	signal, #byte,	signal, #bit,	range [V/] signal length[bit]	signal name	signal function	value table	ISW	MCU	BMS		binary range	aling / resolution	offset	unit	'ault/initial value	Data type	comment t
	version	0.1															
VCU_transmit	t							_								1	
	0	0	2	S_motor_running_mode	Motor state operating mode given	Oh-reserve 1h-traction 2h-brake 3h-reserve	т	R		03	03	1	0		0	uns i gned	Do not use
	0	2	2	S_motor_control_mode	Motor control mode	0-reserve 1-torque mode 2-speed mode' 3-reserve'	т	R		03	03	1	0		0	uns i gned	Generally, torque control mode is used unless otherwise specified
VCU to MCU_1	0	4	2	S_motor_run_stop	Motor control instructions	0-reserve 1-run 2-stop 3-reserve	т	R		03	03	1	0		0	uns i gned	The motor controller can drive the motor only after receiving the run command
ID = 0x0800A7A6 cycle time=10ms DLC=8	0	6	2	S_motor_direction	Motor direction control	O-N or P shift 1-CCW 2-CW 3-reserve	Т	R		03	03	1	0		0	unsigned	CCW counterclockwise direction, forward command. CW clockwise direction, reverse command. Do not use.
	2	16	16	S_motor_torque	Motor torque control command	Torque0bj	Т	R		-15000 [~] 15000	0…65535	1	-15000	Nm	0	signed	Only in the torque control mode, the torque control command is sent. In speed control mode, this command sends 0
	4	32	16	S_motor_speed	Motor speed control command	Speed0bj	R			-15000 [~] 15000	0…65535	1	-15000	rpm	0	signed	Only in the speed control mode, the speed control command is sent. In speed control mode, this command sends 0
MCU_transmit								T		<u> </u>				1		1	
	0	0	16	N_motorTorqueLim	Motor torque limit value	MotorMaxTor	R	Т		-15000~15000	0 65535	1	-15000	Nm	0	unsigned	
	2	16	16	N_motorTorque	Motor torque	MotorTor	R	T		-15000~15000	0 65535	1	-15000	Nm	0	uns i gned	
	4	32	16	N_motorSpeed	Motor speed	MotorSpd 0h=stop 1h=ccw 2h=cw	R	Т		-15000~15000	0 65535	1	-15000	rpm	0	unsigned	
MCU_State_1 电机状态1	6	48	2	St_motorDirection	Motor rotation direction	3h=reserve	R	т		03	03	1	0		0	unsigned	
ID = 0x0C08A6A7 cycle time=10ms DLC=8	6	50	2	St_motorMode	Motor operation mode	Oh=stop 1h=torque mode 2h=speed mode 3h=slope slip	R	т		03	0 15	1	0		0	unsigned	
	6	52	2	St_motor	Total motor fault status	Oh= reserve 1h= Warning 2h= Limit Power 3h= Fault	R	Т		03	0 15	1	0		0	uns i gned	

No. St.																
Part	6	54	1	St_MCU_enable	MCU enable state		R	т	Ш	03	0 15	1	0		0	unsigned
Part	7	56	1	St_MCUdriverPermit	Motor drive license		R	т		01	0…1	1	0		0	unsigned
March Marc	7	57	1	St_MCUoffPermit	MCU power-off license		R	Т		01	01	1	0		0	unsigned
## 15 1	0	0	16	N_MotorACCurrent	Motor AC side current		R	т	\perp	0. 0~800. 0	0 65535	0. 1	0	A	0	unsigned
## 10 - S DECONSATE NOT THE PROPERTY OF THE PR		16	16	N_MotorACVoltage	Motor AC side voltage		R	т	\perp	0. 0~800. 0	0 65535	0. 1	0	v	0	unsigned
Part	ID = 0x0C09A6A7 cycle time=100ms	32	16	N_MCUDCVoltage	DC side voltage		R	т	\perp	0. 0~800. 0	0 65535	0. 1	0	v	0	unsigned
Compared to the factor of failure Compared to the failure Compar	DLC=8	48	8	N_motorTemp	Motor temperature		R	т	\perp	-40 [~] 150	0255	1	-40	°C	0	unsigned
No. Professor concurrence State	7	56	8	N_MCUTemp	MCU temperature		R	т	\perp	-40 [~] 150	0255	1	-40	°C	0	unsigned
NOUTFAILURE 1 1 1 1 1 1 1 1 1	0_	0	1		Hardware driver failure		R	т		01	0…1	1	0		0	unsigned
NOU_Falure_1 1	0	1	1				R	т	\perp	01	0…1	1	0		0	unsigned
Note Part	0	2	1		Zero offset fault		R	т		01	01	1	0		0	unsigned
NOU_Failure_1	0	3	1		Fan failure		R	 		01	01	1	0		0	unsigned
AB Hall failure	0	4	1		Temperature difference	0=0K	R	Ţ		01	01	1	0		0	
Stall failure	0	5	1			0=0K	R	T				1	0		0	
NOUTFAILURE 1	0	6	1			0=0K		Ţ				1	0		0	
1 8 1 Software overcurrent faul Fault R T O1 O1 1 O O Unsigned	0	7	1			0=0K		Ė							٥	
1		- /	<u>'</u>			0=0K	1		\top							
1	1	8	1			0=0K		T	+		01	1	0		0	unsigned
1 10 1 Total hardware failure 1=Fault R T 0	1	9	1		Hardware overvoltage fau		R	T	+	01	01	1	0		0	uns i gned
1	MCU_Faliure_1	10	1		Total hardware failure	1=Fault	R	Т	+	01	01	1	0	-	0	uns i gned
1	cycle time=100ms 1	11	1		Bus overvoltage fault	1=Fault	R	т	\perp	01	0…1	1	0		0	unsigned
1 13 1	1	12	1		Busbar undervoltage fau		R	т	\perp	01	01	1	0		0	unsigned
1 14 1	1_	13	1		Module over temperature		R	т		01	0…1	1	0		0	unsigned
1 15 1	1	14	1		Module over temperature		R	т	Ш	01	01	1	0		0	unsigned
2 16 1 Reserved 1=Fault R T 01 01 1 0 0 unsigned 2 17 1 Motor over temperature w 1=Fault R T 01 01 1 0 0 unsigned 2 18 1 Motor over temperature f 1=Fault R T 01 01 1 0 0 unsigned 2 19 1 CAN offline failure 1=Fault R T 01 01 1 0 0 unsigned CAN offline failure 0=OK 0=OK 0=OK 0=OK 0=OK 0=OK 0=OK 0=OK	1	15	1		Overspeed fault		R	т		01	01	1	0		0	unsigned
2 17 1	2	16	1		Reserved		R	т		01	01	1	0		0	
2 18 1	2		1			0=0K	R	Ţ		01		1	0		0	
2 19 1 CAN offline failure 0=0K 1=Fault R T 01 1 0 0 unsigned	2		1			0=0K	1,	Ţ				1	0		ا ا	
0=0K	2					0=0K	T.	<u> </u>	\top							
	2		1			0=0K		\parallel	+			1	U		U	unsigned
2 20 1 Encoder failure 1=Fault R T 0···1 1 0 0 unsigned	2		1		Encoder failure	1=Fault	R	T	+	01	01	1	0		0	uns i gned

6	48	4	Motor_Quantity	Number of motors	R	Т	015	015	1	0	0	unsigned	
6	52	4	Motor_Num	Motor number	R	Т	015	0…15	1	0	0	uns i gned	
7	56	8	MCU Number	MCU manufacturer number	R	Т	0255	0255	1	0	0	unsigned	

Note: The protocol meets the CAN 2.0B standard and uses extended frames, the communication baud rate is 500Kbps, and the CAN message uses intel format.