

# 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 Temperature: -30 °C to +70 °C (-22 °F to +158 °F)
- 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

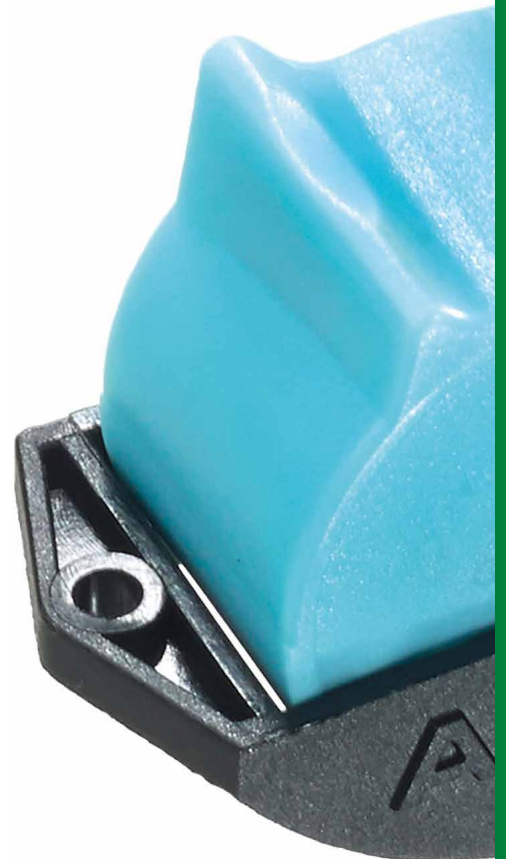
- Supply Voltage Range: 5 VDC  $\pm$  0.50 VDC
- Reverse Polarity Max: -10 VDC max
- Overvoltage Max: 20 V
- Consumption: 11 mA max (single output), 22 mA max (dual output)
- Return to Center Voltage Tolerance (no load): 2.5 VDC  $\pm$  0.2 VDC
- LED supply : 6 VDC 10 mA



## 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.



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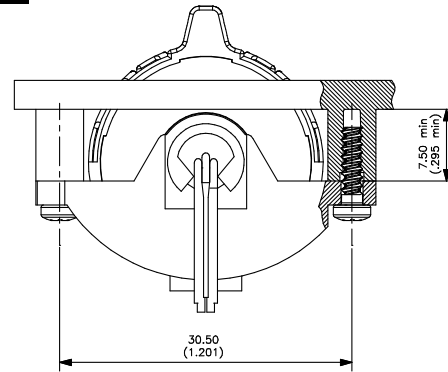


## MATERIALS

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



## MOUNTING



## CONNECTIONS

### SINGLE OUTPUT WITHOUT BACKLIGHTING

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

### SINGLE OUTPUT WITH BACKLIGHTING

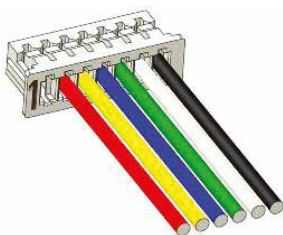
PIN	FUNCTION	COLOR
1		
2	Power supply: +VDC 5 V	Red
3	LED +	Yellow
4	LED -	Blue
5		
6	Output	White
7	Ground 0 V	Black

### DUAL OUTPUT WITHOUT BACKLIGHTING

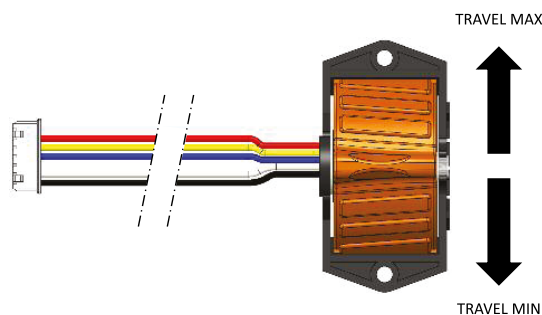
PIN	FUNCTION	COLOR
1		
2	Power supply: +VDC 5 V	Red
3		
4		
5	Output 2	Green
6	Output 1	White
7	Ground 0 V	Black

### 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)



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## BUILD YOUR PART NUMBER



## ABOUT THIS SERIES

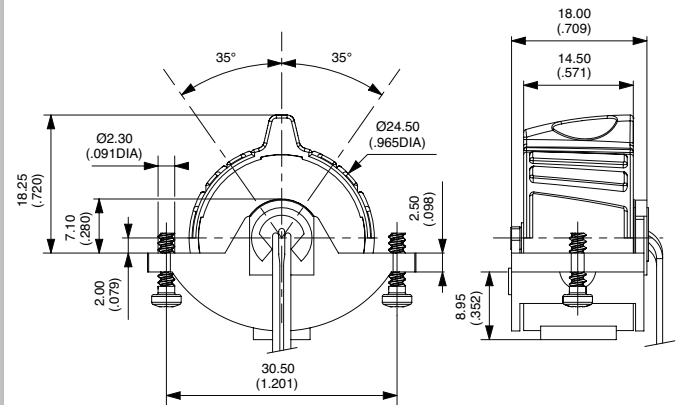


**Mounting accessories :** Standard hardware supplied : 2 self-tapping screws DELTA PT® 22x08 for plastic..

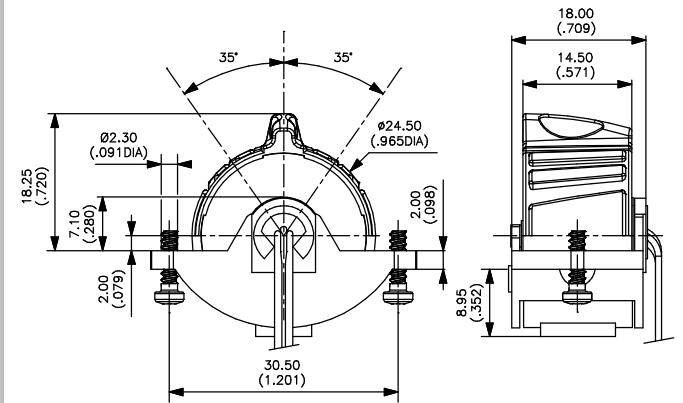
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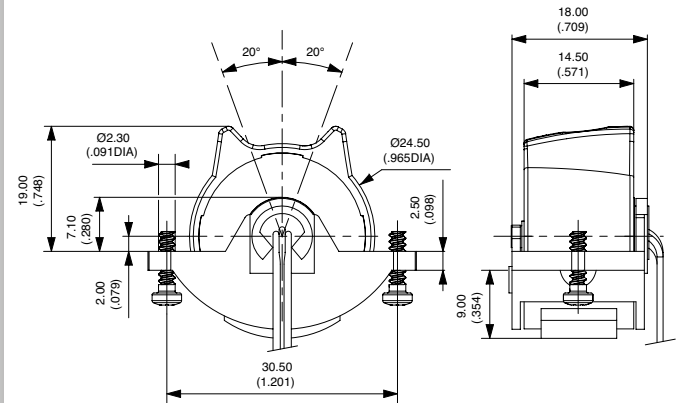
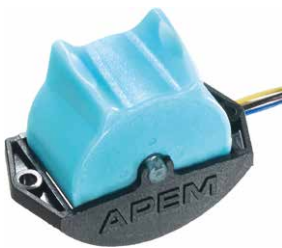
## WHEEL WITH 1 TAB - OPTION S



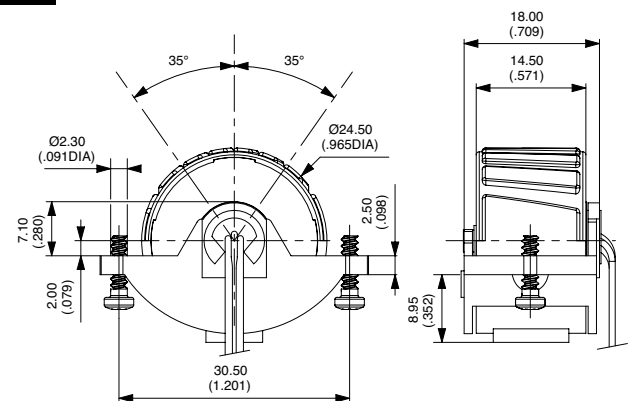
## REVERSED WHEEL WITH 1 TAB - OPTION G



## WHEEL WITH 2 TABS - OPTION K



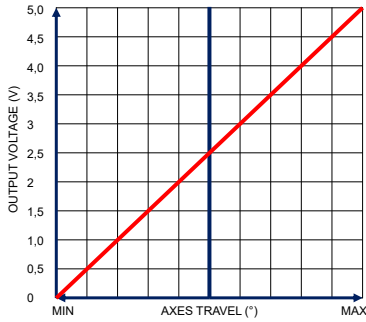
## WHEEL WITHOUT TAB - OPTION L



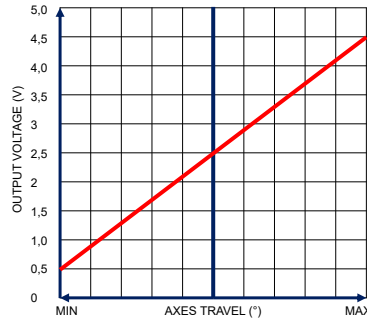
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## VOLTAGE OUTPUT OPTIONS

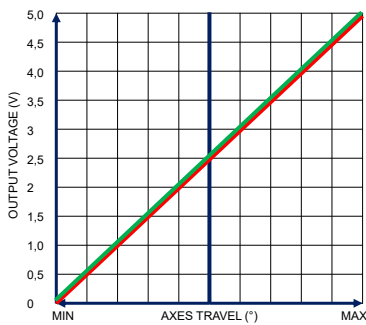


A Single 0 V to 5 V

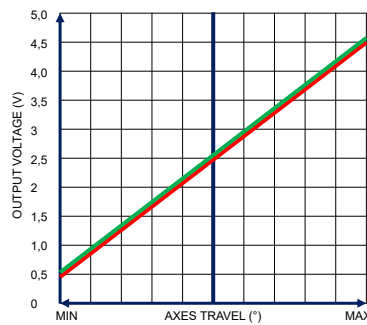


B Single 0.5 V to 4.5 V

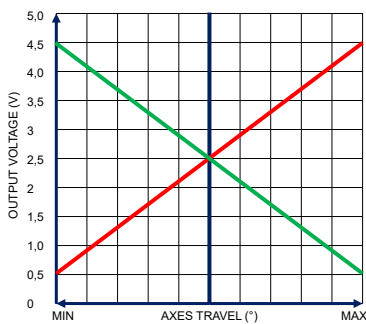
— Output 1  
— Output 2



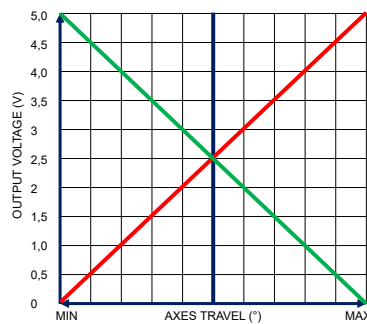
C Dual 0 V to 5 V



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.