



TRAINER/DUPLICATE PANEL FOR GAS TURBINE CONTROL PANELS

The Trainer Panel is a duplicate panel of the customer's primary control panel with identical hardware and software. In addition, a second set of software is provided which simulates startup, shutdown and running characteristics of a typical gas turbine. This provides the customer with a permanent training facility on identical equipment, and a working set of spare parts which can be substituted for any parts in the primary control panel.



Trainer Panels are available for the triple redundant Mark IV SPEEDTRONIC™ control system and the single channel SIMPLEX design for various single shaft turbine applications.

Operator functions included in the trainer are:

- Normal Startup Sequence
- Fast Load Startup Sequence
- Normal Shutdown Sequence
- Emergency Manual Trip Condition
- Preselected Load Command
- Base Load Command
- Peak Load Command
- Manual Raise/Lower Load Commands
- Gas/Distillate Fuel Transfers
- Mixed Fuel Operations
- Modulated Inlet Guide Vanes for Temperature Control
- Manual Guide Vane Control
- Cable Connected Supervisory Remote Operation

Various fault conditions can be initiated with the standard logic forcing display. Two (2) fault conditions can be initiated with hardwired contact inputs to enable the trainee to watch the turbine response on the CRT while activating the fault condition. These conditions are low lube oil pressure and a loss of flame.

Documentation for the trainer is identical to the documentation for the primary control cabinet except for an additional set of simulator instructions 304A7439 and a control elementary reflecting the simulator software 238B3299. This documentation and its associated equipment enables maintenance personnel to train on interfacing between the drawings and the software, the drawings and the hardware, diagnostic tools and trouble shooting.



THE OPERATOR INTERFACE

(A) DISPLAY MODE Group

- A. NORMAL – Selects the Startup, Running and Shutdown displays which show all key operating parameters in friendly units.
- B. DATA – Selects a menu of I/O, maintenance and diagnostic displays.
- C. RESET – Selects a trip reset display.
- D. ALARM – Selects the System and Diagnostic alarm queues with time tagged messages.
- E. MAN CTL – Selects a series of Manual Control displays for control of functions such as inlet guide vanes.

(B) EXECUTE

The EXECUTE pushbutton must be pressed after initiating an operator command in the yellow block of pushbuttons.

(C) DISPLAY KEYPAD

This set of characters is used to select numbered displays or data base points by name or address.

(D) ALARM Group

These pushbuttons are used to SILENCE and RESET alarms.

(E) PRINTER Group

These pushbuttons are used to COPY CRT screens to a panel mounted printer, and initiate a HISTORY log printout.

(F) DISPLAY CURSOR Group

These pushbuttons position the cursor on applicable displays.

(G) OPERATOR SELECTOR

This is a 7 x 4 matrix of operator pushbuttons which require a subsequent execute command to initiate the command, and result in a red LED indication when the control status changes.

(H) EMERGENCY STOP

This maintained pushbutton initiates an emergency trip independent of the processors.

(I) AUXILIARY DISPLAY

This display is used to observe key turbine parameters and alarms if the primary CRT should fail. In addition, it can be used for processor troubleshooting.



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