

RS485 params for SM29, SM45 and STS3032

Addr.	Memory	Bytes	Default	Min	Max	Unit	Area	R/W
0	Firmware Main Version	1	2				EPROM	r
1	Firmware Sec. Version	2	48				EPROM	r
3	Servo Main Version	1	8				EPROM	d
4	Servo Sub Version	1	40				EPROM	d
5	ID (Device Identifier)	1	1	0	253		EPROM	rw
6	Baud Rate (Note 1)	1	4	0	7		EPROM	rw
7	Return Delay Time	1	250			2 uS	EPROM	rw
8	Reply Mode (Note 2)	1	1	0	1		EPROM	rw
9	Min Position Limit (Note 3)	2	0	0	4094	step	EPROM	rw
11	Max Position Limit (Note 3)	2	4095	0	4095	step	EPROM	rw
13	Max Temperature Limit	1	70	0	100	1°C	EPROM	rw
14	Max Input Voltage	1	250	0	254	0.1V	EPROM	rw
15	Min Input Voltage	1	90	0	254	0.1V	EPROM	rw
16	Startup Torque Limit (Note 9)	2	1000	0	1000	0.1%	EPROM	rw
18	Setting Byte	1		0	254		EPROM	rw
19	Protection Switch	1		0	254		EPROM	rw
20	LED Alarm Condition	1		0	254		EPROM	rw
21	Position P Gain	1	32	0	254		EPROM	rw
22	Position D Gain	1	32	0	254		EPROM	rw
23	Position I Gain	1	0	0	254		EPROM	rw
24	Startup force	2	0	0	1000	0.1%	EPROM	rw
26	CW Dead Band	1	0	0	32	step	EPROM	rw
27	CCW Dead Band	1	0	0	32	step	EPROM	rw
28	Overload Current	2	500	0	511	6.5mA	EPROM	rw
30	Angular Resolution	1	1	1	100	step	EPROM	rw
31	Position Offset Value	2	0	-2047	2047	step	EPROM	rw
33	Work Mode	1	0	0	2		EPROM	rw
34	Protect Torque (Note 9)	1	20	0	254	1.0%	EPROM	rw
35	Overload Protection Time	1	200	0	254	10mS	EPROM	rw
36	Overload Torque (Note 9)	1	80	0	254	1.0%	EPROM	rw
37	Velocity P Gain	1	10	0	254		EPROM	rw
38	Over Current Protec. Time	1	200	0	254	10mS	EPROM	rw
39	Velocity I Gain	1	10	0	254		EPROM	rw

Notes:

(1) Baud rates: 0=1M 1=500K 2=250K 3=128K
 4=115200 5=76800 6=57600 7=38400

(2) Reply Mode: 0=Reply for all instructions 1=Reply only for read instructions

Addr.	Memory	Bytes	Default	Min	Max	Unit	Area	R/W
40	Torque Enable (Note 4)	1	1	0	254		SRAM	rw
41	Goal Acceleration (Note 5)	1	0	0	254	(6)	SRAM	rw
42	Goal Position (Note 3)	2		(2)	(2)	step	SRAM	rw
44	Goal Torque (Note 9)	2	0	1			SRAM	rw
46	Goal Velocity	2	0	1	31K	(7)	SRAM	rw
48	Torque Limit	2	1000	0	1000	1.0%	SRAM	rw
55	EPROM Lock switch (Note 10)	1	1	0	1		SRAM	rw
56	Present Position (Note 6)	2		0	4095	step	SRAM	r
58	Present Velocity	2		0		(7)	SRAM	r
60	Present Torque (Note 9)	2		0	1000	0.1%	SRAM	r
62	Present Input Voltage	1		0		0.1V	SRAM	r
63	Present Temperature	1		0		1°C	SRAM	r
64	Sync Write Flag	1	0				SRAM	r
65	Hardware Error Status	1	0				SRAM	r
66	Moving Status	1	0				SRAM	r
69	Present Current	2	0			6.5mA	SRAM	r

Notes:

- (3) Normally the position range is from 0 to 4095
but if "Min Position Limit" and "Max Position Limit" are both zero
then limits are from from -30719 to +30719, that means -7.5 and +7.5 turns.
- (4) Torque Enable 0=Disable 1=Enable 128=Actual position is center (2048 value)
- (5) Acceleration = 0 is not working.
- (6) With multiturn this location does not follows the position (30719 to +30719)
but is limited from 0 to 4095
- (7) The unit for acceleration is : 100 steps / s²
- (8) The unit for speed is : 50 steps / s
- (9) The torque value is two bytes (60 - 61), like Position (56 - 57) and Velocity (58 - 59).
But the Torque is not codified as a signed 16 bit. It is codified as a signed 11 bit, making it
a particular case, out of any standard and impossible to decode with the same functions
used for all the other values. The "Torque" is not really a force, it is the motor drive current
with a scale from 0 to 1023, where 1023 is the max Torque and from 1024 to 2047 there
are the negative values.
- (10) The EPROM has a protective lock switch, which needs to be turned off (0) before
modifying the ID, otherwise the sample ID number will not be saved when power is off.