

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 \pm 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 \pm 0.2 VDC
- LED supply : 6 VDC 10 mA



GENERAL SPECIFICATIONS

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

The company reserves the right to change specifications without notice.



HR series

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

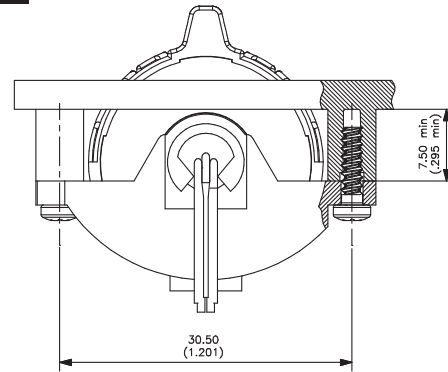


MATERIALS

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



MOUNTING



CONNECTIONS

SINGLE OUTPUT WITHOUT BACKLIGHTING

| PIN | FUNCTION | COLOR |
|-----|------------------------|-------|
| 1 | | |
| 2 | Power supply: +VDC 5 V | Red |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | Output | |
| 7 | Ground 0V | Black |

SINGLE OUTPUT WITH BACKLIGHTING

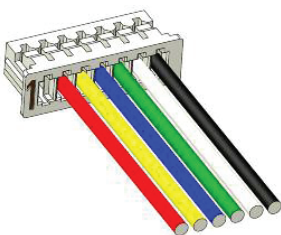
| PIN | FUNCTION | COLOR |
|-----|------------------------|--------|
| 1 | | |
| 2 | Power supply: +VDC 5 V | Red |
| 3 | LED + | Yellow |
| 4 | LED - | Blue |
| 5 | | |
| 6 | Output | White |
| 7 | Ground 0 V | Black |

DUAL OUTPUT WITHOUT BACKLIGHTING

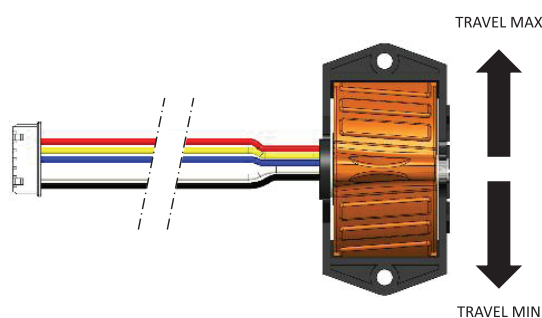
| PIN | FUNCTION | COLOR |
|-----|------------------------|-------|
| 1 | | |
| 2 | Power supply: +VDC 5 V | Red |
| 3 | | |
| 4 | | |
| 5 | Output 2 | Green |
| 6 | Output 1 | White |
| 7 | Ground 0 V | Black |

DUAL OUTPUT WITH BACKLIGHTING

| PIN | FUNCTION | COLOR |
|-----|------------------------|--------|
| 1 | | |
| 2 | Power supply: +VDC 5 V | Red |
| 3 | LED + | Yellow |
| 4 | LED - | Blue |
| 5 | Output 2 | Green |
| 6 | Output 1 | White |
| 7 | Ground 0 V | Black |



Wiring harness with multiwire leads
AWG28 - Length 140mm (5.51in)



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



BUILD YOUR PART NUMBER



HR

SERIES

—

ACTUATOR

—

MOUNTING OPTIONS

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

- 2** Rear



—

BACKLIGHTING

- 1** Yes
- 0** No

—

WHEEL COLORS

- 1** Blue
- B** Dark blue
- 2** Black
- 3** Green
- 5** Yellow
- 6** Red
- 7** White
- 9** Orange

—

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

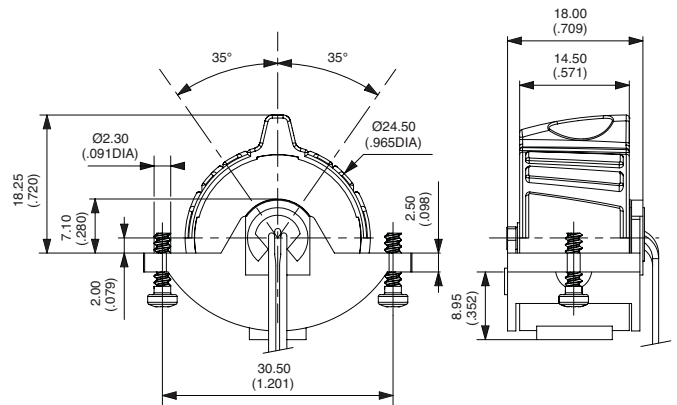
- 0** Spring to center, without center detent
- 1** Spring to center, with center detent

NOTE:
Other detent options available upon request.

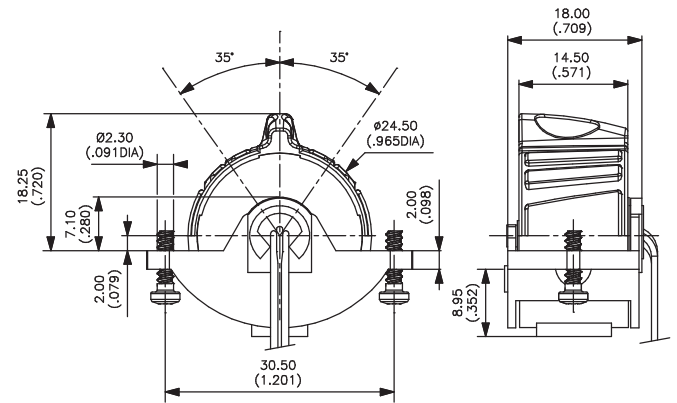
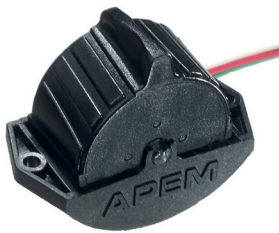
HR series

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

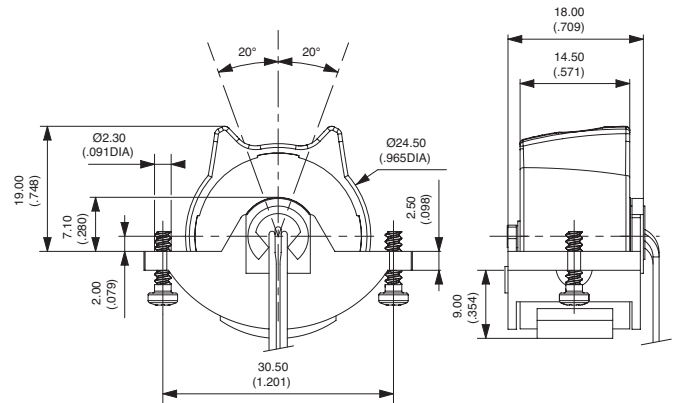
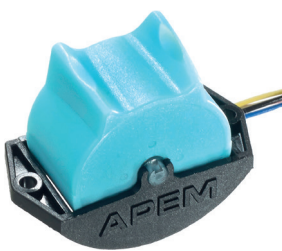
WHEEL WITH 1 TAB - OPTION S



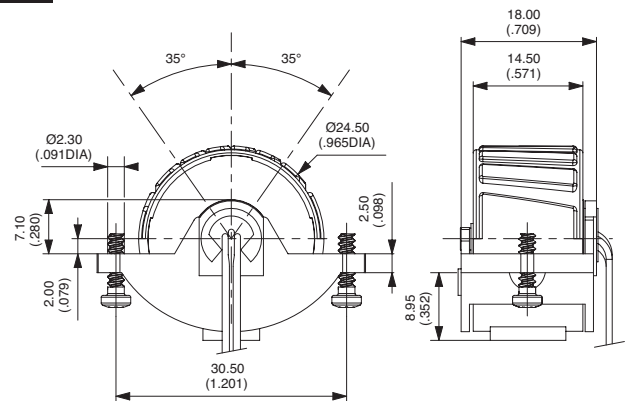
REVERSED WHEEL WITH 1 TAB - OPTION G



WHEEL WITH 2 TABS - OPTION K



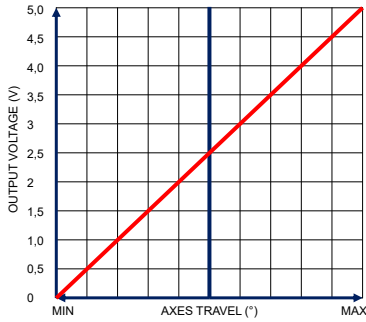
WHEEL WITHOUT TAB - OPTION L



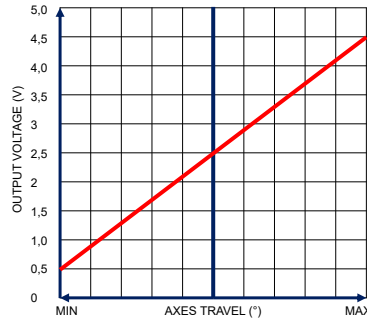
Proportional single axis thumb controls • non-contacting Hall effect technology • spring to center



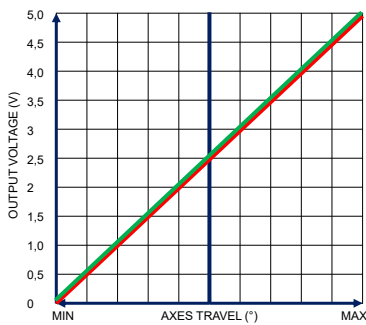
VOLTAGE OUTPUT OPTIONS



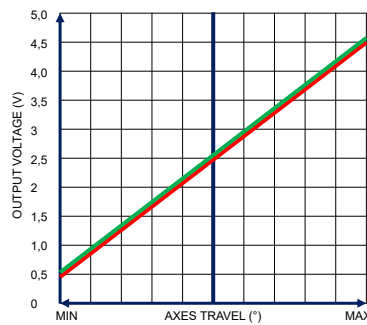
A Single 0 V to 5 V



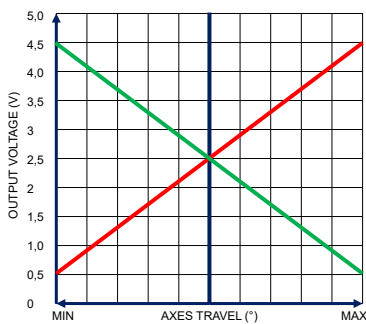
B Single 0.5 V to 4.5 V



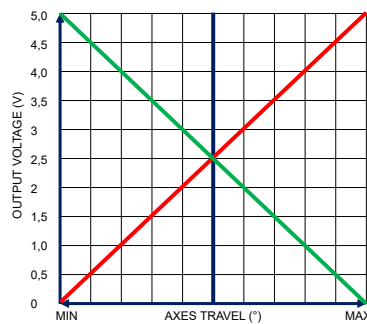
C Dual 0 V to 5 V



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

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.