NS2/NSB2-KB
HEAVY MILL DUTY COMPACT AC & DC
CAST JOYSTICK CONTROLLER

Construction:
The type NS2/NSB2-KB series of joystick controllers are characterized by their versatility and rugged construction for step and stepless AC & DC controls.

Space saving design and popular mounting hole pattern allow for easy replacement of other manufacturer’s master switches.

Your specific control requirements can be accommodated by a variety of standard and custom engineered configurations including a variety of handle options and proportional and discrete outputs.

Application:
For use in steel mills, process lines, foundry cranes, mining shovels, and logging equipment. Widely used on Class E cranes and in-plant process control where duty cycle is continuous.

Features:
- Versatile design
- Cast construction, double ball bearing operating shaft
- Space saving design
- Environmentally sealed, field replaceable torsion spring return system
- 20 Million cycle mechanical operating life
- Rugged 12mm diameter handle shaft
- Corrosion resistant components
- Double pole, field replaceable contacts

Options:
- Maintained or friction held handle
- Large variety of optional handle configurations including; push button, mechanical interlock and rocker switch handle
- Stepped detents (up to 7-0-7)
- DC contacts with magnetic blow outs (NSB2-KB)
- Large selection of proportional outputs including potentiometer, DGO, rotary differential transformer, encoder, 4-20mA, 10V amplifier and CAN bus
- Variety of steel enclosures and pedestals

J.R. MERRITT CONTROLS, INC.
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NS2/NSB2-KB ORDERING INFORMATION

Drive Arrangement: Single axis cast housing
Basic Assembly: 9.5” handle height off of panel and cast housing supplied standard
Handle: 2.0” diameter round ball
Handle Action: Spring Return
Output: Proportional, discrete (AC and DC contacts with magnetic blowouts)
Output Devices: Potentiometer, DGO rotary differential transformer, encoder, 4-20 mA, 10V amplifier and CAN bus

-- NS2-KB Technical Data --

**Mechanical:**
- Mechanical Life: 20 million cycles
- Gear Ratio: 3:1
- Detented Positions: 7-0-7 max.
- Handle Travel: ±40° max.
- Potentiometer Rotation: ±126°

**Environmental:**
- Operating Temperature: -25 to +70 degrees C
- Storage temperature: -40 to +70 degrees C
- Protection above panel: IP65

**Options:**
- Handle: See handle section for a selection of handle options
- Shaft Length: Please consult factory for special shaft length requirements.
- Handle Action: Friction brake or maintained action
- Gates: Please consult factory for special gate requirements.
- Special Pots: 3 watt – 10 million revolution and 5 watt – 20 million revolution wire wound available. Please consult factory for other special potentiometer requirements.

Please consult factory for other available options not listed.

**Electrical:**
- Contacts: Double pole contact block – 20 circuits max. standard
- AC Rating (NS2-KB)
  - AC continuous 25 amps @ 600 volts
  - AC resistive 20 amps @ 240 volts
  - AC inductive 14 amps @ 240 volts
- DC Rating (NSB2-KB) with Magnetic Blowout:
  - Resistive 5 amps @ 250 volts
  - Inductive 2 amps @ 250 volts
- Maximum Switching Capacity:
  - Making – 160 amps
  - Breaking – (0.7 PF) 240 volts, 160 amps
- Potentiometers: 0.5 watt 5K 3-wire or 10K 4-wire center tap, 5 million revolutions
- Connections: 6 position terminal block with #6 screw terminal
- Rotary Differential Transformers:
  - 115/50 VAC (DGO-1)
  - 220/50 VAC (DGO-2)
  - 115/30/30 VAC (DGO-3)
- Electronics: Encoders, 4-20 mA, pot amplifiers, motor control and CAN bus
- Connections: Varies with product

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NS2/NSB2-KB DIMENSIONS

HANDLE OPTIONS

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<tr>
<th>Detent</th>
<th>&quot;W&quot;</th>
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<tbody>
<tr>
<td>1-0-1</td>
<td>10°</td>
</tr>
<tr>
<td>2-0-2</td>
<td>20°</td>
</tr>
<tr>
<td>3-0-3</td>
<td>30°</td>
</tr>
<tr>
<td>4-0-4</td>
<td>33°</td>
</tr>
<tr>
<td>5-0-5</td>
<td>30°</td>
</tr>
<tr>
<td>6-0-6</td>
<td>37°</td>
</tr>
<tr>
<td>7-0-7</td>
<td>40°</td>
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MOUNTING DETAIL

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<th>Number of double contacts</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
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<tbody>
<tr>
<td>Dimension L1 (in)</td>
<td>2.28</td>
<td>3.15</td>
<td>4.02</td>
<td>4.88</td>
<td>5.75</td>
<td>6.61</td>
<td>7.48</td>
<td>8.35</td>
<td>9.21</td>
<td>10.08</td>
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<tr>
<td>Dimension L1 (mm)</td>
<td>58</td>
<td>80</td>
<td>102</td>
<td>124</td>
<td>146</td>
<td>168</td>
<td>190</td>
<td>212</td>
<td>234</td>
<td>256</td>
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Mechanical interlock

Removable cover

Contact drive can be rotated every 90°

Detent "W"