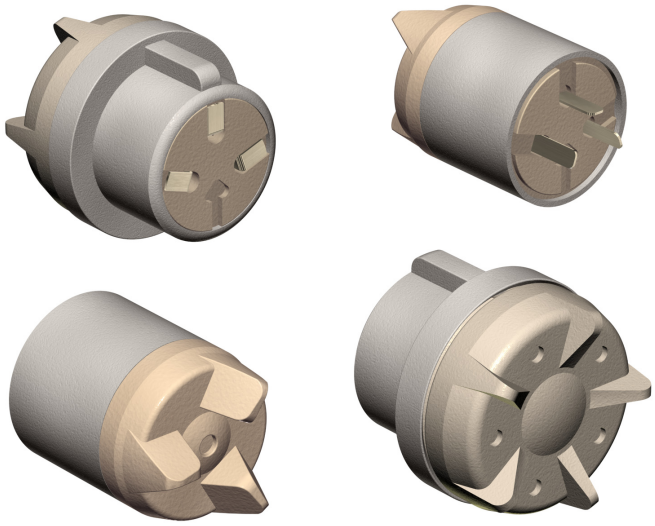
Data Sheet

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



Contents

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

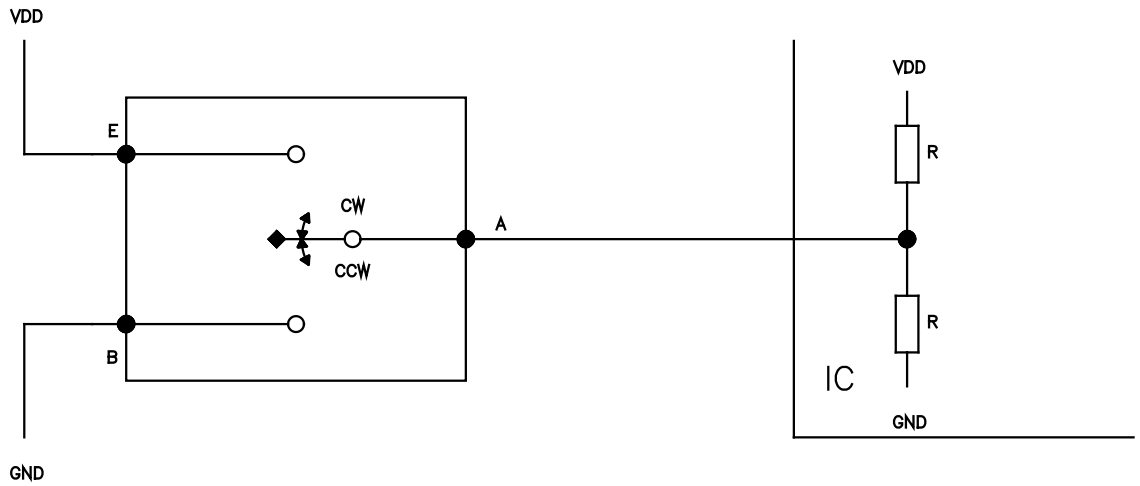
Mechanical Specifications

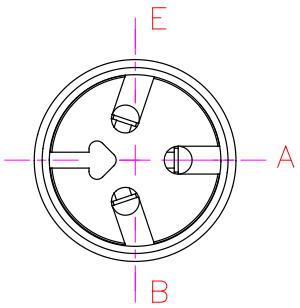
Rotational angle	Continuous rotation, no end stop
Rotational speed	Min. 4 rpm. Max. 60 rpm
Rotational torque	Min. 2 cNcm. Max. 8 cNcm
Switch contact lifetime	Min. 10,000 cycles, 95% confidence. 1 cycle = 360° CW followed by 360° CCW rotation.
Knob retention force:	
Housing Style No. 01	Min. 6 N
Housing Style Nos. 02 and 04	Min. 12 N after humidity exposure IEC 60068-2-38
Terminal retention force	Min. 5 N

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

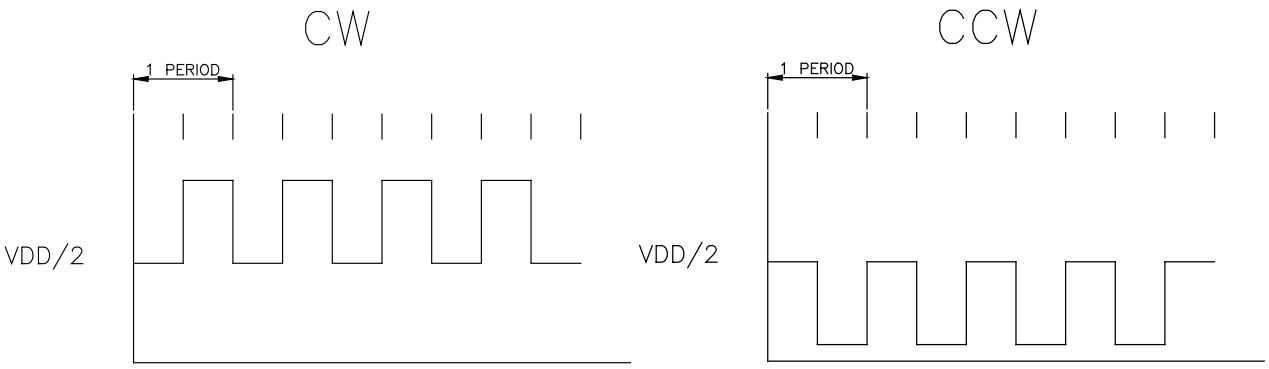
Switching Diagram





State Diagram

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



Materials Specifications

All materials comply with RoHS directive (2002/95/EC)

RoHS 2002/95/EC

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.

Environmental Conditions

Storage temperature . . . . . -40 to +60°C
Storage humidity . . . . . 10 to 95% RH

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

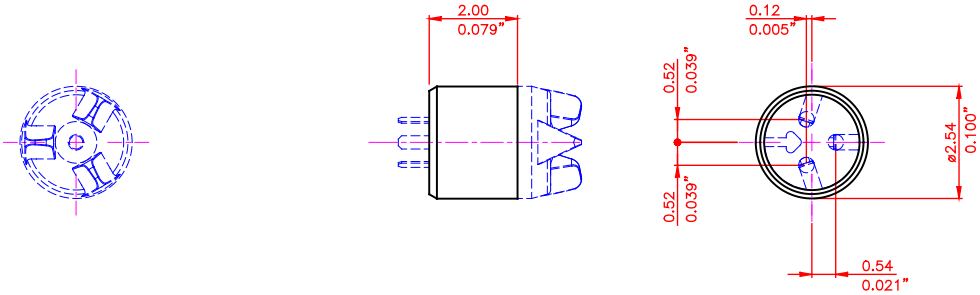
Cleaning:

Recommended cleaning solvents . . . . . For example aqua wash with Alpha 2110 or benzine

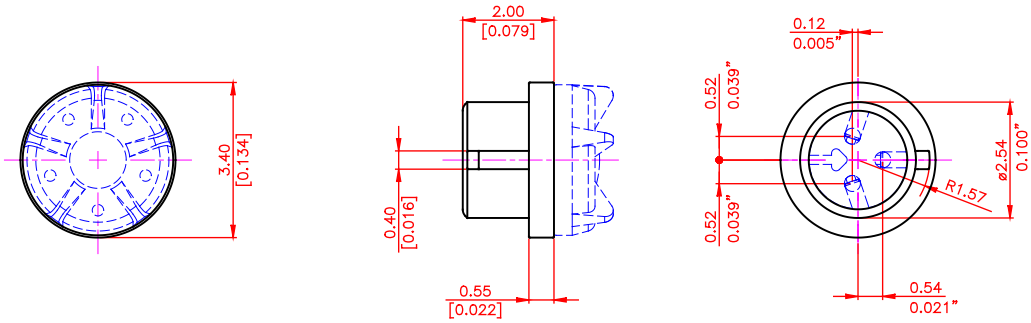
Ultrasonic cleaning must be avoided as it may remove the lubricant inside the component

Mechanical Dimensions

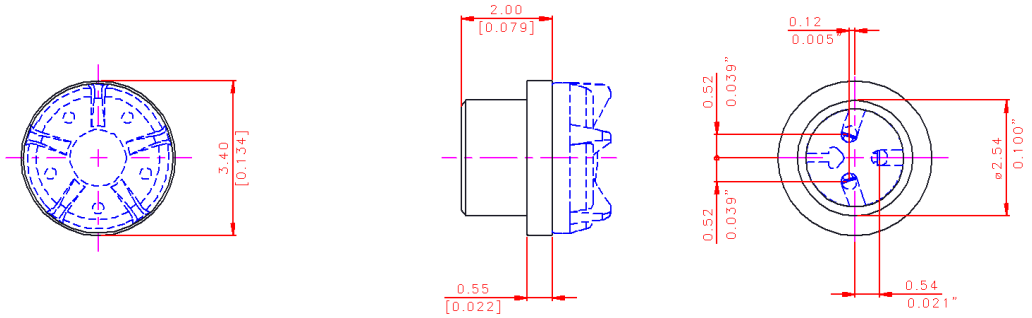
Housing Style No. 01



Housing Style No. 02

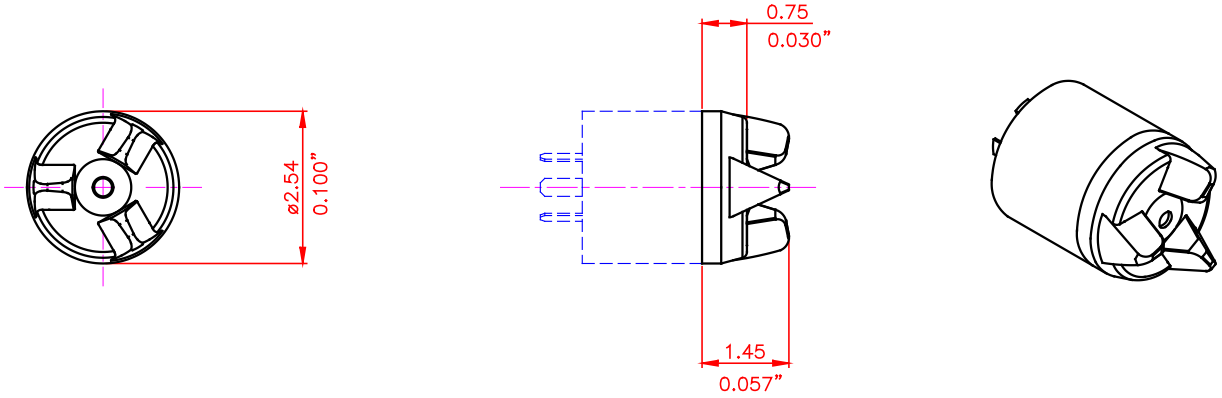


Housing Style No. 04

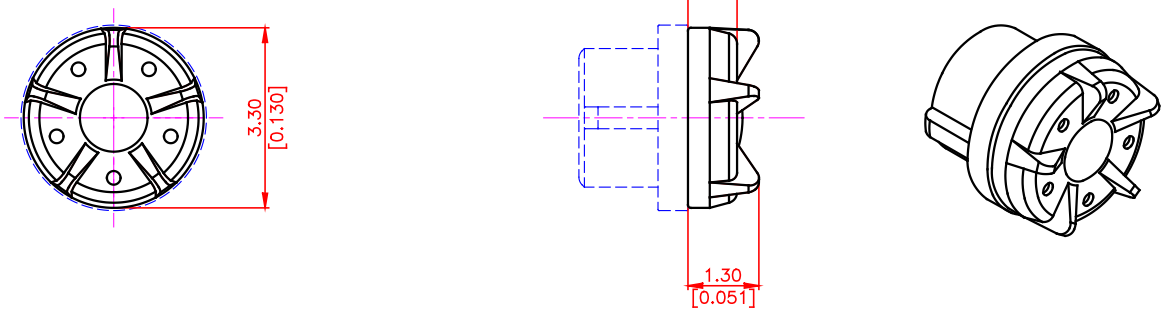


Knob Styles

No. 01 - Fits Housing Style No. 01 only

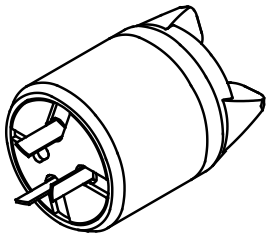


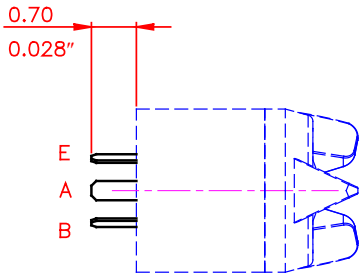
No. 101 - Fits Housing Style Nos. 02 and 04 only

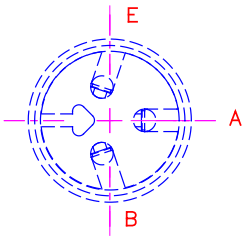


Terminal Styles

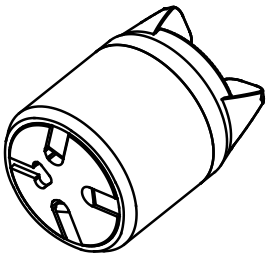
No. 01

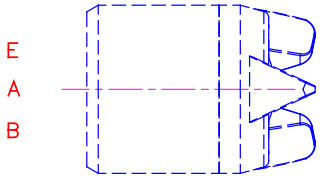


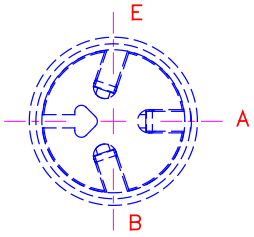




No. 02





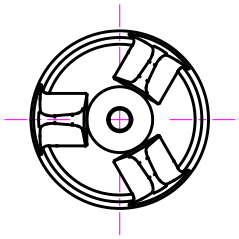


Knob Plastic Colors

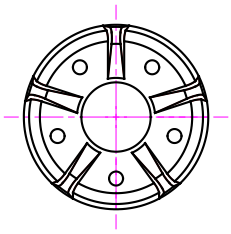
Please refer to the series 100 included in the Sonion 'Plastic Color Assortment' binder

Color Coding

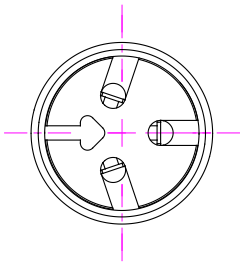
Knob Style No. 01
Blue or red marking in centre of knob is possible



Knob Style No. 101
Blue or red marking in one indentation is possible



Bottom
Blue or red marking of the base is possible



Product Specification Form

Name: _____

Company: _____ **Customer Part No.:** _____

Parameters	Look at Page	Enter your choices	Guidelines
Model	1	DCU 254	
Housing Styles	5		Please enter Housing Style Nos. 01, 02 or 04
Knob Styles	6		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	6-7		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	7		Please refer to the series 100 included in the Sonion 'Plastic Color Assortment' binder
Color Coding	7		Knob If wanted, please enter red or blue
	7		Arrow at bottom If wanted, please enter red or blue