

# Rod Control System Replacement Power Supplies

## Background

Failure of a redundant power supply in the rod control system logic or power cabinet actuates a non-urgent alarm lamp on the front of the affected cabinet and a control room annunciator. To retain redundancy and avoid risk of a reactor trip, the failed supply should be replaced online. Power supply connections are made through terminal blocks and the supplies are mounted to cabinet brackets with screws, making online replacement difficult. In the power cabinet, one (-)24 VDC supply is installed close to an energized movable gripper thyristor heat sink, making replacement hazardous.

## Description

The new power supplies slide into housings that permanently install on existing brackets or on the cabinet back panel. Rails in the housings guide the supply into engagement with an interior rear-mounted connector. No tools are needed to replace the power supply module. Replacement supplies are switching type, operating at about 75 percent efficiency compared with an efficiency of 50 percent for the existing linear supplies. To extend operating life, the power supplies have been equipped with cooling fans; higher current supplies contain dual fans and lower current supplies contain a single fan.

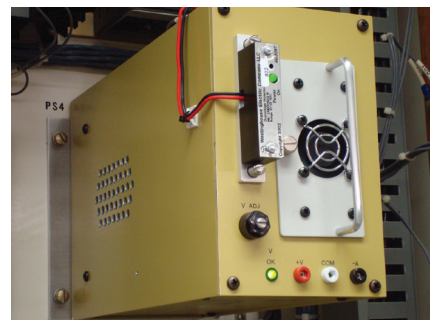
On the front of the housings, test points for voltage and current measurements and a locking voltage adjustment are provided. A green LED on the housing indicates that the DC output is energized, making it easy to spot an out-of-service supply. Each housing, except for the +100 VDC supply, has a Westinghouse-designed, front-mounted overvoltage protector. For the two logic cabinet +100 VDC supplies, a single, permanently mounted housing is installed in the rear of the cabinet. Mounting plates are supplied with each housing, which eliminates the need to drill new holes.

## Benefits

- Tools are not required to replace power supply module.
- Housings are permanently installed.
- Shock hazard on replacement of (-)24 VDC supply is eliminated.
- Switching type supplies significantly reduce heat input.
- Cooling fans extend operating life.
- Test points for current and voltage measurements are included.
- Modules are keyed to prevent insertion of the wrong module.
- Green LED on the housing identifies an energized supply.
- Locking voltage adjustment faces front.
- Overvoltage protector is included on all power supplies except for +100 VDC.
- Easy access to power supply and test is provided.



+24 VDC supply



(-)24 VDC supply

Please refer to the following tables for detailed information on product specifications, ordering information, and replacement information including previous power supply part numbers.

### Specifications

| Nominal Output VDC | Adjustment Range VDC | Output Current 40C | Ripple RMS MV | Ripple peak-peak MV | Efficiency % |
|--------------------|----------------------|--------------------|---------------|---------------------|--------------|
| + 15               | 15-17                | 12.0               | 15            | 100                 | 75           |
| (-)15              | 15-17                | 3                  | 15            | 100                 | 75           |
| + 100              | 95-105               | 2.5                | 150           | 450                 | 75           |
| -24                | 24-26                | 11.0               | 15            | 100                 | 75           |
| (-)24              | 24-26                | 2.1                | 15            | 100                 | 75           |

### Ordering Information

| Supply VDC      | Housing + Module Part No. | Module Part No. |
|-----------------|---------------------------|-----------------|
| + 15 PS1, PS4   | 4A9206G01                 | 4A9206G02       |
| (-) 15 PS2, PS5 | 4A9207G01                 | 4A9207G02       |
| + 100 PS3, PS6  | 4A9208G01                 | 4A9208G02       |
| + 24 PS1, PS2   | 4A9204G01                 | 4A9204G02       |
| (-) 24 PS3, PS4 | 4A9205G01                 | 4A9205G02       |

### Replacement Information

| Supply VDC      | Housing + Module Part No. | Replaces  |
|-----------------|---------------------------|---|
| Logic Cabinet   |                           |   |
| + 15 PS1, PS4   | 4A9206G01                 | LME18-2913<br>LXS-E-15-R-2913<br>2A10020G01         |
| (-) 15 PS2, PS5 | 4A9207G01                 | LM-262<br>LCS-A0-02-6795<br>2A10019G02              |
| + 100 PS3, PS6  | 4A9208G01                 | LMCC-100<br>NP100-3.0<br>3D20798G01                 |
| Power Cabinet   |                           |   |
| + 24 PS1, PS2   | 4A9204G01                 | LME-24<br>2A10017G01                                |
| (-) 24 PS3, PS4 | 4A9205G01                 | LM-261<br>LCS-A-24-6795<br>916E646H51<br>2A10019G01 |