GDPT's CAN Bus Protocol (V1.2)

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Protocol Guidelines

This protocol uses the CAN interface with standard-frame data frames. The baud rate is 250 Kbps and the sample point is 87.5%. The standard frame ID used by the charger to send data is 0x55, and the standard frame ID used by the battery side to send data to the charger is also 0x55. All multi-byte data in this protocol is transmitted with the high byte first and the low byte last, i.e. in big-endian mode.

1 Configuration Command

Battery -> Charger, transmit:

0.0-0.7	**1.0-2.7**	**3.0-4.7**	**5.0-5.7**	**6.0-6.7**	**7.0-7.7**
Function code	Charging voltage	Charging current	Termination (transition) current	Mode	Reserved
1 byte	2 bytes	2 bytes	1 byte	1 byte	1 byte
0x01	xx xx	xx xx	xx	xx	xx

Mode: 0x00 = Power-supply mode; 0x01 = Lithium-ion mode

0x02 = Lead-acid mode; 0x03 = LiFePO4 mode

Example: To configure the charger with a charging current of 30 A, a termination (transition) current of 1 A, and lithium-ion mode, the battery side shall transmit the following data:

0x01 xx xx 0x01 0x2c 0x0a 0x01 xx

Charging current 30.0 A; termination current 1.0 A; mode = lithium-ion

Units: charging current in 0.1 A; termination current in 0.1 A

Charger -> Battery, transmit:

0.0-0.7	**1.0-1.7**	**2.0-7.7**
Function code	Flag code	Reserved
1 byte	1 byte	6 bytes
0x01	xx	00 00 00 00 00 00

Flag code: a bit set to 1 indicates that a limit has been triggered; if all bits are 0, the configuration is normal.

Bit0: configured voltage too high — maximum limit triggered

Bit1: configured voltage too low — minimum limit triggered; Bit2: configured power too high — maximum limit triggered

Bit3: configured current too high — maximum limit triggered; Bit4: configured current too low — minimum limit triggered

Bit5: configured termination current too high — maximum limit triggered; Bit6: configured termination current too low — minimum limit triggered

Note: if the mode setting is invalid, the charger returns 0xff and does not apply any of the other parameters.

2 Read Command

2.1 Read Charging Configuration Parameters

Battery -> Charger, transmit:

0.0-0.7	1.0-1.7	2.0-7.7
Function code	Command	Reserved
1 byte	1 byte	6 bytes
0x02	0x00	xx

0x02 0x00 xx xx xx xx xx xx

Charger -> Battery, response:

0.0-0.7	1.0-1.7	2.0-3.7	4.0-5.7	6.0-6.7	7.0-7.7
Function code	Command	Charging voltage	Charging current	Termination (transition) current	Mode
1 byte	1 byte	2 bytes	2 bytes	1 byte	1 byte
0x02	0x00	xx xx	xx xx	xx	xx

0x02 0x00 0x01 0x40 0x01 0x2c 0x0a 0x02

Charging voltage 32.0 V; charging current 30.0 A; termination current 1 A; mode = lead-acid

Units: charging voltage in 0.1 V; charging current in 0.1 A; termination current in 0.1 A

2.2 Read Charger Output Voltage, Current and Capacity

Battery -> Charger, transmit:

0.0-0.7	1.0-1.7	2.0-7.7
Function code	Command	Reserved
1 byte	1 byte	6 bytes
0x02	0x01	xx

0x02 0x01 xx xx xx xx xx xx

Charger -> Battery, response:

0.0-0.7	1.0-1.7	2.0-3.7	4.0-5.7	6.0-6.7	7.0-7.7
Function code	Command	Output voltage	Output current	Capacity	Reserved

0.0-0.7	1.0-1.7	2.0-3.7	4.0-5.7	6.0-6.7	7.0-7.7
1 byte	1 byte	2 bytes	2 bytes	1 byte	1 byte
0x02	0x01	xx xx	xx xx	xx	xx

0x02 0x01 0x01 0x40 0x01 0x2c 0x37 xx

Output voltage 32.0 V; output current 30.0 A; capacity 55%

Units: output voltage in 0.1 V; output current in 0.1 A; capacity in 1%

3 Control Command

Battery -> Charger, transmit:

0.0-0.7	1.0-1.7	2.0-7.7
Function code	Command	Reserved
1 byte	1 byte	6 bytes
0x03	xx	xx

Command: 0xff = start charging; 0x00 = stop charging

To command the charger to start charging:

Battery -> Charger, transmit:

0x03 0xff xx xx xx xx xx xx

To command the charger to stop charging:

Battery -> Charger, transmit:

0x03 0x00 xx xx xx xx xx xx

4 Communication Link Check Command

The battery side shall transmit one message to the charger every 100 ms, which the charger uses to determine whether the communication link is currently connected.

Battery -> Charger, transmit:

0.0-0.7	**1.0-7.7**
Function code	Reserved
1 byte	7 bytes
0x04	xx

0x04 xx xx xx xx xx xx xx