STS3215 Analysis of memory table parameters -V3.6

No load speed（RPM）	50	Test voltage(V)	7.4V
No load speed（step/s）	3400	No load current（mA）	150
Maximum Effective Angle (Degree)	360	Support multi turn and large angle control, power failure does not save the number of cycles	
Resolution (step)	4096		
Minimum Resolution Angle (Degree/Step)	0,08789	Electronic dead Zone（degree）	0,1757813
Acceleration (degrees / S ^ 2)	8,78906		

Memory address		Function	Bytes	Initial value	Ist-Wert	Storage area	authority	Minimum value	Maximum value	unit	Analysis of values
DEC	HEX		Low Front High behind								If the function address uses two bytes of data, the low byte is in the front address, and the high byte is in the back address
0	0	Firmware major version number	1	3	9	EPROM	read	-1	-1		
1	1	Firmware sub version number	1	6	0	EPROM	read	-1	-1		
3	3	servo Main Version Number	1	9	9	EPROM	read	-1	-1		
4	4	servo sub version number	1	3	3	EPROM	read	-1	-1		
5	0x5	ID	1	1	0	EPROM	read&write	0	253	number	"Unique identification code on the bus. Duplicate ID number is not allowed on the same bus,254 (oxfe) is the broadcast ID, broadcast does not return a reply packet“
6	0x6	Baud rate	1	0	0	EPROM	read&write	0	7	no	0-7 represents baud rate as follows: 1000000，500000，250000，128000，115200，76800，57600，38400
7	0x7	Return delay	1	0	0	EPROM	read&write	0	254	2us	The minimum unit is 2us, and the maximum set return delay is 254 * 2 = 508us
8	0x8	Response status level	1	1	1	EPROM	read&write	0	1	no	0: except for read instruction and Ping instruction, other instructions do not return reply packet;1: Returns a reply packet for all instructions“
9	0x9	Minimum Angle Limitation	2	0	1/128	EPROM	read&write	0	4094	step	Set the minimum limit of motion stroke, the value is less than the maximum angle limit, and this value is 0 when the multi cycle absolute position control is carried out
11	0xB	Maximum Angle Limitation	2	4095	0	EPROM	read&write	1	4095	step	Set the maximum limit of motion stroke, which is greater than the minimum angle limit, and the value is 0 when the multi turn absolute position control is adopted.
13	0xD	Maximum Temperature Limit	1	70	70	EPROM	read&write	0	100	°C	The maximum operating temperature limit, if set to 70, the maximum temperature is 70 °C, and the setting accuracy is 1 °C
14	0xE	Maximum input voltage	1	80	140	EPROM	read&write	0	254	0.1V	If the maximum input voltage is set to 80, the maximum working voltage is limited to 8.0V and the setting accuracy is 0.1V
15	0xF	Minimum input voltage	1	40	40	EPROM	read&write	0	254	0.1V	If the minimum input voltage is set to 40, the minimum working voltage is limited to 4.0V and the setting accuracy is 0.1V
16	0x10	Maximum torque	2	1000	232/3	EPROM	read&write	0	1000	0,10 %	Set the maximum output torque limit of the servo, and set 1000 = 100% * locked torque,Power on assigned to address 48 torque limit“
18	0x12	phase	1	12	12	EPROM	read&write	0	254	no	Special function byte, which cannot be modified without special requirements. See special byte bit analysis for details
19	0x13	Unloading condition	1	44	44	EPROM	read&write	0	254	no	Bit0 Bit1 bit2 bit3 bit4 bit5 corresponding bit is set to enable corresponding protection
20	0x14	LED Alarm condition	1	47	47	EPROM	read&write	0	254	no	The corresponding bit of temperature current angle overload of voltage sensor is set to 0 to close the corresponding protection“Bit0 Bit1 bit2 bit3 bit4 bit5 corresponding bit is set to enable flashing alarm The corresponding bit of temperature current angle overload of voltage sensor is set to 0 to turn off flashing light alarm“
21	0x15	P Proportionality coefficient	1	32	32	EPROM	read&write	0	254	no	Proportional factor of control motor
22	0x16	D Differential coefficient	1	32	32	EPROM	read&write	0	254	no	Differential coefficient of control motor
23	0x17	I Integral coefficient	1	0	0	EPROM	read&write	0	254	no	Integral coefficient of control motor
24	0x18	Minimum startup force	2	16	16/0	EPROM	read&write	0	1000	0,1%	Set the minimum output starting torque of servo and set 1000 = 100% * locked torque

STS3215 Analysis of memory table parameters -V3.6

No load speed（RPM）	50	Test voltage(V)	7.4V
No load speed（step/s）	3400	No load current（mA）	150
Maximum Effective Angle (Degree)	360	Support multi turn and large angle control, power failure does not save the number of cycles	
Resolution (step)	4096		
Minimum Resolution Angle (Degree/Step)	0,08789	Electronic dead Zone（degree）	0,1757813
Acceleration (degrees / S ^ 2)	8,78906		

Memory address		Function	Bytes	Initial value	Ist-Wert	Storage area	authority	Minimum value	Maximum value	unit	Analysis of values
DEC	HEX		Low Front High behind								If the function address uses two bytes of data, the low byte is in the front address, and the high byte is in the back address
26	0x1A	Clockwise insensitive area	1	1	1	EPROM	read&write	0	32	step	The minimum unit is a minimum resolution angle
27	0x1B	Counterclockwise insensitive region	1	1	1	EPROM	read&write	0	32	step	The minimum unit is a minimum resolution angle
28	0x1C	Protection current	2	500	54/3	EPROM	read&write	0	511	6.5mA	The maximum current can be set at 3255ma
30	0x1E	Angular resolution	1	1	1	EPROM	read&write	1	100	no	For the amplification factor of minimum resolution angle (degree / step), the number of control turns can be extended by modifying this value
31	0x1F	Position correction	2	0	134/9	EPROM	read&write	-2047	2047	step	Bit11 is the direction bit, indicating the positive and negative directions. Other bits can represent the range of 0-2047 steps
33	0x21	Operation mode	1	0	3	EPROM	read&write	0	2	no	0: position servo mode 1: The motor is in constant speed mode, which is controlled by parameter 0x2e, and the highest bit 15 is the direction bit 2: PWM open-loop speed regulation mode, with parameter 0x2c running time parameter control, bit11 as direction bit 3: In step servo mode, the number of step progress is represented by parameter 0x2a, and the highest bit 15 is the direction bit“
34	0x22	Protective torque	1	20	20	EPROM	read&write	0	254	1,0%	After entering the overload protection, the output torque, if set to 20, means 20% of the maximum torque
35	0x23	Protection time	1	200	200	EPROM	read&write	0	254	10ms	The timing time when the current load output exceeds the overload torque and remains. If 200 is set to 2 seconds, the maximum can be set to 2.5 seconds
36	0x24	Overload torque	1	80	80	EPROM	read&write	0	254	1,0%	The maximum torque threshold of starting overload protection time meter, if set to 80, means 80% of the maximum torque
37	0x25	Speed closed loop P proportional coefficient	1	10	10	EPROM	read&write	0	254	no	In the motor constant speed mode (mode 1), the speed loop proportional coefficient
38	0x26	Over current protection time	1	200	200	EPROM	read&write	0	254	10ms	The maximum setting is 254 * 10ms = 2540ms
39	0x27	Velocity closed loop I integral coefficient	1	10	200	EPROM	read&write	0	254	no	In the motor constant speed mode (mode 1), the speed loop integral coefficient
40	0x28	Torque switch	1	0	0	SRAM	read&write	0	2	no	Write 0: turn off torque output; write 1: turn on torque output; write 128: current position correction is 2048
41	0x29	acceleration	1	0	0	SRAM	read&write	0	254	100step/s^2	If it is set to 10, the speed will be changed by 1000 steps per second
42	0x2A	Target location	2	0	0/0	SRAM	read&write	-32766	32766	step	Each step is a minimum resolution angle, absolute position control mode, the maximum corresponding to the maximum effective angle
44	0x2C	Running time	2	0	0/0	SRAM	read&write	0	1000	0,10 %	

STS3215 Analysis of memory table parameters -V3.6

No load speed（RPM）	50	Test voltage(V)	7.4V
No load speed（step/s）	3400	No load current（mA）	150
Maximum Effective Angle (Degree)	360	Support multi turn and large angle control, power failure does not save the number of cycles	
Resolution (step)	4096		
Minimum Resolution Angle (Degree/Step)	0,08789	Electronic dead Zone（degree）	0,1757813
Acceleration (degrees / S ^ 2)	8,78906		

Memory address		Function	Bytes	Initial value	Ist-Wert	Storage area	authority	Minimum value	Maximum value	unit	Analysis of values
DEC	HEX		Low Front High behind								If the function address uses two bytes of data, the low byte is in the front address, and the high byte is in the back address
46	0x2E	running speed	2	0	0/0	SRAM	read&write	0	254	step/s	Number of steps in unit time (per second), 50 steps / second = 0.732 RPM (cycles per minute)
48	0x30	Torque limit	2	1000	232/3	SRAM	read&write	0	1000	1,0%	The initial value of power on is assigned by the maximum torque (0x10), which can be modified by the user to control the output of the maximum torque
55	0x37	Lock mark	1	0	1	SRAM	read&write	0	1	no	"Write 0 closes the write lock, and the value written to EPROM address is saved after power failure. Write 1 opens the write lock, and the value written to EPROM address is not saved after power failure“
56	0x38	current location	2	0	0/0	SRAM	read-only	-1	-1	step	In the absolute position control mode, the maximum value corresponds to the maximum effective angle
58	0x3A	Current speed	2	0	0/0	SRAM	read-only	-1	-1	step/s	Feedback the current speed of motor rotation, the number of steps in unit time (per second)
60	0x3C	Current load	2	0	0/0	SRAM	read-only	-1	-1	0,1%	Voltage duty cycle of current control output drive motor
62	0x3E	Current voltage	1	0	123	SRAM	read-only	-1	-1	0.1V	Current servo working voltage
63	0x3F	Current temperature	1	0	34	SRAM	read-only	-1	-1	°C	Current internal operating temperature of the servo
64	0x40	Asynchronous write flag	1	0	0/0	SRAM	read-only	-1	-1	no	When using asynchronous write instruction, flag bit
65	0x41	Servo status	1	0	0/0	SRAM	read-only	-1	-1	no	Bit0 Bit1 bit2 bit3 bit4 bit5 corresponding bit is set to 1, indicating that the corresponding error occurs,Voltage sensor temperature current angle overload corresponding bit 0 is no phase error.
66	0x42	Mobile sign	1	0	0/0	SRAM	read-only	-1	-1	no	When the servo is moving, it is marked as 1, and when the servo is stopped, it is 0
69	0x45	Current current	2	0	0/0	SRAM	read-only	-1	-1	6.5mA	The maximum measurable current is 500 * 6.5ma = 3250ma

Turn off the lock pro

Input control parameters
ID number
Write instruction
First address
change ID number

HEX	Header		ID number
hexadecimal	FF	FF	FE
decimal system	255	255	254
Generating hexadecimal instructions	FF FF FE 04 03 37 00 C3		

change ID numb

Input control parameters
ID number
Write instruction
First address
change ID number

HEX	Header		ID number
hexadecimal	FF	FF	01
decimal system	255	255	1
Generating hexadecimal instructions	FF FF 01 04 03 05 02 F0		

Modify protection co

Input control parameters
ID number
Write instruction
First address
Modify protection value

HEX	Header		ID number
hexadecimal	FF	FF	01
decimal system	255	255	1
Generating hexadecimal instructions	FF FF 01 04 03 13 20 C4		

The current position corre

Input control parameters
ID number
Write instruction
First address

Switching force enable

-

HEX	Header		ID number
hexadecimal	FF	FF	01
decimal system	255	255	1
Generating hexadecimal instructions	FF FF 01 03 02 28 80 51		

Switching force en

Input control parameters
ID number
Write instruction
First address
Switching force enable

HEX	Header		ID number
hexadecimal	FF	FF	FD
decimal system	255	255	253
Generating hexadecimal instructions	FF FF FD 04 02 28 00 D4		

Input control parameters
ID number
Write instruction
position
time
speed

ST series	Header		ID number
hexadecimal	FF	FF	02
decimal system	255	255	2
Generating hexadecimal instructions	FF FF 02 09 03 2A E8 03 00 00 00 00 DC		

Input control parameters
ID number
Write instruction
Acceleration

Position
empty set0
speed

ST series	Header		ID number
hexadecimal	FF	FF	01
decimal system	255	255	1
Generating hexadecimal instructions	FF FF 01 0A 03 29 32 E8 03 00 00 E8 03 C0		

Read position instr

Input control parameters
ID number
read instruction
First address
Number of bytes

SC series	Header		ID number
hexadecimal	FF	FF	01
decimal system	255	255	1
Generating hexadecimal instructions	FF FF 01 04 02 38 02 BE		

Number of turns clear

Input control parameters
ID number
Number of turns clear command

Number of

HEX	Header		ID number
hexadecimal	FF	FF	01
decimal system	255	255	1
Generating hexadecimal instructions	FF FF 01 02 0A F2		

tection

Input range

Decimal input	SC
254	0-254
3	
55	
0	0 close

1 Open lock sign

Turn off lock protection command

instruction Packet length	instruction	write first address
04	03	37
4	3	55

ber

input range

Decimal input	SC
1	0-254
3	
5	
2	

Modify ID number instruction

instruction Packet length	instruction	write first address
04	03	05
4	3	5

nditions

Input range

Decimal input	SC
1	0-254
3	
19	
32	

Modify protection conditions

instruction Packet length	instruction	write first address
04	03	13
4	3	19

ction is 2048

Input range

Decimal input		SC/ST
1	0-254	0-254
2		
40	open	close

128	1	0

The current position correction is 2048

instruction Packet length	instruction	write first address
03	02	28
3	2	40

nable

Decimal input	Input range SC/ST	
253	0-254	0-254
2		
40	open	close
0	1	0

Switching force enable instruction

instruction Packet length	instruction	write first address
04	02	28
4	2	40

Decimal input	Input range SC	ST
2	0-253	0-253
3		
1000	0-1023	0-4095
0	2000	--
0		0-150

instruction Packet length	instruction	write first address
09	03	2A
9	3	42

Decimal input	Input range ST	(Unit)
1	0-253	
3		
50	0-255	8.878 °/s2

1000	0-4095	0,088
0		
1000	0-1023	0.732RPM

instruction Packet length	instruction	write first address
0A	03	29
10	3	41

---

uction

Input range

Decimal input	SC	ST
1	0-254	0-254
2		
56		
2		

Read position instruction

instruction Packet length	instruction	write first address
04	02	38
4	2	56

command

Input range

Decimal input	STBL
1	0-254
10	

turns cleared

instruction Packet length	instruction	Check code
02	0A	F2
2	10	242

ID data	Check code
00	C3
0	195

ID data	Check code
02	F0
2	240

protection value	Check code
20	C4
32	196

ST

Median automatic alignment

128

write data	Check code
80	51
128	81

ST

Median automatic alignment
128

Read data length	Check code
00	D4
0	212

Position low byte	Location high byte	Time low byte	Time high byte
E8	03	00	00
232	3	0	0

Multi loop control

-30719~+30719 （正负7.5圈）

no fur

Acceleration byte	Position low byte	Location high byte	Time low byte
32	E8	03	00
50	232	3	0

Number of bytes	Check code
02	BE
2	190

Speed low byte	Speed high byte	Check code
00	00	DC
0	0	220

nction

Time high byte	Speed low byte	Speed high by	Check code
00	E8	03	C0
0	232	3	192