Application:
The TYPE VNS2 / VNSB2 series of Joystick Controllers are characterized by their unmatched versatility and rugged construction. They provide step and stepless control for AC & DC variable speed drives and electro-hydraulic proportional valves. Applications include: Steel, Rolling Mill and Foundry Cranes, Mining Shovels and Excavators, and Logging Equipment.

Features:
- **Rugged Construction:** Forged nickel chromium gimbal mechanism, hardened bearings.
- **Mechanical Life:** 20 Million cycles.
- **Design Flexibility:** Contact and potentiometer drive locations can be selected to accommodate available panel space. Tandem drive arrangement available for mounting at end or at base of controller.
- **Multi-Axis Control:** 1 or 2 axis control with non-simultaneous or simultaneous handle operation. Both standard and custom switching patterns available.
- **Handle:** Variety of handle styles and handle operated dead-man functions.
- **Precise Step Control:** Up to 7-0-7 individually detented steps in each axis.
- **Contacts:** (10) 25A 600 VAC or 2A 250 VDC inductive double pole field replaceable contacts. DC contacts with magnetic blowouts.
- **Potentiometers:** 0.5 watt 5 million revolution conductive plastic potentiometers furnished standard.
- **Electronics:** Proportional Feathering Control (P.F.C.) electronic amplifiers for operation of Electro-Hydraulic valves and strokers.
- **Enclosures:** Variety of standard steel and fiberglass consoles available; NEMA 1, 3R, 12 and 13.
VNS2 / VNSB2 ORDERING INFORMATION

Basic Assembly: 9.5" handle height, 2-piece handle, boot and mounting plate supplied standard.
Drive Arrangement: See VNS2 Dimensions for selecting contact drive mounting arrangements.
Handle: Reference Handle section for handle options and custom grips.
Shaft length: 8"
Contacts: Each contact block supplied with 2 poles.
Output Devices:
  Potentiometers: 0.5 watt conductive plastic 5 million revolutions furnished standard.
  Specify resistance and type required. (Consult factory for custom requirements).
  Electronics: See Proportional Feathering Control (P.F.C.) and PFC/CR electronics for ordering information.
  Encoder: See OGR8G-M1 8 Bit gray code absolute encoder information sheet.
  Transformer: See DGO 1, 2 & 3 Rotary Inductive Differential Transformer information sheet.

VNS2 TECHNICAL DATA

MECHANICAL:
• Operating Temperature: -25°C to +70°C
• Detented Positions: Up to 7-0-7 Steps.
• Gear Ratio: 3:1 (Handle deflection ±40°, cams and potentiometers ±120°).
  (Other angles available consult factory).
• Mechanical Life: 20 million plus cycles.

ELECTRICAL:
• Contacts: 10 Double pole replaceable blocks and 20 circuits for each axis.
  (Consult factory if additional circuits required)
• Terminals: M5 machine screws
• VNS2 Rating AC:
  a) AC continuous 25 amps @ 600V
  b) AC resistive 20 amps @ 240V
  c) AC inductive 14 amps @ 240V
• VNSB2 Rating DC: (with magnetic blow-out)
  Resistive 5 amps 250V
  Inductive 2 amps 250V
• Max. Switching Capacity:
  Making - 160 amps
  Breaking - (0.7PF) 160 amps 240V
VNS2 / VNSB2 DIMENSIONS

Drive Arrangement Selection Table

<table>
<thead>
<tr>
<th>VNS2-E</th>
<th>VNS2-G</th>
<th>VNS2-A</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Image of VNS2-E]</td>
<td>![Image of VNS2-G]</td>
<td>![Image of VNS2-A]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>VNS2-V</th>
<th>VNS2-M</th>
<th>VNS2-H</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Image of VNS2-V]</td>
<td>![Image of VNS2-M]</td>
<td>![Image of VNS2-H]</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>VNS2-EA</th>
<th>VNS2-AA</th>
<th>VNS2-GG</th>
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<tr>
<td>![Image of VNS2-EA]</td>
<td>![Image of VNS2-AA]</td>
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<th>VNS2-GGA</th>
<th>VNS2-GGEA</th>
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<td>![Image of VNS2-GGEA]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>L1 or L2 Dimensions</th>
<th>2.28</th>
<th>3.15</th>
<th>4.00</th>
<th>4.88</th>
<th>5.75</th>
<th>6.61</th>
<th>7.48</th>
<th>8.35</th>
<th>9.21</th>
<th>10.07</th>
<th>6.0-6</th>
<th>35°</th>
<th>5.75</th>
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<tbody>
<tr>
<td>Double Pole Contact Blocks</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td>7-0-7</td>
<td>40°</td>
<td>6.37</td>
</tr>
</tbody>
</table>

IMPORTANT: Consult factory for critical dimensions and custom options.

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