W803C

Battery Powered Electromagnetic Converter

User Manual

May,2015

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1 Brief

W803C is a kind of battery powered electromagnetic converter. This electromagnetic converter is capable of being used together with common electromagnetic flow meter sensor, with the flow rate measurement accuracy up to 0.5 level. A new type of battery powered meter will be developed by connecting the W803C converter to a common electromagnetic flow meter.

The standard configuration of W803C battery powered electromagnetic converter has a lithium battery, which is capable of working 3 to 6 years consecutively. If a high-capacity battery is applied, the converter will have longer working time.

W803C battery powered electromagnetic converter has GPRS and CDMA wireless data transmission function, RS485modbus protocol (external power supply or battery-powered) communication function, and SRD mode wireless network communication system to realize date collection and management.

Stainless steel outer covering and infrared remote controller is applied to W803C battery powered electromagnetic converter to meet IP68-level seal protection requirement, which means the converter can be used in underground and other damp places.

2.Converter Picture

Fig.2.1 integral picture

Fig.2.2 With GPRS

3 Display and Operation

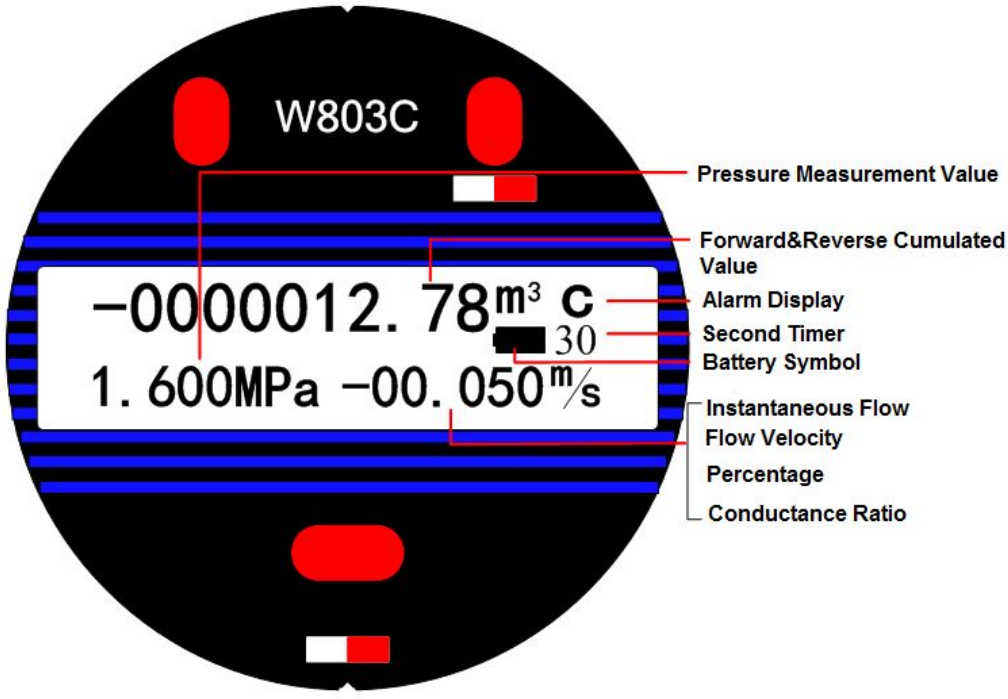


Fig. 3.1 W803C Converter LCD

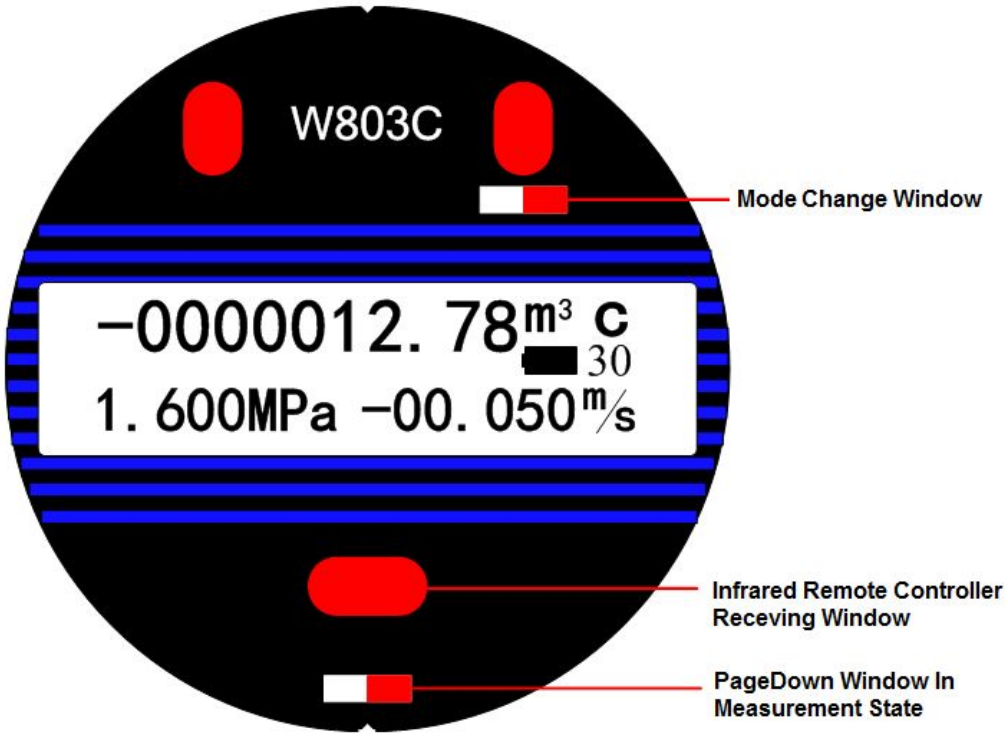
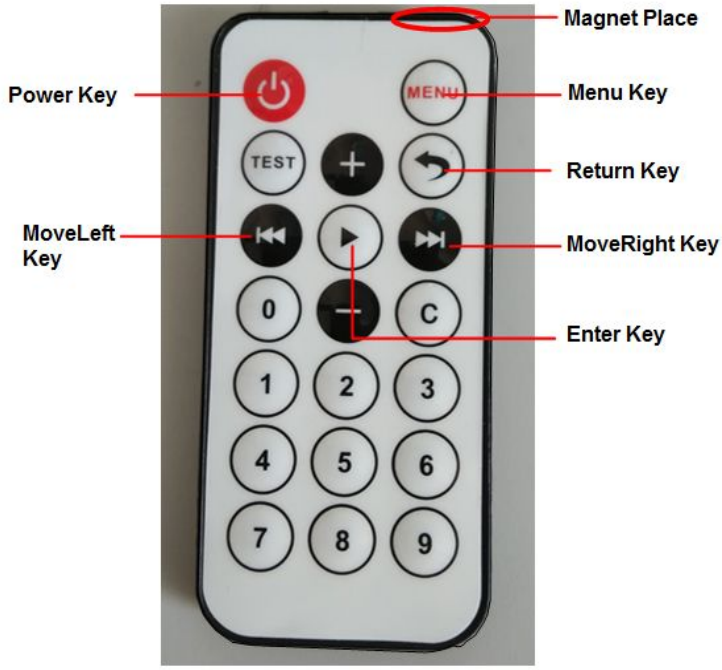


Fig.3.2 W803C magnetic key operating position



Power Key—Testing Mode change to Measurement mode

Menu Key--Testing Mode enter into parameter setting

Enter Key-- Enter into different menu in parameter setting

Return Key--back to previous menu in parameter setting

MoveLeft Key--move the cursor to left MoveRight Key--move the cursor to the right

Fig 3.3 W803C Infrared remote controller display and operation

Please noted:

There should be a button cell in the infrared remote controller.

But Sometimes because of transportation problem, we may didn't include the button cell inside.

Button cell specification:3V/Lithium Battery/CR2025

Below picture for your reference:

Before using the meter, Please read below 3.1 3.2 3.3 3.4 carefully.

3.1 Meter Mode

Test mode: When W803C is power on meter enters in test mode(in test mode,there's no battery symbol on

the display). Converter outputs pulse signal to complete the correction or parameter setting. Under test mode,if no operation the test mode can last for 3 hours and then quit the mode and enter measurement mode.

Measurement mode: measurement mode is applied when the converter is powered on or in use(in measurement mode,there's a battery symbol on the display). Under measurement mode, meter can complete flow, velocity and empty pipe parameter measurement and conduct RS485 or GRPR communication via infrared transmission.

 **Sleep mode:** The meter is factory sealed, in order to save battery life. We set the flow meter in sleep mode when ex-factory. In sleep mode,there is no output display and power is saved. So before using the meter, the user need to wake the meter up on basis of the method from 3.2. What's more, the meter will turn on the sleep mode automatically when the meter stay in the conditions of empty pipe or the signal wire hung in the air. At this time, there is no output and display, either. But the user need not to wake-up the meter, it will turn to the measure mode automatically when the meter detects the normal flow or full pipe.

3.2 Meter Wake-up

When user need to wake up the flow meter,please use our W803C infrared remote controller to change the "meter sleep password" in "measurement mode parameter" to 00000 then go back to measurement mode(there's battery symbol in the middle of LCD display).

Noted:When meter in sleep mode,the timer inside doesn't work. When user wake up the flow meter,please reset the timer parameter.

3.3 Sleep Mode Setting

If use want to set the flow meter back to sleep mode,please use the infrared remote controller in menu "measurement mode parameter" submenu "meter sleep password" and change the password to "23130" then back to measurement mode (there's battery symbol in the middle of the LCD).

3.4 Change between Measurement Mode and Test Mode

3.4.1 Measurement mode into Test Mode

In measurement mode, please use the infrared remote controller,make the "magnet place on the controller" **aim at** the "mode change window on the converter" and use the infrared remote controller row on it lightly. Then the meter will into Test mode. (In Test mode,there's no battery symbol on the display and the second timer accumulates once around 1S).

3.4.2 Test Mode into Measurement Mode

In Test Mode,please use the infrared remote controller **aim at** the “Infrared remote controller receiving window” on the converter, then press “Power key”. The meter will into Measurement mode.(In measurement mode,there’s battery symbol in the display).

Noted:

In order to save battery life,flow meter be set in sleep mode when ex-factory.

In sleep mode,the display is powered off.

Before using it,user need to use the infrared remote controller to wake up the meter first then come to work.(please refer to 3.2 above).When use it,user need to change the “meter sleep password” to other password instead of sleep password,then set the time parameter.

2.When the meter was waked up,it will enter into test mode first. If user need to change parameters,please change in test mode. If user need to do measurement or communication,must enter into measurement mode. (please refer to 3.4 about how to change test mode to measurement mode).

3.5 Parameter Setting

3.5.1 Parameter Setting and Infrared remote controller Button Operation

If parameter setting or modify is applied, make sure the meter is under test mode and enter into parameter setting. In the test mode, press “Menu Key” to enter “Meter Parameter Setting” function, then press “Enter Key” enter into input password interface “00000”. Input the password, then press “Enter Key”, enter into main menu, if want to change main menu, just press “+” or “-” is ok.

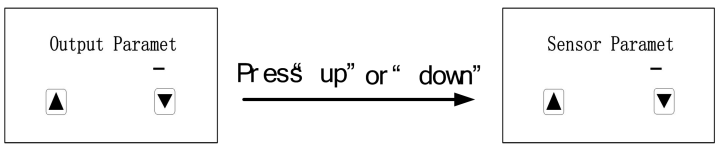


Fig. 3.4

If need to enter main menu to change submenu parameters, press “Enter Key”. If need to back to previous menu or test mode, then press “Back Key” is ok.

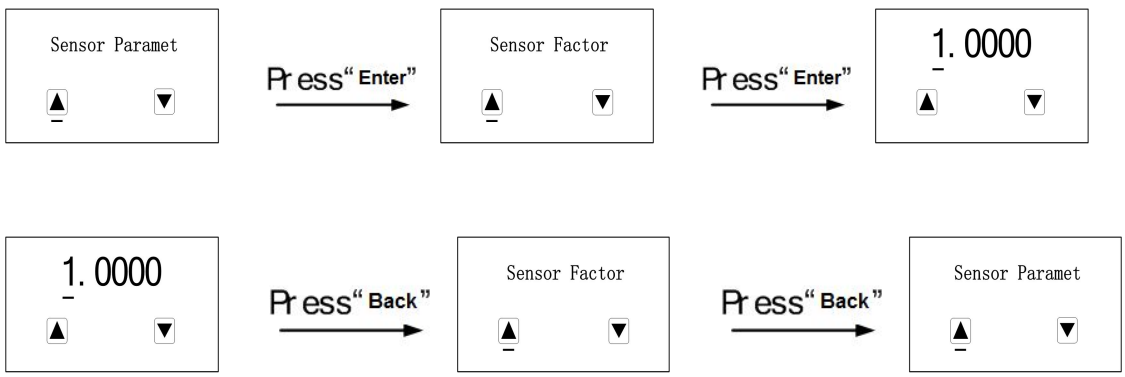


Fig 3.5

3.5.2 Function Selection Display

Press “Menu Key” to enter into function selection display, and press “+” to select. There are four functions to select:

Table 3.1

Parameter Number	Function	Comments
1	Meter Parameter Setting	Select the function to enter parameter setting
2	Gross Record Cleaning	Select the function to clear gross record
3	Monthly Gross Record	Select the function to record gross of 32 months Record forward and reverse flow separately
4	GPRS Para.Set	Used for communication of GPRS

Meter parameter set or modify must be done in test mode. The following steps need to follow to enter parameter setting status by press buttons on the operating panel.

3.6 Gross Zero Cleaning

Step 1: Follow “3.5 Parameter Setting” to set “Gross Zero Password” and back to test mode.
Step 2: In test mode, press ”menu key”. (Meter version will be displayed and 5s later, “Meter Parameter Setting” is displayed.)
Steps 3: Press “+”, “Gross Zero Cleaning” is displayed.
Steps 4: Press “Enter Key”,input the password set in step 1 and press “Enter Key”, the meter displays “00000”, gross zero cleaning is done.
Step 5: Press “Back Key” ,meter is back to test mode.

4 Converter Wiring

W803C battery powered converter has two groups of wiring: signal line group and excitation line group. Two groups are connected to different sensors separately. Pay attention to avoid any possible damage to meters because of incorrect wiring.

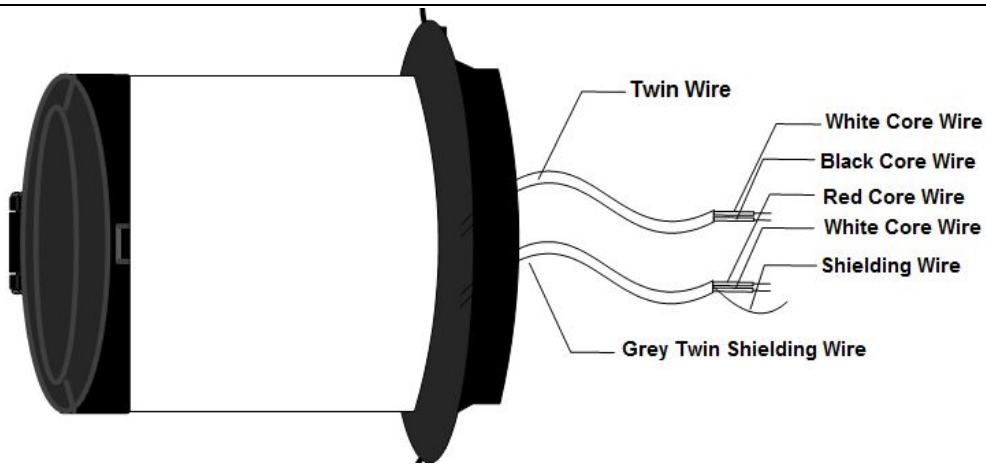


Fig. 4.1 W803C Signal Line

Signal lines are signed as follows :

Black twin plastic wire:	White core wire	Connect with exciting current
		Connect with exciting current
	Black core wire	
Gray twin shielding wire:	Connect the red core wire to “signal 1”	
	Connect the white core wire to “signal 2”	
	Connect the shield wire to “signal ground”	

4.2 Converter Waterproof Interface Definition and Wiring

4.2.1 Converter Waterproof Interface Definition

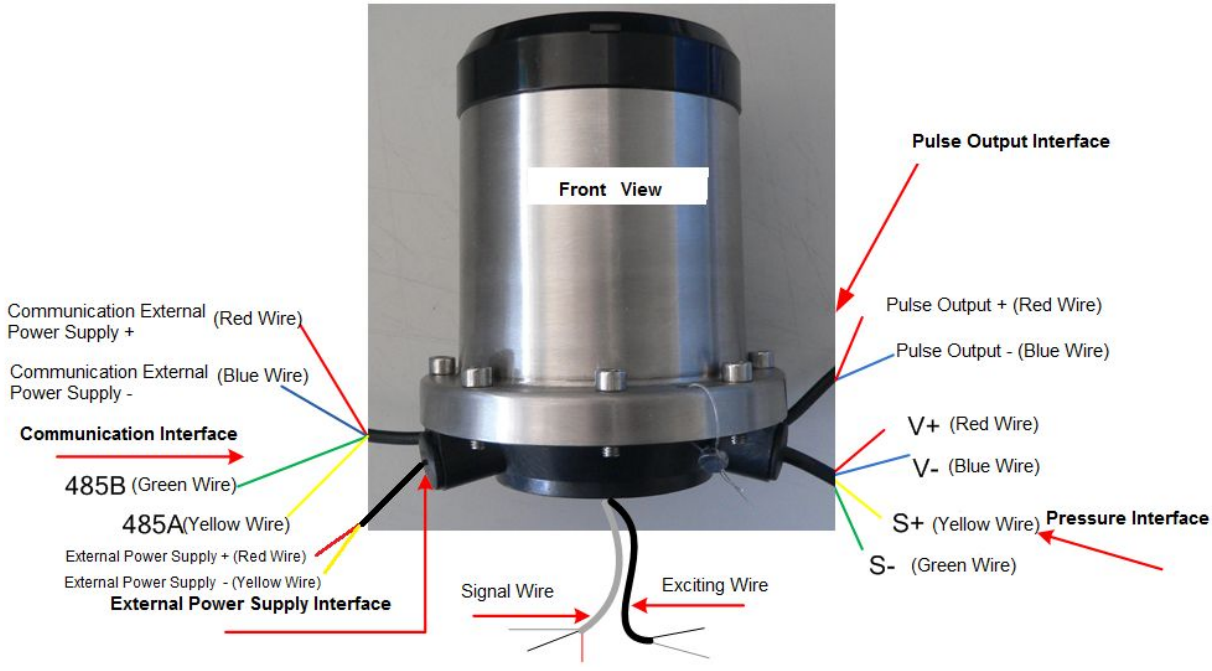


Fig. 4.2a W803C Converter Waterproof Interface Definition

485 Communication Interface(4 Core wire):

Red Wire- External Power Supply + (DC3.6V)

Blue Wire(or other color wire)-External Power Supply -

Yellow Wire-485A

Green Wire-485B

Pressure Measurement Interface(4 Core Wire):

Red Wire-Power Supply +

Blue Wire(or other color)-Power Supply-

Yellow Wire-Pressure Signal +

Green Wire-Pressure Signal -

External Power Supply Interface (2 Core Wire):

Red Wire-Power Supply +

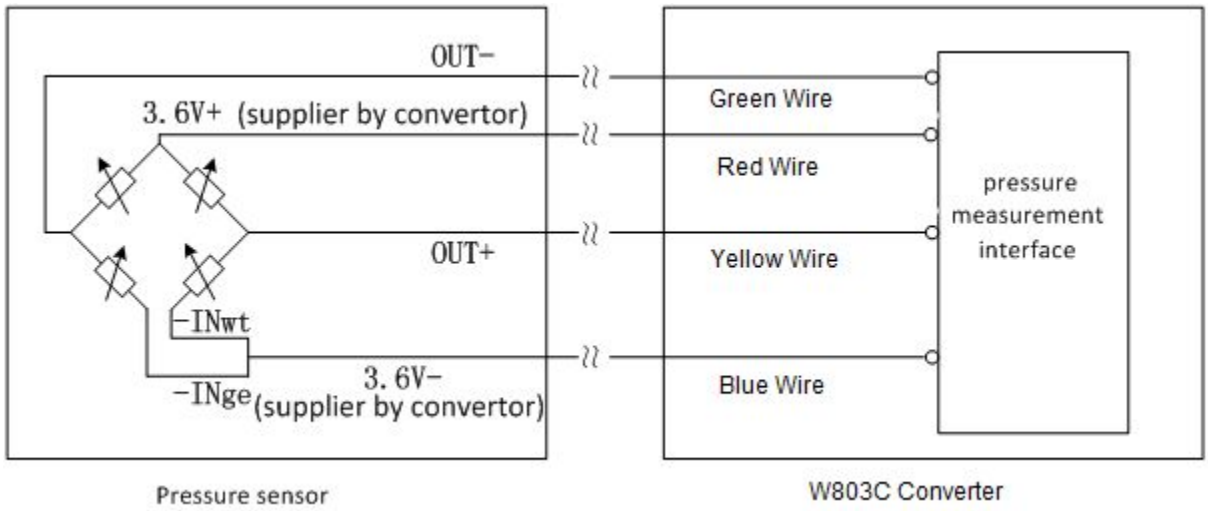
Yellow Wire(or other color)-Power Supply -

Pulse Output Interface(2 Core Wire):

Red Wire-Power Supply +

Blue Wire(or other color)-Power Supply -

4.2.2 Converter Pressure Measurement Interface and Pressure Sensor Wiring



4.3 Converter Assembled Grounding Requirements

First, useΦ20 copper, cut to 1700mm long (can be extended if necessary) to make ground nail buried 1500mm (Note: When buried nails, nail tips in spreading a layer of wood chips carbon, then pour brine);
Second, solder 4mm^2 copper wire to the ground nail, and finally ground to the sensor flange, grounding rings, pipe flanges, refer to Fig. 4.3.
Note: stainless steel is required to fixed ground screw, spring washer, and flat washer.

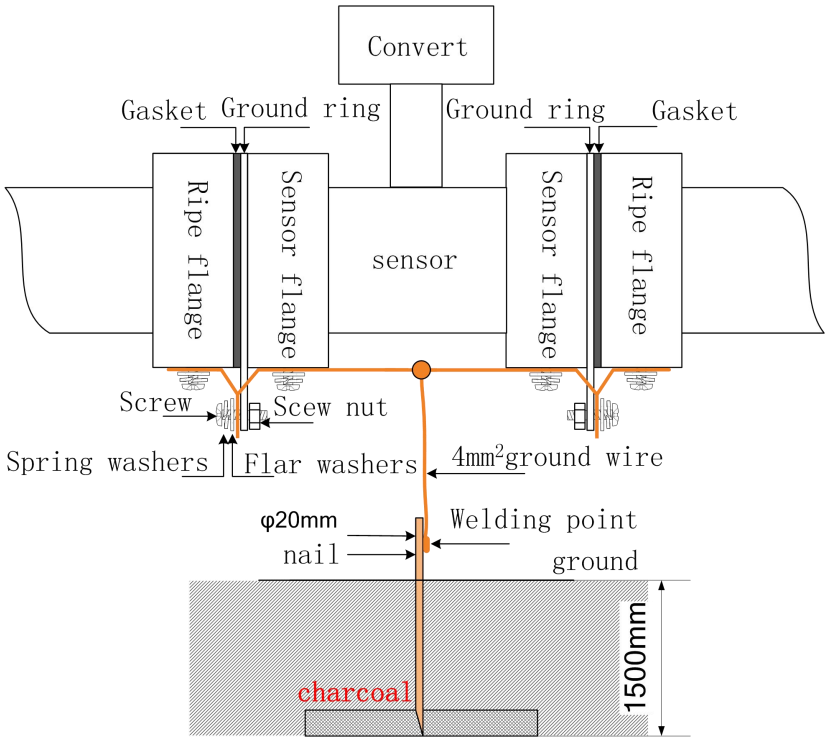


Fig. 4.3 Converter Grounding Schematic

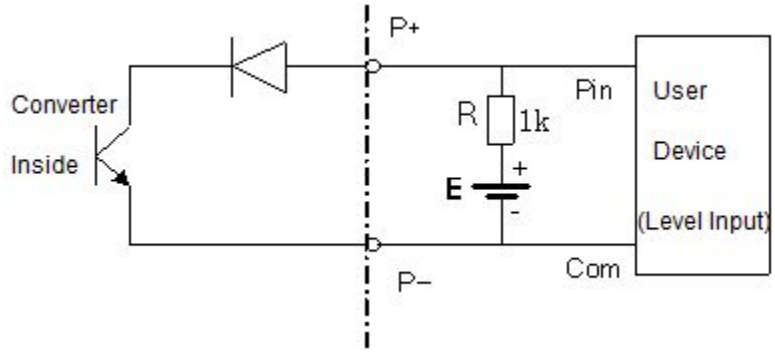
4.4 Flow Test

4.4.1 Pulse Output Wiring

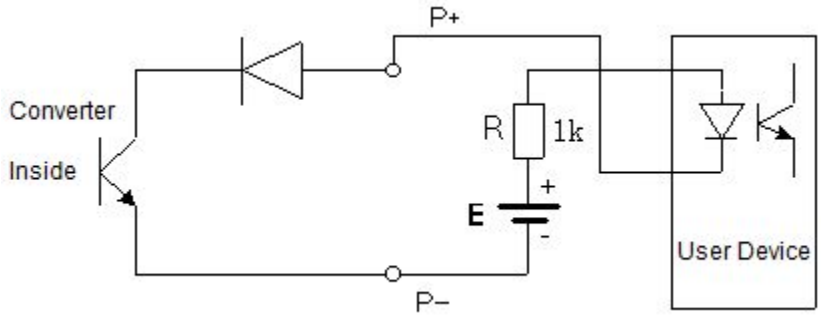
For need for the flow test, W803C has pulse output signal to output pulse per unit volume. In order to ensure good seal, the pulse output interface is designed to infrared transmit. When use it,please follow below wiring steps:

Pulse output signal works in test mode and measurement mode,but pulse output line is different. (please refer to Fig.4.2a)

4.4.2 Pulse Output and Calibration System Connection



Digital Level Output Connection



Digital Level Output Photoelectric Coupler (e.g. PLC etc.)

Fig.4.4.2 Pulse and Calibration System Connection

4.4.3 Pulse Output Parameter Setting

- The maximum measurement pulse output rate is 1Hz, pulse width is 10mS. The maximum test pulse output rate is 500Hz, pulse width is 1mS. When doing meter test, please use pulse output equivalent to set the pulse output rate. The maximum pulse output should less than 500HZ to avoid over limit, resulting in calibration error.
- For example, use DN800 flow meter, when the flow rate is 10m/s, the flow is 18095m3/h. If the pulse output equivalent is 7.5L, there are 670.2 pulses output per second.
- Pulse output rate should not be selected too high to avoid approaching the upper limit of the output rate, causing the output pulse loss and affecting the accuracy of the instrument calibration.
- To avoid counting synchronization error between calibration system and calibrated meter, W803C battery powered converter requires calibration count each time is longer than 4 minutes.

5 Meter Parameter

The parameters of W803C battery powered converter are: measurement mode parameter, flow measurement parameter, meter output parameter, sensor parameter, flow correction parameter, pressure measurement parameter, communication parameter, time parameter, factory calibration parameter and flow gross parameter. The definitions of the parameters are as below:

5.1 Measurement Mode Parameter

5.1.1 Measurement Interval Time

In the measurement mode, meter measurement interval time can be set from 2 seconds to 30 seconds (meter factory defaults settings is 2 seconds. If meter work for 20minutes later ,meter setting will automatically become 15S,this is no relationship with the setting interval time).

5.1.2 Sleep Password

When the sleep password is “23130”, the instrument will start the sleep mode.

5.2 Flow Measurement Parameter

5.2.1 Measuring Pipe Size

Sensor pipe size scope of W803C battery powered electromagnetic converter is 10 to 800 mm.
10,15,20,25,32,40,50,65,80,100,125,150,200,250,300,350,400,450,500,600,700,800.

5.2.2 Flow Calculation Unit

Flow Calculation Units are L/h, L/m, L/s, m^3/h, m^3/m , m^3/s,ukg/h,ukg/m,ukg/s,usg/h,usg/m,usg/s. User can select the unit according to actual status.

5.2.3 Range Setting

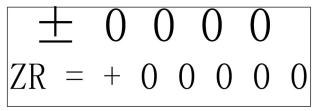
Flow range setting means upper limit flow value setting, and lower limit flow value is set “0” automatically.

5.2.4 Flow Direction Choosing

When doing debugging, if the flow direction is not consistent, users do not have to change the excitation line or signal line connection, and just reset the flow direction parameters.

5.2.5 Flow Zero-Point Correction

Make sure the sensor is full and the fluid is in stationary state when doing the flow zero-point correction. Flow zero-point is shown as velocity of flow, mm/s. Zero-point correction displayed as below:



Upper large characters: corrected flow zero-point.
Lower small characters: ZR means measured zero-point;
When ZR display is not “0”, do correction to make ZR display to “0”. Note: if correct upper line character and ZR increases, change the “+, -” in lower line to make sure ZR display to be zero.
The corrected flow zero-point is the compound value of sensor, and shall be recorded in sensor list and label. The unit is mm/s, and the sign is in opposite with corrected value.

5.2.6 Small Signal Elimination Point

Small signal elimination point setting is showed by flow. When applied small signal elimination, the flow, gross, pulse output are also eliminated, only the velocity of flow is displayed.

5.2.7 Measured Damping Time

Long measured damping time can enhance the stability of flow display and output digital, and is applicable for cumulative add up of pulse flow. Short measured damping time means quick respond to measurement, and always apply in production control. Measured damping time setting is by choosing. (Damping time can only be applied in test mode.)

5.2.8 Reverse Flow Measurement

W803C converter has reverse flow output disable function, when "Forbidden", no output display of the flow, pulse and accumulated gross, only the flow rate display; When the "Allowance", converter works properly.

5.2.9 Measured Flow Frequency Threshold

In the measurement mode, in order to fast-track measure upheaval flow meter to determine the flow rate change, when the flow rate change is greater than measured flow frequency threshold, the instrument starts fast tracking measurements to ensure the accuracy of the measurement. When the flow rate change is less than measured flow frequency threshold, the meter measures by measurement time interval.

5.3 Meter Output Parameter

5.3.1 Pulse Output Allowance

If “Forbidden”, pulse output function in measurement mode is off. If “Allowance”, pulse output function in measurement mode is on.

5.3.2 Output Pulse Unit

There are four output pulse units: m3 , L, ukg, usg.

5.3.3 Output Pulse Equivalent

Pulse coefficient is pulse equivalent, and the range is from 0.001 to 59.999. Output pulse equivalent unit is in consistence with the selected pulse output type, and used to measure pulse output.

5.4 Sensor Parameter

5.4.1 Sensor Coefficient

Sensor coefficient is electromagnetic flow meter calibration coefficient. The coefficient obtained from the actual calibration, and stenciled onto the sensor plate. Users shall input the coefficient factor into W803C converter parameter table.

5.4.2 Excitation Mode Selection

There are three excitation modes to select: 4.63Hz/s (mode 1), 3.90Hz/s (mode 2).

Small diameter sensor excitation system exciting small caliber, 4.63Hz/s should be selected. Large diameter sensor excitation system exciting large caliber, 3.90Hz/s should be selected. In use, first select excitation mode 1, if the meter displays flow rate zero is too high or SYS, then select mode 2. Note: excitation mode shall be in consistent with calibration mode.

5.4.3 Sensor Encoder

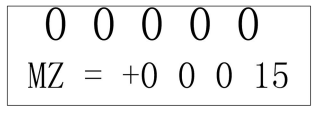
Sensor encoder is used by the factory to record the sensor.

5.4.4 Empty Pipe Alarming Threshold

W803C measures the resistance between the two electrodes of the sensor to determine whether the pipe is empty. In the measurement mode, when the pipe is full, observe the fluid measured resistance value (R%), then take 1.5 to 2 times of the measured values to set the empty pipe alarm threshold . When the pipe is empty, the resistance between the electrodes increases, if the threshold is exceeded, empty pipe alarming is triggered.

5.4.5 Empty Pipe Zero-point Correction

User can do empty pipe zero-point correction. When doing the calibration, make sure the sensor is full. Empty pipe zero-point correction displayed as below:



Upper large characters: calibrated empty pipe zero-point.

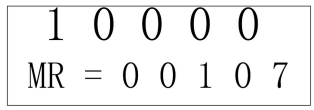
Lower small characters: MZ means measured zero-point;

According to the actual measured conductivity R%, do correction to make MZ=5 – 10.

Note: if increase upper line character and MZ decreases.

5.4.6 Full Pipe Zero-point Correction

User can do full pipe zero-point correction when the conductivity R% is small. When doing the calibration, make sure the senior is empty. Full pipe zero-point correction displayed as below:



Upper large characters: calibrated full pipe zero-point.

Lower small characters: MR means measured zero-point;

Increase upper line character and MR decreases. Decrease upper line character and MR increases. User can correct MR to proper value based on actual needs (it is suggested that MR is around 100), the conductivity obtained in empty pipe is actual corrected MR.

5.5 Flow Correction Parameter

5.5.1 Flow Correction Allowance

The parameter is used to select whether meter linear correction will do. If “Forbidden”, correction will not do; if “Allowance”, correction will do.

5.5.2 Flow Correction Point 1-4

Details refer to Annex 2.

5.6 Pressure Measurement Parameter

5.6.1 Pressure Measurement Allowance

The parameter is used to select whether the pressure measure will do. If “Forbidden”, measurement will not do; if “Allowance”, measurement will do.

5.6.2 Pressure Zero-point and Full Scale Correction

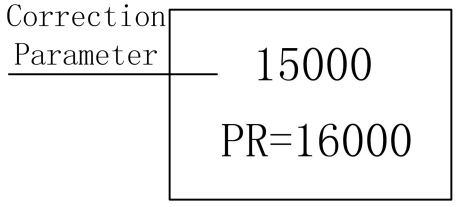
Pressure correction method: First according to defined interface, connect pressure sensor with converter. Adjust pressure sensor to zero, correct pressure zero PZ to 0, and then adjust pressure sensor to the full-scale, correct pressure full-scale PR to full scale value.

5.6.3 Pressure Calculation Unit

1.000Kpa, 10.00Kpa, 100.0Kpa, 1.000 Mpa, 10.00 Mpa, 100.0 Mpa

5.6.4 Pressure Measurement Gain

When the pressure coefficient value of full-scale correction is more than 20000, it is indicating that the pressure sensor signal is too small, and the pressure measurement gain should be increase one level.



5.7 Communication Parameter

5.7.1 Communication Address

Communication address means address range when doing data communication. The address range is from 01 to 99 and address 0 is reserved.

5.7.2 Communication Interval Time

Communication interval time is used to send data to communication terminal, set range: 01 ~ 59999S.The interval time is shorter, the greater the meter communication modules power consumption and the faster the data updates. The factory default time interval is 60S, users can change according to the actual needs.

5.8 Time Parameter

Time parameter is used to set Year, Month, Day, Hour, Minutes and Second. Time parameter is used in Day and Month gross records.

5.9 Factory Calibration Parameter

5.9.1 Language

There are Chinese and English in W803C converter for users.

5.9.2 Factory Calibration Coefficient

Factory calibration coefficient the special coefficient of sensor-made-factory and the factory use this coefficient to unite W803C converters to make sure all the Meters can interchange by 0.1%.

5.9.3 Factory Calibration Parameter

Used by the factory.

5.9.4 Converter Coder

Converter coder records the time the converter leaves the factory and the number.

5.10 Flow Gross Parameter

5.10.1 Flow Integrating Unit

9 bit calculator is applied and the upper limit is 999999999.

Flow Integrating Units are:

0.001L, 0.010L, 0.100L, 1.000L, 0.001m^3, 0.010m^3, 0.100m^3 and 1.000m^3 ·

0.001ukg,0.010ukg,0.100ukg,1.000ukg,0.001usg,0.010usg,0.100usg,1.000usg.

5.10.2 Gross Cleaning Password

User can use upper level password to set gross cleaning password. Enter function selection menu, press the page key to enter into gross cleaning menu to set the gross cleaning password, and complete the gross cleaning.

5.10.3 Forward and Reverse Gross High and Low Bit

Gross high and low bit setting can change the flow gross value which is used in meter maintenance and replacement. User use third level password to change the flow gross value and generally can not exceed the maximum value of counter (999999999).

6 Performance Indicators

- Environmental Temperature:-20℃-- 50℃
- Relative Humidity:≦95％
- Outer Covering Protection Level: IP68
- Flow Speed Measurement Range :0-15m/s
- Conductivity: Clean water >20 μs/cm
- Measuring Diameter: DN10---DN800
- Matching Accuracy Class: 0.5
- Measurement Parameter: instantaneous flow, instantaneous flow rate
- Record Parameter: accumulated gross Flow
- Detection and Alarm Parameters: Fluid empty pipe detection alarm, excitation current detection alarm
- Scaled Output Signal: Unit volume flow pulse
- Communication Mode: RS485 (modbus protocol), GPRS
- Battery Working Time

Table 6.1.1 Corresponding Table of Battery life and Interval Measurement Time

(Excitation Mode 1)

Cycle Measuring Time	50mA Excitation Use Time	20mA Excitation Use Time
30S	120 months	200 months
15S	60 months	100 months
14S	56 months	93 months
13S	52 months	86 months
12S	48 months	79 months
11S	44 months	73 months
10S	40 months	66 months
9S	36 months	59 months
8S	32 months	53 months
7S	28 months	46 months
6S	24 months	39 months
5S	20 months	33 months
4S	16 months	26 months
3S	12 months	19 months

Table 6.1.2 Battery Life Coefficient Corresponding Excitation Mode

Excitation Mode	Mode 1	Mode 2
Battery Life Coefficient	1.0	0.85

When the sensor has large diameter, the corresponding excitation cycle is long (see excitation mode parameter), therefore there is more power consumption.

6.1 Sensor Matching Requirements

- For 20mA excitation, sensor excitation coil resistance: 70 to 110 Ω (two coils in series) (recommended)

- For 35mA excitation, sensor excitation coil resistance: 50 to 70 Ω (two coils in series)
- For 50mA excitation, sensor excitation coil resistance: 40 to 50 Ω (two coils in series)
- Sensor flow signal strength: 50 to 100 mV (1m/s)

Note: Special note is necessary to order excitation coil resistance

Note: When doing the flow correction, if corrected sensor coefficient is around 1.0000, it is indicating that the flow sensor signal strength meets the requirements. If corrected sensor coefficient is greater than 1.0000, it is indicating that flow sensor is with low sensitivity. If corrected sensor coefficient is less than 1.0000, it is indicating that the flow sensor is with high sensitivity. If flow sensor with high sensitivity, stability and conducive of the flow meter measurement accuracy is better.

Generally, W803 converter can achieve good matching if ordinary sensor of 250mA excitation converter produced by our company is equipped and correction coefficient is less than 1.0000.

6.2 Mounting Drawing

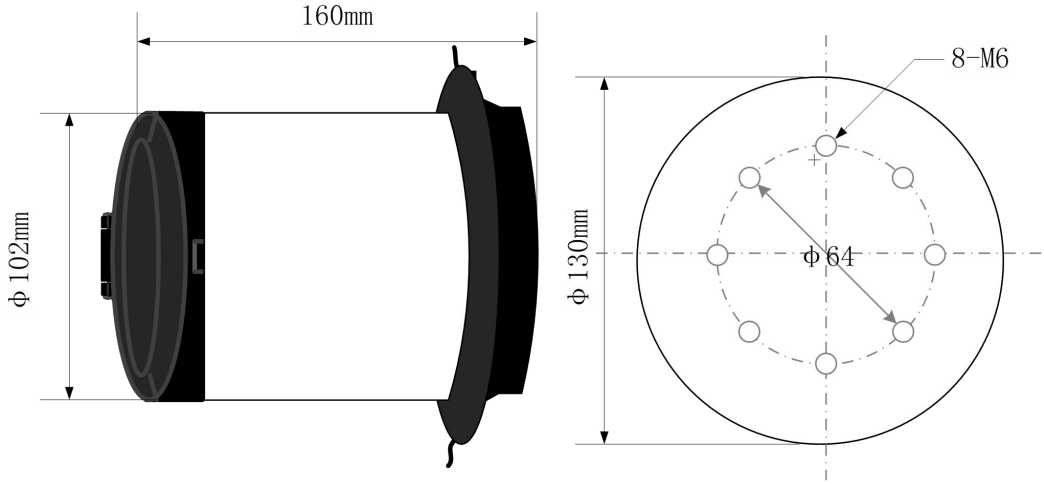


fig. 6.2 Mounting Drawing

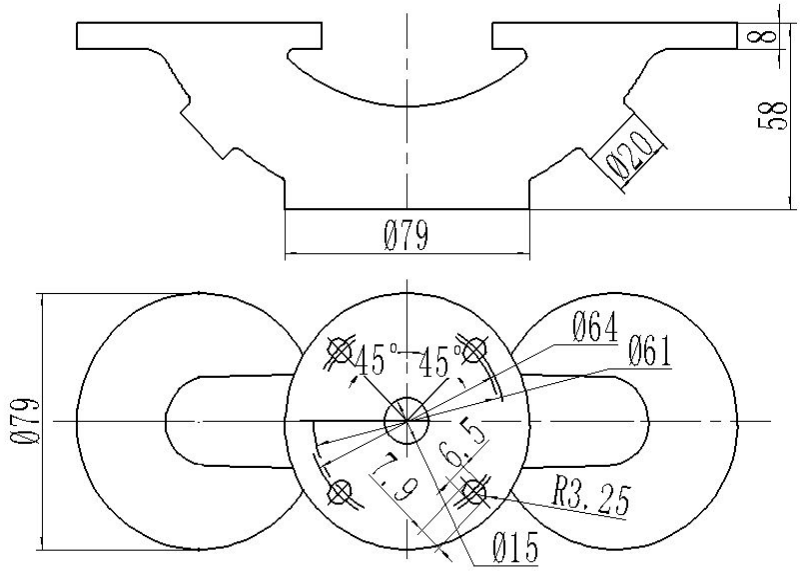


Fig.6.2.2 Integral Flange Mounting Dimension

7 Alarming Information

There are three kinds of alarming information: S—system alarming, M—empty pipe alarming, C—small signal cut alarming. If S displays, it is possible that converter exciting breaks or converter excitation frequency mode selection inappropriate.

8 Error Disposition

8.1 No Display

* Check whether the power is on
* Check whether the power fuse is in good condition
* Check whether the power voltage meets the requirement

8.2 Excitation Mode Alarming

* Check whether excitation wiring EX1and EX2 is open circuit
* Check whether the total sensor excitation coil resistance is less than 150Ω
* If the items above are in normal, then the converter is malfunctioned

8.3 Empty Pipe Alarming

* Check whether the fluid is full of the senior pipe
* Connect SIG1, SIG2 and SIGGND to short circuit, if the empty pipe alarming “Empty Pipe” disappeared, the meter is in normal condition; otherwise, the error may caused by low fluid conductance, wrong setting of empty pipe threshold or range.
* Check whether the signal wiring is correct
* Check whether the senior pole is in normal condition

If the flow is zero, the displayed conductance ratio shall be less than 100%

If there is liquid in pipe, the resistance between SIG, SIG2 and SIGGND shall be less than 50kΩ.(If the medium is water, it is better to use pointer multimeter to do the test and there is charge and discharge during the testing.)

* The DC voltage between DS1and DS2 shall be less than 1V, otherwise, it means the sensor pipe pole is polluted and cleaning is needed.

8.4 Flow Measurement Inaccurate

* Check whether the liquid is full of sensor pipe
* Check whether the signal cable is in normal condition
* Check the sensor parameter and zero-point is set by sensor label or factory calibration

8.5 Infrared Remote Controller Key Failure

If the buttons are unresponsive when aligned remote controller to infrared tube, the power button battery insides may be low. Then can open the back of the remote controller and test the battery voltage. If the value is lower than 2.7V, the remote controller can not work properly. Then button battery needs to be replaced.

Solemnly declare: the manual is applied to common software and if the content is not in consistent with the converter, refer to the actual product.

May,2015

Annex 1 W803C Parameter Setting Overview


Parameters Set
Clr Total Rec
Monh Total Re
GPRS Para Set
Password
Up or Down
Operate Mode
Flow Paramees
Output Paramet
Sensor Paramet
Linearization
Pressure Param
Communication
Date Parameters
Factory Adjust
Total Parameter
Measurement Interval Time
Sleep Password
Operate Mode
Interval Time
Meter Dormancy
Sensor Size
Flow Unit
Flow Range
Flow Directon
Flow Zero CRC
Flow Cutoff
Flow FilterTime
Reverse Flow En
Starting Value
Pulse Out Ena
Pulse Unit
Pulse Factor
Sensor Factor
Excitation
Sensor Coding
Emptpipe Vlue
Empty Zero CRC
Empty Range CRC
LinearizatiEna
Linearity CRCV1
LinearityPoint1
Linearity CRCV2
LinearityPoint2
Linearity CRCV3
LinearityPoint3
Linearity CRCV4
LinearityPoint4
Pressure Enable
PressureZeroCRC
Pressu.RangeCRC
Pressure Unit
Pressure Gain
CommAddres
CommunicatGap
YEAR
MONTH
DAY
HOUR
MINUTE
SECOND
Language
Meter Factor
Meter Correct
Ener Password
Meter Code
Flow Total Unit
Clear Total Key
FWD Total LoW
FWD Total High
REV Total LoW
REV Total High

Annex 2 Function of Nonlinear Correction

W803C electromagnetic flow meter converter update new nonlinear correction function. New calculation method is more convenience and nonlinear correction is accurate.
Parameter Definition:

Qpn--Original flow of the selected correction point(Correction Point:Qp1--Qp9)
Qcn--Corrected flow user want after correction(Correction Factor:Qc1--Qc9)

W803C design 9 flow correction points and 8 flow correction factors. The 9th flow correction point is the 9th flow correction factor. The corresponding relationship is as below:
Flow Correction Point1--Flow Correction Factor1
Flow Correction Point2--Flow Correction Factor2
Flow Correction Point3--Flow Correction Factor3
Flow Correction Point4--Flow Correction Factor4
Flow Correction Point5--Flow Correction Factor5
And so on...

User need to set the flow from low flow correction point to big flow correction point. As below:

Flow Correction Point9 > Flow Correction Point8>Flow Correction Point7>Flow Correction Point6>Flow Correction Point5>Flow Correction Point4>Flow Correction Point3>Flow Correction Point2>Flow Correction Point1>0

Flow Correction Formula:

$$K = \frac{Q_{c1}}{Q_{p1}} + \frac{Q_X - Q_{P1}}{Q_{p2} - Q_{P1}} \times \left(\frac{Q_{c2}}{Q_{p2}} - \frac{Q_{c1}}{Q_{p1}}\right)$$

$$Qcx = K \times Qx$$

Qcx-----Corrected Flow After Correction
Qx----Original Flow Before Correction
K----intermediate variable

Noted:
If user only need to change part of the flow correction point,user can set all the other flow correction points and factors as the maximum point flow.
For example,when user only need to change from Flow Correction Point 1 ---Point 5. Then User can set other Point 6=Factor 6=Point 7=Factor 7=Point 8=Factor 8=Point 9.

Annex 3 W803C Information Record Function

W803C has data retention memory inside for record-keeping various types of data.

Date Recorded in W803C

Date	Date Format	Record Method	Record Length	Remark
accumulated Gross	9 bit decimal	permanent record	8 byte	
Monthly Gross	Date + Gross	cycle record	32 groups	record 32 months

Note: the information record function of W803C refers to Meter.

Cycle record:

New records overwrite the oldest records, record keeping N group. For example, 32 groups monthly gross means a monthly gross record of last month overwrites the record of 32 months ago (two and a half years of records are keeping).

Record View Method:

1, View the record on meter through infrared remote controller key.

2, Through RS485 to use PC W803C_485 software to view the monthly gross record.

Note:

1.When meter in sleep mode,the time inside doesn't work. If user need monthly gross,please set the time first and then please do not set the meter in sleep mode again.

2.After replacing the meter battery, it will automatically record a monthly gross record and the date is January. 1, 2000. The accumulated value is the value of the point of battery replacement. This record is only used as a marker to replace the battery, and does not record the actual monthly gross.

Annex4 W803C Waterproof Joint Wiring

When user need to make the wire come from water joint longer,User can use the terminal block and waterproof joint to make connection as below:

Step1:Make both ends of the wire come from the converter and the extension wire tin-plating.

Step2:Please check below Fig.3. Make the wire pass through the waterproof joint locking cap and rubber clog,then connect to the terminal block.

Step3:After connecting both sides to the terminal block,put the terminal block into the waterproof joint.

Step4:Make the locking cap of the waterproof joint tightly.

Fig.1 Extension the wire from the converter

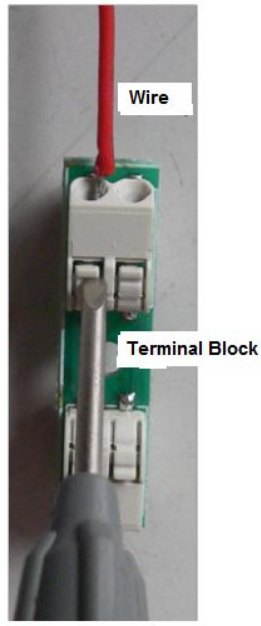


Fig.2. Terminal Block Wire Connection

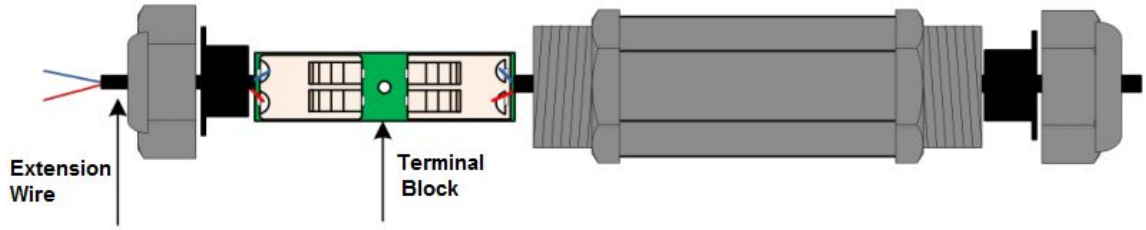
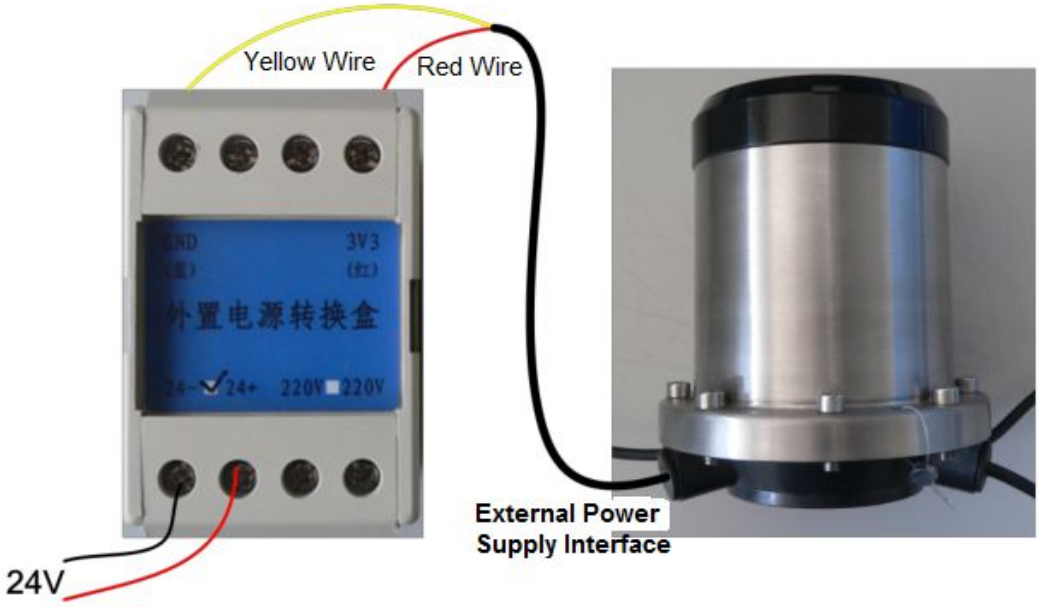


Fig.3 Waterproof Joint Connection

Annex5 External Power Supply Converter Connection

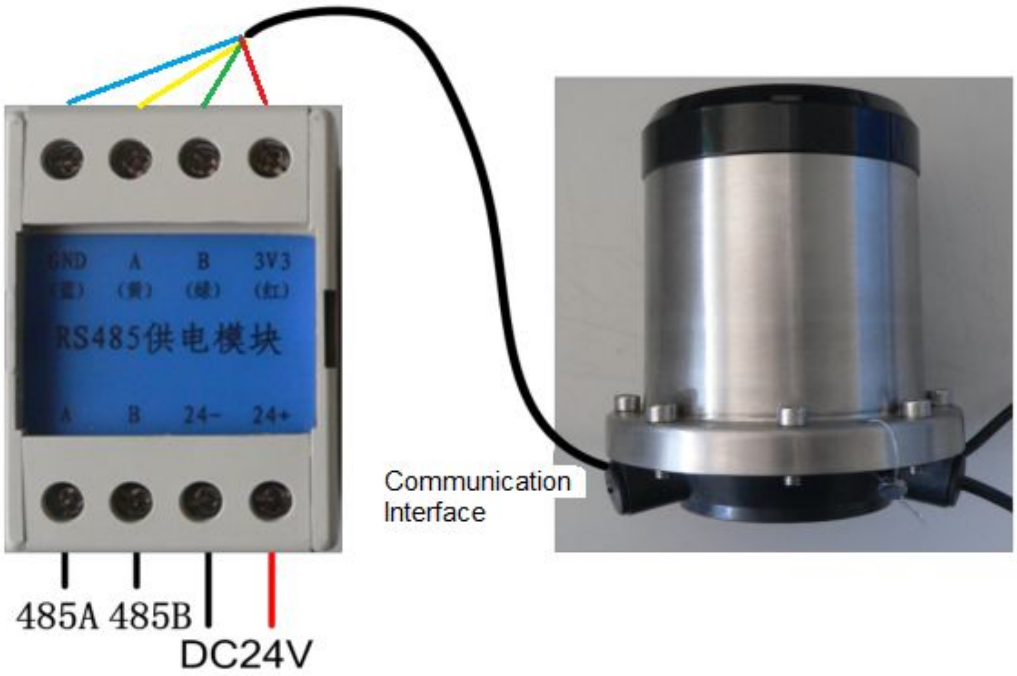
1.24V DC External Power Supply Converter Box Connection



2.220VAC External Power Supply Converter Box Connection

Annex6 RS485 External Power Supply Connection

1.24V RS485 Module Connection



2.220V RS485 Module Connection