Voltage V/ Current A Data display instrument-user manual V202308

Model：Q02H01A (voltage)/ Q02H01B (current)

(Optional relay R or Buzzer S Output type or G Power isolated type)

1 Product function

1.1 Multifunctional digital display meter is mainly used for small voltage and current analog signal display.

1.2 Display ratio and decimal point position can be set to facilitate comparison with the actual value.

1.3 With alarm output function (optional), relay shock parameters：3A 250VAC/30VDC;

1.4 Wide voltage power supply, voltage change does not affect the display accuracy.

1.5 Power supply reverse protection, input anti-static protection, can work continuously for a long time.

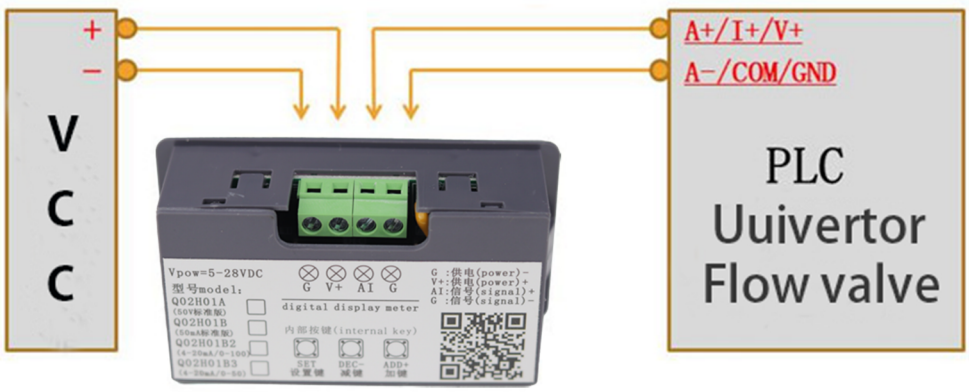
2 Main technical indicators:

	Q02H01A(voltage)	Q02H01B(current)
Electricity supply	Voltage 5-28V DC， Power<0.5W	
Measurement range	DC Voltage±50V	DC Current±50mA
Input impedance	50KΩ	10Ω
Display specification	4 digit 0.56 inch red digital tube	
Work environment	Temperature 0-40℃,Relative humidity<80%	
Hole size	76×40mm,Panel thickness greater than 1.4mm to catch ears	
Weight	40 g （electrostatic bag packaging）	

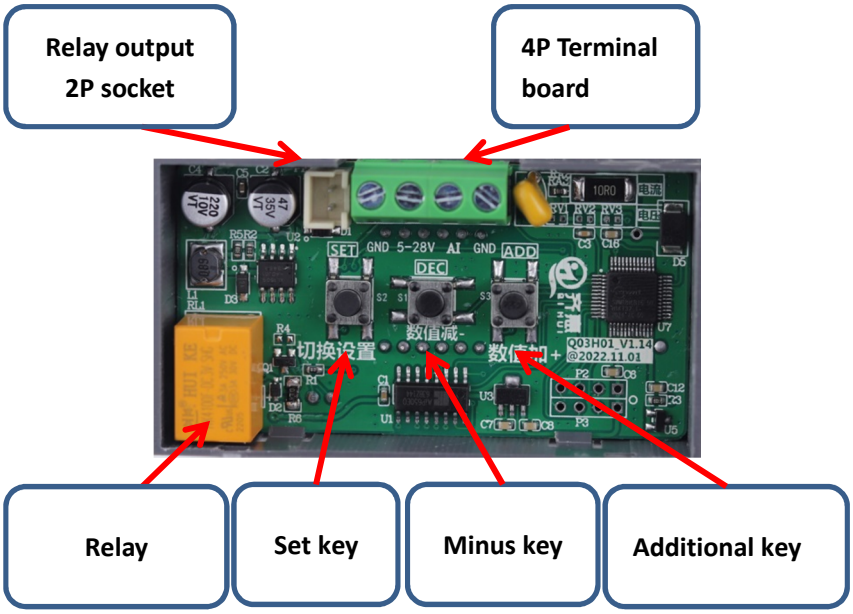
3 Wiring diagram:

G： Power Ground
V+： Positive pole (DC5-24V)
AI： Input positive
G： Input location

1、The power supply ground and the output ground can be connected internally only one.
2、Warning: When the measured negative electrode is not the ground of the measured control system, the power supply of the instrument cannot be shared with the control system, and must be powered separately!



4 Circuit board back relay (optional) and button diagram:



Note :The relay and socket in the picture are optional*

5 Dimensional drawing, opening:

Hole size
76x40mm

Cabinet/electric box installation precautions:
The panel can be fixed by jamming the ears on both sides of the instrument, and the thickness of the panel is>1mm.
The tihickness of the panel is less than 10mm, which is too thick to block the terminal and cannot beconnected.

6 Parameter setting description and parameter table:

6.1 Open the back cover, three buttons on the circuit board: SET(switching mode)、DEC(numerical-)、ADD(numerical+).

6.2 Hold down the “Set” button for 2 seconds to enter the setting state.

6.3 Press "Set" to switch the parameter number.

6.4 Press "Plus key" to enter the parameter Settings.

6.5 Press "Plus key" to add 1 to the corresponding value. Holding down Plus key will speed up the number adding.

6.6 Press the "Decrease key" to decrease the corresponding value by 1, and hold down the "Decrease key" to speed up the digit reduction.

6.7 Press the Set key again to save the parameter value and return the parameter number to switch.

6.8 The System Automatically Exits from the Setting State after 10 seconds if no operation is performed.

6.9 Parameter Table:

Number	Description	Note	Default
F001	Alarm function (relay or buzzer)	0 Out of control 1 The feedback value is switched on in the upper and lower limits 2 The feedback value is disconnected between the upper and lower limits	8.0
F002	Lower limit of alarm	-50.0V(or mA) to 50.0V(or mA)	4.0
F003	Upper alarm value	-50.0V(or mA) to 50.0V(or mA)	8.0
F004	Alarm-delay	0-10.0 Second	1.0
F005	Back up		0
F006	Back up		
F007	Input low end	-50.0V(or mA) to 50.0 V(or mA)	0
F008	Input high end	-50.0V(or mA) to 50.0 V(or mA)	20.0
F009	Low segment display	-1999 to 9999, Ignore the decimal point, in F011 set	0
F010	High-end display	-1999 to 9999, Ignore the decimal point, in F011 set	2000
F011	Displays decimal position	0-4 0/1:Not have 2:999.9 3:99.99 4:9.999	3
F012	Less than the low-end display mode	0：Minimum display value F009 1: It's linear scale	1
F013	Greater than the high-end display mode	0：Maximum display value F010 1: It's linear scale	1
F014	High level 0 automatically fades	0:No blanking 1:Automatic blanking	4
F015	Nixie luminance	0(Dark)---7(Bright)	4
F016	Zero point calibration	If the input is not connected or short connected, press "plus" to automatically calibrate the zero point	
F017	Range calibration 3-50(V/mA)	Access the signal, adjust the add or subtract key, so that the display value of the watch head is consistent with that of the multimeter	

6.10 Example for setting relay (or buzzer) output control : This function is optional and can be selected at the time of purchase

Setting example	**F001**	**F002**	**F003**	**F004**
Input in the upper and lower limits 1-10V(mA), the relay delay 1 second on	1	1.0	10.0	1.0
Input less than 5V(mA), greater than 10(mA),relay delay 1 second on	2	5.0	10.0	1.0

6.11 Examples for Setting Output Range and Display Ratio:

Setting example	**F007**	**F008**	**F009**	**F010**	**F011**	**F012**	**F013**
±50V(or mA)Show -50.0 or +50.0	0.0	50.0	0	500	2	1	1
0-10V Show 0-100.0 Less than 0 Show 0,Greater than 10V Show 100.0	0.0	10.0	0	1000	2	0	0
0-10V Show 0-50.0 Less than 0 Show 0， Greater than 10V Show 50.0	0.0	10.0	0	500	2	0	0
0-5V Show 0-100.0	0.0	5.0	0	1000	2	0	0

Less than 0 Show 0，Greater than 5V Show 100.0							
4-5V Show 0-100.0 Less than 4V Show 0，Greater than 5V Show 100.0	4.0	5.0	0	1000	2	0	0
0-1V Show 0-1.00 Less than 0 Show 0，Greater than 1V Show 1.00	0.0	1.0	0	100	3	0	0
0-20mA Show 0-100.0 Less than 0 Show 0, Greater than 20 Show 100.0	0.0	20.0	0	1000	2	0	0
4-20mA Show 0-100.0 Less than 4 Show 0, Greater than 20 Show 100.0	4.0	20.0	0	1000	2	0	0
4-20mA Show 0-50.0 Less than 4 Show 0, Greater than 20 Show 50.0	4.0	20.0	0	500	2	0	0
4-20mA Show -0.10 to +1.50 Less than 4 or Greater than 20mA Do a sum in proportion	4.0	20.00	-10	150	3	1	1
4-20mA Show -40.0 to +80.0 Less than 4 or Greater than 20mA Do a sum in proportion	4.0	20.00	-400	800	2	1	1

Note: Since the minimum negative number of the 4-digit digital tube can only display -1999 , so it can display the actual -50V(or mA), you can set the display to one decimal±50.0, can not be set to ±50.00, the specific setting please refer to the first row of the table above.

6.12 Automatic blanking setting F014: Display the ”0” in front of automatic blanking If it is set to no automatic blanking , the four nixie tubes will be displayed all the time, For example, 0 will be displayed, 0000 will be displayed without blanking, and 0 will be displayed after automatic blanking.

6.13 Digital tube brightness Settings F015：Because the brightness of the digital tube is too dark to see, or too bright is very dazzling, so let go of the brightness setting, the user can adjust according to the actual.

6.14 Calibration instruction:

Zero calibration F016：If the error of the display drift is not 0 when there is no input, it is necessary to calibrate the zero point: after the input is not connected or short-connected, enter the value setting of parameter F016, press the “plus” key, display the value flash, automatically complete the zero point calibration, display an internal offset value, the size of the value is not required.

Range calibration F017：If the display value of the input signal meter head is inconsistent with the measurement of the multimeter, the range can be calibrated to make the display consistent with the multimeter or other equipment. Input 3-50V (or mA), multimeter parallel voltage measurement (or series current measurement), enter parameter F017, display voltage (or current), press the add or subtract key to adjust, so that the display value of the meter head is consistent with the display value of the multimeter, calibration is done. Note that the displayed value of parameter F017 is the actual measured voltage (or current) value, which has not been converted by the display ratio.

7 Matters needing attention

7.1 Power off and than connect cables.

7.2 Exceeding the demonstration range of technical indicators may cause abnormal operation or even damage to the instrument.