function	0-1	0	R/W
18	13 Not Function	0-1	0	R/W
19	Detected Frequency Level	0-Pr02	30 Hz	R/W
20	Detected Frequency Bandwidth	0-30 Hz	10 Hz	R/W
21	Output Power Setpoint	Power		R/W
22	Detected Feedback Level	0% - 100%	50.00	R/W
23	Detected Feedback Hysteresis	0 – 100Hz	0.00	R/W
30	D6 Redefine Configuration (just in G200 series)	0 - 9	0	R/W
	(External fault)		1	

	(Preset Frequency 5)	2		
	(3rd Acceleration/Deceleration Time Select)	3		
	(PID Remote Activation)	4		
	Change direction	5		
	JOG	6		
	(Preset Frequency 4)	7		
	(2nd Acceleration/Deceleration Time Select)	8		
	(Remote/Local Frequency Setup)	9		
IO31	Relay Mode 2 (just in G200 series)	0-20	0	R/W
	(Active on fault)		0	-
	(Active on zero Frequency)		1	-
	(Active while VFD outputs are ho t)		2	-
	(The end of Acceleration and Deceleration)		3	-
	(Active on Overload condition)		4	-
	Motor Stall		6	-
	Over Voltage Trip		7	-
	Low Voltage Trip		8	-
	VFD Over -Heat		9	-
	Command Loss		10	-
	During Constant Run		13	-
	Wait Time for run signal Input		14	-
	Setpoint power level		15	
	FDT-1		16	-
	FDT-2		17	-
FDT-3		18	-	
FDT-4		19	-	
Feedback level		20		
IO32	IO 31 not function	0-1	0	R/W
IO33	I1 Current Range Minimum Value	0.0-21.0mA	4.00	R/W
IO34	V1 Voltage Range Minimum Value	0.00-11.00 V	00.00	R/W
IO35	V2 Voltage Range Minimum Value	0.00-11.00 V	00.00	R/W

○ 4-SE

Parameter	Name	Setting range	Default	Mode
SE01	Password	0-9999	0	R/W
SE02	Backup / Restore	0-3	0	R/W
	(Deactivate)			0
	(Load Defaults Value ,Press and hold Enter for 5Sec)			1
	(Restore edited Parameters)			2
	(Backup Edited Parameter)			3
SE03	Boot Loader Update	0-1	0	R/W
SE04	Stop Mode	0-2	0	R/W
	(With defined Ramp Times)			0
	(Coast to stop)			1
	(DC Brake with Delay at Specific Frequency by Injection of DC Current for Specific Time)			2
SE05	DC Brake Current	1.00-13.00 A	Rated	R/W
SE06	DC Brake Time	0.1-999.9 s	5.0	R/W
SE07	DC Brake Start Frequency	0.0-20.0 Hz	0.0	R/W
SE08	DC Brake Wait Time	0.0-10.0 s	0.0	R/W
SE09	AVR Function	0-1	1	R/W
	AVR Function is active			0
	AVR Function is deactivated			1
SE10	Start at Power on	0-1	0	R/W
SE11	Fan Turn On	0-2	0	R/W
	Start With Motor Start			0
	Start Conditionally			1
	Always on			2
SE12	Control mode	0-1	0	R/W
	V/f			
	Sensorless vector control (Requires autotune. Refer to rE11)			1
SE13	Power Scale (%)	0.0-100.0%	100%	R/W
	Using this parameter, the maximum power injected to the motor is limited in the PID control mode.			
SE14	Start on the Fly (Speed search)	0-3	2	R/W
	(Disabled)			0
	(Every Start)			1

Parameter	Name	Setting range	Default	Mode
	Only when the stop Mode → SE04=1 (coast to stop)			2
	Once before the first Start after POWER ON			3
SE 15	Controller Select	0-2	0	R/W
	Deactivate			0
	PID Is Active			1
	On-Off Control Active			2
SE 16	P of PID	0.01-99.99	1.00	R/W
SE 17	I of PID	0.01-99.99	1.00	R/W
SE 18	D of PID	0.01-99.99	1.00	R/W
SE 19	PID Process Reverse	0-1	0	R/W
SE20	2nd Acceleration Time	0.4-999.9 s	5.0	R/W
SE21	2nd Deceleration Time	0.4-999.9 s	5.0	R/W
SE22	Setpoint Mode for PID	0-2	0	R/W
	PID Setpoint = 0			0
	PID Setpoint = The last value before Power off			1
	PID Setpoint = SE23			2
SE23	Setpoint value for PID	0.00-99.99%	10.00%	R/W
SE24	PWM Frequency	SE25-10.0kHz	4.0kHz	R/W
SE25	PWM Min Frequency	2.0-SE24 kHz	2.0kHz	R/W
SE26	3rd Acceleration Time	0.4-999.9 s	5.0	R/W
SE27	3rd Deceleration Time	0.4-999.9 s	5.0	R/W
SE28	Baud rate	0-5	3	R/W
		4800 bps		0
		9600 bps		1
		19200 bps		2
		38400 bps		3
		57600 bps		4
	115200 bps		5	
SE29	Serial Address	1-240	1	R/W
SE30	Parity	0-2	0	R/W
	No parity			0
	Odd parity			1
	Even parity			2
SE31	Communication Time out	0.1-99.9s	1.0	R/W
SE32	Time out Function	0-2	0	R/W
	Do nothing			0
	stop			1
	Deactivate the VFD			2
SE33	Software version	1.00-9.99	-	R/O

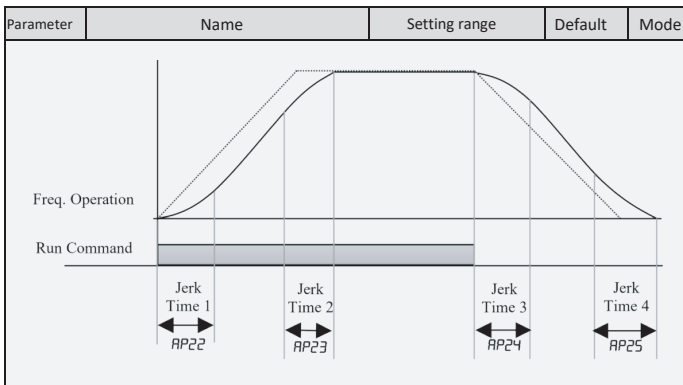
Parameter	Name	Setting range	Default	Mode
SE34	VFD Model			R/O
	0041	1-ph / 0.37	0303	3-ph / 3
	0081	1-ph / 0.75	0403	3-ph / 4
	0111	1-ph / 1.1	0553	3-ph / 5.5
	0151	1-ph / 1.5	0753	3-ph / 7.5
	0221	1-ph / 2.2	1103	3-ph / 11
	0301	1-ph / 3	1503	3-ph / 15
	0083	3-ph / 0.75	1853	3-ph / 18.5
	0153	3-ph / 1.5	2203	3-ph / 22
0223	3-ph / 2.2	3003	3-ph / 30	
SE35	V/F pattern Select	0-3	0	R/W
	(Linear + Boost)		0	Page
	(Pump and fan)		1	
	(2nd order curve)		2	
	Customized V/F		3	
SE36	V/f Start Frequency	0.1-500.0 Hz	10.0	R/W
SE37	On/Off Mode Hysteresis	0.00-100.00 %	0.00	R/W
SE38	PID Sleep frequency	0.0-800.0Hz	0.0	R/W
SE40	Start at Enable on	0 - 1	0	R/W
SE41	PID Wake up Error	0.0-0.999	0.000	R/W
Parameters SE42, SE43, SE44, SE45, SE46, SE47, SE48, and SE49 control the PLC process when $\alpha\Omega I=23$.				
SE42	PLC mode	1-5	1	R/W
	All the steps will be executed continuously. The number of times the cycle is repeated is defined by the parameter SE49.		1	
	The whole cycle will be repeated continuously and indefinitely.		2	
	All the steps will be executed. When each step is complete, the frequency will become zero before the next step is executed. The number of times the cycle is repeated is defined by the parameter SE49.		3	
	The whole cycle will be repeated indefinitely. When each step is complete, the frequency will become zero before the next step is executed.		4	
	The whole cycle will be executed once. When the process ends the frequency will be equal to the last frequency step of the cycle.		5	
SE43	PLC at Power failure	0-1	0	R/W
	The process resumes at power-up.		0	
	The process restarts at power-up.		1	
	Time unit	0-1	0	R/W

Parameter	Name	Setting range	Default	Mode
5E44	The times of each step defined by parameters P_{r28} - P_{r34} , will be in seconds.		0	
	The times of each step defined by parameters P_{r28} - P_{r34} , will be in minutes.		1	
5E45	Command Signal	0-1	0	R/W
	If a smaller cycle is defined inside the main cycle, and the smaller cycle is finished, parameter 5E45 determines how the rest of the process is going to be executed.			
	The rest of the process will continue when the command signal is received. Before the command signal is received, the frequency of the last step of the smaller cycle will be applied to the motor.		0	
	The rest of the process will continue regardless of the command signal.		1	
5E46	Main Steps Count	1-7	5	R/W
	This parameter determines the total number of steps defined in the process.			
5E47	Pre-executed Steps Count	0-7	0	R/W
	Parameter 5E47 determines the number of initial steps which form the smaller cycle. For example, if there are 5 steps in the main cycle ($5E46=5$), and $5E47=3$, the first 3 steps of the main cycle will be considered as a smaller cycle which will be repeated 5E48 times before executing the remaining steps of the main cycle.			
5E48	Repetition Count	1-100	1	R/W
	The pre-executed steps will be repeated 5E48 times before the remaining steps of the main cycle are executed.			
5E49	Cycle Repetition Count	1-10	1	R/W
	If parameter 5E42 is set to 1 or 3, the whole cycle will be repeated 5E49 times.			

○ 5-AP

Parameter	Name	Setting range	Default	Mode
AP01	Difference between FWD and REV boost	-20.00%~ + 20.00%	0	R/W
AP02	No. of Auto Restart try	0-6	0	R/W
AP03	Auto Restart try Time	0-30s	0	R/W
AP04	Energy Saving (Percentage of Voltage reduction)	0.00-30.00%	0.00	R/W
AP05	DWELL Frequency	0.0-800.0 Hz	0.0	R/W
	Deactivate		0	Page
	Activate		0.1-800.0	
AP06	DWELL Time	0.0-10.0 s	0.0	R/W

Parameter	Name	Setting range	Default	Mode
AP07	Skip Frequency	0-1	0	R/W
	deactivate		0	Page
	activate		1	
AP08	Skip Frequency 1 high	0.0-800.0 Hz	0.0	R/W
AP09	Skip Frequency 1 low	0.0-800.0 Hz	0.0	R/W
AP10	Skip Frequency 2 high	0.0-800.0 Hz	0.0	R/W
AP11	Skip Frequency 2 low	0.0-800.0 Hz	0.0	R/W
AP12	Skip Frequency 3 high	0.0-800.0 Hz	0.0	R/W
AP13	Skip Frequency 3 low	0.0-800.0 Hz	0.0	R/W
AP14	User V/F Pattern Voltage 1	0.0-100.0%	0.0	R/W
AP15	User V/F Pattern Frequency 1	0.0-800.0 Hz	0.0	R/W
AP16	User V/F Pattern Voltage 2	0.0-100.0%	0.0	R/W
AP17	User V/F Pattern Frequency 2	0.0-800.0 Hz	0.0	R/W
AP18	User V/F Pattern Voltage 3	0.0-100.0%	0.0	R/W
AP19	User V/F Pattern Frequency 3	0.0-800.0 Hz	0.0	R/W
AP20	User V/F Pattern Voltage 4	0.0-100.0%	0.0	R/W
AP21	User V/F Pattern Frequency 4	0.0-800.0 Hz	0.0	R/W
AP22	S-Curve Acceleration Start Jerk	0.0-10.0 s	0.5 s	R/W
AP23	S-Curve Acceleration end Jerk	0.0-10.0 s	0.5 s	R/W
AP24	S-Curve Deceleration Start Jerk	0.0-10.0 s	0.5 s	R/W
AP25	S-Curve Deceleration end Jerk	0.0-10.0 s	0.5 s	R/W



○ 6-PF

Parameter	Name	Setting range	Default	Mode	
PF01	ETH Protection	0-1	0	R/W	
PF02	ETH Level for 1 min.	30-200%	150%	R/W	
PF04	Motor Type	0-1	0	R/W	
PF05	Overload Warning Enable	0-1	0	R/W	
PF06	Overload Warning Level	30-150%	110%	R/W	
PF07	Overload Warning Time	0-30 s	1s	R/W	
PF08	Overload Trip Enable	0-1	1	R/W	
PF09	Overload Trip Level	30-200 %	110%	R/W	
PF10	Overload Trip Time	0-60	1s	R/W	
PF11	Stall Prevention Select	0-7	3	R/W	
		During acceleration	During constant speed	During stop	
	0	-	-	-	
	1	-	-	√	
	2	-	√	-	
	3	-	√	√	
	4	√	-	-	
	5	√	-	√	
	6	√	√	-	
	7	√	√	√	
PF12	Stall Prevention Level	60-150%	130%	R/W	

Parameter	Name	Setting range	Default	Mode
PF 13	Input - Output Phase Loss Protection	0-3	0	R/W
	deactivate		0	
	Output phase loss		1	
	Input phase loss		2	
	Input and Output Phase loss		3	
PF 14	External Trip Signal	0-1	0	R/W
PF 15	Inverter Overload	0-1	1	R/W

○ 7-H1

Parameter	Name	Mode
H1 01	(Last fault)	R/O
H1 02	The fault before Hi01	
H1 03	The fault before Hi02	
H1 04	The fault before Hi03	
H1 05	The fault before Hi04	
H1 06	The fault before Hi05	
H1 07	The fault before Hi06	
H1 08	(SC occurrence)	
H1 09	(OC-OCA-OCd occurrence)	
H1 10	(OH occurrence)	
H1 11	(OV occurrence)	
H1 12	(OP occurrence)	
H1 13	(Total on Time)	
H1 14	(Total run Time)	
H1 15	(Hours elapsed from the last fault)	
H1 16	Reset the faults	R/W

○ 8-ob

Parameter	Name	Setting range	Mode
ob01	Input Terminal status	On-Off	R/O
ob02	Output Terminal status	On-Off	R/O
ob03	Output Current	A	R/O
ob04	RPM	RPM	R/O

ob05	Heat Sink Temperature	C°	R/O
ob06	DC link Voltage	V	R/O
ob07	Output Voltage	V	R/O
ob08	Output Power	kW	R/O

Table 10 List of address registers

Parameter	Name	Setting Range	Default	Address register
<i>Pr 01</i>	Min Frequency	0 - <i>Pr 02</i> Hz	0 Hz	0x0000
<i>Pr 02</i>	Max Frequency	<i>Pr 01</i> - 800.0Hz	50.0 Hz	0x0001
<i>Pr 03</i>	Acceleration Time	0.4 - 999.9 (s/100Hz)	10.0 s/100Hz	0x0002
<i>Pr 04</i>	Deceleration Time	0.4 - 999.9 s/100Hz	10.0 s/100Hz	0x0003
<i>Pr 05</i>	Boost Voltage	0.00 - 20.00%	0.01%	0x0004
<i>Pr 06</i>	Boost End Frequency	0.0 - <i>Pr 02</i> Hz	10.0 Hz	0x0005
<i>Pr 07</i>	JOG Frequency	0.0 - <i>Pr 02</i>	5.0Hz	0x0006
<i>Pr 08</i>	JOG Acceleration	0.4 - 999.9 s	10.0 s	0x0007
<i>Pr 09</i>	JOG Deceleration	0.4 - 999.9 s	10.0 s	0x0008
<i>Pr 10</i>	Fwd/Rev Delay Time	0.0 - 240.0 s	0.0 s	0x0009
<i>Pr 11</i>	Preset Frequency 1	0.0 - <i>Pr 16</i>	10.0Hz	0x000A
<i>Pr 12</i>	Preset Frequency 2	0.0 - <i>Pr 16</i>	20.0Hz	0x000B
<i>Pr 13</i>	Preset Frequency 3	0.0 - <i>Pr 16</i>	30.0Hz	0x000C
<i>Pr 14</i>	Preset Frequency 4	0.0 - <i>Pr 16</i>	40.0Hz	0x000D
<i>Pr 15</i>	Preset Frequency 5	0.0 - <i>Pr 16</i>	50.0Hz	0x000E
<i>Pr 16</i>	Frequency limit	0.0 - <i>Pr 02</i>	50 Hz	0x000F

Parameter	Name	Setting Range	Default	Address register
<i>Pr 17</i>	Setpoint Frequency	0 - 2	1	0x0010
<i>Pr 18</i>	Up/Down setting Time	0.1 - 999.9 s	10.0	0x0011
<i>Pr 19</i>	Accel/Decel Pattern	0-1	0	0x0012
<i>Pr 20</i>	Frequency Step Count	0.1-800.0	10	0x0013
<i>Pr 21</i>	Speed Gain	0.01 – 99.99	1	0x0014
<i>Pr 22</i>	SpeedI	0.01 – 99.99	1	0x0015
<i>Pr 23</i>	Speed Gain1	0.01 – 99.99	1	0x0016
<i>Pr 24</i>	SpeedI1	0.01 – 99.99	1	0x0017
<i>Pr 25</i>	Access Level	1 - 7	7	0x0018
<i>Pr 26</i>	Preset Frequency 6	0.0- <i>Pr 16</i>	50.0	0x0019
<i>Pr 27</i>	Preset Frequency 7	0.0- <i>Pr 16</i>	50.0	0x001A
<i>r t 01</i>	Motor Current	2.0-VFD Max Current	Rated	0x0100
<i>r t 02</i>	Motor RPM	100 - 9999	Rated	0x0101
<i>r t 03</i>	Motor Voltage	100-500	380/220	0x0102
<i>r t 04</i>	Motor PF	0.40-1.00	0.85	0x0103
<i>r t 05</i>	Motor Frequency	20.0 - 800.0 Hz	50.0Hz	0x0104
<i>r t 06</i>	Stator Resistance	0.0 - 20.0 ohm	Rated	0x0105
<i>r t 07</i>	rotor Resistance	0.0 - 20.0 ohm	Rated	0x0106
<i>r t 08</i>	Rated power	0.37-15 Kw	Rated	0x0107
<i>r t 09</i>	No load current	20-90%	50%	0x0108
<i>r t 10</i>	Motor Default Direction	0 - 3	0	0x0109
<i>r t 11</i>	Auto Tune	0 - 2	0	0x010A
<i>r t 12</i>	Brake Resistance	30 - 300ohm	100	0x010B
<i>r t 13</i>	Brake Power	50 - 5000W	Rated	0x010C

Parameter	Name	Setting Range	Default	Address register
r14	L sigma	0.01-0.3	0.1	0x010D
r15	Slip gain	0.5-2.5	0.7	0x010E
001	Digital Input Configuration	0-19	2	0x0200
002	D4 redefine Configuration	0 - 4	0	0x0201
003	D5 redefine Configuration	0 - 4	0	0x0202
004	HSI Configuration	0 - 2	0	0x0203
005	Analog Input Configuration	0 - 7	0	0x0204
006	I1 Input Range	0 - 1	0	0x0205
007	I1 Current Range	8.00 - 21.00mA	20.00mA	0x0206
008	V1 Voltage Range	2.00 - 11.00V	10.00V	0x0207
009	V2 Voltage Range	2.00 - 11.00V	10.00V	0x0208
00	Indicating value	0 - 8	0	0x0209
011	RPM coefficient	0.001 - 9.999	1.000	0x020A
012	Relay Mode	0 - 20	0	0x020B
013	Dout Mode	0 - 20	0	0x020C
014	HSI Max Frequency	0.50 - 20.00kHz	10.00kHz	0x020D
015	Feedback Selection	1 - 5	1	0x020E
016	Analog filter	0 - 2	1	0x020F
017	012 not Function	0-1	0	0x0210
018	013 not Function	0-1	0	0x0211
019	Detected Frequency Level	0-Pr02	30 Hz	0x0212

Parameter	Name	Setting Range	Default	Address register
1020	Detected Frequency Bandwidth	0-30 Hz	10 Hz	0x0213
1021	Output Power Setpoint			0x0214
1022	Detected Feedback Level	0% - 100%	50	0x0215
1023	Detected Feedback Hysteresis	0 – 100Hz	0.00	0x0216
1030	D6 Redefine Configuration (just in G200 series)	0 - 9	0	0x021D
1031	Relay Mode 2 (just in G200 series)	0-20	0	0x021E
1032	IO 31 not function	0 -1	0	0x021F
1033	I1 Current Range	0-21.0mA	4.00	0x0220
1034	V1 Voltage Range	0.00-11.00v	0.00	0x0221
1035	V2 Voltage Range	0.00-11.00v	0.00	0x0222
5E01	Password	0 - 9999	0	-
5E02	Backup / Restore	0 - 3	0	-
5E03	Boot Loader Update	0-1	0	-
5E04	Stop Mode	0-2	0	0x0303
5E05	DC Brake Current	1.00 - 13.00A	Rated	0x0304
5E06	DC Brake Time	0.1 - 999.9 s	5.0 s	0x0305
5E07	DC Brake Start Frequency	0.0-20.0 Hz	0	0x0306
5E08	DC Brake Wait Time	0.0-10.0 s	0.0	0x0307

Parameter	Name	Setting Range	Default	Address register
5E09	AVR Function	0 - 1	1	0x0308
5E10	Start at Power on	0 - 1	0	0x0309
5E11	Fan Turn On	0 - 2	0	0x030A
5E12	Sensorless control	0-1	0	0x030B
5E13	Power Scale (%rated)	0 - 100%	100%	0x030C
5E14	Start on the fly (Speed search)	0-3	2	0x030D
5E15	Controller Mode	0 - 2	0	0x030E
5E16	P of PID	0.01 - 99.99	1.00	0x030F
5E17	I of PID	0.01 - 99.99	1.00	0x0310
5E18	D of PID	0.01 - 99.99	1.00	0x0311
5E19	PID Process Reverse	0 - 1	0	0x0312
5E20	2nd Acceleration Time	0.4 - 999.9 S	5.0 s	0x0313
5E21	2nd Deceleration Time	0.4 - 999.9 S	5.0 s	0x0314
5E22	Setpoint Mode for PID	0 - 2	0	0x0315
5E23	Setpoint Value for PID	0.00 - 99.99%	10.00%	0x0316
5E24	PWM Frequency	5E25 - 10 KHz	4.0 kHz	0x0317
5E25	PWM min Frequency	2.0 - 5E24 KHz	2.0 kHz	0x0318
5E26	3rd Acceleration Time	0.4 - 999.9 S	5.0 s	0x0319
5E27	3rd Deceleration Time	0.4 - 999.9 S	5.0 s	0x031A
5E28	Baud rate	0 - 5	3	0x031B

Parameter	Name	Setting Range	Default	Address register
5E29	Serial address	1 - 240	1	0x031C
5E30	Parity	0 - 2	0	0x031D
5E31	Communication Time out	0.1 - 99.9 S	1.0	0x031E
5E32	Time out Function	0 - 2	0	0x031F
5E33	Software version	1.00 - 9.99	-	0x0320
5E34	VFD Model	-	-	0x0321
5E35	V/F Pattern Select	0-3	0	0x0322
5E36	V/F Start Frequency	0.1-500.0 Hz	10.0	0x0323
5E37	On/Off Mode Hysteresis	0.00-100.00%	0.00	0x0324
5E38	PID Sleep Hysteresis	0.0-800.0	0.0	0x0325
5E39	PID Start Hysteresis	0.0-800.0	0.0	0x0326
AP01	Difference Between Rev and Fwd Boost	-20.00% - +20.00%	0.00	0x0400
AP02	No. of Auto Restart try	0-6	0	0x0401
AP03	Auto Restart try Time	0-30s	0	0x0402
AP04	Energy Saving (Percentage of Voltage reduction)	0.0-30.0%	0.0	0x0403
AP05	DWELL Frequency	0.0-800.0 Hz	0.0	0x0404
AP06	DWELL Time	0.0-10.0 s	0.0	0x0405
AP07	Skip Frequency	0-1	0	0x0406
AP08	Skip Frequency 1 high	0.0-800.0 Hz	0.0	0x0407

Parameter	Name	Setting Range	Default	Address register
AP09	Skip Frequency 1 low	0.0-800.0 Hz	0.0	0x0408
AP 10	Skip Frequency 2 high	0.0-800.0 Hz	0.0	0x0409
AP 11	Skip Frequency 2 low	0.0-800.0 Hz	0.0	0x040A
AP 12	Skip Frequency 3 high	0.0-800.0 Hz	0.0	0x040B
AP 13	Skip Frequency 3 low	0.0-800.0 Hz	0.0	0x040C
AP 14	User V/F Pattern Voltage 1	0.0-100.0 %	0.0	0x040D
AP 15	User V/F Pattern Frequency 1	0.0-800.0 Hz	0.0	0x040E
AP 16	User V/F Pattern Voltage 2	0.0-100.0 %	0.0	0x040F
AP 17	User V/F Pattern Frequency 2	0.0-800.0 Hz	0.0	0x0410
AP 18	User V/F Pattern Voltage 3	0.0-100.0 %	0.0	0x0411
AP 19	User V/F Pattern Frequency 3	0.0-800.0 Hz	0.0	0x0412
AP20	User V/F Pattern Voltage 4	0.0-100.0 %	0.0	0x0413
AP21	User V/F Pattern Frequency 4	0.0-800.0 Hz	0.0	0x0414
AP22	S-Curve Acceleration Start Jerk	0.0-10.0 m/s ³	0.5	0x0415

Parameter	Name	Setting Range	Default	Address register
<i>AP23</i>	S-Curve Acceleration end Jerk	0.0-10.0 m/s ³	0.5	0x0416
<i>AP24</i>	S-Curve Deceleration Start Jerk	0.0-10.0 m/s ³	0.5	0x0417
<i>AP25</i>	S-Curve Deceleration end Jerk	0.0-10.0 m/s ³	0.5	0x0418
<i>PF01</i>	ETH Enable	0-1	0	0x0500
<i>PF02</i>	ETH Level for 1 min.	30-200%	150	0x0501
<i>PF04</i>	Motor type	0-1	0	0x0503
<i>PF05</i>	Overload Warning Trip	0-1	0	0x0504
<i>PF06</i>	Overload Warning Level	30-150 %	110	0x0505
<i>PF07</i>	Overload Warning Time	0-30 s	1	0x0506
<i>PF08</i>	Overload Trip Enable	0-1	1	0x0507
<i>PF09</i>	Overload Trip Level	30-200 %	110	0x0508
<i>PF10</i>	Overload Trip Time	0-60	1	0x0509
<i>PF11</i>	Stall Prevention Select	0-7	3	0x050A
<i>PF12</i>	Stall Prevention Level	60-150%	130	0x050B
<i>PF13</i>	Input-Output phase loss Protection	0-3	0	0x050C
<i>PF14</i>	External Trip Signal	0-1	0	0x050D
<i>PF15</i>	Inverter Overload	0-1	0	0x050E
<i>ob03</i>	Output Current	0x2102		
<i>ob04</i>	RPM	0x210B		

Parameter	Name	Setting Range	Default	Address register
ab05	Heat Sink Temperature		0x2104	
ab06	DC link Voltage		0x210C	
ab07	Output Voltage		0x2103	
ab08	Output Power		0x2105	

Table 11 Faults

Number	Fault	Abbreviation	Fault code
1	Short circuit	SC	000001
2	Over Current	OC	000010
3	Over Current during Acceleration	OC-A	000011
4	Over Current during Deceleration	OC-d	000100
5	Over Voltage during Deceleration	OV-d	000101
6	Over Voltage	OV	000110
7	12V Overload	12oc	000111
8	Input Current Reduction	cUrr	001000
9	Phase loss	PLoS	001001
10	Output phase loss	OLoS	001010
11	Under Voltage	UV	001011
12	Overload	OL	001100
13	Over Temperature	OH	001101
14	Under Temperature	UH	001110
15	Output Power Error	OP	001111
16	Brake Over load	brOL	010000
17	Automatic Setting Error	AUto	010001
18	Emergency Error	EE-	010010
19	External fault	EFLE	010101
20	Connection loss	-CL-	010100