INOMAX

Medium and Low-Voltage drives Soft starters
solar inverters solution provider

AST6200 Intelligent Online soft starters

5.5-1400 kW | 220-1140 VAC (by voltage class) | 10-1600 A

User manual

25121111219

REV: V2612
Nov.2026



SHENZHEN INOMAX TECHNOLOGY CO.LTD

www.inomaxtechnology.com

Contents

AST6200 intelligent online soft starter

1 Safety information **1**

1.1 Risk of electric shock 1

1.2 Disposal instructions 4

2 Introduction **5**

2.1 Function list 5

3 Operating conditions & installation **6**

3.1 Operating conditions 6

3.2 Ratings and installation dimensions 7

4 External terminals & wiring **9**

4.1 Control wiring 9

4.2 Main and control circuit 10

4.3 Terminal descriptions 11

5 Operation panel **13**

6 Basic parameters **14**

6.1 Group A - Basic settings 14

6.2 Group B - Protection settings 16

6.3 Group C - Protection response 17

6.4 Group D - Calibration 19

6.5 Group E - Status information 20

Contents / continued

AST6200 intelligent online soft starter

7 Troubleshooting **21**

7.1 Protection response 21

7.2 Trip messages 21

8 Function description **26**

8.1 Overload protection 26

8.2 Motor overload characteristics 27

9 Model code **28**

10 Modbus communication **29**

10.1 Modbus RTU overview 29

10.2 Supported function codes 29

10.3 Register map 30

10.4 Exception responses 40

1 Safety information

The caution symbol identifies special precautions for equipment installation and operation.

The caution statements cannot cover every possible cause of equipment damage, but highlight common causes. Before installing, operating or maintaining the equipment, the installer must read and understand all instructions in this manual and follow sound electrical installation practices, including wearing appropriate personal protective equipment. Seek advice before using an operating method that differs from this manual.

NOTICE - Authorized service only

The soft starter is not user-serviceable. Only authorized service personnel may service it. Unauthorized modification invalidates the product warranty.

1.1 Risk of electric shock

Hazardous voltages at the following locations can cause serious or fatal electric shock:

- AC power cables and connections.
- Output cables and connections.
- Many parts of the starter and external optional equipment.

Before opening the starter cover or carrying out maintenance, isolate the AC power supply from the starter using an approved isolating device.

WARNING - Electric shock

While the supply voltage is connected, the bus and heat sink must be treated as live, including when the starter has tripped or is waiting for a command.

WARNING - Short circuit

The soft starter cannot prevent a short circuit. After a severe overload or short circuit, an authorized service agent must fully test the soft starter.

WARNING - Grounding and branch protection

The user or installer must provide proper grounding and branch circuit protection in accordance with local electrical safety regulations.

For safety

WARNING - Electrical isolation

The stop function does not isolate hazardous voltage at the starter output. Before touching electrical connections, disconnect the soft starter using an approved electrical isolating device.

WARNING - Operator protection

The soft starter protection functions apply only to motor protection. The user must ensure the safety of machine operators.

WARNING - Unexpected starting

In some installations, accidental starting can endanger operators or damage the machine. In such cases, install an isolating switch and circuit breaker (such as a power contactor) on the soft starter supply that can be controlled by an external safety system, such as an emergency stop and fault detection system.

WARNING - Protective tripping

The built-in protection trips the starter and stops the motor when a fault occurs. Voltage fluctuations, power outages and motor jams can also cause tripping.

WARNING - Unexpected restarting

After the cause of a shutdown is removed, the motor may restart and endanger machinery or equipment. Configure the system appropriately to prevent restarting after an unexpected shutdown.

The soft starter is a component for integration into an electrical system. The system designer/user must ensure that the system is safe and complies with the applicable local safety standards.

The company accepts no responsibility for damage caused by failure to follow the recommendations above.

1.2 Disposal instructions

Equipment containing electrical parts must not be disposed of as domestic waste. Collect electrical and electronic waste separately in accordance with current local laws.

Product information and copyright

Our company continually improves its products and reserves the right to modify product specifications at any time without notice.

The text, diagrams, pictures and other textual or artistic works in this manual are protected by copyright. Users may copy materials for personal reference. Prior company permission is required for any other copying.

Our company makes every effort to ensure that the information, including pictures, is accurate, but assumes no responsibility for errors, omissions or inconsistencies in this manual.

2 Introduction

The AST6200 is an advanced digital soft starting solution for motors from 5.5 kW to 1400 kW, depending on voltage class. A comprehensive set of motor and system protection functions supports reliable performance in demanding installation environments.

2.1 Function list

Function group	Available functions
Soft starting	Voltage ramp start Current limit start Torque start
Soft stopping	Free stop Timed soft stop
Inputs and outputs	Remote control input Relay output Analog output RS485 communication output
Configurable protection	Input phase loss Output phase loss Soft starter overheating Phase sequence Running overload Starting overcurrent Running overcurrent Overvoltage Undervoltage Underload
Connection ratings	Rated current: 10-1600 A Voltage: 220-1140 VAC (by class)
Display and feedback	Removable operation panel Built-in Chinese and English display

3 Operating conditions & installation

Install and operate the online intelligent motor soft starter under the conditions below. Otherwise performance cannot be guaranteed, and the service life may be shortened or the equipment damaged.

3.1 Operating conditions

Item	Requirement
Power supply	Mains, self-supplied power station or diesel generator; three-phase AC, 220-1140 V by voltage class (see 3.2), 30-70 Hz. Supply capacity must meet the motor starting requirements.
Motor	Squirrel-cage three-phase asynchronous motor. Motor rated power must match the soft starter rated power.
Starting frequency	No fixed requirement; the number of starts depends on the load.
Cooling	Forced-air cooling
Protection rating	IP20
Altitude	Below 2000 m. Derating is required above 2000 m.
Ambient temperature	-10 °C to +40 °C
Humidity	Below 95% RH, non-condensing
Environment	Indoors with good ventilation; no flammable, explosive or corrosive gases, and no conductive dust. Vibration less than 0.5 G.

Products for special conditions, such as explosion-proof, low-temperature and high-voltage applications, can be supplied. Their operating conditions are specified separately.

3.2 Ratings and installation dimensions

Class	Voltage (AC)	Rated current	Rated power
S2	220-240 V	23-1400 A	5.5-400 kW
S4	380-480 V	17-1600 A	7.5-800 kW
S6	520-690 V	11-1600 A	7.5-1400 kW
S11	1000-1140 V	10-560 A	15-800 kW

Common specification	Value
Display	Chinese / English LCD
Number of parameters	62
Protection types	12
Input/output terminals	14
Overload capacity	Adjustable

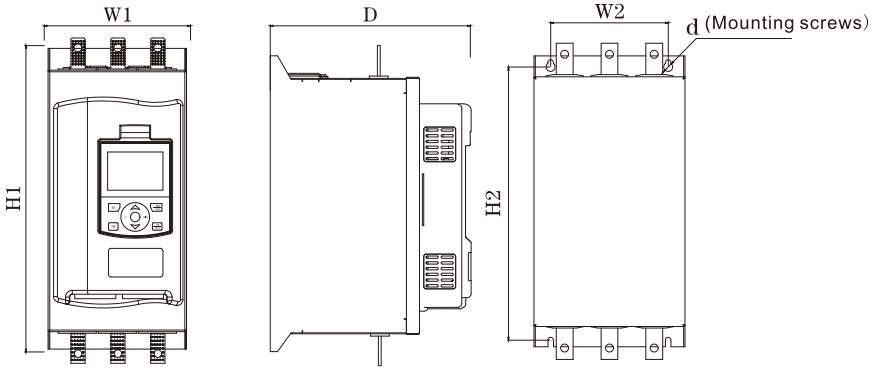


Figure 3-1. Enclosure and mounting dimensions.

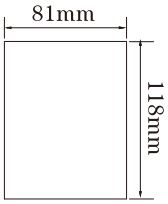


Figure 3-2. External keypad installation dimensions (mm).

Width W1 (mm)	Depth D (mm)	Height H1 (mm)	Gross / unit (kg)
145	214	315	5.75
173	218	322	8.35
210	225	360	12
325	260	462	26.7
491	303	560	36.8–38.7
684	420	840	93.6–100

Gross weight is per individually packed unit and varies by model. Select the exact model in Catalog V2612.

Frame width W1	W2 (mm)	H2 (mm)	Screw d
145	116	285	M6
173	140	300	M6
210	150	343	M8
325	260	440	M8
491	335	535	M8
684	350	780	M10

4 External terminals & wiring

4.1 Control wiring

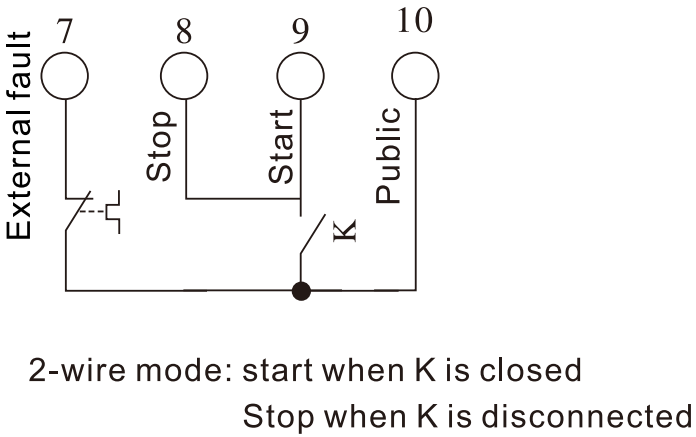


Figure 4-1. Two-wire mode: close K to start; open K to stop.

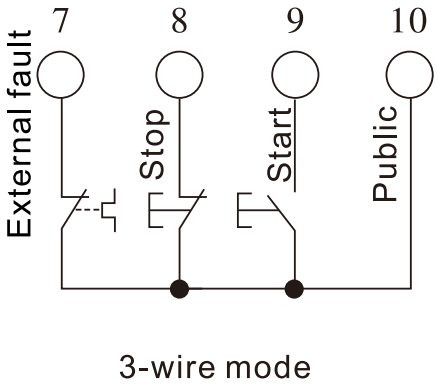


Figure 4-2. Three-wire mode.

4.2 Main and control circuit

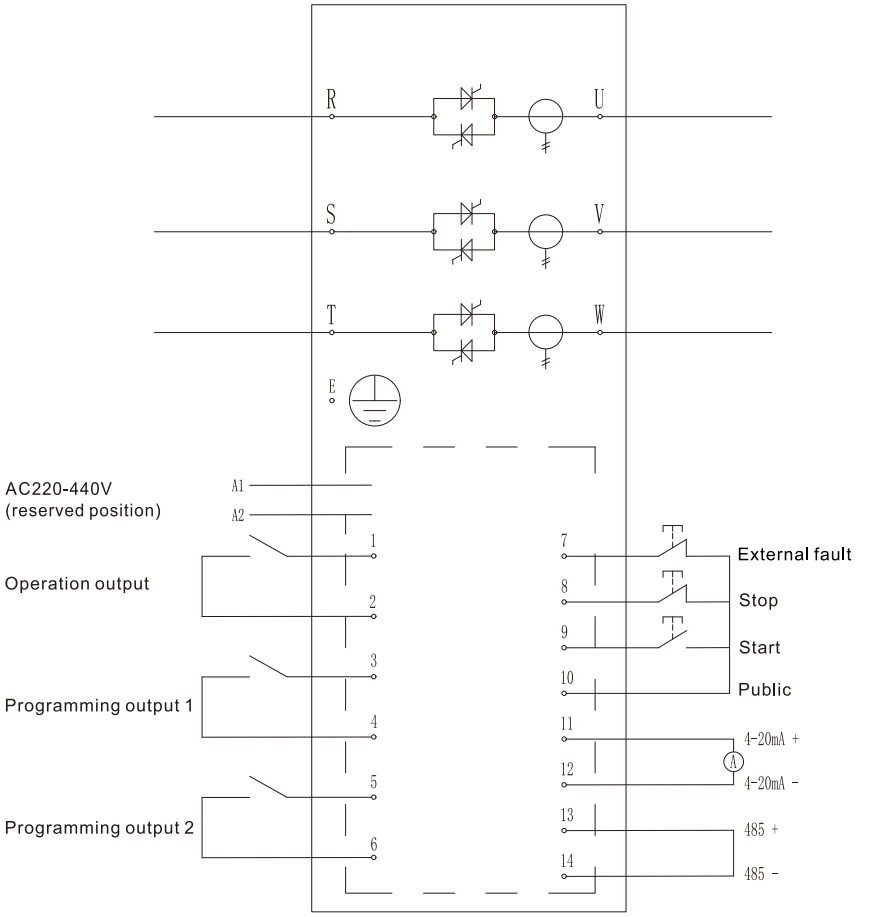


Figure 4-3. Power and control terminal connections.

4.3 Terminal descriptions

Terminal	Name / type	Description
R, S, T	Main circuit input	Three-phase AC power input.
U, V, W	Soft starter output	Connect to a three-phase asynchronous motor.
1, 2	Running relay	Passive contact. Closes after successful starting.
3, 4	Programmable relay 1	Programmable output 1; see relay functions below.
5, 6	Programmable relay 2	Programmable output 2; see relay functions below.
7	External fault input	Reports an external fault. For normal operation, this terminal must be shorted to terminal 10.
8	Stop input	Stop terminal
9	Start input	Start terminal
10	Common	Common terminal
11	Analog output +	4-20 mA output positive
12	Analog output -	4-20 mA output negative
13	RS485+	Modbus RTU communication
14	RS485-	Modbus RTU communication
A1, A2	External supply	AC 220-440 V. External supply is optional; specify this requirement in the order remarks.

Programmable relay functions

Value	Function
0	No action
1	Power-on action
2	Soft start action
3	Bypass action
4	Soft stop action
5	Operation action
6	Standby action
7	Fault action
8	Current arrival action

5 Operation panel

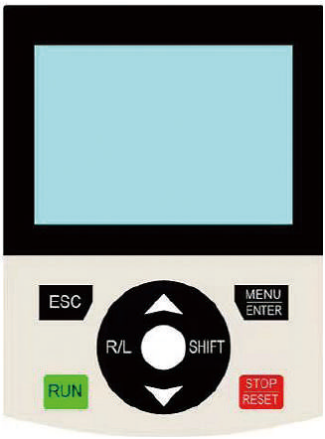


Figure 5-1. Operation panel.

Key	Name	Function
ESC	Cancel	Exit parameters; cancel parameter changes.
SHIFT	Shift	Move the editing position when changing parameters; view the fault record from the main interface.
▲	Increment	Increase data values or parameter codes.
▼	Decrement	Decrease data values or parameter codes.
RUN	Run	Start operation in keypad control mode.
STOP/RESET	Stop / reset	Stop during operation; reset after a fault.
MENU/ENTER	Set / confirm	Enter the parameter menu; confirm parameter settings.
R/L	Panel control	Turn keypad control on or off.

6 Basic parameters

6.1 Group A - Basic settings

Parameter	Setting range / options	Default
A00 Control mode	0: Start and stop prohibited 1: Keypad only 2: External control only 3: Keypad + external control 4: Communication only 5: Keypad + communication 6: External control + communication 7: Keypad + external control + communication	3: Keypad + external control
A01 Starting mode	0: Voltage ramp 1: Current limit 2: Torque	0: Voltage ramp
A02 Starting current limit	50-600%	300%
A03 Starting voltage	30-80%	35%
A04 Starting time	1-120 s	15 s
A05 Stay voltage	60-85%	65%
A06 Early acceleration time	1-10 s	5 s
A07 Stay time	1-120 s	10 s
A08 End ramp time	1-10 s	3 s
A09 Soft stop time	0-60 s	0 s
A10 Soft starter type	0: Online 1: Bypass	0: Online

Parameter	Setting range / options	Default
A11 Programmable relay 1	0: No action 1: Power-on action 2: Soft start action 3: Bypass action 4: Soft stop action 5: Operation action 6: Standby action 7: Fault action 8: Current arrival action 9: Fault (NC) 10: Current reached (NC)	5: Operation action
A12 Programmable output delay 1	0-600 s	0 s
A13 Programmable relay 2	0: No action 1: Power-on action 2: Soft start action 3: Bypass action 4: Soft stop action 5: Operation action 6: Standby action 7: Fault action 8: Current arrival action 9: Fault (NC) 10: Current reached (NC)	7: Fault action
A14 Programmable output delay 2	0-600 s	0 s
A15 Current arrival	1-600%	100%
A16 Current arrival hysteresis	1-100%	20%
A17 4-20 mA upper-limit current	50-500%	200%
A18 Motor wiring mode	0: In-line 1: Inside-delta	0: In-line

Parameter	Setting range / options	Default
A19 Communication address	1-127	1
A20 Communication baud rate	0: 2400 1: 4800 2: 9600 3: 19200	2: 9600
A21 Delay start time	0-999	0
A22 External control mode	0: Pulse mode 1: Level mode	0: Pulse mode
A23 Display language	0: English 1: Chinese	1: Chinese
A24 Reserved	0	0

6.2 Group B - Protection settings

Parameter	Setting range / options	Default
B00 Running overload class	1-30	10
B01 Starting overcurrent multiple	50-600%	500%
B02 Starting overcurrent protection time	0-120 s	5 s
B03 Running overcurrent multiple	50-600%	200%
B04 Running overcurrent protection time	0-6000 s	5 s

Parameter	Setting range / options	Default
B05 Overvoltage protection multiple	100-140%	120%
B06 Overvoltage protection time	0-120 s	5 s
B07 Undervoltage protection multiple	50-100%	80%
B08 Undervoltage protection time	0-120 s	5 s
B09 Three-phase unbalance	20-100%	40%
B10 Three-phase unbalance time	0-120 s	3 s
B11 Underload protection multiple	10-100%	30%
B12 Underload protection time	1-120 s	10 s
B13 Phase sequence selection	0: Any phase sequence 1: Positive phase sequence 2: Reverse phase sequence	0: Any phase sequence

6.3 Group C - Protection response

Parameter	Setting range / options	Default
C00 Running overload	0: Trip shutdown 1: Ignore	0: Trip shutdown
C01 Starting overcurrent	0: Trip shutdown 1: Ignore	1: Ignore
C02 Running overcurrent	0: Trip shutdown 1: Ignore	0: Trip shutdown

Parameter	Setting range / options	Default
C03 Overvoltage protection	0: Trip shutdown 1: Ignore	0: Trip shutdown
C04 Undervoltage protection	0: Trip shutdown 1: Ignore	0: Trip shutdown
C05 Three-phase unbalance	0: Trip shutdown 1: Ignore	0: Trip shutdown
C06 Underload	0: Trip shutdown 1: Ignore	1: Ignore
C07 Soft starter overheat	0: Trip shutdown 1: Ignore	0: Trip shutdown
C08 Thyristor breakdown emergency	0: Close 1: Open	0: Close
C09 Input phase loss	0: Trip shutdown 1: Ignore	0: Trip shutdown
C10 Output phase loss	0: Trip shutdown 1: Ignore	0: Trip shutdown

6.4 Group D - Calibration

Parameter	Setting range / options	Default
D00 Phase A current calibration	10-1000%	100%
D01 Phase B current calibration	10-1000%	100%
D02 Phase C current calibration	10-1000%	100%
D03 Input voltage calibration	10-1000%	100%
D04 Output voltage calibration	10-1000%	100%
D05 4-20 mA lower-limit calibration	0-150.0%	20.0%
D06 4-20 mA upper-limit calibration	0-150.0%	100.0%

6.5 Group E - Status information

Parameter	Status / range
E00 Soft starter rated current	-
E01 Soft starter rated voltage	-
E02 Motor rated current	-
E03 Average current	-
E04 Input voltage	-
E05 Output voltage	-
E06 Phase A current	-
E07 Phase B current	-
E08 Phase C current	-
E09 Start completion percentage	-
E10 Three-phase current unbalance	-
E11 Power frequency	-
E12 Power phase sequence	Positive / reverse phase sequence
E13 Cumulative running time	0 minutes to 10000 days
E14 Number of starts	0-65535
E15 Control software version	-

7 Troubleshooting

7.1 Protection response

When a protection condition is detected, the soft starter records the condition and may trip or issue a warning. The response depends on the protection level.

Some protection responses cannot be adjusted. Such trips are generally caused by external events, such as phase loss, or by internal starter faults. They have no associated adjustable parameters and cannot be set to warning or ignored.

If the starter trips, identify and clear the triggering condition, reset the starter, and then restart. Press STOP/RESET on the operation panel to reset it.

7.2 Trip messages

The following entries describe the protection functions, possible trip causes and corrective actions. Some responses are adjustable; others are built-in system protection that cannot be configured.

01 Input PL

Item	Details
Possible causes	1. One or more input phases are not energized when the start command is issued. 2. Circuit board fault.
Suggested actions	1. Check whether the main circuit is energized. 2. Check for an open SCR in the input circuit and poor contact in the pulse signal wiring. 3. Contact the manufacturer.
Related parameters	C09

02 Output PL

Item	Details
Possible causes	1. SCR short circuit. 2. One or more motor wires are open. 3. Main circuit board fault.
Suggested actions	1. Check whether the SCR is short-circuited. 2. Check for open motor wiring. 3. Contact the manufacturer.
Related parameters	C10

03 Running OL

Item	Details
Possible causes	1. Load too heavy. 2. Incorrect parameter settings.
Suggested actions	1. Use a higher-power soft starter. 2. Adjust the parameters.
Related parameters	B00, C00

04 Under Load

Item	Details
Possible causes	1. Load too small. 2. Incorrect parameter settings.
Suggested actions	1. Adjust the parameters.
Related parameters	B11, B12, C06

05 SS Over Heat

Item	Details
Possible causes	1. Faulty temperature switch. 2. Fan not rotating. 3. Soft starter operating time too long.
Suggested actions	1. Check the temperature switch. 2. Check whether the fan rotates. 3. Stop the machine and allow the starter to cool.
Related parameters	C07

06 Over Volt

Item	Details
Possible causes	1. Input supply voltage too high. 2. Incorrect parameter settings.
Suggested actions	1. Adjust the supply voltage. 2. Adjust the parameters.
Related parameters	B05, B06, C03

07 Under Volt

Item	Details
Possible causes	1. Input supply voltage too low. 2. Incorrect parameter settings.
Suggested actions	1. Adjust the supply voltage. 2. Adjust the parameters.
Related parameters	B07, B08, C04

08 Running OC

Item	Details
Possible causes	1. Load too heavy. 2. Incorrect parameter settings.
Suggested actions	1. Use a higher-power soft starter. 2. Adjust the parameters.
Related parameters	B03, B04, C02

09 Starting OC

Item	Details
Possible causes	1. Load too heavy. 2. Incorrect parameter settings.
Suggested actions	1. Use a higher-power soft starter. 2. Adjust the parameters.
Related parameters	B01, B02, C01

10 Outside Fault

Item	Details
Possible causes	1. The external fault terminal has an input.
Suggested actions	1. Check the input at the external fault terminal.
Related parameters	None

11 Phase Seq Err

Item	Details
Possible causes	1. Input phase sequence differs from the setting.
Suggested actions	1. Adjust the power phase sequence. 2. Adjust the parameters.
Related parameters	B13

12 Curr Unblance

Item	Details
Possible causes	1. Unbalanced supply voltage. 2. Motor winding problem. 3. Current transformer problem.
Suggested actions	1. Adjust the supply voltage. 2. Check the motor winding. 3. Check for an open current transformer circuit.
Related parameters	B09, B10, C05

13 SCR SC

Item	Details
Possible causes	1. Thyristor breakdown. 2. Circuit board fault.
Suggested actions	1. Check for thyristor breakdown. 2. Contact the manufacturer.
Related parameters	C08

8 Function description

8.1 Overload protection

Overload protection uses inverse-time control. The protection time is:

$$t = 35 \times Tp / [(I / Ip)^2 - 1]$$

t = operating time; Tp = protection class; I = operating current; Ip = motor rated current.

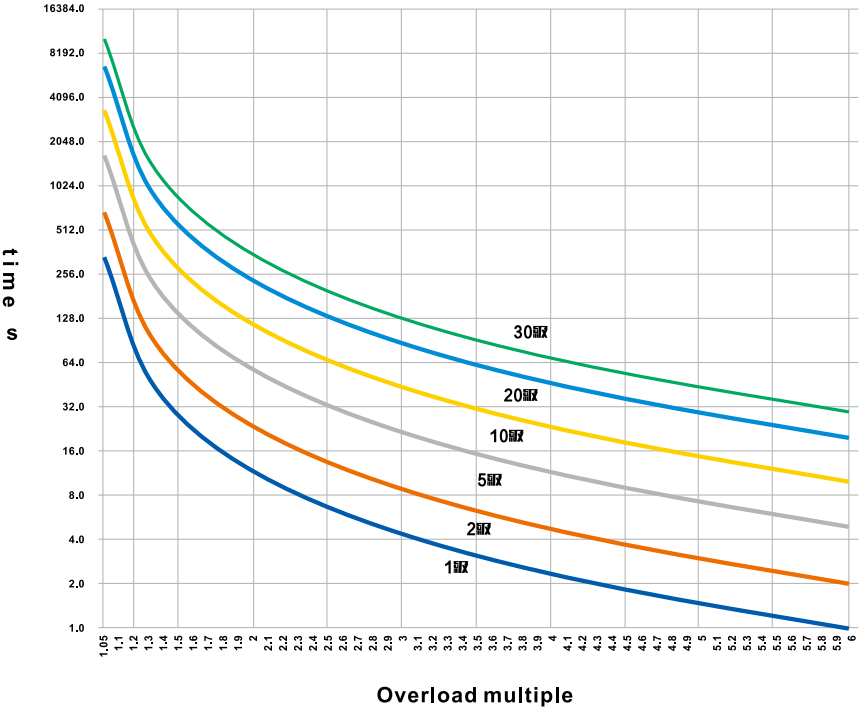


Figure 8-1. Motor overload protection characteristic curves (classes 1, 2, 5, 10, 20 and 30).

8.2 Motor overload characteristics

Times are in seconds. ∞ indicates no action. Ie is the rated motor current.

Class	1.05 Ie	1.2 Ie	1.5 Ie	2 Ie
1	∞	79.5	28	11.7
2	∞	159	56	23.3
5	∞	398	140	58.3
10	∞	795.5	280	117
20	∞	1591	560	233
30	∞	2386	840	350

Class	3 Ie	4 Ie	5 Ie	6 Ie
1	4.4	2.3	1.5	1
2	8.8	4.7	2.9	2
5	22	11.7	7.3	5
10	43.8	23.3	14.6	10
20	87.5	46.7	29.2	20
30	131	70	43.8	30

9 Model code

Model code example:

`AST6200 - S4 - 15`

Code segment	Meaning
AST6200	Intelligent online AC soft starter series
S2	Voltage: 220-240 V
S4	Voltage: 380-480 V
S6	Voltage: 520-690 V
S11	Voltage: 1000-1140 V
15	Rated power: 15 kW

10 Modbus communication

10.1 Modbus RTU overview

This series provides an RS485 interface and supports the Modbus RTU slave protocol for centralized control.

Communication item	Specification
Electrical interface	RS485, half duplex
Default baud rate	9600
Data format	8 data bits, no parity, 1 stop bit

Communication frame

Address code	Function code	Data area	CRC check
1 byte	1 byte	N bytes	2 bytes

10.2 Supported function codes

Only the following function codes are supported. Other codes return an exception response.

Code	Function
03	Read register
06	Write a single register

Code 03 supports single-word (WORD) reads only.

10.3 Register map

• Communication format: no parity, 8 data bits, 1 stop bit.

• Selectable communication address: 1-127.

• Selectable baud rate: 2400-19200.

• Supported Modbus function codes: 03 and 06.

• Maximum registers transferred at one time: 32.

Access: R = read; W = write; R/W = read and write. A dash indicates that no value is specified in the source table.

Configuration registers

Address / function	Setting range / options	Default	Access
0 SS Rated Curr	-	-	R
1 SS Rated Volt	-	-	R
2 Mot Rated Curr	-	-	R/W
3 Control Mode	0: Start and stop prohibited 1: Keypad only 2: External control only 3: Keypad + external control 4: Communication only 5: Keypad + communication 6: External control + communication 7: Keypad + external control + communication	3: Keypad + external control	R/W

Address / function	Setting range / options	Default	Access
4 Start Mode	0: Volt Ramp 1: Curr Limit 2: Torque Start 3: Test Mode	0: Voltage ramp start	R/W
5 CLS Curr Limit	50-600%	300%	R/W
6 Init Start Volt	30-80%	35%	R/W
7 VRS Start Time	1-120 s	15 s	R/W
8 Stay Volt	60-85%	65%	R/W
9 Init Ramp Time	1-10 s	5 s	R/W
10 Stay Time	1-120 s	10 s	R/W
11 End Ramp Time	1-10 s	3 s	R/W
12 Soft Stop Time	0-60 s	0 s	R/W
13 Soft Starter Type	0: Online 1: Bypass type	1: Bypass type	R/W
14 Program Relay	0: Disable 1: Power On 2: Starting 3: Bypass 4: Stopping 5: Running 6: StandBy 7: Fault 8: Curr Reached	5: Operation action	R/W

Address / function	Setting range / options	Default	Access
15 PR1 Delay Time	0-600 s	0 s	R/W
16 Program Relay	0: Disable 1: Power On 2: Starting 3: Bypass 4: Stopping 5: Running 6: StandBy 7: Fault 8: Curr Reached	7: Fault action	R/W
17 PR1 Delay Time	0-600 s	0 s	R/W
18 Curr Reached	1-600%	100%	R/W
19 Curr Reach Hyst	1-100%	20%	R/W
20 4-20mA Curr Limit	50-500%	200%	R/W
21 Motor Wiring	0: In-line 1: Inside-delta	0: In-line	R/W
22 Modbus Addr	1-127	1	R/W
23 Modbus Baudrate	0: 2400 1: 4800 2: 9600 3: 19200	2: 9600	R/W
24 Running OL Class	1-30	10	R/W
25 Starting OC P.C.	50-600%	500%	R/W

Address / function	Setting range / options	Default	Access
26 Starting OC Time	0-120 s	5 s	R/W
27 Running OC P.C.	50-600%	200%	R/W
28 Running OC Time	0-6000 s	5 s	R/W
29 Over Volt P.C.	100-140%	120%	R/W
30 Over Volt Time	0-120 s	5 s	R/W
31 Under Volt P.C.	50-100%	80%	R/W
32 Under Volt Time	0-120 s	5 s	R/W
33 Curr Unb P.C.	20-100%	40%	R/W
34 Curr Unb Time	0-120 s	3 s	R/W
35 Under Load P.C.	10-100%	30%	R/W
36 Under Load Time	1-120 s	10 s	R/W
37 Phase Sequence	0: Any phase sequence 1: Positive phase sequence 2: Reverse phase sequence	0: Any phase sequence	R/W
38 Running OL	0: Trip shutdown 1: Ignore	0: Trip shutdown	R/W

Address / function	Setting range / options	Default	Access
39 Starting OC	0: Trip shutdown 1: Ignore	1: Ignore	R/W
40 Running OC	0: Trip shutdown 1: Ignore	0: Trip shutdown	R/W
41 Over Volt	0: Trip shutdown 1: Ignore	0: Trip shutdown	R/W
42 Under Volt	0: Trip shutdown 1: Ignore	0: Trip shutdown	R/W
43 Curr Unbalance	0: Trip shutdown 1: Ignore	0: Trip shutdown	R/W
44 Under Load	0: Trip shutdown 1: Ignore	1: Ignore	R/W
45 SS Over Temp	0: Trip shutdown 1: Ignore	0: Trip shutdown	R/W
46 SCR SC Start	0: Close 1: Open	0: Off	R/W
47 Reserved	-	-	-
48 IA Calibration	10-1000%	100%	R/W
49 IA Calibration	10-1000%	100%	R/W
50 IA Calibration	10-1000%	100%	R/W
51 In Volt Cali	10-1000%	100%	R/W
52 Out Volt Cali	10-1000%	100%	R/W

Address / function	Setting range / options	Default	Access
53 4-20mA Low Cali	0-150.0%	20.0%	R/W
54 4-20mA Up Cali	0-150.0%	100.0%	R/W
55 Display Language	0: English 1: Chinese	1: Chinese	R/W
56 Disp Curr Mode	0: Ave Current 1: Three Phase Curr	0: Ave Current	R/W
57 SS Version	-	-	R
58 Accu Run Second H	-	-	R
59 Accu Run Time	-	-	R
60 SS Start Times	-	-	R
61 Reserved	-	-	R/W

Equipment status registers

Address	Function	Values / access
100	SS Status	0: Ready 1: Starting 2: Running 3: Stopping 5: Fault Read only
101	Cur Fault	Fault codes listed below. Read only

Current fault codes - register 101

Value	Fault description
0	No malfunction
128	No malfunction
129	Input phase loss
130	Input phase loss
131	Output phase loss
132	Output phase loss
133	Running overload
134	Starting overload
135	Soft starter underload
136	Rapid overcurrent
137	Current imbalance
138	Soft starter overheating
139	Overvoltage fault
140	Undervoltage fault
141	Thyristor breakdown
142	Start timeout
143	Reserved
144	Running overcurrent
145	Starting overcurrent
146	Restricted start
147	Motor overheating

Value	Fault description
148	Reserved
149	Reserved
150	External malfunction
151	Reserved
152	Reserved
153	Phase sequence fault
154	Internal malfunction
155	Internal malfunction

Operating data registers

Address	Function	Access
102	Ave Current	R
103	Input Volt	R
104	Output Volt	R
105	Current A	R
106	Current B	R
107	Current C	R
108	Output Volt P.C.	R
109	Curr Unb P.C.	R
110	Apparent Power	R
111	Power Freq	R
112	Phase Sequence	R

Address	Function	Access
113	SS Temp	R
114	Mot Temp	R
115	Cur Run Time	R
116	Accu Run Time	R
117	Start Times	R
118	SS Version	R

Historical fault records

Address	Function	Access
300	First fault name	R
301	Supply voltage	R
302	Phase A current	R
303	Phase B current	R
304	Phase C current	R
305	Cumulative running time	R
306	Second fault name	R
307	Supply voltage	R
308	Phase A current	R
309	Phase B current	R
310	Phase C current	R
311	Cumulative running time	R
312	Third fault name	R

Address	Function	Access
...	...	R
354	Tenth fault name	R
355	Supply voltage	R
356	Phase A current	R
357	Phase B current	R
358	Phase C current	R
359	Cumulative running time	R

Control command

Address	Function	Values / access
406	Control command register	0x0001: Start 0x0002: Reserved 0x0003: Stop 0x0004: Fault reset Write only

10.4 Exception responses

Code	Name	Description
01	Illegal function	The function code is not supported by the soft starter.
02	Illegal data address	The address is invalid; the request cannot be executed.
03	Illegal data value	The received data cannot be executed: 1. Parameter value exceeds the range. 2. Parameter cannot be modified. 3. Parameter cannot be modified during operation.

NOTICE - Communication settings

The soft starter address, communication speed and parity mode must match the controller settings. If no response is received, check these settings and the terminal connections.

When communicating with multiple soft starters, connect a 120 Ω resistor across the final 485+ and 485- terminals.

Connect to other Modbus devices as shown below:

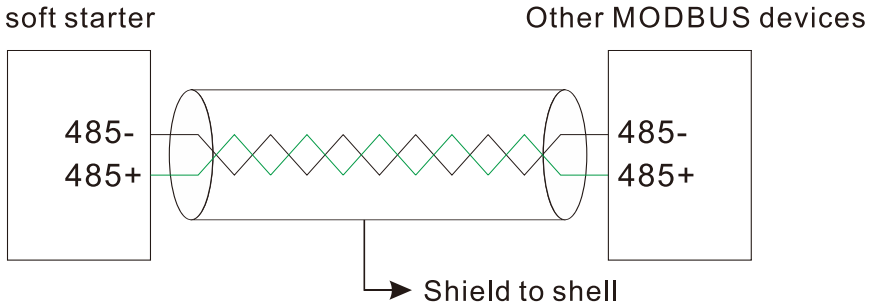


Figure 10-1. RS485 wiring and cable shield connection.

INOMAX

Build your trust of technology from China

SHENZHEN INOMAX TECHNOLOGY CO.,LTD

Address: Ideal Science and Technology Park,
Guanlan Avenue, Longhua District, Shenzhen,
Guangdong, China

Tel: 0086-75521002258
Fax: 0086-75521002258

E-mail:info@inomaxtechnology.com
Websit:www.inomaxtechnology.com