The CPN1 Duplex Controller is designed to alternate the lead control of two SJE-Rhombus CPN1 or CP3R panels, based on the accumulated run time of each variable frequency drive.

The CPN1 Duplex Controller also controls the lag pump operation in the duplex system, so as to maintain the operating pressure under high demand.

The CPN1 Duplex Controller is designed for indoor installations only.

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**Deep Well Submersible Pump Application**

![Deep Well Submersible Pump Application Diagram]

**Pressure Booster Pump Application**

![Pressure Booster Pump Application Diagram]
Display and Keypad

Changing Lead Shift Hours
Press ESC+UP/DOWN arrows to increment/decrement the hours before the lead pump control is shifted to the other drive.

Manual Lead Shift
Press ESC+RIGHT arrow to manual shift the lead pump control to the other drive.

CPN1/CP3R Applicable Parameter List for Duplex Operation

<table>
<thead>
<tr>
<th>PARAMETERS</th>
<th>DESCRIPTION</th>
<th>RANGE</th>
<th>DEFAULT</th>
<th>TYPICAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>P. 42</td>
<td>Output Frequency Detection</td>
<td>0 to 60Hz</td>
<td>35</td>
<td>35</td>
</tr>
<tr>
<td>P. 132</td>
<td>PID Lower Limit</td>
<td>0 to 100%</td>
<td>50.0</td>
<td>50.0</td>
</tr>
</tbody>
</table>

Output Frequency Detection: (P.42)
The output frequency detection should be set to the frequency below which the lead drive in the duplex system calls for the lag drive to stop operation. This is typically going to be set at or just above the sleep frequency of the lead drive. Parameter must be changed on each CPN1 or CP3R drive.

PID Lower Limit: (P.132)
The PID lower limit should be set to the pressure below which the lead drive in the duplex system calls for the lag drive to start operation. This is typically set below the pressure at which the lead drive starts after sleep mode. Parameter must be changed on each CPN1 or CP3R drive.
Terminal Connections

CPN1 Duplex Controller

**CPN1 1.5 & 3 HP PANELS**
**CP3R 1.5, 3 & 5HP PANELS**

*If a high pressure shutdown switch is used, connect the blue and brown wires in series with the shutdown.*

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120VAC 60Hz

**CPN1/CP3R PANEL #1**

**VFD I/O**
- VFD Running
- Up to Freq
- PID Lower Limit
- PID Upper Limit
- High Speed
- High Pressure
- Shutdown Input

**CPN1/CP3R PANEL #2**

**VFD I/O**
- VFD Running
- Up to Freq
- PID Lower Limit
- PID Upper Limit
- High Speed
- High Pressure
- Shutdown Input

- Status
- P1 Lead
- P1 Lead
- P1 Ready
- P2 Ready
- ESC
- OK