LCM-2WT

User manual

WECON Technology Co., Ltd.

Website: http://www.we-con.com.cn/en
Technical Support: support@we-con.com.cn
Skype: fcwkkj
Phone: 86-591-87868869
QQ Group: 465230233
Technical forum: http://wecon.freeforums.net

1. Weighing module principle

When the metal material is subjected to tension, the metal material becomes thinner and the electrical impedance increases; conversely, when compressed, the metal resistance becomes smaller. Applying this method to make a strain gauge is called weighing module. This type of device converts the pressure in a physical phenomenon into electrical signal output, so it often used in the occasion of load, tension and pressure conversion.

2. Introduction

1) Thanks for your purchasing WECON LCM-2WT expansion module, the maximum resolution is 24-bit, using 4 or 6 wires weighing sensor.It can adjust the response speed according to the customer's demand, and can easily meet the overall demand of the current load application market;
2) To ensure proper installation and operation of this product, please read the user manual carefully before using this module, this manual is only for LCM-2WT;
3) Using RS485(Modbus protocol) to read/write data from/to LCM-2WT.

Warning: disconnect the power supply before installing/removing the module or wiring the module to avoid contact or product damage.

2.1 Specification

Item	Description
Channel	Double channel
A/D converter	24 bitΔ¯∑ A/D
Resolution	24bit (signed)
Speed	7.5/10/25/50/60/150/300Hz available
Polarity	Unipolar and bipolar
Non-linearity	≤0.01% full scale(25℃)
Zero drift	≤0.2μV/℃
Gain drift	≤10ppm/℃
Excitation current	5V,load impedance≥200Ω
Sensor sensitivity	1mV/V-15mV/V
Isolation	Transformer (power supply) and the optical coupler (signal)
Lamp	Power supply lamp (24V), communication lamp(COM)
Power supply	24V±20% 2VA
Operating temperature	0~60℃
Storage temperature	-20~80℃
Dimension	90(L)x58(W)x80(H) mm

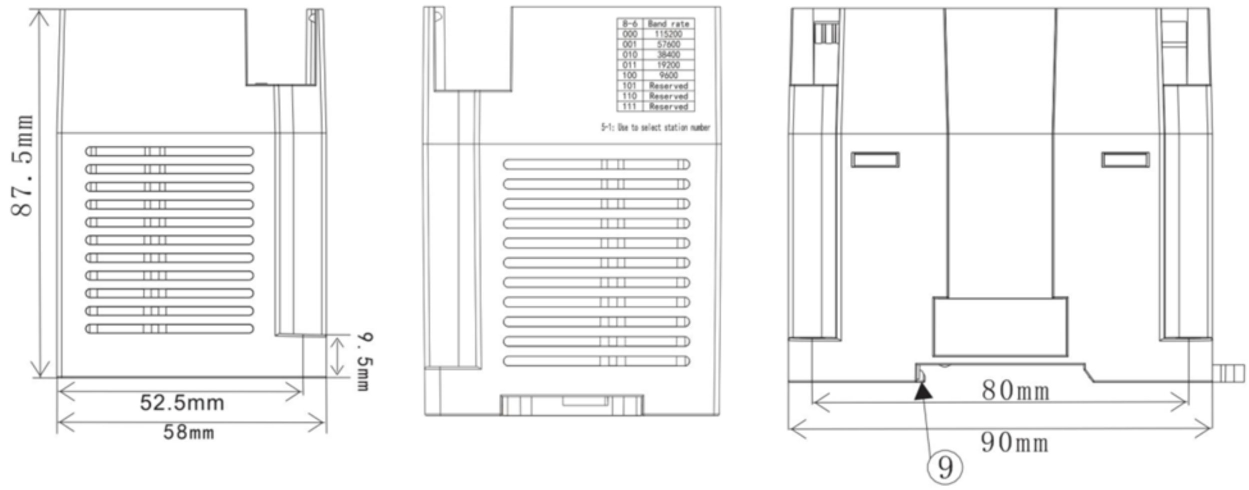
2.2 Valid bits

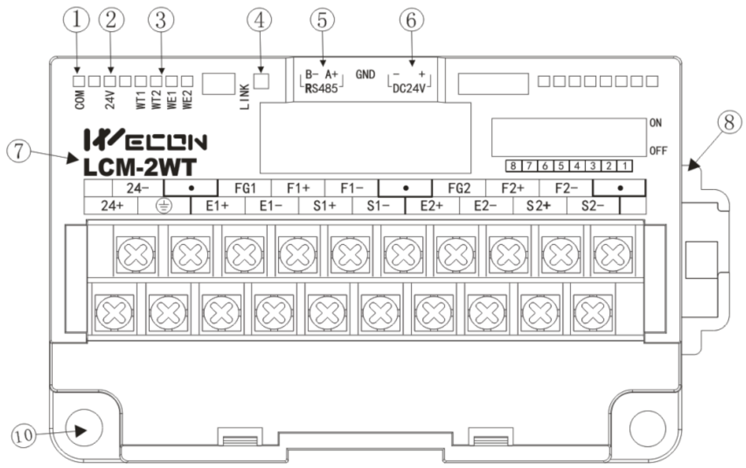
For more details, refer to sampling frequency in Chapter 5, Section 5.2 of this manual.

3. Dimensions

3.1 Dimensions

Weight: Approx 0.3kg Dimensions: mm





①COM: communication indicator of communication board and acquisition board

② 24V: 24V indicator

③ WT: channel input/output indicator

WE: Channel calibration indicator

④ LINK: comm indicator of RS485

⑤ RS485 communication terminal

⑥ DC24V power supply

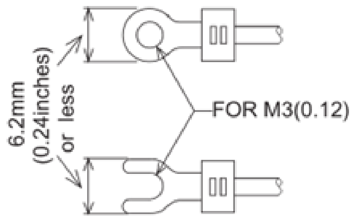
⑦ Extension module name

⑧ DIN rail mounting slot

⑨ DIN rail hook

⑩ Mounting holes (ϕ4.5)

Name	Description	Indicator state	State
LINK indicator	RS485 comm. indicator	Blink	Normal
		OFF	Comm.is abnormal or failed
		ON	Software is running abnormally or hardware failure
COM indicator	Communication & acquisition board comm. indicator	Blink	Normal
		OFF	Comm.is abnormal or failed
		ON	Software is running abnormally or hardware failure
WT indicator	Channel input/output indicator	Blink	Analog input is over range
		ON	Analog input is in range
		OFF	Channel is closed
WE indicator	Channel calibration indicator	OFF	Successful calibration
		ON	Calibration failed or not calibrated



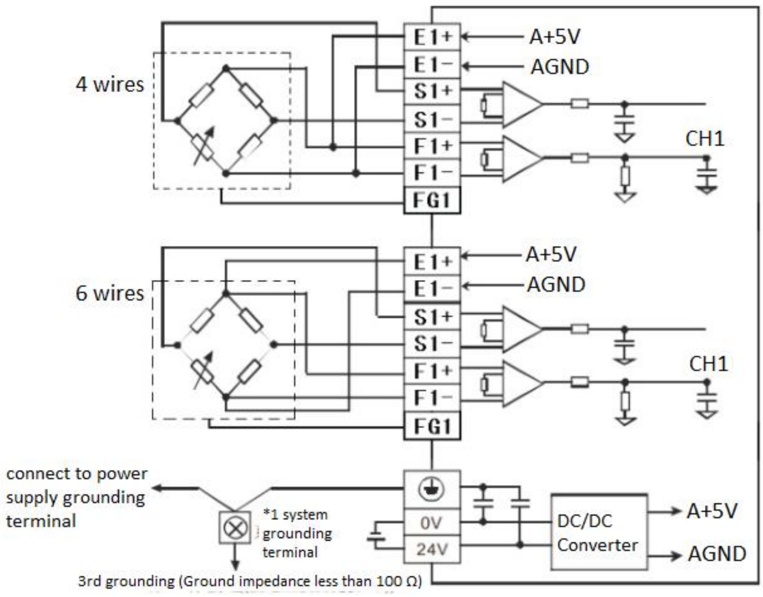
- Be sure to use the terminals that fit the dimensional requirements.
- Apply 0.5 to 0.8 N.m (5 to 8 kgf.cm) torque to tighten the terminals

3.2 Terminals

Table 3-1

Terminals	Instruction	Terminals	Instruction
24V+	Power supply+	24V-	Power supply-
GND	Ground	FG1	CH1 sensor grounding
E1+	CH1 power supply+ (5V) for sensor	E1-	CH1 power supply- (5V) for sensor in
S1+	CH1 signal output+ of sensor	S1-	CH1 signal output- of sensor
F1+	CH1 feedback+ of sensor	F1-	CH1 feedback- of sensor
E2+	CH2 power supply+ (5V) for sensor	E2-	CH2 power supply- (5V) for sensor in
S2+	CH2 signal output+ of sensor	S2-	CH2 signal output- of sensor
F2+	CH2 feedback+ of sensor	F2-	CH2 feedback- of sensor
FG2	CH2 sensor grounding	●	

4. Wiring



Note:

1) The impedance of the weighing sensor is greater than 50 Ω
2) The sensor with 4 wires requires E1+ connecting with F1+, E1 connecting with F1.

5. BFM instruction

5.1 BFM list

Table 5-1

BFM		Latched	Read/Write	Function	Default	Range	Description
CH1	CH2						
#0		0	R	Model	6050		LCM-2WT model number
#1		0	R	System version	100		Software & hardware version
#2	#42	0	R/W	Unipolar/Bipolar	0	0-1	0: bipolar 1: unipolar
#3	#43	0	R/W	Sampling frequency	1	0-9	0: 7.5 Hz; 1: 10 HZ; 2: 25 Hz; 3: 50 Hz; 4: 60 Hz; 5: 150 Hz; 6: 300 Hz; 7: 600 Hz; 8: 960 Hz; 9: 2400 Hz; 10: 10~4800hz
#4	#44	X	R	State code	0	-	Refer to chapter 5.2

#5	#45	X	R	Error code	0	-	It is the data register for all error states, and each error status is displayed in the corresponding bit, possibly with multiple error states 0: No error; 1: Error; b0: Power supply error; b1: Hardware error; b2: CH1 conversion error; b4-b15: Reserved; #45: Reserved;
#6	#46	X	R/W	Tare weight	0	0~1	Use the current average value as the tare weight 0: Disable; 1: Enable, reset afterwards; Others: Reserved;
#7	#47	O	R/W	Gross/Net weight	0	-	Display gross weight or net weight as current weight 0: Gross weight; 1: Net weight; Others: Channel closed;
#8	#48	X	R/W	Calibrating weight	0	-	0 by default。 0x0001: Return to 0 (ch1); 0x0002: Calibrating (ch1); Step1: Remove all load ; Step2: write 0x0001 to BFM #8; Step3: Add known weight; Step4: Write known weight to BFM#23 (#63); Step5: write 0x0002 to BFM #8;
#9	#49	X	R/W	Reset to default	0	0-3	#49:Reserve not use 1: Reset CH1; 2: Reset CH2; 3: Reset both channels; Others: Reserved;
#10	#50	0	R/W	Filtering mode	0	0-1	Need to recalibrate if

							changed
#11	#51	0	R/W	Filtering strength	0	0-7	Need to recalibrate if changed
#12	#52	0	R/W	Zero tracking intensity	0	0-20000	When the zero tracking function is turned on, the minimum interval between two clears, unit is 1 ms.
#13	#53	0	R/W	Zero tracking range	0	0-100	0: Turn off zero tracking Other: Set the zero tracking range (absolute value)
#14	#54	0	R/W	Automatically zeroing	0	0-4	0: Disable auto zeroing; 1: ±2%MAX; 2: ±5%MAX; 3: ±10%MAX; 4: ±20%MAX;
#15	#55	0	R	Sensor sensitivity setting	4	0-5	0: <1V/V 1: <125mV/V 2: <62.5mV/V 3: <31.25V/V 4: <15.625mV/V 5: <7.812mV/V Note: Recalibration is required after setting. (The version need to be 13904 and above)
#16	#56	X	R	Average L	0	Signed int	Average weight (Low)
#17	#57			Average H			Average weight (High)
#18	#58	0	R/W	Sliding average	5	1-50	Setting range:K1~K50; Default value: K12; When the set value exceeds the range, it is automatically changed to the critical value K1 or K50.
#19	#59	0	R/W	Tare weight L	0		The user can write or read the tare #7 by the instruction. Range: K-8388608~K8388607
#20	#60			Tare weight H			
#21	#61	0	R/W	Standstill	200	0-20000	Stable inspection time,

				checking times			used in conjunction with the stable inspection range, unit: ms.
#22	#62	0	R/W	Checking range	1	1-10000	If the stability check range is set to 100 and the stability check time is set to 200ms, the current weight jump range is within 100 for 200ms, the value is considered stable, and other conditions are considered unstable. The stable flag is displayed in BFM#4.
#23	#63	0	R/W	Calibration weight value L	1000		Range: -8388608~8388607 Please refer to #8
#24	#64	0		Calibration weight value H			
#25	#65	0	R/W	Weight limit L	32767		Show error when exceeds Max. weight value Range: -8388608~8388607
#26	#66	0	R/W	Weight limit H			
#27	#67	0	R/W	Zero upper limit L	10	-8388608~ 8388607	The user can use the zero judgment function to know that the item has been removed from the weighing module. Bit of zero weight equals to 1 when all of load removed
#28	#68	0	R/W	Zero upper limit H			
#29	#69	0	R/W	Zero lower limit L	-10	-8388608~ 8388607	
#30	#70	0	R/W	Zero lower limit H			
#31	#71	X	R/W	Additional function options	0	0~1	0: Default, disable additional functions; 1: Enable filter reset function. Other: Reserved
#32	#72	X	R/W	Additional function parameters	0	0~100	Enable filter reset function: 0: Default; 0~100: The number of sampling cycles to wait for the filter to restart. The values collected during

							the period are cumulatively averaged as the initial value of the filtering.
#33	#73	X	R	Digital value L	0	-	Digital value collected by the ADC
#34	#74	X	R	Digital value H			
#35	#75	X	R	Reserved			Read only
#36	#76	X	R	Reserved			
#37	#77	X	R	Reserved			
#38	#78	X	R	Reserved			
#39	#79	0	R/W	Sensor sensitivity setting	2	0-32767	Current sensor sensitivity in mV/V. If 10mV/V sensor is used, set to 10 (this setting is only related to the calibration flag)
#40	#80	0	R/W	Sensor feedback voltage L	0	-	Write: 0: not displayed 1: display current sensor feedback voltage in real time 2: Display zero voltage during calibration 3: Display the voltage when the weight is placed Read: Displays the high byte voltage value in uV.
#41	#81	0	R	Sensor feedback voltage H	0		Read: Displays the high byte voltage value in uV.

Note:

1) 0: means latched address
2) X: means non-latched address
3) R: means readable
4) W: means writable

BFM No. is the same as Modbus communication address.

5.2 Buffer (BFM) description

1) **BFM0: Module code**

   LCM-2WT code: 6050

2) **BFM1: module version**

   Module version (decimal) for example BFM1=100, means V1.0.0

3) **BFM2: Polarity**

   Bipolarity means that the signal passes through zero during the change process. Since the analog value converted to a digital value is a signed integer, the value corresponding to the bipolar signal will have a negative number.

4) **BFM3: Sampling frequency**

   The frequency at the module collects the signal. The lower the frequency, the more stable the value is, the higher the accuracy, but the lower the rate.

Table 5-2

Setting	Sample frequency (HZ)	Sample precision (Bits)	Setting	Sample frequency (HZ)	Sample precision (Bits)
0	7.5	23.5	5	150	21.5
1	10	23.5	6	300	21
2	25	23	7	600	20.5
3	50	22	8	960	20
4	60	22	9	2400	17.5

5) **BFM4: State code**

Table 5-3

Bit No	Description	
	1	2
Bit0	CH1 zero weight (load free)	CH1 is not empty
Bit1	CH2 zero weight (load free)	CH2 is not empty
Bit2	CH1 is overload Note: The upper limit weight is set by #27, #28	CH1is not overload
Bit3	CH2 is overload Note: The upper limit weight is set by #27, #28	CH2 is not overload
Bit4	CH1 value is stable	CH1 value is not stable
Bit5	CH2 value is stable	CH2 value is not stable

Bit6	CH1 not calibrated	CH1 calibrated
Bit7	CH2 not calibrated	CH2 calibrated
Bit8 Bit9	00: no error 10: inputted weight is too large	01: load free calibrated 11: not calibrated
Bit10 Bit11	00: no error 10: inputted weight is too large	01: load free calibrated 11: not calibrated
Bit12	CH1 exceeds sensor range Note: determined by the sensor feedback voltage	CH1 is within the sensor range
Bit13	CH2 exceeds sensor range Note: determined by the sensor feedback voltage	CH2 is within the sensor range

6) BFM5: Error code

Table 5-4

Bit No.	Value	Error	Bit No.	Value	Error
bit 0	K1 (H0001)	Power failure	bit 1	K1 (H0001)	Hardware failure
bit 2	K2 (H0004)	CH1 conversion error	bit 3	K8 (H0008)	CH2 conversion error
Others	Reserved		BFM#45	Reserve not use	
Note: Save all error state of data registers, each error status is determined by the corresponding bit, there are May generate more than two states at same time, 0: no error, 1: error.					

7) BFM6(CH1) & BFM46(CH2): Tare setting

Select the current weight value (BFM16-17) as a tare (BFM19-20) weight value. Each channel occupies one bit, available when 1, reset to zero automatically.

Use CH1 as example

The current weight is 100, after setting tare weight:

If it displays gross weight (BFM7 = 0) currently, the tare weight (BFM19-20) will become 100, the current weight is still 100;

If it displays net weight (BFM7 = 1), the tare weight (BFM19-20) will be original value + current weight value, the current weight value becomes zero.

8) BFM8: calibration steps: (described in CH1)

Step1: Do not put any weight on the load cell;

Step2: #8 value is written as 0x0001;

Step3: Add a standard weight to the load cell;

Step4: Write the weight of the weight on the current chassis to #23.

Step5: The #8 value is written as 0x0002.

9) BFM11: filtering strength

The higher filter strength , the more stable and accurate weight value will be. but the delay will increase, and the sensitivity will decrease accordingly. It can be set according to need.

10) BFM12: Zero tracking interval

BFM#12 is used together with BFM#13. When BFM#13 is not 0, BFM#12 indicates the time interval between the automatic weight clearing and the next automatic clearing to prevent continuous clearing.

Note: This function is generally used to correct the temperature drift of the sensor.

11) BFM13: Zero tracking range

The cumulative range of zero tracking, if the total exceeds this range, the tracking will not continue.

Table 5-5

Settings	Description	Note
0	Zero tracking OFF	Default
1-100	When setting the zero tracking range (absolute value), the tracking must be performed when the value is stable and the current weight is within the zero tracking range.	If set to 10, the current weight is ±9, and the stable flag is 1, the current weight is cleared.
Note: when lower precision required, user could disable this function.		

For example:

The setting value is 100. After the zero point drifts from the 0 position to over ±100, the tracking will not continue. If it drifts back within ±100, the tracking is resumed.

12) **BFM15:** Set the gain of the AD chip, which can be set according to the sensor range. After the BFM is set, it needs to be recalibrated.

BFM15	Voltage range	Sensor precision
0	±5V	<1V/V
1	±625mV	<125mV/V
2	±312.5mV	<62.5mV/V
3	±156.2mV	<31.25mV/V
4	±78.125mV	<15.625mV/V
5	±39.06mV	<7.812mV/V

5.3 Function Instruction

1) Weight measurement

Normally, users can choose to measure the net weight or gross weight of an object. The net weight means the weight of the product itself, that is, the actual weight of the product without its external packaging.

The weight of the packaging is called the tare weight. The gross weight is the total weight, namely the net weight plus the tare weight.

- Tare weight: weight of the packaging
- Net weight: the weight of the product, excluding the packaging.
- Gross weight: the net weight plus the tare of the product.
- Gross weight= net weight + tare weight.

Example 1

A product weighs 10kg and the carton contains it weighs 0.2kg, then its gross weight is 10.2 kg (net weight=10kg, tare weight=0.2kg, gross weight=10.2kg)

Example 2

Use the measured value at CH1 as the net weight and disable CH2. If you know the weight of the packaging already, you can skip the step of reading the tare weight.

- Read the tare weight
  Step 1: Write H0000 into BFM7.
  Step 2: Place the packaging on the CH1 load cell.
  Step 3: Write H0001 into BFM6 to take the weight of the packaging as the tare weight.
- Set BFM7 = H0001.

2) Standstill check

When an object is placed on the load cell to measure its weight, you can use the standstill check to know that the measured value has been stable.

- If the measured value shifts within the range for standstill check set up by the user, bit4 will be set to “1”.
- If the measured value shifts beyond the range for standstill check set up by the user, bit4 will be set to “0”. They will be set to “1” again when the range is returned to the set range.

Example

The measuring time is 10ms, the times of standstill check is 10, and the range for standstill check is 1,000. When the range for standstill check exceeds 1,000, the measured value will be regarded unstable, i.e. bit4 will be set to 0. When the measuring time is within 100ms (10 × 10ms) and the range returns to be within 1,000, bit4 will be set to 1 again. We recommend you check if the measured value is stable enough before operating it.

3) Zero detection

Users can use this function to know if the object has been removed from the load cell. If the bit4 is 1, and the bit0 and bit1 are 1 as well, the object has been removed from the load cell already, and you will be able to perform the next step of the control.

4) Filtering

The average value is a steady value obtained from the sum of the read values. However, due to unavoidable external factors, the read values may be an acute pulse, resulting in fierce changes in the average value. The filtering function thus exclude the read value that is an acute pulse from the sum-up and equalization, so the average value obtained will not be affected by the acute read value.

6. MODBUS settings

6.1 Com port communication configuration

Com port comm. configuration	
Station No.	1~32 (Adjust by DIP switch)
Baud rate	9600~115200 (Adjust by DIP switch)
Stop bit	1
Data bit	8
parity	even

6.2 Communication

The communication protocol is Modbus, support function codes 03 (read holding register), 06 (write single register), and 16 (write multiple registers).

1) 0x03 function code description

Request (send from master)

Slave address	1 byte	Slave station No.
Function code	1 byte	0x03
Start address	2 bytes	0x0000 to 0xFFFF
Register No.	2 bytes	1 to 125
CRC	2 bytes	CRC of all the above data

Respond (reply from slave)

Slave address	1 byte	Slave station No.
Function code	1 byte	0x03
Byte number	1 byte	2*N
Register value	N*2 bytes	
CRC	2 bytes	CRC of all the above data

Note: N is the number of register.

Error (reply from slave)

Slave address	1 byte	Slave station No.
Error code	1 byte	0x83
Exception code	1 byte	01 (not support this function code) 02 (Address over range)
CRC	2 bytes	CRC of all the above data

Example: reading the value of the holding register (0x0000-0x0001) from slave (station No. 0x0f)

Send from master		Reply from slave	
Slave address	0x0F	Slave address	0x0F
Function code	0x03	Function code	0x03
Holding register high byte	0x00	Byte number	0x04
Holding register low byte	0x00	High byte of register 0	0x00
High byte of read No.	0x00	low byte of register 0	0x0F
Low byte of read No.	0x02	High byte of register 1	0x00
CRC low byte	0xC5	low byte of register 1	0x01
CRC high byte	0x25	CRC low byte	0xE4
		CRC high byte	0x30

2) 0x06 function code description

Request (send from master)

Slave address	1 byte	Slave station No.
Function code	1 byte	0x06
Start address	2 bytes	0x0000 to 0xFFFF
Register value	2 bytes	0x0000 to 0xFFFF
CRC	2 bytes	CRC of all the above data

Reply (reply from slave)

Slave address	1 byte	Slave station No.
Function code	1 byte	0x06
Register address	2 bytes	0x0000 to 0xFFFF
Register value	2 bytes	0x0000 to 0xFFFF
CRC	2 bytes	CRC of all the above data

Error (reply from slave)

Slave address	1 byte	Slave station No.

Error code	1 byte	0x86
Exception code	1 byte	01 (not support this function code) 02 (Address over range)
CRC	2 bytes	CRC of all the above data

Example: writing 0x001 to address 0x00A from slave(station No. 0x0f)

Send from master		**Reply from slave**	
Slave address	0x0F	Slave address	0x0F
Function code	0x06	Function code	0x06
Holding register high byte	0x00	Register High byte	0x00
Holding register low byte	0x0A	Register low byte	0x0A
High byte of register value	0x00	High byte of register value	0x00
Low byte of register value	0x01	low byte of register value	0x01
CRC low byte	0x69	CRC low byte	0x69
CRC high byte	0x26	CRC high byte	0x26

3) 0X10 Function code description

Request (send from master)

Slave address	1 byte	Slave station No.
Function code	2 bytes	0x10
Start address	2 bytes	0x0000 to 0xFFFF
Register No.	2 bytes	0x0001 to 0x0078
Byte No.	1 byte	2*N
Register value	N*2 bytes	VALUE
CRC	2 bytes	CRC of all the above data

Reply (reply from slave)

Slave address	1 byte	Slave station No.
Function code	1 byte	0x01
Starting address	2 bytes	0x0000 to 0xFFFF
Register No.	2 bytes	1 to 123
CRC	2 bytes	CRC of all the above data

Error (reply from slave)

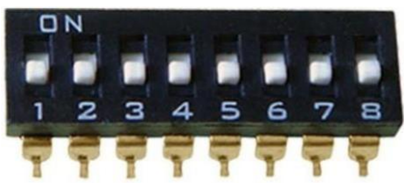
Slave address	1 byte	Slave station No.
Error code	1 byte	0x90
Exception code	1 byte	01 (not support this function code) 02 (Address over range)
CRC	2 bytes	CRC of all the above data

Example: writing 0x001 and 0x002 to address 0x00A and 0x00B from slave (station No. 0x0f)

Send from master		Reply from slave	
Slave address	0x0F	Slave address	0x0F
Function code	0x06	Function code	0x06
Start address High byte	0x00	Start address High byte	0x00
Start address low byte	0x0A	Start address low byte	0x0A
High byte of register No.	0x00	High byte of register No.	0x00
low byte of register	0x02	low byte of register	0x02
Byte No.	0x04	CRC low byte	0x29
High byte of register 0	0x00	CRC high byte	0x27
low byte of register 0	0x01		
High byte of register 1	0x00		
low byte of register 1	0x02		
CRC Low byte	0x76		
CRC Low byte	0xB3		

6.3 Introduction of DIP switch

1) DIP switch introduction



8-6	Baud rate
000	115200
001	57600
010	38400
011	19200
100	9600
101	Reserved
110	Reserved
111	Reserved

5-1: Use to select station number

Figure 6-1 DIP switch

Note:

In practical use, the dial switch is ON (1) downward and OFF (0) upward. As shown in the figure, the status of the DIP switch is downward, all are ON.

2) DIP switch and station setting

In practical use, the # 1 to # 5 of the DIP switch is used for the selection of the module station number, and the relationship between the station number and the 1 # 5 dial number switch is shown in the following table:

#1 DIP switch	#2 DIP switch	#3 DIP switch	#4 DIP switch	#5 DIP switch	Module station
0	0	0	0	0	1

1	0	0	0	0	2
0	1	0	0	0	3
1	1	0	0	0	4
0	0	1	0	0	5
1	0	1	0	0	6
0	1	1	0	0	7
1	1	1	0	0	8
0	0	0	1	0	9
1	0	0	1	0	10
0	1	0	1	0	11
1	1	0	1	0	12
0	0	1	1	0	13
1	0	1	1	0	14
0	1	1	1	0	15
1	1	1	1	0	16
0	0	0	0	1	17
1	0	0	0	1	18
0	1	0	0	1	19
1	1	0	0	1	20
0	0	1	0	1	21
1	0	1	0	1	22
0	1	1	0	1	23
1	1	1	0	1	24
0	0	0	1	1	25
1	0	0	1	1	25
0	1	0	1	1	27
1	1	0	1	1	28
0	0	1	1	1	29
1	0	1	1	1	30
0	1	1	1	1	31
1	1	1	1	1	32

3) DIP switch and baud rate setting

In practical use, the #6 to #8 of the DIP switch are used for the selection of the baud rate, and the relationship between the baud rate and #6-# 8 DIP switch is shown in the following table:

Table 6-1

#6 DIP switch	#7 DIP switch	#8 DIP switch	Module baud rate
0	0	0	115200

1	0	0	57600
0	1	0	38400
1	1	0	19200
0	0	1	9600
1	0	1	Reserved for later expansion (Default: 115200)
0	1	1	Reserved for later expansion (Default: 115200)
1	1	1	Reserved for later expansion (Default: 115200)

6.4 Note

LCM-2WT and LX3V-2WT differentiate in communication method, but the register functions are the same.

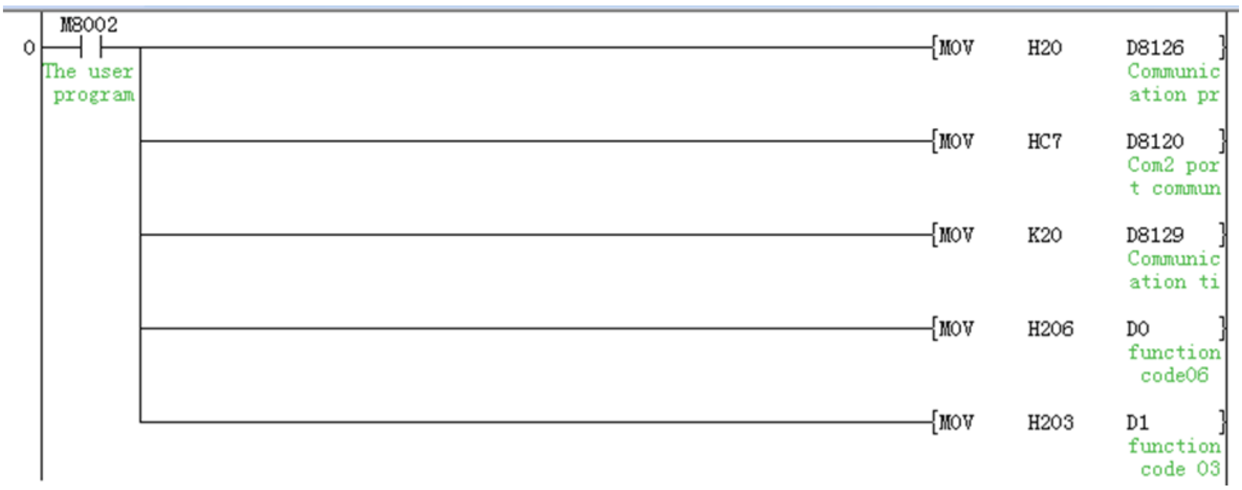
Table 6-2

Module	Max. accessible address (BFM address)
2WT	81

7. Example

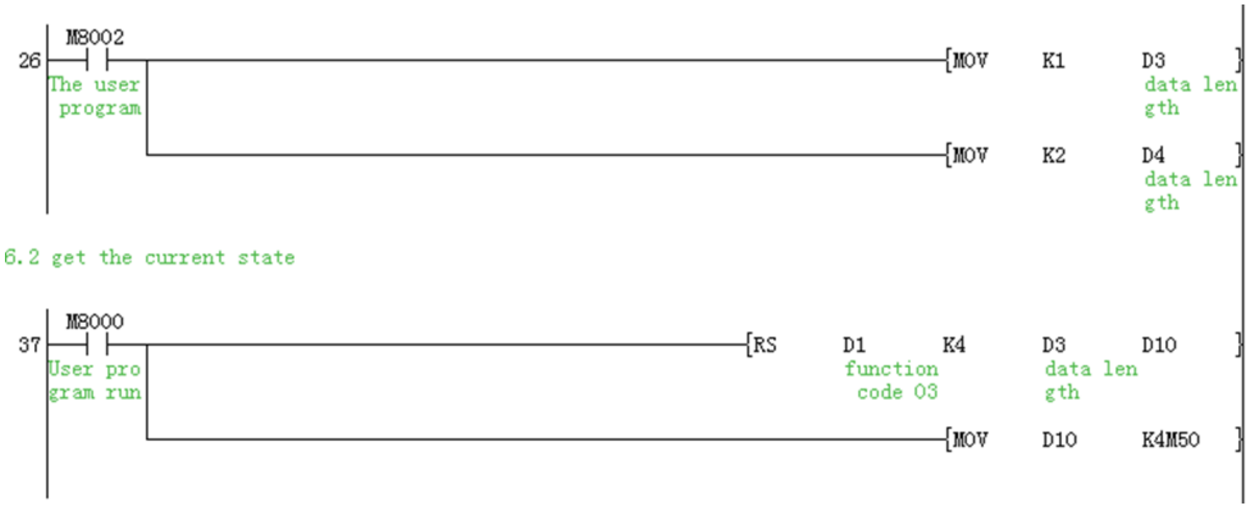
7.1 Set the com port parameter

Set the station number as 2 and the baud rate as 115200 according to chapter 6.3.



PLC COM2 is set as MODBUS master, parameter is 115200, 1, 8 ,even.

7.2 The current state



Read the current state from BFM4, refer to the detail in chapter 5.2.

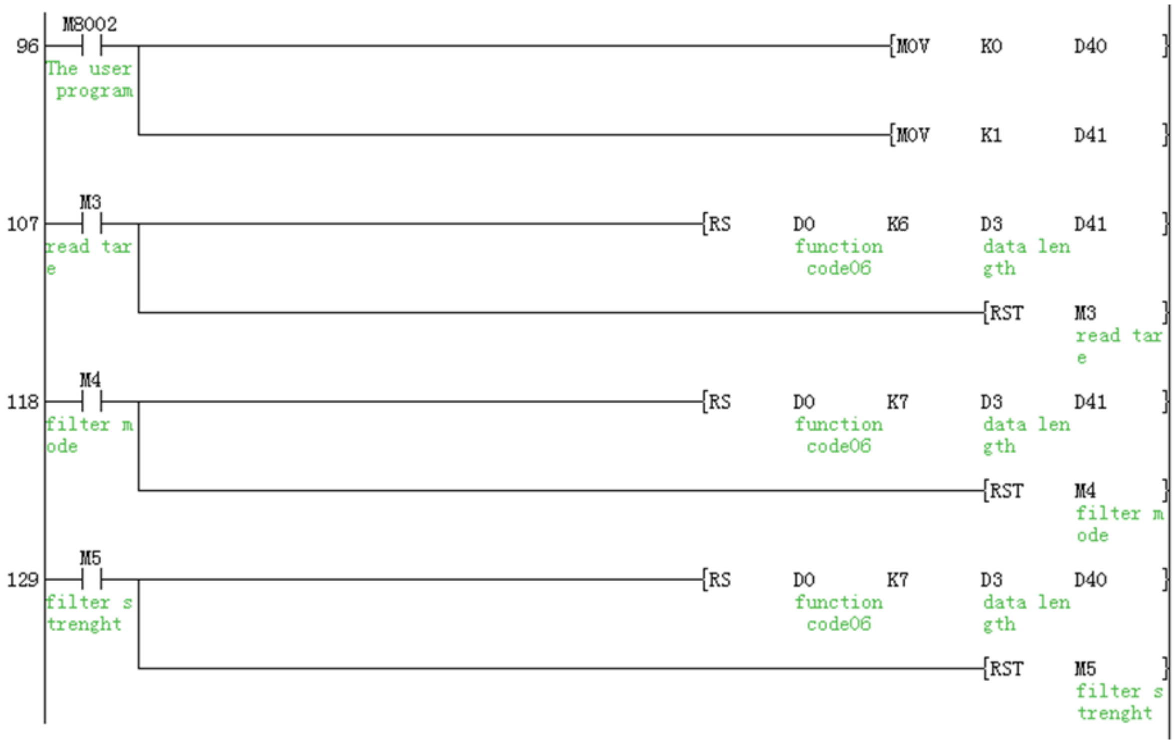
7.3 Calibration

The first step can also be used for manual zeroing.

The adjustment is to match the value of the module to the load cell.

- Step 1: Put nothing on the load cell
- Step 2: Write 0x001 to bfm8
- Step 3: Put a standard weight on the load cell
- Step 4: Write the value(D2)to BFM23
- Step 5: Write 0x0002 to BFM8

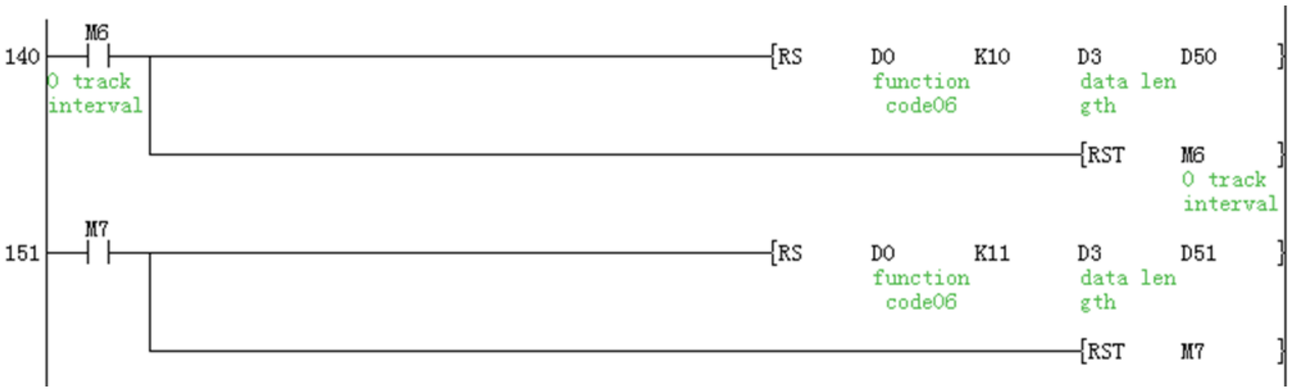
7.4 Net weight and tare 1



- Step 1: Write K1 to BFM6 set the tare value
- Step 2: Write k1 to BFM7 (display net weight)
- Step 3: Write k0 to BFM7 (display gross weight)

7.5 Net weight and tare 2

After the filter mode or filter strength is changed, it needs to be recalibrated.

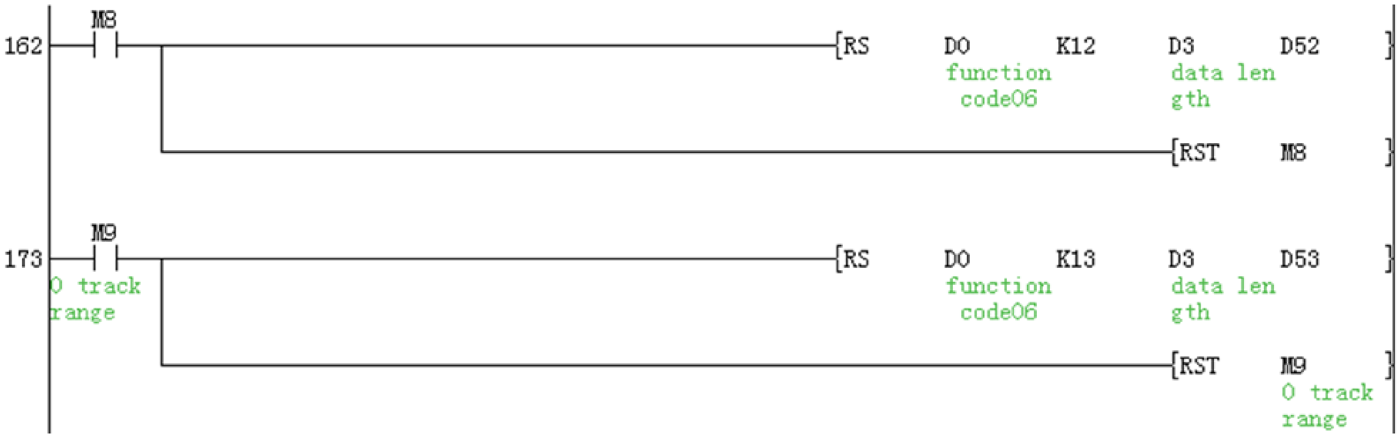


- Step 1: Configure filter mode by writing value to BFM10
- Step 2: Set the filter strength (BFM11)

7.6 Zero point track

Zero tracking is used to reduce temperature drift.

The zero tracking strength is 0, which means that zero tracking is not turned on.



8. Diagnosis

8.1 Preliminary examination

1) Check if the input/output wiring and/or extension cable are connected to the LCM-2WT module.
2) Check if the number of special functions modules exceeds 8, and the total number of system I/O points cannot exceed 256 points.
3) Ensure that the correct operating range is selected in the program.
4) Check that there is no power overload in the 5V or 24V power supply.
5) The LX3V main unit is at the RUN state.

8.2 Check error

If LCM-2WT does not work properly, please check the following items.

- Check the status of the power LED
  ON: the extension cable is properly connected
  Otherwise: Check the connection of the extension cable.
- Check external wiring
- Check the status of the "24V" LED (upper right corner of the LCM-2WT)
  ON: The LCM-2WT is normal and the 24VDC power supply is normal.
  Otherwise: The 24V DC power supply may be faulty. If the power supply is normal, the LCM-4LTC is faulty.
- Check the status of the “A/D” LED (upper right corner of LCM-2WT)
  Lit: A/D conversion works normally.
  Otherwise: Check buffer memory #29 (error status). If any of the bits (b2 and b3) are in the ON state, which is why the A/D indicator is off.

Version: V1.1.0

Date: June 2019