

# WG18A02 RS485 Weighing module Register and Instruction

## Description

**MODBUS command (support function code: 03, 06, 16)**

Notice:

1 The data must be in hexadecimal format;

2 The default baud rate is 9600, 8 data bits, one stop bit, no parity bit, and each data frame contains 8 bytes.

**Register table:**

Addr	Function	Remark	write protection
0x00	The data before the decimal point of the weight is 16 high	read only (signed)	
0x01	The lower 16 bits of the data before the decimal point of the weight	read only (signed)	
0x02	16-bit data with one decimal place for weight	read only (unsigned)	
0x03~0xEE		reserved	
0xEF	peeled	write only, 1 peeled, 0 not peeled	yes
0xF0	Weight calibration	Write only, the data is the weight value	yes
0xF1	Automatic report	read/write, data range 0 or 1, default 0	yes
0xF2	write protection	read/write, data range 0 or 1, default 0	no
0xF3	Zero chase range	read/write, data range 1~50, default 3	yes
0xF4	Zero chase enable	read/write, data range 0~3, default 3	yes

0xF5	Graduation value	Read/Write, data range 1, 2, 5, 10, 20, 50, 100, default 1	yes
0xF6	median filter value	read/write, data range 1, 3, 5, 7, 9, default 3	yes
0xF7	sample rate	read/write, data range 10 or 40, default 40	yes
0xF8	Stable weight switch	read/write, data range 0 or 1, default 0	yes
0xF9	Average filter value	Read/Write, data range 1~50, default 5	yes
0xFA	Dynamic tracking range	read/write, data range 0~50, default 1	yes
0xFB	Delay return time	Read/write, data range 0~1000, default 0	yes
0xFC	Module address	Read/Write, data range 0~255, default 1	yes
0xFD	baud rate	read/write, data range 0~7, default 3	yes
0xFE	command register	read/write, data range 0 or 1, default 0	yes

## Register parsing:

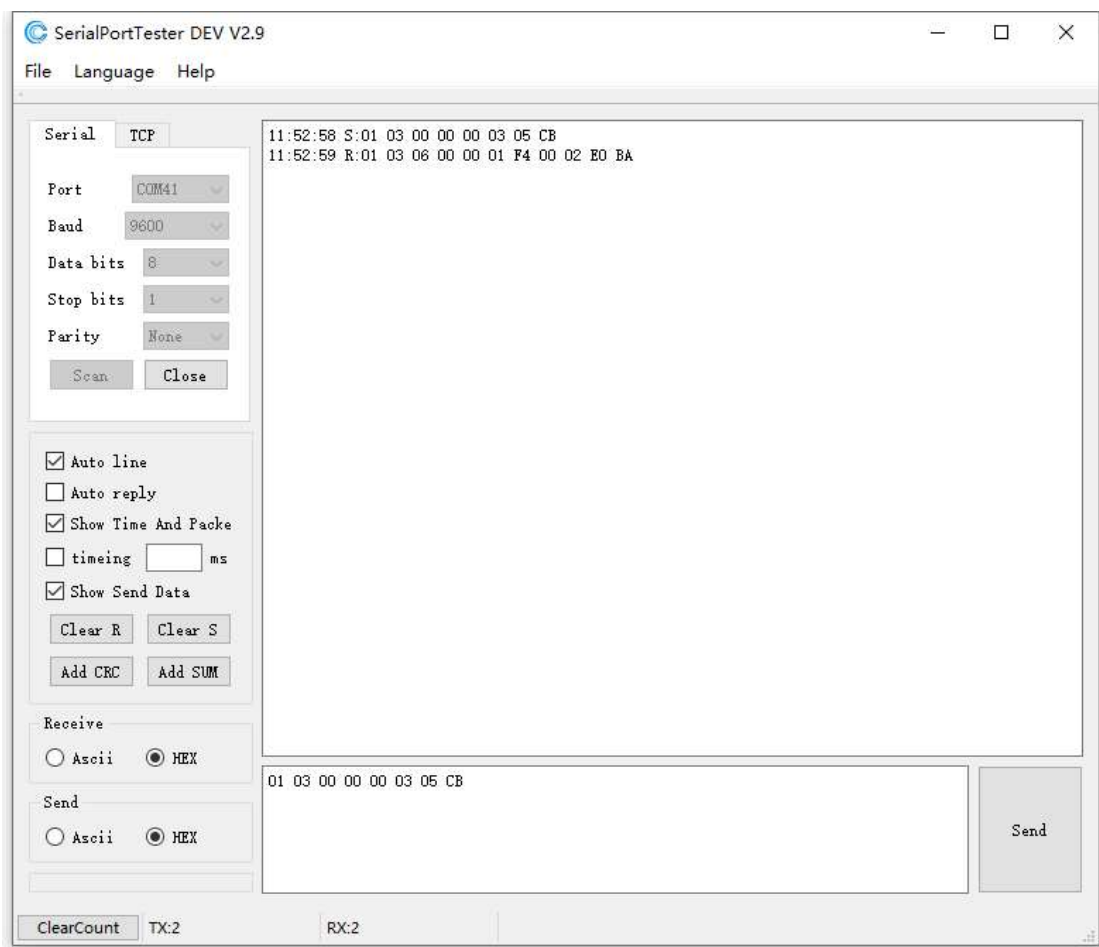
### Register 0x00、0x01、0x02:

The three registers store the measured weight, which has one decimal place, where 0x00 and 0x01 represent the number before the decimal point, 0x00 represents the high 16 bits, 0x01 represents the low 16 bits. Together, they form a 32-bit signed data. When the first bit is 0, it represents a positive number, and when the first bit is 1, it represents a negative number. 0x02 represents the number after the decimal point and is a 16-bit unsigned data.

Complement of a positive number = source code; The complement of a negative number = the symbol bit of the original code is unchanged + (the value bit is reversed by bit +1).

For example, we want to read the current weight and send the read command 01 03 00 00 00 03 05 CB through RS485, where 01 is the device address, 03 is the function code, which means reading, 00 00 is the starting address of the read register, 00 03 is the number of registers to be read, and 05 CB is the CRC check. After sending, it will receive the return data 01 03 06 00 00 01 F4 00

06 E1 79, of which 01 is the device address, 03 is the function code, which means reading, 06 means the number of returned data, 00 00 is the value of the register 0x00, 01 F4 is the value of register 0x01, 00 06 is the value of register 0x02, E1 79 is the CRC check, 00 00 01 F4 is the number before the decimal point, the binary format is 0000 0000 0000 0000 0000 0001 1111 0100B, the first bit is 0, represents a positive number, the complement of the positive number = original code =  $(0x00*256+0x00)*65536+0x01*256+0xF4=500$ , 00 05 is the number after the decimal point, the binary format is 0000 0000 0000 0110B, the first bit is 0, it represents a positive number, the complement of the positive number = original code =  $0x00*256+0x06=6$ , so the measured weight is 500.6 grams.



**Register 0x03~0xEE:** Reserved registers, do not do any processing.

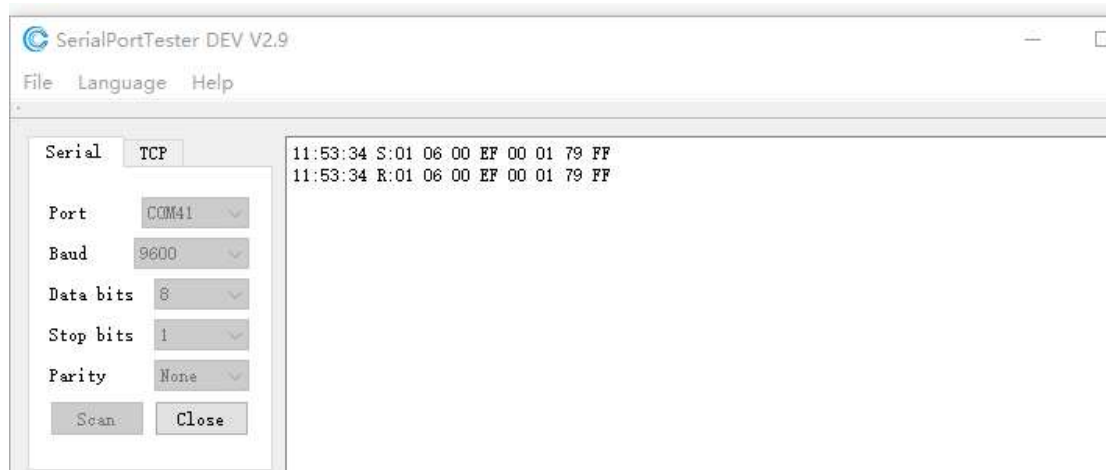
### Register 0xEF:

Tare operation, that is to remove the weight of the pallet. This register is used when tare is required. Send data 1 to perform the tare operation, and send 0 to perform no operation.。

Send (06 function code): 01 06 00 EF 00 01 79 FF, of which 01 is the device address, 06 is the

function code, which means writing, 00 EF is the written register address, 00 01 is the written value, 79 FF for CRC check.

Return: same as sending.

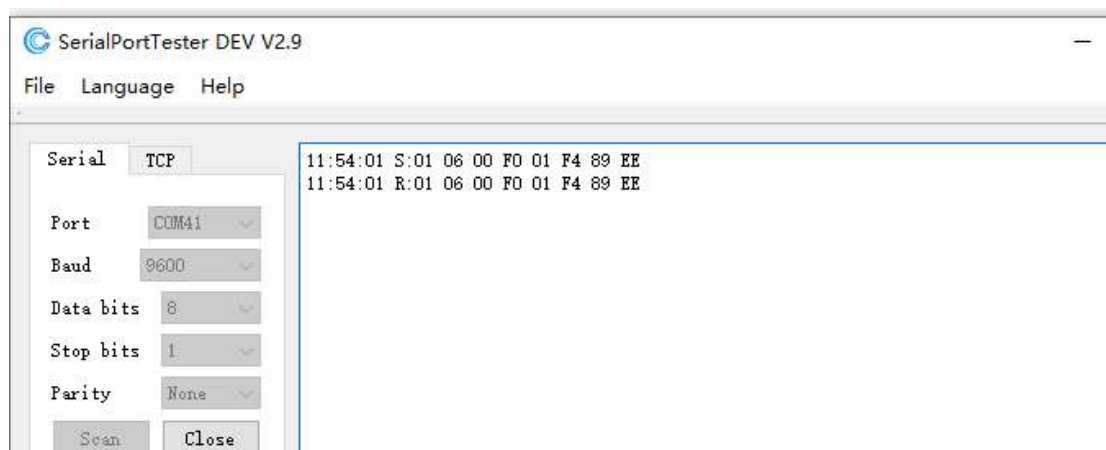


### Register 0xF0:

This register is used when weight calibration is required, and the weight calibration operation can be performed by sending the data weight value.

Send (06 function code): 01 06 00 F0 01 F4 89 EE, of which 01 is the device address, 06 is the function code, indicating writing, 00 F0 is the register address to be written, 01 F4 is the weight value, 16 of 500 Hexadecimal expression, 89 EE is the CRC check.

Return: same as sending.



### Register 0xF1:

Automatically report weight data function, the range is 0~1, the default is 0. When it is 1, the automatic reporting function is activated, and the time interval is fixed at 1 second; when it is 0, the

automatic reporting function is turned off.

Read automatic reporting status transmission (03 function code, read separately): 01 03 00 F1 00 01 D5 F9, where 01 is the device address, 03 is the function code, indicating read, and 00 F1 is the starting address of the read register, 00 01 is the number of registers read, D5 F9 is the CRC check. The method of reading the value of the following registers is the same as the method of reading the automatic reporting status, only need to change the starting address of the register and the CRC check.

Return: 01 03 02 00 01 79 84, of which 01 is the device address, 03 is the function code, indicating read, 02 is the number of returned data, 00 01 is the returned register data, 1 indicates that automatic reporting has been turned on, and 79 84 is CRC check.

Start the automatic reporting function to send (06 function code): 01 06 00 F1 00 01 19 F9, of which 01 is the device address, 06 is the function code, which means writing, 00 F1 is the register address to be written, and 00 01 is the written address value, 19 F9 is CRC check.

Return: same as sending.

### **Register 0xF2:**

Write protection function, the range is 0~1, the default is 0. When it is 0, the write protection function is turned on; when it is 1, the write protection function is turned off. When the write protection function is turned on, data cannot be written to other registers.

Turn on the write protection function and send (06 function code): 01 06 00 F2 00 00 28 39, of which 01 is the device address, 06 is the function code, indicating writing, 00 F2 is the register address to be written, and 00 00 is the written register value, 28 39 is the CRC check.

Return: same as sending.

### **Register 0xF3:**

The range of chasing zero, the range is 1~50, the default is 3. If the measured weight is always within  $\pm 0.3$ , perform the zero reset operation.

Set the zero-chasing range 3 to send (06 function code): 01 06 00 F3 00 03 39 F8, where 01 is the device address, 06 is the function code, which means writing, 00 F3 is the register address to be written, and 00 03 is the writing The value of 39 F8 is the CRC check.

Return: same as sending.

### **Register 0xF4:**

Zero chase enable, the range is 0~3, the default is 3. If it is 0, it means to turn off the power-on tare and zero-chasing functions; if it is 1, it means that only the power-on tare function is turned on; if it is 2, it means that only the zero-chasing function is turned on; if it is 3 means to turn on the power-on tare and zero-chasing functions.

Set zero chase enable 3 to send (06 function code): 01 06 00 F4 00 03 88 39, of which 01 is the device address, 06 is the function code, which means writing, 00 F4 is the register address to write, and 00 03 is writing The entered value, 88 39 is the CRC check.

Return: same as sending.

### **Register 0xF5:**

The division value, the range is 1, 2, 5, 10, 20, 50, 100, and the default is 1. The division value is the minimum scale value, which refers to the minimum division value between two adjacent scales.

Set the division value 1 to send (06 function code): 01 06 00 F5 00 01 58 38, of which 01 is the device address, 06 is the function code, which means writing, 00 F5 is the register address to be written, and 00 01 is the writing The value of 58 38 is the CRC check.

Return: same as sending.

### **Register 0xF6:**

The median filter value, the range is 1, 3, 5, 7, 9, the default is 3, the median filter is to continuously sample N times, and after sorting by size, take the median value as the valid value this time. The larger the median filter value, the slower the weight data change time.

Set median filter value 3 to send (06 function code): 01 06 00 F6 00 03 29 F9, of which 01 is the device address, 06 is the function code, which means writing, 00 F6 is the register address to write, and 00 03 is writing Enter the value, 29 F9 is the CRC check.

Return: same as sending.

### **Register 0xF7:**

Sampling rate, the range is 10 or 40, the default is 40. 10 means 10Hz, which means sampling every 100ms; 40 means 40Hz, means sampling every 25ms.

Set the sampling rate to 40 to send (06 function code): 01 06 00 F7 00 28 38 26, of which 01 is the device address, 06 is the function code, which means writing, 00 F7 is the register address for

writing, and 00 28 is for writing value, 38 26 is the CRC check.

Return: same as sending.

### **Register 0xF8:**

Stable weight switch, the range is 0 or 1, the default is 0. 1 means to open the stable weight switch, the weight value will be saved in the register after the stability no longer changes, and it will be displayed like this when reading: 0->100; 0 means Turn off the stable weight switch, the weight value is also saved in the register when it is incremented, and it will be displayed like this when reading: 0->50->100. The weight data change time will be longer after opening.

Set the stable weight switch to open and send (06 function code): 01 06 00 F8 00 01 C9 FB, where 01 is the device address, 06 is the function code, which means writing, 00 F8 is the register address for writing, and 00 01 is writing The value of C9 FB is CRC check.

Return: same as sending.

### **Register 0xF9:**

Average filter value, the range is 1~50, the default is 5. The average filtering value is the data after continuous sampling N times of median filtering, and then the average value is calculated as the effective value of this time. The larger the average filter value, the slower the weight data change time, but the greater the accuracy.

Set the average filter value to 10 to send (06 function code): 01 06 00 F9 00 0A D9 FC, where 01 is the device address, 06 is the function code, which means writing, 00 F9 is the register address to be written, and 00 0A is the writing The value of D9 FC is the CRC check.

Return: same as sending.

### **Register 0xFA:**

Dynamic tracking range, the range is 0~50, the default is 1. If there is slight vibration in the use environment of the scale, the data fluctuation of the sensor will become larger. At this time, the dynamic tracking range can be increased to achieve the purpose of stabilizing the weight output.

Set the dynamic tracking range 1 to send (06 function code): 01 06 00 FA 00 01 68 3B, where 01 is the device address, 06 is the function code, which means writing, 00 FA is the register address to be written, and 00 01 is the writing The value, 68 3B is the CRC check.

Return: same as sending.

### **Register 0xFB:**

Delay return time, the range is 0~1000, the default is 0. Delayed return time refers to the interval time of returning data after the serial port receives a valid command (unit ms, scale 5ms, time=n\*5ms).

Set the delay return time to 0ms to send (06 function code): 01 06 00 FB 00 00 F8 3B, of which 01 is the device address, 06 is the function code, which means writing, 00 FB is the register address for writing, and 00 00 is writing Enter the value, F8 3B is CRC check.

Return: same as sending.

### **Register 0xFC:**

Module address, the range is 0~255, the default is 1. The module address is the device address. After the value of this register is modified, the module will restart automatically. Do not read or write the serial port during the restart process, otherwise the module will not restart normally.

If you do not know the current device address of the module, you can send: FF 03 00 FC 00 01 51 E4, where 03 is the function code, which means reading, 00 FC is the starting address of the register to be read, and 00 01 is the number of registers to be read. Number, 51 E4 is CRC check. Return: 01 03 02 00 01 79 84, in which 01 is the device address, 03 is the function code, indicating read, 02 is the number of returned data, 00 01 is the read value, indicating that the current device address of the module is 0x01, 79 84 are CRC checksums.

Set the module address 0x01 to send (06 function code): 01 06 00 FC 00 01 88 3A, where 01 is the device address, 06 is the function code, which means writing, 00 FC is the register address for writing, and 00 01 is the writing value, 88 3A is CRC check.

Return: same as sending.

### **Register 0xFD:**

Baud rate, range 0~8, default 3. Baud rate corresponding numbers: 0: 1200; 1: 2400; 2: 4800; 3: 9600; 4: 19200; 5: 38400; 6: 57600; 7: 115200. After the value of this register is modified, the module will restart automatically. Do not read or write the serial port during the restart process, otherwise the module will not restart normally.

Set the baud rate to 9600 to send (06 function code): 01 06 00 FD 00 03 58 3B, where 01 is the device address, 06 is the function code, which means writing, 00 FD is the register address for writing, and 00 03 is writing The value of 58 3B is the CRC check.

Return: same as sending.



### **Register 0xFE:**

Command register, range 0~1, default 0. When it is 1, the module restores the factory settings, and when it is 0, there is no operation. After the value of this register is modified, the module will restart automatically. Do not read or write the serial port during the restart process, otherwise the module will not restart normally.

Set the command register value to 1 to send (06 function code): 01 06 00 FE 00 01 29 FA, where 01 is the device address, 06 is the function code, which means writing, 00 FE is the register address to be written, and 00 01 is writing Enter the value, 29 FA is the CRC check.

Return: same as sending.

Note: In addition to restoring the factory settings through RS485, you can also restore the factory settings through hardware, just short-circuit the J1 short-circuit point on the module for 5 seconds. The LED light will be off when short-circuiting, and the LED light will be on after 5 seconds of short-circuiting. At this time, there is no need to short-circuit the short-circuit point, just wait for the module to restart automatically. Do not read or write the serial port during the restart process, otherwise the module will not restart normally.