

# Instruction Manual

TI08-H Digital Displays						
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#### Introduction

This instruction manual is aimed at users of the TI08H digital display who intend to connect a 4-20mA sensor into it and make use of the relay outputs from the display.

The two types of displays mentioned in this document have identical features, however they are powered by different supplies. The TI08H.C.CC is powered by 230VAC and the TIO8H.P.CC is powered by 12-24VDC.

The document will explain how to power and configure the units.

## 2 Tools and Equipment Required

Below is a list of tools and equipment needed to power, test and configure the display.

- Terminal Screwdriver
- Mains Plug or 12/24V power supply
- 2-core power cable
- COMECO TI08H.C.CC or TIO8H.P.CC display
- Sensor with 4-20mA output (preferably pressure)

#### Power

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# 3.1 TIO8H.C.CC

- Insert the Live wire into screw terminal 1, Earth into terminal 2 and Neutral into terminal
  - 3. Wire mains plug into the other side of the wire to connect to 230VAC.



# 3.2 TIO8H.P.CC

• Insert 12/24V+ into screw terminal 1 and 0V into terminal 3, then connect the other side to a 12/24V power supply or battery.



# 4.1 Configuration

• Press and hold the diamond button until "L3" appears, then let go of the button.



• Press the down around until inP appears on the screen, then press the diamond button.



• Press the down arrow until .420 appears on the screen, then press the diamond and up arrow at the same time to return to the previous menu.



• Press the down arrow until i.Lo appears on the screen, then press the diamond button



 Enter the value which is the low point of your sensor range. For example, if using a 4-20mA pressure sensor with a 0-25bar range, enter 0 into this setting, as seen below. Then press the diamond and up button at the same time to return to the previous menu.



• Press the down arrow until i. Hi appears on the screen, then press the diamond button



Enter the value which is the high point of your sensor range. For example, if using a 4-20mA pressure sensor with a 0-25bar range, enter 25 into this setting, as seen below. Then press the diamond and up button at the same time to return to the previous menu. Once returned to the previous menu, wait 5 seconds for the display to begin reading the measured value.



# 4.2 Wiring

 Connect the Signal + of your 4-20mA sensor to screw terminal 14 and the Signal – to terminal 12.



4.3 **Optional Testing** 

If a sensor is used where a known value can be applied, it is recommended that this is done to check that the display is reading correctly. For example, if using a pressure sensor, apply the pressure sensor to a hand pump and apply pressure, as seen below.





# 5 Relay Outputs

## 5.1 Configuration

Before you begin to configure the device for relay activation, you must first collect the following information about the application:

- 1. At what value do you want the relay to activate?
- 2. At what value do you want the relay to deactivate?
- 3. Is the de-activation value lower or higher than the activation value?
- 4. Do you need the relay output to pulse when it is triggered?
- 5. If you do, what is the duration of the ON/OFF cycles?
- 6. When the relay is activated, what is the duration you want the relay to stay de-activated for before the relay switches?
- 7. When the relay is de-activated, what is the duration, if any, you want the relay to stay activated for before the relay switches?
- To begin configuring the device, press the up arrow when on the default display screen until SP.1 appears, then press the diamond button.



• Enter the value from Q1. For example, in this case the relay will activate at "5". Once entered, press the diamond and up arrow the return to the previous menu



• If the answer to Q3 is "higher", press the down arrow until dir.1 appears, then press the diamond button. Select "cool", then press the diamond and up button to return to the previous menu. Then press the down arrow until P.d1 appears, then press the diamond button. Subtract Q1 value from Q2, then enter the answer into here. For example, if I

wanted the relay to deactivate at "6", I would subtract my activation value "5" away from 6, which is 1. After, press the diamond and up button to return to the previous menu.





• If the answer to Q3 is "lower", press the down arrow until dir.1 appears, then press the diamond button. Select "heat", then press the diamond and up button to return to the previous menu. Press the down arrow until n.d1 appears, then press the diamond button. Subtract Q2 value from Q1, then enter the answer into here. For example, if I wanted the relay to deactivate at "4", I would subtract this from my activation value "5", which is 1. After, press the diamond and up button to return to the previous menu.





• If the answer to Q4 is yes, press the down button until t.n.1 appears, then press the diamond button. Enter here the duration of the ON cycle, then press the diamond and up

button to return to the previous screen. If the answer is NO, do nothing. arrow until t.f.1 appears, press the diamond button. Enter here the duration of the OFF cycle, then press the diamond button to return to the previous menu.



Hydrotechnik UK Ltd, 1 Central Park, Lenton Lane, Nottingham, NG7 2NR, United Kingdom Tel: 0115 9003550 www.hydrotechnik.co.uk Press the down

• If the answer to Q6 is "0", do nothing. If the answer is anything but 0, press the down arrow until h.n.1 appears, then press the down arrow. Enter here the value to Q6, then press the diamond and up arrow buttons to return to the previous screen





• If the answer to Q7 is "0", do nothing. If the answer is anything but 0, press the down arrow until h.f.1 appears, then press the down arrow. Enter here the value to Q6, then

press the diamond and up arrow buttons to return to the previous screen



• Wait 10 seconds for the display to return to display mode, then hold the diamond button until L3 appears, then let go. Press the down arrow until S.P.h appears, then press the diamond button. Enter a value into here which is slightly higher than your activation/de-activation value (whichever is higher). For example, if the highest value was 5, this would be set to 6. This avoids the operator being able to change the set points too much if the relay is for a safety circuit. Then press the diamond and up arrow together.



• Press the down button until S.P.I appears. Enter a value into here which is slightly lower than your activation/de-activation value (whichever is lower). For example, if the lowest

value was 1, this would be set to 0. This avoids the operator being able to change the set points too much if the relay is for a safety circuit. Then press the diamond and up arrow together.



The first relay output should now be configured to activate, de-activate and cycle as you wish.

To do the same for the second relay output, follow the same process, but replace "1" with "2" in the name of each setting, this will configure the second relay output.

- 5.2 Wiring
- 5.2.1 Relay Output 1
  - For a normally open relay circuit, connect into terminals 4 and 6.





• For a normally closed circuit, connect into terminals 5 and 6.



# 5.2.2 Relay Output 2

• For a normally open relay circuit, connect into terminals 7 and 9.



• For a normally closed circuit, connect into terminals 8 and 9.

