
Instructions of CAN Communication

Application Examples of TXD/RXD Macro Parameter

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CATALOG

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I. CAN Communication between PLC and HMI

Note 1: Connection

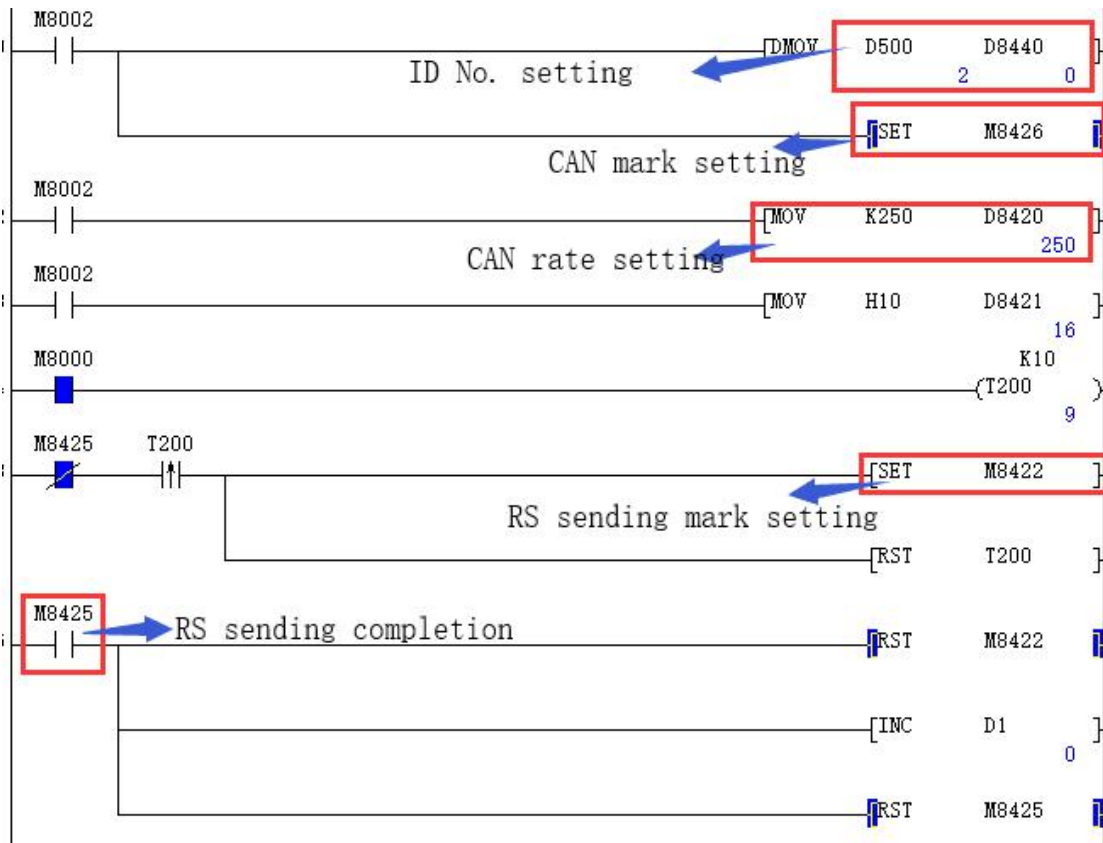
The PLC CAN interface H and L connects to the HMI CAN interface H and L respectively.

Note 2: PLC parameter settings

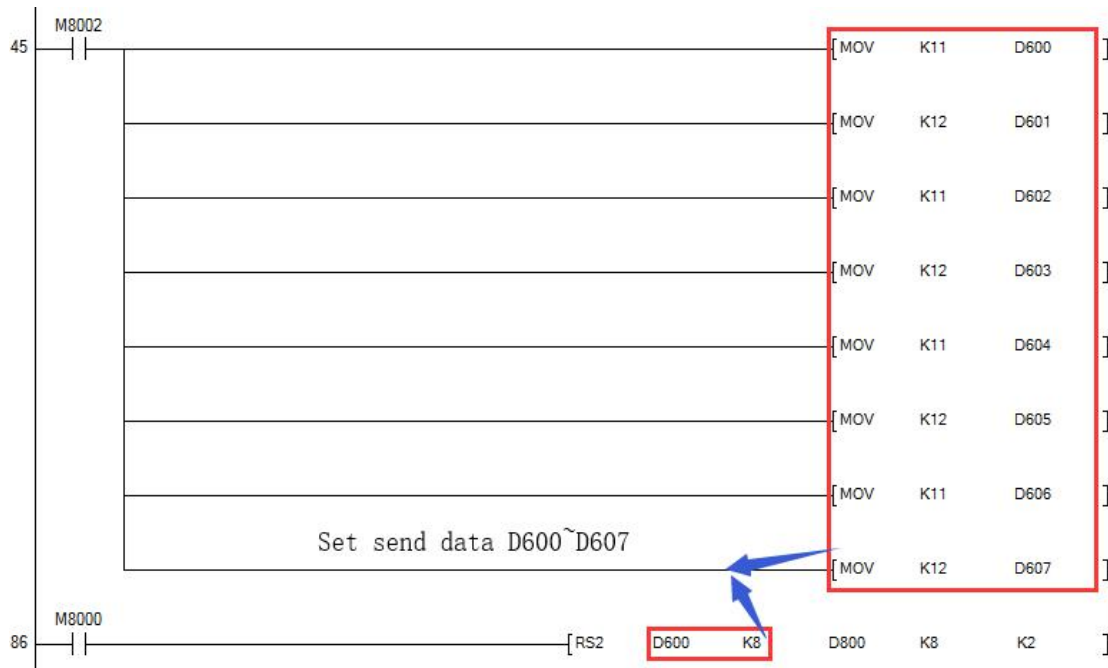
PLC special parameter settings please refer to the CAN parameter settings in the PLC programming manual.

1. PLC settings

a. The PLC program settings in this instructions are as follows:

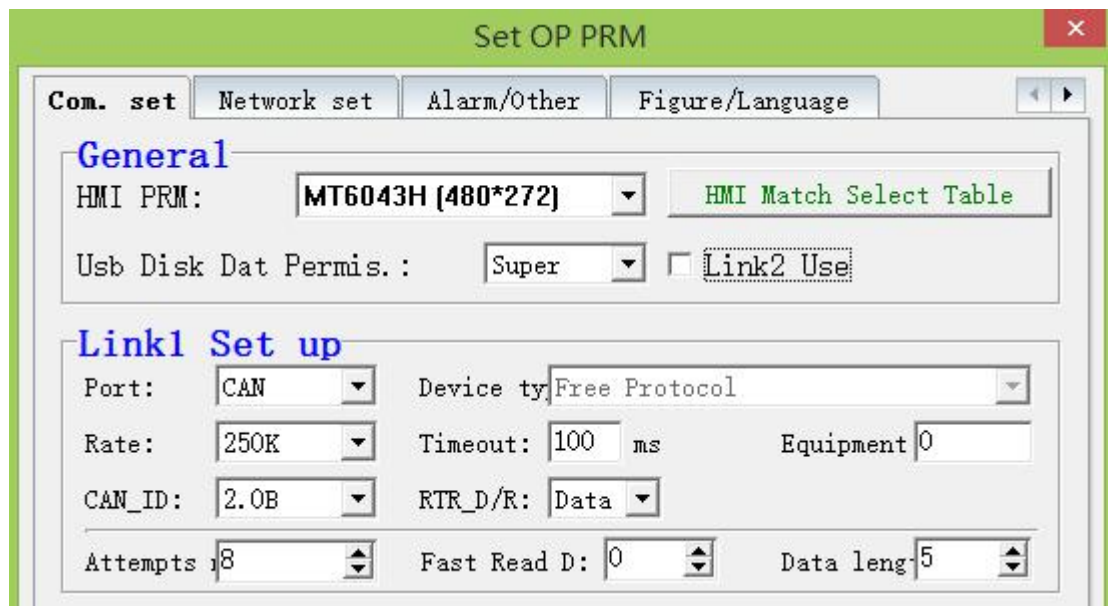


b. Program settings of PLC sending data are as follows.



2. HMI parameter settings

Set the HMI ID as 0.



3. Macro settings of HMI

```

1 #Analyzing Conditions
2 IF LW100.0 == ON THEN GOTO LABEL 1
3 IF LW100.1 == ON THEN GOTO LABEL 2
4 END
5 #
6 LABEL 1
7 #Send frame 8or12 byte
8 CLRB LW100.0
9 TXD( LW1000, 12)
10 END
11 #
12 #
13 LABEL 2
14 CLRB LW100.1
15 #RXD parameter A2 set as LW, A2>=(A1+255)
16 #If receive data more than 255 byte,
17 #last 255 byte will be reserved
18 RXD( LW1500, LW1756)
19 END

```

Explanation of macro demand.

TXD: Macro demand of data sent. RXD: Macro demand of data receiving.

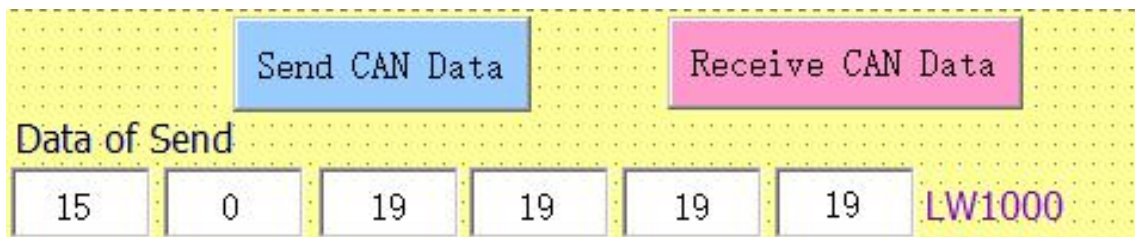
TXD (A1, A2)

A1 is the starting address, which is LW register.

A2 is the byte of data sent.

Note: Send by word (Word) while sending data. (1 Word = 2 bytes) The word here can be understood as 1 LW register.

Settings of data sent are as below.



Click “Send CAN Data”, (send 12 bytes, where the first two registers occupy the ID number, and the next four registers with total 8 bytes of data are transferred to PLC). The specific results are shown as below.

Elements	+F E D C	+B A 9 8	+7 6 5 4	+3 2 1 0	
D800	0 0 0 0	0 0 0 0	0 0 0 1	0 0 1 1	19
D801	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0
D802	0 0 0 0	0 0 0 0	0 0 0 1	0 0 1 1	19
D803	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0
D804	0 0 0 0	0 0 0 0	0 0 0 1	0 0 1 1	19
D805	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0
D806	0 0 0 0	0 0 0 0	0 0 0 1	0 0 1 1	19
D807	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0

RXD (A1, A2)

A1 indicates that the received data goes to the starting address specified by A1, which refers to LW register.

When A2 is set as K, it means that K bytes are read.

When A2 is set as LW, it means all bytes of the buffer are read.

The value of $A2 \geq A1 + 255$

The number of bytes read in the A2 address.

The data format is stored in the A2+1 address.

Set $A2+1=0$: The received data is arranged in bytes.

Set $A2+1=1$: The received data is arranged in words, with the high byte first.

Set $A2+1=2$: The received data is arranged in words, with low byte first.

4. Examples

The following settings are based on RXD (LW1500, LW1755) for data return.

4.1 When LW1756 is set as 0, the received data is arranged in bytes.

Click the "Receive CAN Data" button, the program interface is as follows:

The screenshot shows a software interface for CAN communication. At the top, there are two buttons: "Send CAN Data" (blue) and "Receive CAN Data" (pink). Below the buttons, there are several data fields and tables.

Data of Send: A row of six empty input boxes, with "LW1000" and "Set 0" to the right.

Data of Received: A row of six input boxes. The first four boxes contain "15", "0", "0", and "0", which are highlighted with a red border. The fifth box contains "11" and the sixth "12". To the right, "LW1500" is labeled. Above this row, "ID of Received" is written with a blue arrow pointing to the first box.

Settings: "LW1756" is set to "24" and "LW1757" is set to "0", which is highlighted with a red border. A blue arrow points from "Set 0" to the "0" in LW1757.

Data of D600~D607 Receive from PLC: A 2x6 grid of data boxes. The top row contains "11", "12", "11", "12", "11", "12". The bottom row contains "15", "0", "0", "0", "11", "12". To the right, "LW1506" and "LW1512" are labeled. A blue arrow points from the "0" in the bottom row to the "0" in the top row.

Other Labels: "LW1518" is labeled at the bottom right.

The PLC ID (4 registers) and D600-D607 (8 registers) are total 12 bytes and received and stored in the register LW1500 to LW1511.

Note: The ID number is 15, which occupies 4 registers. The data of D600-D607 in PLC is: 11 12 11 12 11 12 11 12.

4.2 Set LW1757 as 1.

Click the “Receive CAN Data” button and the data will be received as shown below.

The screenshot shows a CAN communication interface with two main sections: "Send CAN Data" (blue button) and "Receive CAN Data" (pink button). Below these are two rows of registers. The "Data of Send" row contains six registers with values 15, 0, 19, 19, 19, 19. The "Data of Received" row contains six registers with values 3840, 0, 2828, 2828, 2828, 2828. A blue arrow points from the "Receive CAN Data" button to the "Data of Received" section. A red box highlights the value "1" in the LW1757 register. A blue arrow points from the "ID number of Receive" label to the "3840" register. A blue arrow points from the "Data of D600~D607 from PLC" label to the "2828" registers. The registers are labeled LW1000, LW1756, LW1757, LW1500, LW1506, LW1512, and LW1518. The "Set 1" label is in the top right corner.

The first two registers display as the ID number.

The next four registers show the data of D600~D607 in the PLC.

Data display mode: decimal

Data display contents: 1 LW register displays data of 2 D registers, with the high byte first.

Note: The data of D600~D607 in PLC is

Decimal: 11 12 11 12 11 12 11 12

Hexadecimal: 0B 0C 0B 0C 0B 0C 0B 0C

The low bit is stored in the 4 registers of the LW before the previous high bit.

LW hexadecimal: B0C B0C B0C B0C

Converted to decimal as 2828 2828 2828 2828

4.3 Set LW1757 as 2

Click the “Receive CAN Data” button and the data will be received as shown below.

Send CAN Data		Receive CAN Data					
Data of Send						Set 2	
15	0	20	20	21	21	LW1000	
ID number of Receive		LW1756				72	LW1757
15	0	3083	3083	3083	3083	LW1500	
15	0	3083	3083	3083	3083	LW1506	
Data of Receive from PLC							
15	0	3083	3083	3083	3083	LW1512	
15	0	3083	3083	3083	3083	LW1518	

The first two registers display as the ID number.

The next four registers show the data of D600~D607 in the PLC.

Data display mode: decimal

Data display contents: 1 LW register shows the data of 2 D registers, with the low byte first.

Note: The data of D600~D607 in PLC is

Decimal: 11 12 11 12 11 12 11 12

Hexadecimal: 0B 0C 0B 0C 0B 0C 0B 0C

The low bit is stored in the 4 registers of the LW before the previous high bit.

The LW hexadecimal: C0B C0B C0B C0B

Converted to decimal as 3083 3083 3083 3083.

5. Examples: Set RXD parameter A2 as K

11	#
12	#
13	LABEL 2
14	CLRB LW100.1
15	#RXD parameter A2 set as LW, $A2 \geq (A1+255)$
16	#If receive data more than 255 byte,
17	#last 255 byte will be reserved
18	RXD(LW1500, 24) →
19	END
20	Set as 24 means only receive 24-byte data

Click the “Receive CAN Data” button and the data will be received as shown below.

Send CAN Data
Receive CAN Data

Data of Send

20	0	5	5	5	5	LW1000
----	---	---	---	---	---	--------

Data of Received

Set A2=K, only Receive Data's number=A2

15	0	0	0	11	12	LW1500
11	12	11	12	11	12	LW1506
15	0	0	0	11	12	LW1512
11	12	11	12	11	12	LW1518

II. CAN Communication among HMIs

Note 1: Connection

The CAN interface of “HMI 1” H and L connects to the “HMI 2” CAN interface H and L respectively.

Note 2: PLC parameter settings

HMI settings and macro programming, please refer to “I. CAN Communication between PLC and HMI”.

III. HMI communicates with PLC by RS485

The PLC RS485 interfaces A and B are respectively connected to the RS485 interfaces A and B of the screen. The parameter settings in the screen are as follows:

The screenshot shows the 'Set OP PRM' dialog box with the following settings:

- General**
 - HMI PRM: MT6043H (480*272)
 - Usb Disk Dat Permis.: Super
 - Link2 Use:
- Link1 Set up**
 - Port: COM1
 - Device ty: CoolMay PLC (3G)/FX3UC
 - Rate: 38400
 - Timeout: 100 ms
 - Equipment: 0
 - CheckBit: Odd
 - Dat Bits: 6 b
 - Stop bit: 1 b
 - Attempts: 8
 - Fast Read D: 0
 - Data leng: 5
- Link2 Set up**
 - Port: COM2
 - Device ty: CoolMay PLC (2N)
 - Rate: 9600
 - Timeout: 200 ms
 - Equipment: 0
 - CheckBit: Even
 - Dat Bits: 7 b
 - Stop bit: 1 b
 - Attempts: 8
 - Fast Read D: 0
 - Data leng: 0

Buttons at the bottom: Confirm(Y), Application, Cancel(N)

If successful communication, the data in PLC or HMI will change as other devices change.