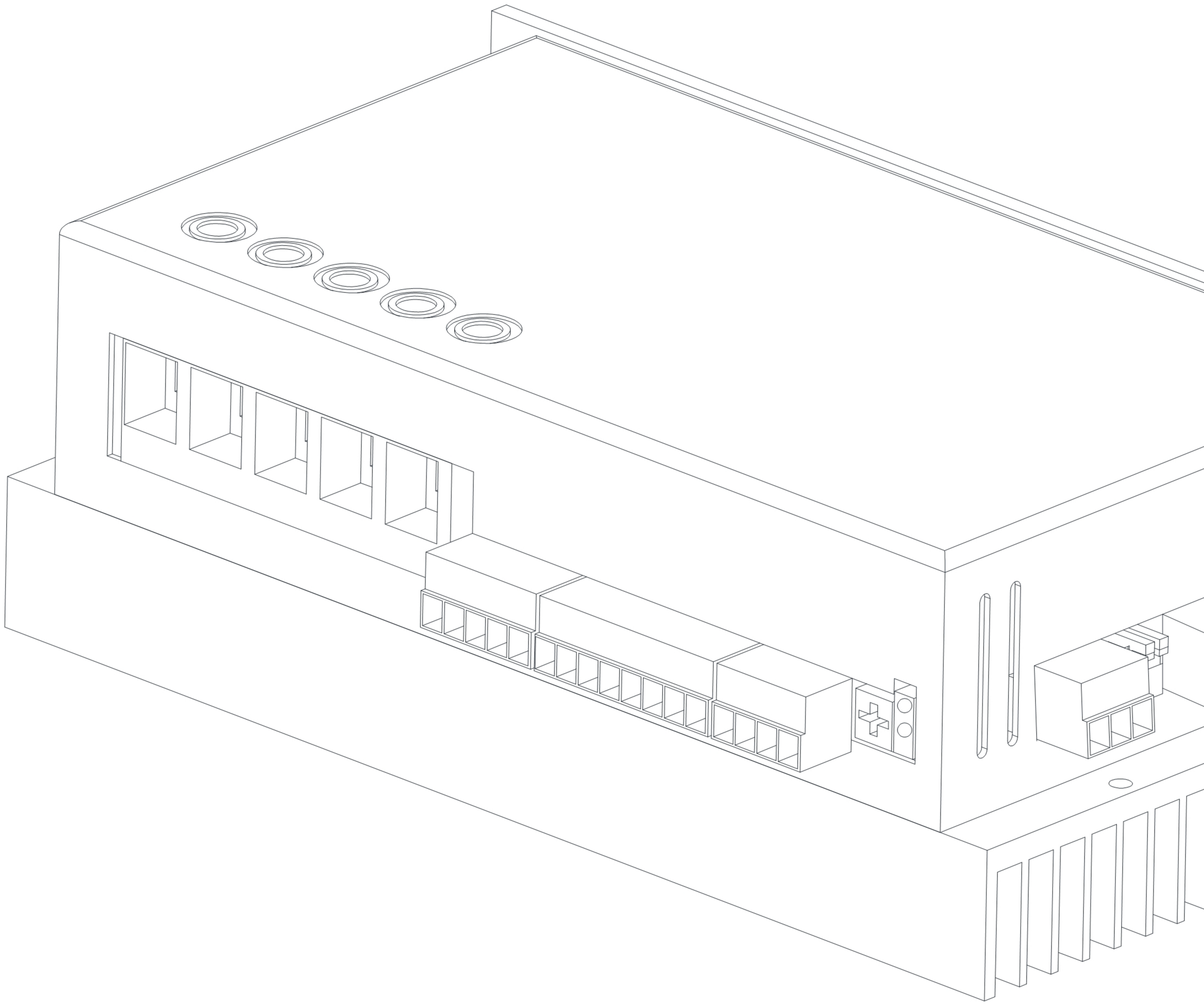
Brushless



BLDC Controller RS485 Communication Protocol

11 Parameter Pn List

Pn	HEX	Range		Default	Unit	Name	Attr.	Description
1	0001h	1	20	4	PP	Polar Pair	Reset	Motor parameter
2	0002h	300	10000	3000	rpm	Max Speed	Immediate	Motor parameter
3	0003h	5	40	40	A	Rated Current	Reset	Motor parameter
8	0008h	12	90	20	V	Under Voltage Alarm Value	Reset	System alarm after bus voltage is lower than this value for more than 300mS
9	0009h	12	90	90	V	Over Voltage Alarm Value	Reset	System alarm when bus voltage is higher than this value
10	000Ah	10	180	180	A	Peak Current Alarm Value	Immediate	System working peak current alarm value
12	000Ch	10	150	150	A	Bus Current Alarm Value	Immediate	System working bus current alarm value
13	000Dh	10	70	60	A	Bus Current Limit Value	Immediate	System working bus current limit value
14	000Eh	1	6	/	-	Data Channel	Reset	1=SV, 2=MODBUS, 3=CAN, 4=PWM dutycycle, 5=PWM frequency, 6=Segment speed
15	000Fh	1	4	/	-	Control Channel	Reset	1=IO switch, 2=MODBUS, 3=CAN, 4=Segment Speed
16	0010h	1	2	/	-	Control Mode	Reset	1=Torq(open loop), 2=Speed(close loop)
21	0015h	0	1	0	-	Disable Overload Alarm	Immediate	0=Not disable, 1=Disable(Bus current limit value will be Pn003 value)
24	0018h	0	1	0	-	X1 Inverse	Immediate	0=Not inverse, 1=X1 input signal inversed
25	0019h	0	1	0	-	X2 Inverse	Immediate	0=Not inverse, 1=X2 input signal inversed
26	001Ah	0	1	0	-	X3 Inverse	Immediate	0=Not inverse, 1=X3 input signal inversed
27	001Bh	0	1	0	-	X4 Inverse	Immediate	0=Not inverse, 1=X4 input signal inversed
28	001Ch	0	1	0	-	D0 Inverse	Immediate	0=Not inverse, 1=D0 output signal inversed
29	001Dh	0	1	0	-	D1 Inverse	Immediate	0=Not inverse, 1=D1 output signal inversed
30	001Eh	0	4	0	-	X1 Function Sel	Reset	0=EN(Start/Stop), 1=F/R(Direction), 2= BRAKE, 3=Error Clear, 4=Segment speed input
31	001Fh	0	4	1	-	X2 Function Sel	Reset	0=EN(Start/Stop), 1=F/R(Direction), 2= BRAKE, 3=Error Clear, 4=Segment speed input
32	0020h	0	4	2	-	X3 Function Sel	Reset	0=EN(Start/Stop), 1=F/R(Direction), 2= BRAKE, 3=Error Clear, 4=Segment speed input
33	0021h	0	4	3	-	X4 Function Sel	Reset	0=EN(Start/Stop), 1=F/R(Direction), 2= BRAKE, 3=Error Clear, 4=Segment speed input
35	0023h	0	1	0	-	NPN PNP Sel	Reset	X1~X4 input：0=NPN，1=PNP
36	0024h	0	4	0	-	D0 Function Sel	Immediate	0=Error Output, 1=FG speed signal, 2=Torq reached signal, 3=Mechanic brake, 4=Speed reached signal
37	0025h	0	4	1	-	D1 Function Sel	Immediate	0=Error Output, 1=FG speed signal, 2=Torq reached signal, 3=Mechanic brake, 4=Speed reached signal
39	0027h	0	1	0	-	SV Range	Immediate	0=0~5V，1=0~10V
40	0028h	100	1000	500	mV	SV Start Voltage	Immediate	SV dead area voltage
41	0029h	0	1	0	-	PWM Signal Inverse	Immediate	0=Not inverse, 1=Inversed
42	002Ah	0	1	0	-	FG Out Freq	Immediate	0=Single Phase, 1=3 Phase
45	002Dh	0	255	0	-	CAN ID	Reset	CAN nod ID
46	002Eh	0	2	2	-	CAN Baudrate	Reset	0=125k，1=250k，2=500k
47	002Fh	0	0xFFFF	0x0103	-	CAN Control Mode	Reset	High Byte: 0x00=Torq(open loop), 0x01=Speed(close loop), others=null Low Byte: 0x03=CAN input command, 0x00=IO input command, others=null
48	0030h	0	0xFFFF	0x0000	-	CAN Direction	Immediate	High Byte: 0x01=Positive direction, 0x00=Negative direction, others=null Low Byte: 0x01=Positive feedback, 0x00=Negative feedback, others=null
49	0031h	0	0xFFFF	1000	mS	CAN Heartbeat Enable	Immediate	0=Disable, Others=Heartbeat protection interval

50	0032h	0	10000	3000	rpm	CAN Max Speed	Immediate	Command value which exceed this value is considered to be this value
51	0033h	0	10000	200	rpm	CAN Min Speed	Immediate	Command value which exceed this value is considered to be this value
58	003Ah	0	0xFFFF	0	rpm	Data A	Immediate	485 command data A
63	003Fh	0	255	2	-	485 ID	Reset	485 nod ID
64	0040h	0	4	2	-	485 Baudrate	Immediate	0=9600, 1=19200, 2=38400, 3=57600, 4=115200
65	0041h	0	0xFFFF	0	mS	485 Heartbeat Protection Enable	Immediate	0=Disable, Others=Heartbeat protection interval
67	0043h	0	0xFFFF	0x0101	-	485 Direction	Immediate	High Byte: 0x01=Positive direction, 0x00=Negative direction, others=null Low Byte: 0x01=Positive feedback, 0x00=Negative feedback, others=null
68	0044h	-10000	10000	3500	rpm	485 Max Speed	Immediate	Command value which exceed this value is considered to be this value
69	0045h	-10000	10000	200	rpm	485 Min Speed	Immediate	Command value which exceed this value is considered to be this value
74	004Ah	-10000	10000	0	rpm	Segment Speed 0	Immediate	Segment speed 0
75	004Bh	-10000	10000	200	rpm	Segment Speed 1	Immediate	Segment speed 1
76	004Ch	-10000	10000	400	rpm	Segment Speed 2	Immediate	Segment speed 2
77	004Dh	-10000	10000	800	rpm	Segment Speed 3	Immediate	Segment speed 3
78	004Eh	-10000	10000	1600	rpm	Segment Speed 4	Immediate	Segment speed 4
79	004Fh	-10000	10000	2000	rpm	Segment Speed 5	Immediate	Segment speed 5
80	0050h	-10000	10000	2400	rpm	Segment Speed 6	Immediate	Segment speed 6
81	0051h	-10000	10000	3000	rpm	Segment Speed 7	Immediate	Segment speed 7
82	0052h	-10000	10000	-200	rpm	Segment Speed 8	Immediate	Segment speed 8
83	0053h	-10000	10000	-400	rpm	Segment Speed 9	Immediate	Segment speed 9
84	0054h	-10000	10000	-800	rpm	Segment Speed 10	Immediate	Segment speed 10
85	0055h	-10000	10000	-1600	rpm	Segment Speed 11	Immediate	Segment speed 11
86	0056h	-10000	10000	-2000	rpm	Segment Speed 12	Immediate	Segment speed 12
87	0057h	-10000	10000	-2400	rpm	Segment Speed 13	Immediate	Segment speed 13
88	0058h	-10000	10000	-3000	rpm	Segment Speed 14	Immediate	Segment speed 14
89	0059h	-10000	10000	0	rpm	Segment Speed 15	Immediate	Segment speed 15
93	005Dh	0	65536	1000	mS	ACC	Immediate	0=No ramp, Others: mS/1000rpm(speed close loop)
94	005Eh	0	65536	1000	mS	DEC	Immediate	0=No ramp, Others: mS/1000rpm(speed close loop)
95	005Fh	0	65535	0	mS	Over Speed Alarm Period	Immediate	0=Disable over speed alarm, Others=Alarm after motor keeps this period in higher than Pn96 speed
96	0060h	1000	6500	3500	rpm	Over Speed Alarm Value	Immediate	Over speed value
97	0061h	1	500	20	A	Torq Reached	Immediate	System marks after working torq reached this value
98	0062h	300	10000	1000	rpm	Speed Reached	Immediate	System marks after working speed reached this value
99	0063h	0	1000	100	rpm	Mechanic Brake Speed	Immediate	Mechanic brake ON/OFF speed thresholds
101	0065h	0	1	/	-	Motor NTC Sel	Immediate	0=No sensor, 1=104F-RT NTC 100K
103	0067h	0	1	0	-	Error Clear Cmd	Immediate	Clear current error code, reset system
120	0078h	0	1	0	-	AI Input Enable	Immediate	0=Disable, 1=Enable. AI data will instead of IO/SV/PWM input signal
121	0079h	0	1	0	-	X1 AI	Immediate	X1 virtual input

122	007Ah	0	1	0	-	X2 AI	Immediate	X2 virtual input
123	007Bh	0	1	0	-	X3 AI	Immediate	X3 virtual input
124	007Ch	0	1	0	-	X4 AI	Immediate	X4 virtual input
125	007Dh	0	1000	0	‰	ADC AI	Immediate	ADC virtual input data
126	007Eh	0	1000	0	‰	PWM AI	Immediate	PWM virtual input data
127	007Fh	0	1	/	-	D0 AI	RO	D0 virtual output
128	0080h	0	1	/	-	D1 AI	RO	D1 virtual output
129	0081h	0	1	/	-	X1 Status	RO	X1 signal input status
130	0082h	0	1	/	-	X2 Status	RO	X2 signal input status
131	0083h	0	1	/	-	X3 Status	RO	X3 signal input status
132	0084h	0	1	/	-	X4 Status	RO	X4 signal input status
133	0085h	0	1	/	-	D0 Status	RO	D0 output status
134	0086h	0	1	/	-	D1 Status	RO	D1 output status
135	0087h	0	1000	/	%	ADC Data	RO	ADC input data
136	0088h	0	1000	/	%	PWM Data	RO	PWM input data
137	0089h	0	0xFFFF	/	rpm	Working Speed	RO	Working Speed
138	008Ah	0	300	/	A	Working Current	RO	Working Current
139	008Bh	0	1000	/	0.1V	Working Bus Voltage	RO	Working Bus Voltage
140	008Ch	0	0xFFFF	/	-	Error Code	RO	Code value=0x0001<<(n-1) ERR_STALL, // n=1 ERR_BKIN, // 2 ERR_OVER_CUR_PEAK, // 3 ERR_OVER_CUR_AVG, // 4 ERR_HALL, // 5 ERR_UNDER_UBUS, // 6 ERR_OVER_UBUS, // 7 ERR_OVER_SPEED, // 8 ERR_IBUS_OFFSET, // 9 ERR_OVER_LOAD, // 10 ERR_UNDER_TEMPER_PCBA, // 11 ERR_OVER_TEMPER_PCBA, // 12 ERR_PWM_SIGNAL, //13 ERR_EERPOM, // 14
141	008Dh	0	0xFFFF	/	-	Position High Byte	RO	Together with Pn142 becomes a s32 type data
142	008Eh	0	0xFFFF	/	-	Position Low Byte	RO	Together with Pn141 becomes a s32 type data
143	008Fh	0	0xFFFF	/	-	Firmware Version	RO	0x2425=Year 2024, Week 25
144	0090h	0	0xFFFF	/	-	Driver Temperature	RO	Temperature value=(Data-40)℃, If this value is 30, then temperature is - 10℃
145	0091h	0	0xFFFF	/	-	Motor Temperature	RO	0xFFFF=No NTC(Pn101=0), Others:Temperatue =(Data-40)℃