

# Bailey network 90™

## I/O Power Supply NPS10□

### WARNING

DO NOT INSTALL, MAINTAIN OR OPERATE THIS EQUIPMENT WITHOUT READING, UNDERSTANDING AND FOLLOWING PROPER Babcock & Wilcox Bailey Controls INSTRUCTIONS AND MANUALS, OTHERWISE INJURY OR DAMAGE MAY RESULT

### AVERTISSEMENT

NE PAS METTRE EN PLACE, REPARER OU FAIRE FONCTIONNER CE MATERIEL SANS AVOIR LU, COMPRIS ET SUIVI LES INSTRUCTIONS REGLEMENTAIRES DE Babcock & Wilcox Bailey Controls TOUTE NEGLIGENCE A CET EGARD POURRAIT ETRE UNE CAUSE D'ACCIDENT OU DE DEFAILLANCE DU MATERIEL

### Receiving, Handling and Storage

Upon receipt, the unit should be examined for possible damage in transit. If damage is found or if there is any evidence of rough handling, a damage claim should be filed with the responsible transportation company and the nearest Bailey Sales Office should be notified.

Storage should make use of original packing material and container. The storage environment should be protected and should be free of all environmental extremes, including temperature, moisture and air quality conditions.

### Description

The I/O Power Supplies mount in the I/O Power Panel (Product Instruction E93-909-3). These power supplies provide 24 V dc or 125 V dc which is used to power controller outputs, two-wire transmitters, field contacts and Digital Control Stations.

Nomenclature and part numbers for the I/O Power Supplies are given in Table A.

| Nomenclature | Output Power | Line Voltage, Frequency        | Part Number |
|--------------|--------------|--------------------------------|-------------|
| NPS101       | 24 V dc      | 120 V ac, 60 Hz. source        | 1946817-024 |
| NPS102       | 125 V dc     | 120 V ac, 60 Hz. source        | 1946817-125 |
| NPS103       | 24 V dc      | 120/240 V ac, 50/60 Hz. source | 1947316-024 |
| NPS104       | 125 V dc     | 120/240 V ac, 50/60 Hz. source | 1947316-125 |

TABLE A — Nomenclature and Description of NPS10□ Power Supplies

**Bailey Controls**  
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### Input Voltage and Frequency Selection on NPSI03/NPSI04 Models

Type NPSI03/04 Supplies are shipped wired for 240 V ac/50 Hz operation. Before operating in a 120 V ac application:

- 1) Remove flat heat screws and separate case halves.
- 2) Locate internal terminal connection plate.
- 3) Change jumper positions for desired input voltage and frequency. Refer to Figure 1 which shows jumper positions.
- 4) Position C1 and CR1 leads per Table B and Figure 2.
- 5) Replace case halves and screw together
- 6) Replace 3.5 amp fuse (F1) with 7-amp fuse. 7 amp fuse is shipped with the unit.

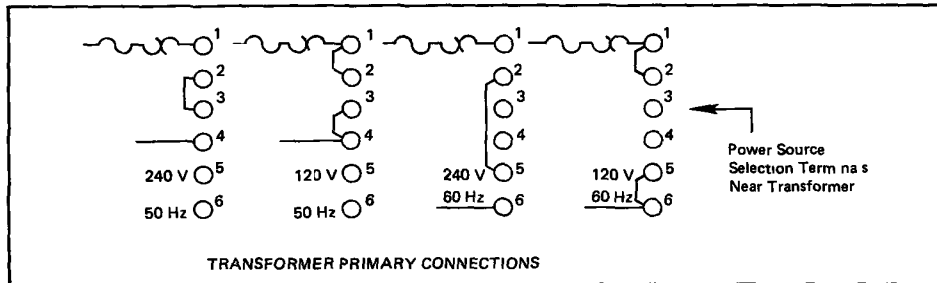
|        | C1 Lead to | CR1 Lead to |
|--------|------------|-------------|
| 50 Hz* | 8          | 11          |
| 60 Hz  | 7          | 10          |

\*Units are shipped for 50 Hz operation.  
**TABLE B** — Position of C1 and CR1 Leads for 50/60 Hz Operation of NPSI03/04

| Fuse Rating and Type |        |           |                      |
|----------------------|--------|-----------|----------------------|
| Fuse F1              | Input  | 240 V ac* | 3.5 A (MDA or equal) |
|                      |        | 120 V ac  | 7.0 A (MDA or equal) |
| Fuse F2              | Output | 24 V dc   | 15 A (ABC or equal)  |
|                      |        | 125 V dc  | 4 A (ABC or equal)   |

\*Units are shipped with 3.5 A fuse for 240 V ac operation. Applies to types NPSI03/04 only

**TABLE C** — I/O Power Supply Fuse Requirements



**FIGURE 1** — Voltage Source Selection for Type NPSI03/04 Power Supplies

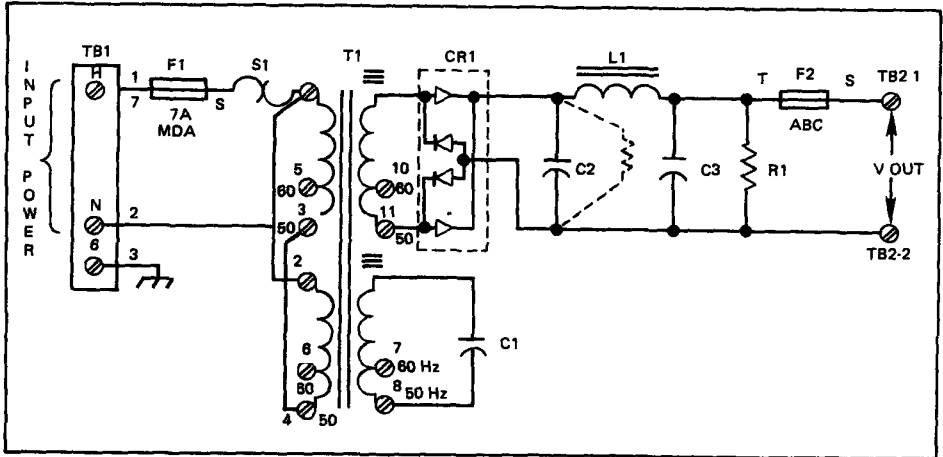


FIGURE 2 -- NPSI03/04 Schematic Showing Adjustments Needed for 50/60 Hz Selection

### Specifications

|  |   |
|--|---|
| <b>Voltage</b>                                     | 102 to 132 V ac* or 204 to 264 V ac<br>*NPSI01/02 127 V ac, maximum |
| <b>Frequency</b>                                   | 50/60 ± 2 Hz  |
| <b>Harmonic Distortion</b>                         | ± 3 %   |
| <b>Maximum Interruption</b>                        | 0.5 cycle   |
| <b>Maximum Line Noise</b>                          | ± 100% of line amplitude for 2 usec<br>once every half cycle        |
| <b>Normal and Inrush Currents and Power Factor</b> | See Tables D and E  |

| Output over Temperature Range °C | With or Without Auctioneering<br>24 V I/O Supplies  |       |       |      |      |      |
|----------------------------------|---|-------|-------|------|------|------|
|                                  | 24 V @ A  |       |       |      |      |      |
|                                  | Supply  | 0-50  | 0-55  | 0-60 | 0-65 | 0-70 |
| NPSI01                           | 1 2 5 0   |       |       |      |      |      |
| NPSI03                           | 10 90   | 10 90 | 10 27 | 9 63 | 9 00 |      |
| Output over Temperature Range °C | With or Without Auctioneering<br>125 V I/O Supplies |       |       |      |      |      |
|                                  | 125 V @ A   |       |       |      |      |      |
|                                  | Supply  | 0-50  | 0-55  | 0-60 | 0-65 | 0-70 |
|                                  | NPSI02  | 2.40  |       |      |      |      |
| NPSI04                           | 2.40  | 2.40  | 2.30  | 2.20 | 2.10 |      |

| Nomen. | Line Volt,<br>Freq. | Max.<br>Load<br>55°C | Current<br>70°C | Max.<br>Input<br>RMS Amps | Inrush*<br>RMS<br>Amps | Power<br>Factor |
|--------|---------------------|----------------------|-----------------|---------------------------|------------------------|-----------------|
| NPSI01 | 120 V ac,<br>60 Hz  | 12.5A                | 12.5A           | 3 75                      | 100                    | 0.8             |
| NPSI03 | 120 V ac,<br>60 Hz  | 10.9A                | 9.0A            | 2 17/4 34                 | 100                    | 0.8             |

TABLE D — 24 V dc I/O Supplies Normal and Inrush Currents and Power Factor

| Nomen. | Line Volt,<br>Freq.       | Max.<br>Load<br>55°C | Current<br>70°C | Max.<br>Input<br>RMS Amps | Inrush*<br>RMS<br>Amps | Power<br>Factor |
|--------|---------------------------|----------------------|-----------------|---------------------------|------------------------|-----------------|
| NPSI02 | 120/240 V ac,<br>50/60 Hz | 2.4A                 | 2.4A            | 3.8                       | 100                    | 0.8             |
| NPSI04 | 120/240 V ac,<br>50/60 Hz | 2.4A                 | 2.1A            | 2.52/5.04                 | 100                    | 0.8             |

\*Approximate first cycle peak values listed. The Inrush lasts a maximum of 1.5 seconds. These inrush values are dependent upon capacity of the distributed system.

TABLE E — 125 V dc I/O Supplies Normal and Inrush Currents and Power Factor

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

Bailey Controls, Wickliffe, Ohio 44092, a division of Babcock & Wilcox, U.S.A.

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