



# **H648WD Programming**

## **User Manual**

1. OVERVIEW .....	1
1.1. EQUIPMENT AND SOFTWARE .....	1
1.2. HART PROGRAMMING SYSTEM WIRING .....	1
2. OPERATION .....	1
2.1. CONFIGURATION SOFTWARE .....	1
2.2. QUICK GUIDE.....	1
2.3. CONNECT THE TRANSMITTER .....	2
2.4. ANALOG OUTPUT TRIM (DIGITAL-TO-ANALOG TRIM) .....	2
2.5. SENSOR SETUP .....	2
2.6. TRANSMITTER CONFIGURATION.....	2
2.7. MANUFACTURER TRIM .....	2
2.8. USER TRIM.....	3
2.9. ADDITIONAL FEATURES .....	3

Beijing Zhong Rui Zhi Cheng Technology Co., Ltd  
Tel: 010-82894308, 010-82894290  
Http: [www.BJZRZC.com](http://www.BJZRZC.com)



# H648WD Programming

## User Manual

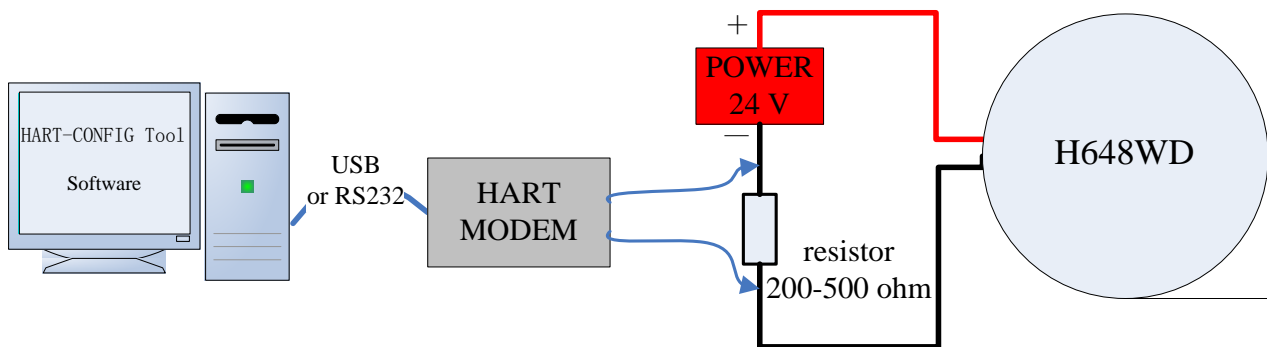
## 1. Overview

### 1.1. Equipment and Software

Please prepare the appropriate equipment and software before production.

1. H648WD temperature module.
2. 24V DC power, HART232 Modem, and a resistor between 200 and 500 ohm for communication.
3. HART-CONFIG TOOL.exe software.

### 1.2. Hart Programming System Wiring

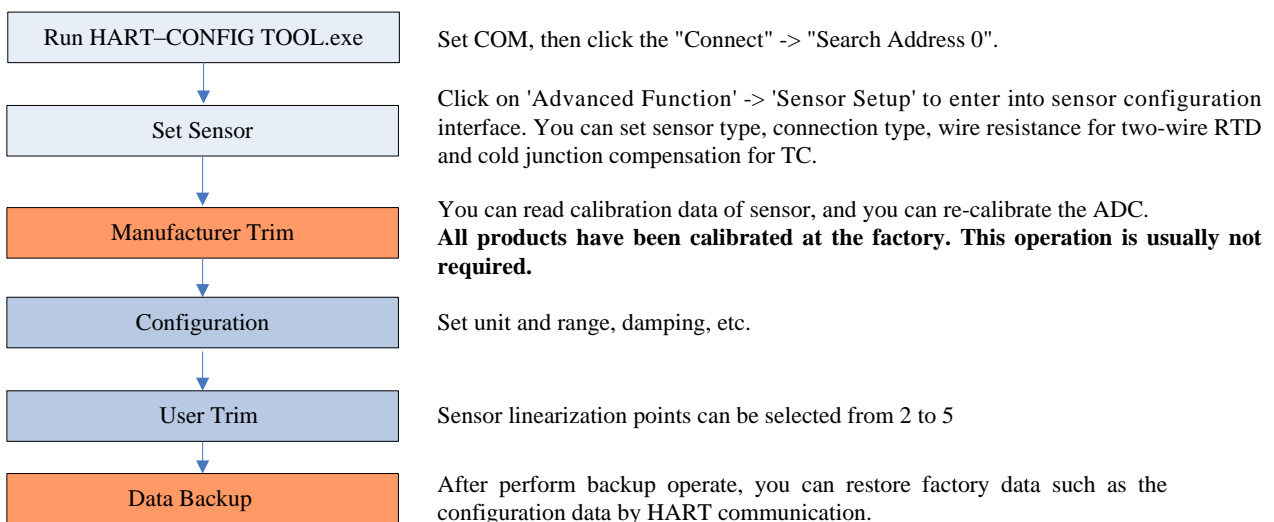


## 2. Operation

### 2.1. Configuration Software

HART-CONFIG configuration / debug software using menu mode, used for transmitter configuration, maintenance and calibration. The software support WINDOWS 98, WINDOWS 2000, WinXP.

### 2.2. Quick Guide





## 2.3. Connect the Transmitter

- Connect the transmitter and power on.
- Run HART-CONFIG TOOL.exe software.
- Set COM.
- Use the left button of mouse to click the "Connect" -> "Search Address 0". All configuration software user interfaces will be activated if communication is successful.

## 2.4. Analog Output Trim (Digital-to-Analog Trim)

The Analog Output Trim allows you to adjust the transmitter's current output at the 4 and 20 mA points to match the plant standards. This command adjusts the digital to analog signal conversion.

- Click on 'Transmitter adjustment' -> 'Analog Output Trim' to enter into operation interface.
- Connect an accurate reference ammeter to the transmitter.
- Click on 'Enter Trim' button.
- Select '4mA trim'. The transmitter outputs 4.0 mA.
- Record the actual value from the reference meter, and enter it at the ENTER METER VALUE prompt. And click 'Write' button to send the actual value to the transmitter.
- Select '20mA trim'. The transmitter outputs 20.0 mA.
- Record the actual value from the reference meter, and enter it at the ENTER METER VALUE prompt. And click 'Write' button to send the actual value to the transmitter.
- Click on 'Exit Trim' to finish trim, and the transmitter is returned to automatic control.

## 2.5. Sensor Setup

- Click on the 'Advanced Features' -> 'Sensor Setup' to enter into sensor configuration interface.
- Please select 'Sensor Type', connection type, wire resistance for two-wire RTD and cold junction compensation for TC.
- Click on the 'Write' button to send the configuration value to the transmitter.

## 2.6. Transmitter Configuration

- Click on the 'Configuration' -> 'Rerange' to enter into transmitter range configuration interface. Primary variable unit and range value can be selected or set.  
Note: Upper range value and lower range value must between the upper sensor limit and lower sensor limit.
- Click on the 'Configuration' -> 'Output function' to enter into the output parameters configuration interface. The damping value and display can be set. H648WD without LCD display, H3051WD supports LCD display.
- Click on the 'Configuration' -> 'Fault Protection' to enter into the alarm parameters configuration interface. The write protection state and fail mode can be set.

## 2.7. Manufacturer Trim

**Note:** All products have been calibrated at the factory. This operation is usually not required.

- Click on 'Manufacturer Trim' -> 'Manufacturer Trim'.
- Select calibration mode, such as TC Mode or RTD Mode.
- Connection the standard resistor and the reference precision voltmeter as figure.



- Input the resistor value or/ and the voltage.
- Click on the 'Write' button to trim ADC.

## 2.8. User Trim

The calibration points can be selected from 2 to 5.

- Click on 'User Trim' -> 'User Trim'.
- Select trim points.
- Input the corrected 'Input Value'. If the trim values are average distribution, you can set "Upper" and "Lower" and then click on the "Equal division" button in order to fast input.
- Click on the 'Collect' button, the 'Collect' dialog will show. Press 'OK' to read transmitter's measure value and save it to the 'Collect value' list. Follow the same method to complete the data collection.

**Note: "Collect Value" must satisfy monotonicity.**

- Click on the 'Write' button to save data to the transmitter.

## 2.9. Additional Features

Enter 'Advanced Features' -> 'Additional Features'.

- Click on the 'Backup' button to backup unit, range, damping value, data.

### **Restore factory settings:**

If the damping value entered is '05678', it will automatically perform 'restore factory settings'. The real damping values remain unchanged. (Manufacturers need to perform 'Data Backup' operation.)