

# CS1

## ULTRA COMPACT – EXTREMELY RUGGED JOYSTICK CONTROLLER

### Construction:

The **CS1** is an extremely rugged Joystick in an ultra-compact and versatile design. The durable housing and heavy stainless steel gimbal yokes make this device resistant to abuse and ideally suited for high duty cycle applications.

Single and dual axis control is available as well as a variety of standard and custom handles and grips with push-buttons and triggers. Both separate and simultaneous operation of each axis is achieved with standard and custom gate patterns.

### Application:

For use on Bucket Trucks, Truck Mounted Cranes, Construction, Agricultural, Mining, Forestry and Airport Ground Support equipment.

### Features:

- Rugged construction (stainless steel gimbal yokes)
- Ultra – Compact design
- Corrosion resistant components
- Single and dual axis operation.
- Standard and custom switching gates.
- 8 Single Pole Double Throw 5A 125VAC contacts, each axis. (4) with potentiometer.
- Built in conductive plastic potentiometers or Hall-effect sensors for proportional control in a compact and reliable package.
- High life design
- PFC-CR, PFC or MPFC Proportional Feathering Control electronics each axis for controlling Electro-Hydraulic Proportional Valves.
- 10 Amp V3 micro switches available for Bang/Bang control.
- Variety of handle actuated deadman functions and custom handle designs.
- Rugged Mechanical Interlock to prevent inadvertent operation. Mechanical Interlock can be furnished for separate or simultaneous operation.



**CS1V with RHS Rocker handle,  
Internal conductive plastic  
potentiometers and (2) DPDT  
contacts in each axis.**

# CS1 ORDERING INFORMATION

- Basic Assembly:** 4 1/8" Shaft length, 2 piece handle, boot, and 2.84" x 2.84" mounting plate supplied standard.
- Drive Arrangement:** E=1 Axis, V=2 Axis
- Handle:** Reference Handle section for a selection of handle options.
- Contacts:** 5A 125 VAC supplied standard. 10 Amp V3 micro switches for Bang/Bang design.  
Maximum number of Contacts in each axis with out potentiometer = 8.  
Maximum number of Contacts in each axis with Potentiometer = 4.
- Potentiometers:** 0.5 watt 5 million cycles provided standard.
- Electronics:** See PFC, PFC-CR or MPFC (Proportional Feathering Control electronics) for ordering information.

## CS1 Technical Data

### Mechanical:

- **Operating Temperature:** -25° to +70°C
- **Detented Positions:** 0° neutral and 1-0-1
- **Mechanical Life:** 10 million plus cycles.
- **Gear Ratio:** 3.78:1  
**Optional:** 5.23:1
- **Handle Travel:** 2x ± 36°  
**Optional:** 2x ± 26°
- **Potentiometer rotation:** ±136°

### Electrical:

- **Contacts:** 4 Double Pole Double Throw micro switch contacts per axis maximum with potentiometer, 8 maximum without potentiometer.
- **Terminals:** .020 x .110 Quick Disconnect
- **Rating AC:** 5 Amps @ 250 VAC  
1 Amp gold available for dry circuit
- **Internal Potentiometers:** 0.5 watt 5K 3 wire or 4 wire center tap. 5 million revolutions

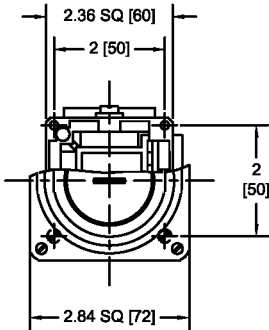
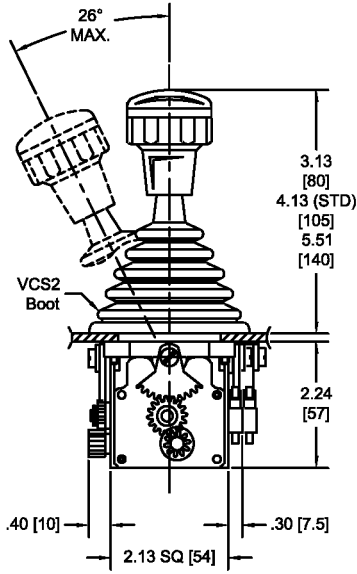
### Bang/Bang Design:

(2) 10Amp Micros per axis, 2x ±20° handle travel, round ball handle, V040KE boot and aluminum mounting plate

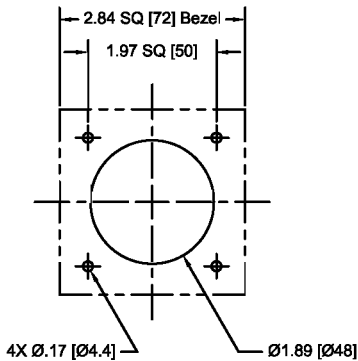
- **Contacts:** Type V3 Micro switch
- **Terminals:** .020 x .187 male quick disconnect
- **Rating AC:** 10 Amp @ 125, 250 VAC  
6 Amps inductive 12-24VDC  
1 Amp gold available for dry circuit

# CS1 DIMENSIONS

CS1 with internal potentiometer and (2) 5A SPDT Micro Switches each axis

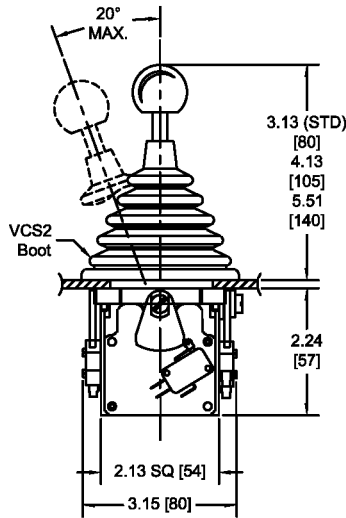


Mounting Dimensions for 2.84" x 2.84" mounting plate

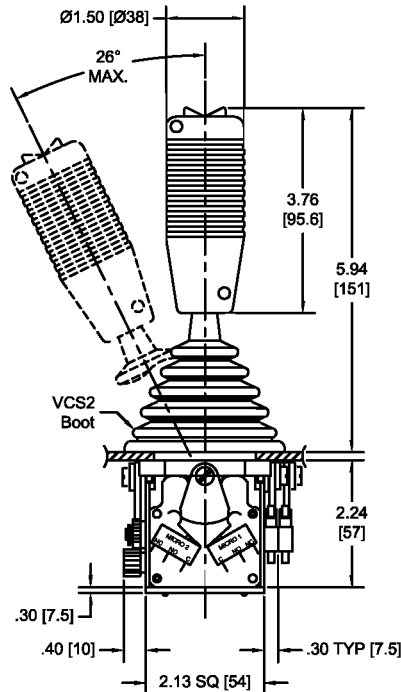


2.224" x 2.224" mounting hole pattern available upon request

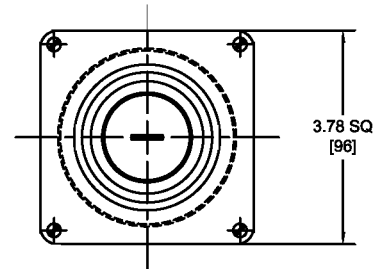
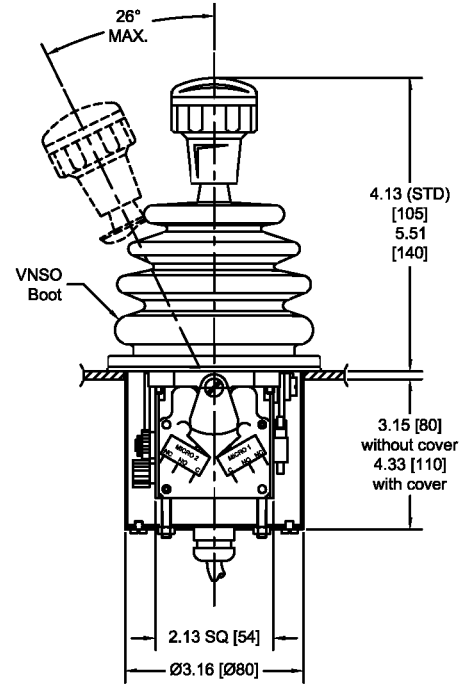
CS1 Bang/Bang with 10A Micro Switches



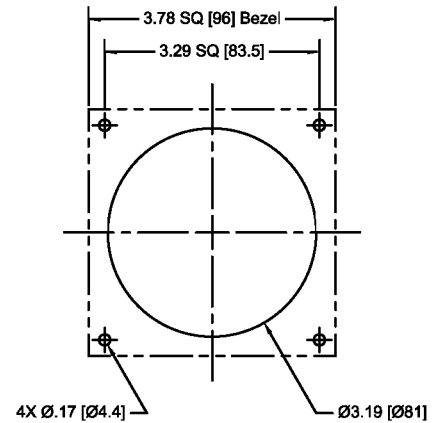
CS1 with internal potentiometer and RHS Rocker Handle



CS1 with Ø3.15 enclosure and 3.78" x 3.78" Front Plate, internal potentiometers and (2) 5A SPDT Micro Switches in each axis



Drop-in Mounting Dimensions for 3.78" x 3.78" mounting plate

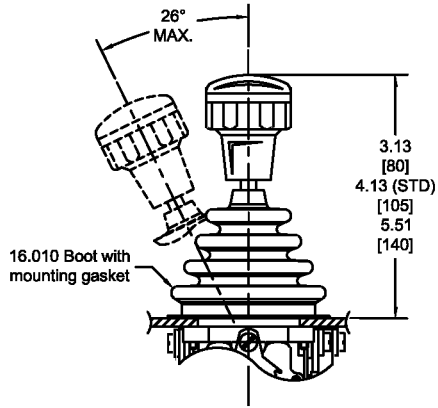


⚠ Important: Consult factory for custom mounting requirements, custom handle travel, and custom handle panel hole requirements.

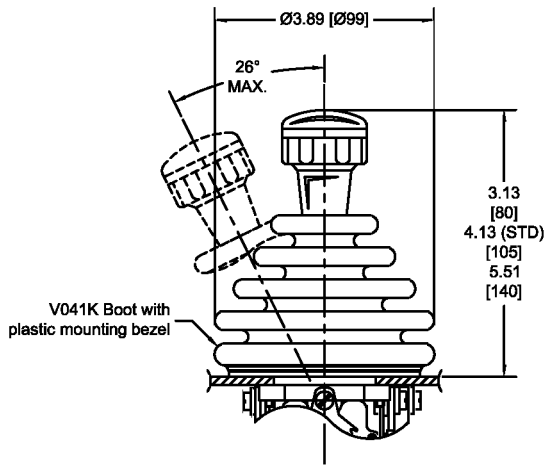
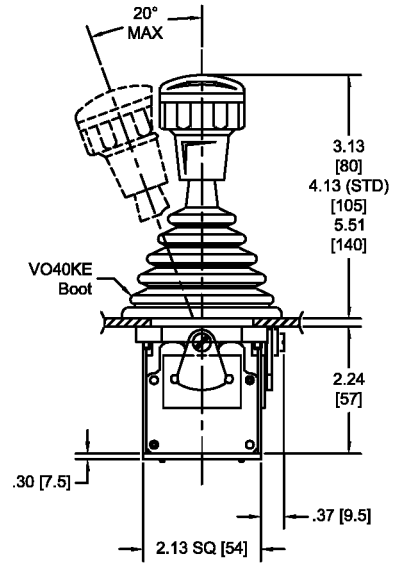
**J.R. MERRITT**  
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# CS1 DIMENSIONS



## CS1 with Hall-Effect Sensor



Mounting Dimensions for  
2.84" x 2.84" plastic mounting bezel

