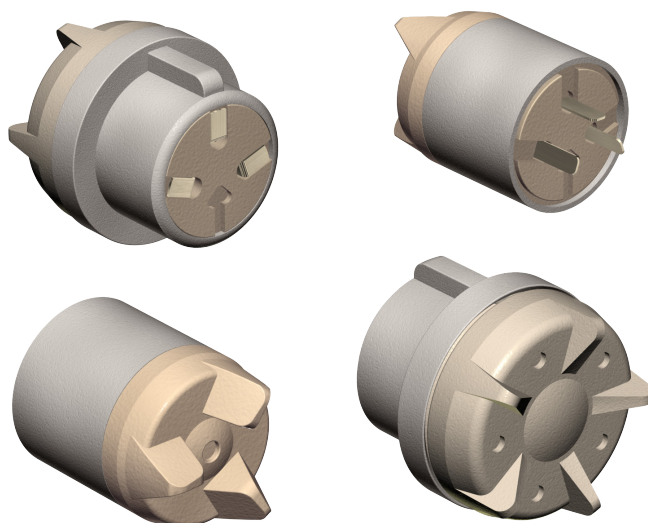
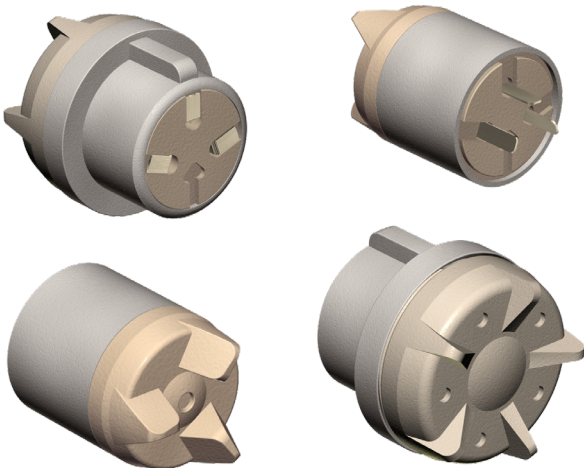




Volume Controls Model DCU 254



Features

- 2nd generation Digital Control Unit
- Continuous rotation, no end stop
- For ITE-applications
- Switching diagram similar to DCU 93 and DCU 193 3-terminal diagram
- Housing diameter 2.54 mm [0.1"]
- TAB-style solder terminals
- Solder terminal material PdAg for excellent solder ability and corrosion resistance
- 10 pulses per rotation

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Sonion reserves the right to make changes at any time to improve reliability, function or design, in order to provide the best product possible.

1. History Revision

Revision Number/Date	Change from last revision
02 / Nov 06	History revision added. Switch contact lifetime changed to 10,000 cycles
MT1037.A (07/08)	No technical updates
003/JUL-14-09	No technical updates
004/NOV-26-09	Housing style no. 04 added. Storage humidity added. Operational temperature and humidity removed
005/MAY-25-10	Added that Knob Style no. 101 also fits Housing Style no. 04
006/2014-01-10	Updated design and new RoHS logo directive (2011/65/EU)
007/2019-09-03	Change of storage temperature and humidity (CR3860)

2. Mechanical Specifications

Rotational angle	Continuous rotation, no end stop
Rotational speed	Min. 4 rpm. Max. 60 rpm
Rotational torque	Min. 2 cNcm. Max. 8 cNcm

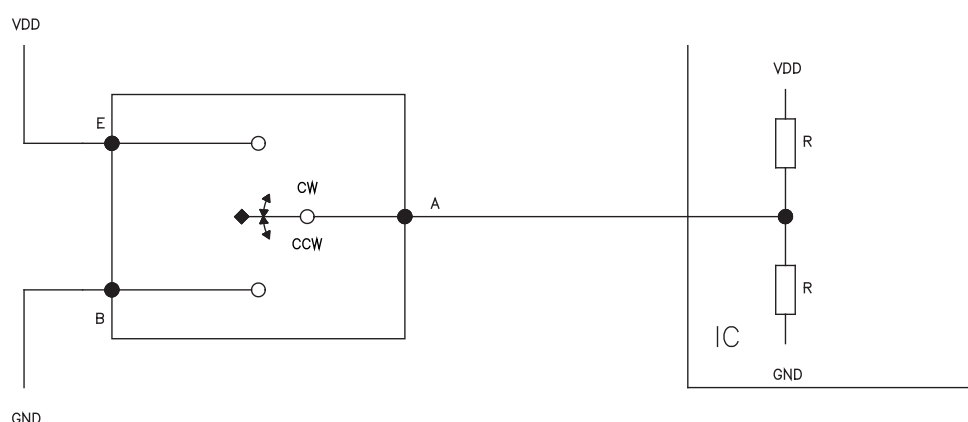
Switch contact lifetime	Min. 10,000 cycles, 95% confidence. 1 cycle = 360° CW followed by 360° CCW rotation.
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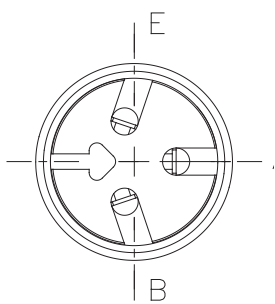
Knob retention force:	
Housing Style No. 01	Min. 6 N
Housing Style Nos. 02 and 04	Min. 12 N after humidity exposure IEC 60068-2-38
Terminal retention force	Min. 5 N

3. Electrical Specifications

Number of pulses per rotation	10 pulses. Pulses are interpreted as changes in the internal switch state
Switching current	Max. 0.1 mA
Contact resistance	Max. 500 mΩ
Insulation resistance	Min. 1 MΩ
Parasitic capacitance	Max. 10 pF between any two leads
Pulse width	10° - 27°
Bounce time	Max. 20 mS. Measured at 25 rpm, 2 μA and 0.7 V
Pulse counting accuracy	1 pulse per 100 pulses. Measured at 25 rpm

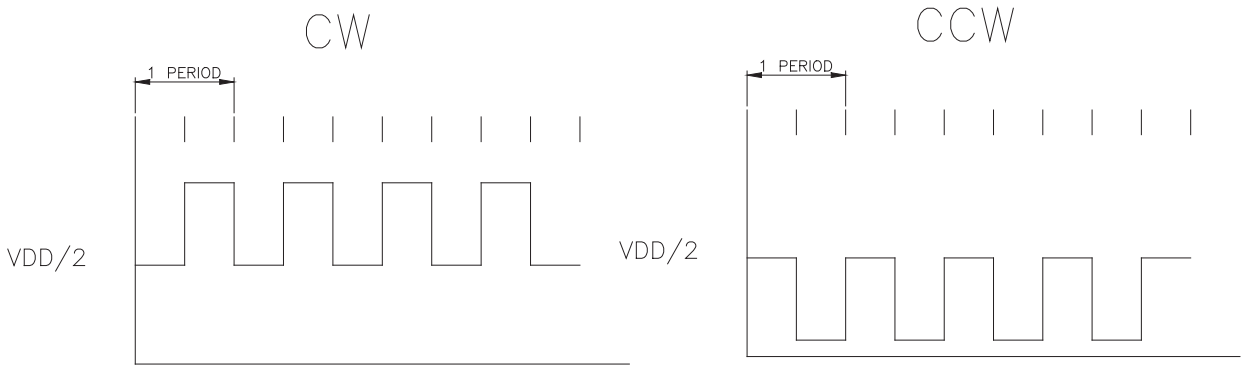
4. Switching Diagram





State Diagram

Static	CW Rotation	CCW Rotation
Undefined	A Pulses to E	A Pulses to B



5.Materials Specifications

All materials comply with RoHS directive (2011/65/EU)

Solder terminals	PdAg
Knob	PA 6.6
Timing gear	PA 6.6
Base	LCP
Housing Style No. 01	LCP
Housing Style Nos. 02 and 04	PA 6.6

Lubricant, glue / seal, and paint specifications are proprietary information.

6.Environmental Conditions

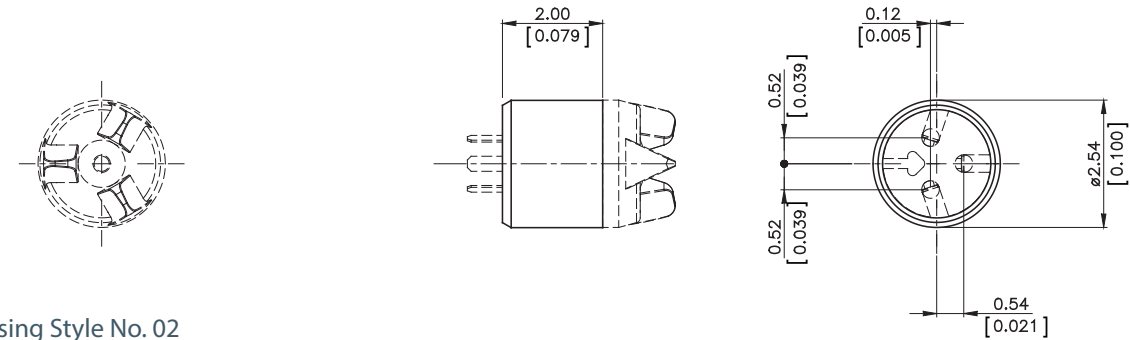
Storage temperature	25°C
Storage humidity	60% RH
Purpose is to protect from high humidity and keep at driest condition as possible	

7.Processing Conditions

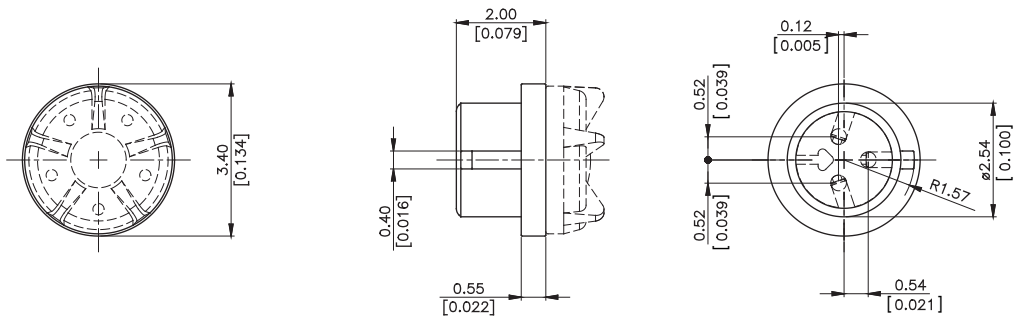
Gluing	
Recommended types of glue	Non-blooming cyanoacrylates, i.e Loctite 401, 408, 460, and Sicomet 50, 63, 77 Non-blooming types must be used to ensure that residuals from the curing process do not degrade the component
Soldering	
Soldering temperature and time	300°C [572°F] for 3 s or 350°C [662°F] for 1 s
Soldering distance:	Min. 0.5 mm [0.02"] from housing
Bending of solder terminals:	Min. 1 bending cycle 90° with 25 g load Mechanical stress on soldering terminals must be avoided during soldering
Cleaning	
Recommended cleaning solvents	For example aqua wash with Alpha 2110 or benzine Ultrasonic cleaning must be avoided as it may remove the lubricant inside the component

8.Mechanical Dimensions

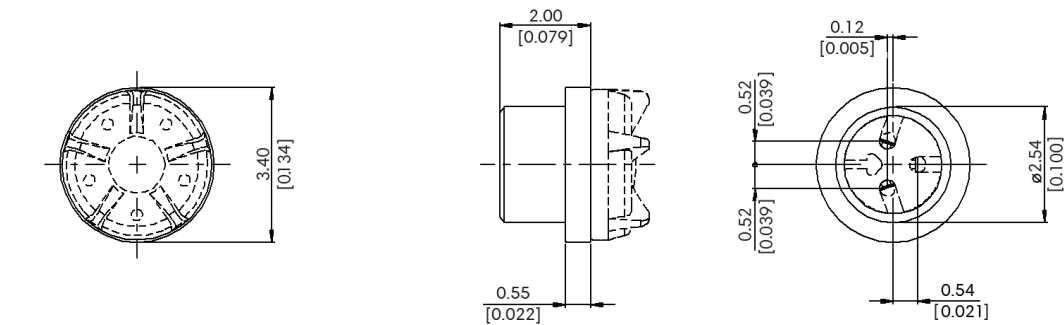
Housing Style No. 01



Housing Style No. 02

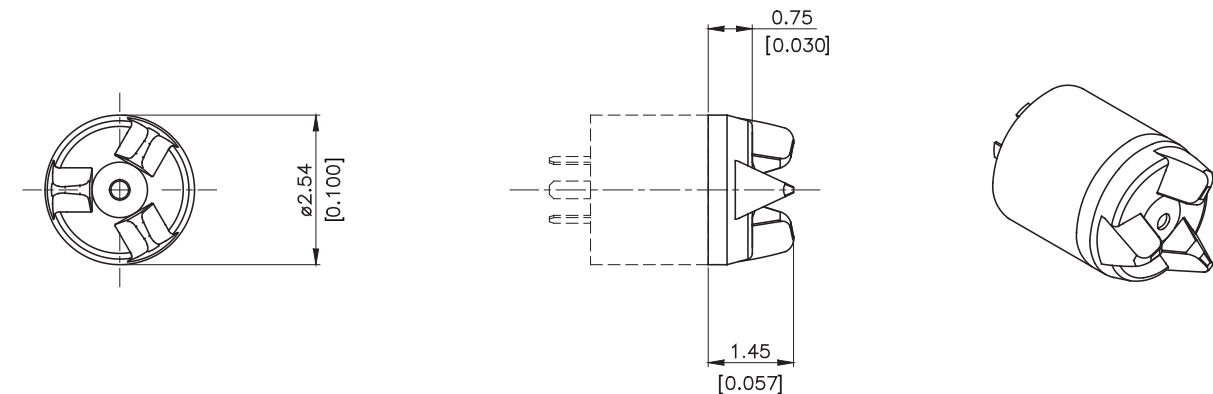


Housing Style No. 04

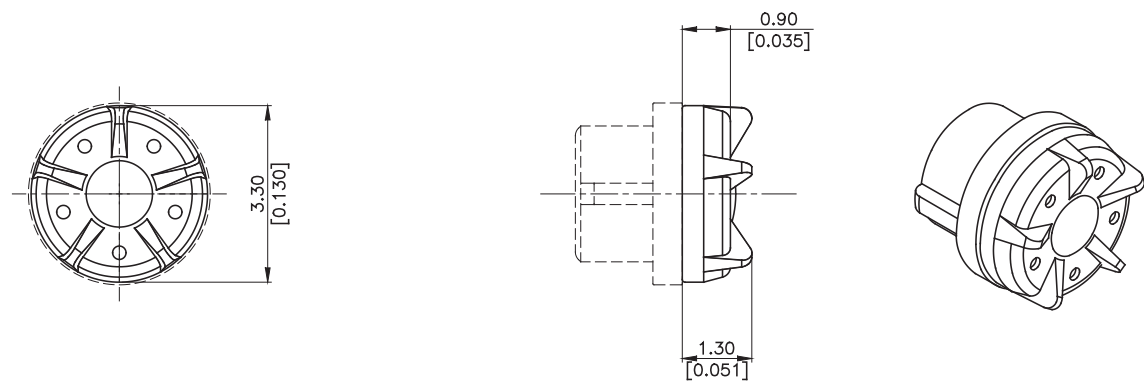


9. Knob Styles

No. 01 - Fits Housing Style No. 01 only

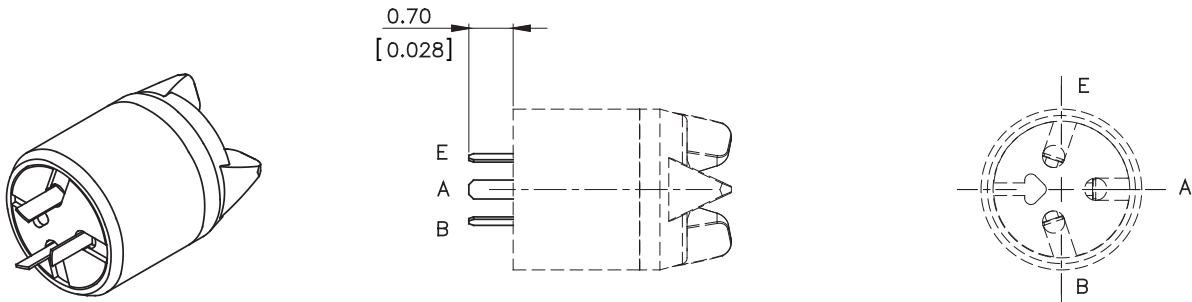


No. 101 - Fits Housing Style Nos. 02 and 04 only

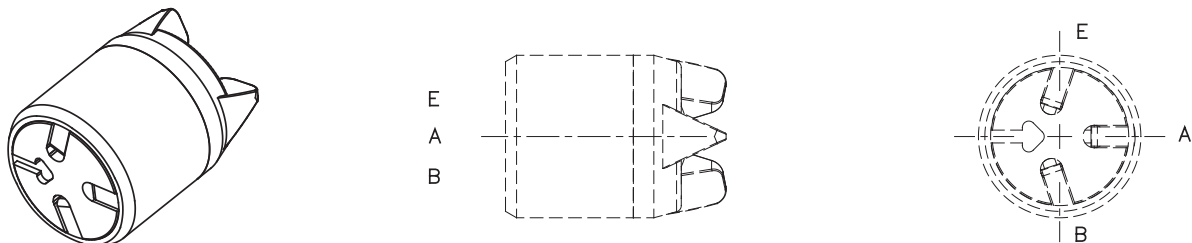


10. Terminal Styles

No. 01



No. 02



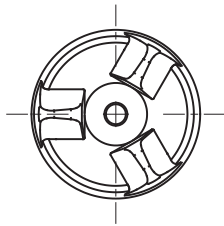
11. Knob Plastic Colors

Please refer to the series 100 included in the Sonion 'Plastic Color Assortment' binder

12. Color Coding

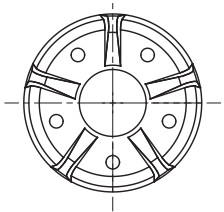
Knob Style No. 01

Blue or red marking in centre of knob is possible



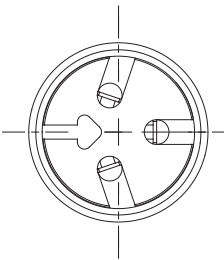
Knob Style No. 101

Blue or red marking in one indentation is possible



Bottom

Blue or red marking of the base is possible



13. Product Specification Form

Name _____

Company _____

Customer Part No. _____

Parameters	Look at Page	Enter your choices	Guidelines
Model	2	DCU 254	
Housing Styles	6-7		Please enter Housing Style Nos. 01, 02 or 04
Knob Styles	7		Please enter Knob Style No. 01 or No. 101 Knob Style No. 01 fits Housing Style No. 01 only Knob Style No. 101 fits Housing Style Nos. 02 and 04 only
Terminal Styles	8		Please enter Terminal Style No. 01 or No. 02
Housing Colors			Housing Style No. 01 available in LCP uncolored only Housing Style No. 02 available in color No. 100 and 131
Knob Plastic Colors	9		Please refer to the series 100 included in the Sonion 'Plastic Color Assortment' binder
Color Coding	9		Knob If wanted, please enter red or blue
	9		Arrow at bottom If wanted, please enter red or blue