HR series

Proportional single axis thumb controls • non-contacting Hall effect technology • spring to center

DISTINCTIVE FEATURES

Single or dual analog outputs
Backlighting option
5 million lifecycles (without detent)
Electronics sealed to IP68
SIL2 capable

ENVIRONMENTAL SPECIFICATIONS

• Operating & Storage Temperature: -40 °C to +85 °C (-40 °F to +185 °F)
• Electronics sealed to IP68 according IEC 60529
• EMC Immunity Level: EN61000-4-3 and ISO 11452-2 (100 V/m)
• EMC Emissions Level: EN61000-6-3: 2001
• ESD: 16KV according to EN61000-4-2
• Shock resistance: 50 g during 11 ms
• Vibration resistance: 10-500Hz - 5g according to IEC 512-4, test 6d
• Salt spray: IEC 512-6, test 11f

ELECTRICAL SPECIFICATIONS

• Supply Voltage Range: 5 VDC ± 0.50 VDC
• Reverse Polarity Max: -10 VDC max
• Overvoltage Max: 20 V
• Consumption: 16 mA (single output), 32 mA (dual output) max
• Return to Center Voltage Tolerance (no load): 2.5 VDC ± 0.2 VDC
• LED supply: 6 VDC 10 mA

GENERAL SPECIFICATIONS

• APEM SAS patented design
• Operating Force: 4 N ± 0.5N (with detent); 2 N ±0.5 N (without detent)
• Mechanical Angle of Movement: ± 35° (versions S/G/L); ± 20° (version K)
• Expected Life: 5 million lifecycles
• Mass/Weight: 11 g ± 2 g (0.4 oz ± 0.07 oz)

The company reserves the right to change specifications without notice.
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MATERIALS

- Body: Polyamide
- Wheel: Polyamide
- Electronics sealing: epoxy
- Connector: polyester (Molex 0510210700)
- Multiwire lead AWG28

MOUNTING

CONNECTIONS

SINGLE OUTPUT WITHOUT BACKLIGHTING

<table>
<thead>
<tr>
<th>PIN</th>
<th>FUNCTION</th>
<th>COLOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Power supply: +VDC 5 V</td>
<td>Red</td>
</tr>
<tr>
<td>3</td>
<td></td>
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<td>4</td>
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<td>5</td>
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<tr>
<td>6</td>
<td>Output</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Ground 0V</td>
<td>Black</td>
</tr>
</tbody>
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SINGLE OUTPUT WITH BACKLIGHTING

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<td>3</td>
<td>LED +</td>
<td>Yellow</td>
</tr>
<tr>
<td>4</td>
<td>LED -</td>
<td>Blue</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Output</td>
<td>White</td>
</tr>
<tr>
<td>7</td>
<td>Ground 0V</td>
<td>Black</td>
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DUAL OUTPUT WITHOUT BACKLIGHTING

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<tr>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Output 2</td>
<td>Green</td>
</tr>
<tr>
<td>6</td>
<td>Output 1</td>
<td>White</td>
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<tr>
<td>7</td>
<td>Ground 0V</td>
<td>Black</td>
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DUAL OUTPUT WITH BACKLIGHTING

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<td>LED +</td>
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<td>LED -</td>
<td>Blue</td>
</tr>
<tr>
<td>5</td>
<td>Output 2</td>
<td>Green</td>
</tr>
<tr>
<td>6</td>
<td>Output 1</td>
<td>White</td>
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<tr>
<td>7</td>
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Wiring harness with multiwire leads
AWG28 - Length 140mm (5.51in)
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BUILD YOUR PART NUMBER

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SERIES

HR

ACTUATOR

S Wheel with 1 tab
G Reversed wheel with 1 tab
K Wheel with 2 tabs
L Wheel without tab

MOUNTING OPTIONS

2 Rear

WHEEL COLORS

1 Blue
2 Black
3 Green
5 Yellow
6 Red
7 White
9 Orange

BACKLIGHTING

1 Yes
0 No

OUTPUT OPTIONS

A Single 0 V to 5 V
B Single 0.5 V to 4.5 V
C Dual 0 V to 5 V
D Dual 0.5 V to 4.5 V
E Inverse dual 0.5 V to 4.5 V
F Inverse dual 0 V to 5 V

MECHANICAL FUNCTIONS

0 Spring to center, without center detent
1 Spring to center, with center detent

NOTE:
Other detent options available upon request.
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WHEEL WITH 1 TAB - OPTION S

REVERSED WHEEL WITH 1 TAB - OPTION G

WHEEL WITH 2 TABS - OPTION K

WHEEL WITHOUT TAB - OPTION L
VOLTAGE OUTPUT OPTIONS

**Output 1**

A Single 0 V to 5 V

B Single 0.5 V to 4.5 V

C Dual 0 V to 5 V

D Dual 0.5 V to 4.5 V

E Inverse dual 0.5 V to 4.5 V

F Inverse dual 0 V to 5 V

**Note:** The output voltage cannot be superior to the power supply voltage. For 0 V to 5 V versions, the power supply should not be lower than 5 V.