

# **IT6600 Series**

## **CAN2.0B Programming Guide**

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# Chapter1 CAN2.0B Introduction

## 1.1 Introduction of Communication Process

IT6600 CAN communication is based on CANopen/CAN2.0B protocol. Connect CAN interface of the instrument rear panel to CAN analysis tool, configure CAN interface information in the menu before start CAN communication. For example, set CAN address as 01, baud rate as 125kHz, and CAN protocol to CAN2.0B. Please refer to this series user manual.

## 1.2 Intrduction of CAN Format

Different CAN analysis tools have different requirements and fields, please refer to the specific CAN tool.

When using a common CAN tool, the user needs to set the frame type to data frame and the frame format to standard frame, and send in little-endian format. Additionally, when sending CAN commands, attention should be paid to the frame ID and frame data to ensure communication accuracy.

### 1.2.1 Frame ID

The frame IDs are classified into three types: Set Message Frame ID, Query Message Frame ID, and Response Message Frame ID. The calculation methods for different types of frame IDs are shown in the table below. The Base ID is the CAN address of the device.

Object	Frame ID	Instruction
Set_object	Base ID	The set message sent by the host (no response required from the device).
Query_object	Base ID+1	The query message sent by the host (the device needs to respond).
Read_object	Base ID+2	The device's response to the Query_object message.

### 1.2.2 Data (HEX)

Set message format:

Frame ID(HEX)	Data (HEX)	Remarks
Base ID	3B 18 02 00 00 A0 41	Set the voltage of CH2 to 20V.

- **3B 18:** is the register address, which corresponds to the address index in the CAN 2.0 protocol.
- **02:** Indicates that the data length is 4 bytes.
- **00 00 A0 41:** Actual data. If the data is a floating-point number, it should be converted to hexadecimal according to the IEEE 754 standard. The data is sent in little-endian format.

Query message format:

Frame ID(HEX)	Data (HEX)	Remarks
Base ID+1	3B 18	Read the set voltage value of CH2.

- **3B 18:** is the register address, corresponding to the address index in the CAN 2.0 protocol. It is sent from the host computer to the machine to instruct the machine to read data from this register.

Response message format:

Frame ID(HEX)	Data (HEX)	Remarks
Base ID+2	3B 18 00 00 A0 41	Returns the set voltage value of CH2.

- **3B 18:** is the register address, which corresponds to the address index in the CAN 2.0 protocol.
- **00 00 A0 41:** this is the machine's response to a query command, returning the current data in the register.

## 1.3 Programming Examples

The prerequisites for the programming examples in this section are that the machine's CAN communication address is set to 01 and the protocol is set to CAN 2.0.

### Set/Query on/off Status

Message Information

Frame ID	Data (HEX)	Remarks
01	E9 03 02 01 00 00 00	Set the output of CH1 to On.
01	71 17 02 00 00 00 00	Set the output of CH2 to Off.
02	E9 03	Read the output status of CH1.
02	71 17	Read the output status of CH2.

Users can send message to query the input/output state of the current instrument. After sending read message, a response message will be received and the On/Off status information of the instrument will be uploaded.

Send On/Off Setting message to turn input/output On or Off. Sending setting message will not upload response info. The instrument will perform the corresponding set action.

### Setting Output Voltage

Message Information

Frame ID	Data (HEX)	Remarks
01	B3 04 02 00 00 A0 41	Set the voltage of CH1 to 20V.
01	3B 18 02 00 00 20 41	Set the voltage of CH2 to 10V.
02	B3 04	Read the set voltage value of CH1.
02	3B 18	Read the set voltage value of CH2.

The last four bytes of setting command are specific voltage hexadecimal values, such as 20V, converted to hexadecimal 41 20 00 00, low byte 20 in front, and high byte 41 in the back.

## Chapter2 Command Description

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The IT6600 series devices provide CAN2.0B control commands, and the detailed commands refer to the corresponding *IT6600 Modbus&CANopen&CAN2.0B protocol-EN.xlsx*.