# PMED-H1-1-Series

## User’s Manual

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(3) Zero and auto-center (1/2) function
(4) Set count direction (increase/decrease)
(5) Switch between digital and analog signals
   * Analog signal is only used for the HIWIN Positioning Measurement System
(6) Decimal point setting
   
   mm: 0.001, 0.01, 0.1, 1
   inch: 0.000001, 0.00001, 0.0001, 0.001
(7) Resolution setting (unit: μm): 1, 2, 5, 10
(8) Preset function: 8 sets
(9) Relay output function: 4 sets
(10) Current value read (displayed) will be automatically saved during a temporary power failure

2. Specifications:

◎ Display: LED 8 digit display
◎ Input power: 5VDC ± 5%/1A
◎ Input signal: SIN/COS 1Vp-p(analog), 5V RS-422/TTL(digital)
◎ Relay contact rating: 24VDC/2A
◎ Relay frequency: 2 seconds
◎ Operating temperature range: 0°C ~ +50°C
◎ Storage temperature range: -5°C ~ +65°C
3. Panel Description:

![Panel Description Diagram]

**ABS:** ABS Mode  
**INC:** REL Mode  
**MM:** Unit: mm  
**INCH:** Unit: inch

4. Normal Mode Description:

Button representation:

- **MENU RETURN:** Menu  
- **ABS/REL:** Switch between ABS/REL mode  
- **mm/inch radius:** Switch between units (mm/inch)  
- **ZERO ENTER:** Set zero mark
5. Function Mode Description:

When the display is set on normal mode, press the MENU button to enter into the function mode.

Button representation:

- MENU RETURN: Return back to normal mode/back one page
- ABS/REL: Switch between functions
  - F1-1-2 > F2-DIR > F3-ADC > F4-DOT > F5-DPI > F6-PCALL
  - F7-PSET > F8-IO.USE > F9-IO.SET > F1-1-2
- mm/inch radius: Switch between units (mm/inch)
  - F1-1-2 > F9-IO.SET > F8-IO.USE > F7-PSET > F6-PCALL > F5-DPI
  - F4-DOT > F3-ADC > F2-DIR > F1-1-2
- ZERO ENTER: Confirmation button
6. **Auto-Center (1/2) Function:**

Function: To set the auto-center (1/2) value when needed

Caution: Can only be used when the display unit is set on INC mode

Step 1. If not in INC mode, press **ABS/REL** to switch into INC mode.

Step 2. Press **MENU** once, and then press **ABS/REL** or **mm/inch radius** until it displays F1-1-2. Press **ZERO** to find the midpoint.
7. **Count Direction Setting (DIR):**

Function: To set the direction (increase or decrease)

Note: Can be used with the display unit set on ABS mode or INC mode

Step 1. Press **MENU** once, and then press **ABS/REL** or **mm/inch radius** until it displays F2-DIR

Step 2. Press **ZERO ENTER** to enter setting, then press **ABS/REL** or **mm/inch radius** to choose the counting direction (positive or negative) Press **ZERO ENTER** to confirm
8. Input Signal Setting (ADC):
Function: Choose the input signal (analog or digital)
Note: Can be used with the display unit set on ABS mode or INC mode

Step 1. Press MENU RETURN once, then press ABS/REL or mm/inch radius until it displays F3-ADC

Step 2. Press ZERO ENTER to enter setting, then press ABS/REL or mm/inch radius to choose DIG (digital signal) or ANA (analog signal) Press ZERO ENTER to confirm
9. Decimal Point Setting (DOT):

Function: To set the decimal point according to the user’s requirement

1. For mm, choices are 0.001, 0.01, 0.1, 1
2. For inch, choices are 0.000001, 0.00001, 0.0001, 0.001

Note: Can be used with the display unit set on ABS mode or INC mode

Step 1. Press \textit{mm/inch radius} to choose the desired unit

Step 2. Press \textit{MENU \ RETURN} once, and then press \textit{ABS/REL} or \textit{mm/inch radius} until it displays F4-DOT
Step 3. Press **ZERO ENTER** to enter setting, then press **ABS/REL** or **mm/inch radius** to choose the placement of the decimal point. Press **ZERO ENTER** to confirm.
10. Resolution Setting (DPI):

Function: To set the resolution according to user’s requirement

Choices are 1 μm, 2 μm, 5 μm, 10 μm

Note: Can be used with the display unit set on ABS mode or INC mode

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Step 1. Press MENU once, and then press ABS/REL or mm/inch radius until it displays F5-DPI

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Step 2. Press ZERO ENTER to enter setting, then press ABS/REL or mm/inch radius to choose the desired resolution. Press ZERO ENTER to confirm.
11. Pre-Call (PCALL):

Function: This function can recall the preset parameter
Caution: Can only be used when the display unit is set on INC mode

Step 1. If not in INC mode, press ABS/REL to switch into INC mode

Step 2. Press MENU once, and then press ABS/REL or mm/inch radius until it displays F6-PCALL
Step 3. Press **ZERO ENTER** to enter setting, and then press **ABS/REL** or **mm/inch radius** to choose which set of number presets you require. Press **ZERO ENTER** to confirm.
12. Preset Setting (PSET):

Function: Preset number setup
The preset function offers 8 sets
Caution: Can only be used when the display unit is set on INC mode

Step 1. If not in INC mode, press **ABS/REL** to switch into INC mode

Step 2. Press **MENU** once, and then press **ABS/REL** or **mm/inch radius** until it displays F7-PSET
Step 3. Press **ZERO ENTER** to enter setting, and then press **ABS/REL** or **mm/inch radius** to choose which set of number presets you require.

Step 4. Press **ZERO ENTER** to enter setting, and then press **ABS/REL** to change the blinking digit. Press **ABS/REL** to change the value, and press **mm/inch radius** to change to the next digit. Press **ZERO ENTER** to confirm.
13. Relay Enable/Disable Setting (IO.USE):

Function: Relay enable/disable setting
Caution: Can only be used when the display unit is set on INC mode

**Step 1.** If not in INC mode, press **ABS/REL** to switch into INC mode.

**Step 2.** Press **MENU** once, and then press **ABS/REL** or **mm/inch radius** until it displays F8-IO.USE.
Step 3. Press **ZERO** ENTER to enter setting, and then press **ABS/REL** or **mm/inch radius** to choose which set of number presets you require.

Step 4. Press **ZERO** ENTER to enter setting, and then press **ABS/REL** or **ABS/REL** to setup the relay enable or disable function.

Function: Relay output position setup
- Relay output: 4 sets
Caution: Can only be used when the display unit is set on INC mode

Step 1. If not in INC mode, press **ABS/REL** to switch into INC mode

Step 2. Press **MENU** once, and then press **ABS/REL** or **mm/inch radius** until it displays F9-IO.SET
Step 3. Press **ZERO ENTER** to enter setting, then press **ABS/REL** or **mm/inch radius** to choose the position setting (CH-0~CH-3)

Step 4. Press **ZERO ENTER** to enter setting, press **ABS/REL** to change the blinking number, and then press **ABS/REL** to change the value. Press **mm/inch radius** to change to the next number. When completely finished setting the numbers, press **ZERO ENTER** to confirm.
15. Software Version:
Function: The systems software version

When powered on, the panel will display the current software version for about 3 seconds

16. Description of Input Signal:

<table>
<thead>
<tr>
<th>Pin</th>
<th>Signal</th>
<th>Pin</th>
<th>Signal</th>
<th>Pin</th>
<th>Signal</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>+5V</td>
<td>6</td>
<td>FG</td>
<td>11</td>
<td>A+(Analog)</td>
</tr>
<tr>
<td>2</td>
<td>GND</td>
<td>7</td>
<td>Z+</td>
<td>12</td>
<td>A-(Analog)</td>
</tr>
<tr>
<td>3</td>
<td>A+(Digital)</td>
<td>8</td>
<td>Z-</td>
<td>13</td>
<td>B+(Analogue)</td>
</tr>
<tr>
<td>4</td>
<td>B+(Digital)</td>
<td>9</td>
<td>A-(Digital)</td>
<td>14</td>
<td>B-(Analog)</td>
</tr>
<tr>
<td>5</td>
<td>NC</td>
<td>10</td>
<td>B-(Digital)</td>
<td>15</td>
<td>NC</td>
</tr>
</tbody>
</table>

D-sub VGA 15 Pin Female
17. Description of RS-232 Signal:

D-sub 9 Pin male

<table>
<thead>
<tr>
<th>Pin</th>
<th>Signal</th>
<th>Pin</th>
<th>Signal</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>NC</td>
<td>6</td>
<td>NC</td>
</tr>
<tr>
<td>2</td>
<td>TXD</td>
<td>7</td>
<td>NC</td>
</tr>
<tr>
<td>3</td>
<td>RXD</td>
<td>8</td>
<td>NC</td>
</tr>
<tr>
<td>4</td>
<td>NC</td>
<td>9</td>
<td>NC</td>
</tr>
<tr>
<td>5</td>
<td>GND</td>
<td></td>
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</table>

18. Description of Output Signal:

<table>
<thead>
<tr>
<th>I/O 1</th>
<th>I/O 2</th>
</tr>
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<tbody>
<tr>
<td>Pin</td>
<td>Designation</td>
</tr>
<tr>
<td>1</td>
<td>NC</td>
</tr>
<tr>
<td>2</td>
<td>NC</td>
</tr>
<tr>
<td>3</td>
<td>NC</td>
</tr>
<tr>
<td>4</td>
<td>Relay 0(CH-0)</td>
</tr>
<tr>
<td>5</td>
<td>Relay 1(CH-1)</td>
</tr>
<tr>
<td>6</td>
<td>Relay 1(CH-1)</td>
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</table>
19. Dimensions:

![Dimensions Diagram]

20. Parameter Defaults:

<table>
<thead>
<tr>
<th>Function</th>
<th>Description</th>
<th>Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>F2-DIR</td>
<td>Counting Direction</td>
<td>POS (positive)</td>
</tr>
<tr>
<td>F3-ADC</td>
<td>Input Signal</td>
<td>ANA (analog signal)</td>
</tr>
<tr>
<td>F4-DOT</td>
<td>Decimal Point</td>
<td>mm: 0.001  inch: 0.000001</td>
</tr>
<tr>
<td>F5-DPI</td>
<td>Resolution</td>
<td>1 μm</td>
</tr>
<tr>
<td>F6-PCALL</td>
<td>Pre-Call</td>
<td>PSET 0</td>
</tr>
<tr>
<td>F7-PSET</td>
<td>Preset</td>
<td>PSET 0~PSET 7=0</td>
</tr>
<tr>
<td>F8-IO.USE</td>
<td>Relay Enable/Disable</td>
<td>CH-0~CH-3: OFF</td>
</tr>
<tr>
<td>F9-IO.SET</td>
<td>Relay Output</td>
<td>CH-0~CH-3=0</td>
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## 21. Appendix:

Panel display (number and letter (function) representation):

<table>
<thead>
<tr>
<th>Name</th>
<th>LED Display</th>
<th>Name</th>
<th>LED Display</th>
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<th>LED Display</th>
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<td>A</td>
<td>A</td>
<td>B</td>
<td>b</td>
</tr>
<tr>
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<td>X</td>
<td>Y</td>
<td>y</td>
<td>Z</td>
<td>Z</td>
</tr>
</tbody>
</table>
(2). Technical description:

(a). Absolute mode:

Has the same origin, the position of the origin can not be changed

(b). Relative mode:

The position of the origin can be changed based on your demand