



# GE Power Generation Engineering

Materials and Processes Engineering  
Schenectady, NY 12345

PROCESS SPECIFICATION

P3K-AL-0464-A01

## TEST INSTRUCTIONS FOR PLANT COMMUNICATIONS ANALOG CONTROL VALVE FLOW REFERENCE SIGNAL

DOCUMENT REVISION STATUS: DETERMINED BY THE LAST ENTRY IN THE "REV" AND "DATE" COLUMN

REV.	AN NO.	DESCRIPTION	SIGNATURE	REV. DATE
A	YA00096	SPECIFICATION LISTED IN STEAM TURBINE/GENERATOR INDEX AS "INACTIVE" HAS BEEN FORMALLY REVISED AS "INACTIVE FOR NEW DESIGN". (PR BUDKA)	C.R. Tripp	DEC 02 1991
<div>INACTIVE FOR NEW DESIGN AS OF 12/02/91</div>				

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REV NO. <b>1A</b>	TITLE TEST INSTRUCTIONS FOR PLANT COMMUNICATIONS ANALOG (CONTROL VALVE FLOW REFERENCE SIGNAL)	CONT ON SHEET <b>3</b>	SH NO. <b>2</b>
P3K-AL-0464-A01	FIRST MADE FOR EHC MARK II (PLANT COMMUNICATIONS)		
CONT ON SHEET <b>3</b>	SH NO. <b>2</b>		

REVISIONS

I. SCOPE

This instruction outlines the specification for testing the Plant Communications Analog board IPC1-E001.

CIRCUIT BOARD 118D1341 --- CONTROL VALVE FLOW REFERENCE SIGNAL.

II. CIRCUIT DESCRIPTION

The plant communications (PC) control valve flow reference signal is designed to incorporate the following features:

1. Provides a means to convey to the Reactor Control equipment an analog signal that represents the control valve flow reference signal.
2. Analog signal processing done in a manner that provides protection to the EHC circuits that provide the signal, in the event that the output is abused, even seriously abused, by the REACTOR CONTROL equipment.
3. One input is provided that has provision for being shorted out. This is done so that the signal being sent on to the REACTOR CONTROL can be shorted out by the relays on IPC3-B under certain operating conditions.
4. The first stage has an adjustable gain of -1 and the second stage has a fixed gain of -1 giving an overall adjustable gain of +1. The isolation is provided between the two stages.

To provide the isolation, a separate power supply is required furnishing plus and minus 15 VDC power to the output stages.

Zero balance pots are provided on both IC op amps while a gain pot is provided in the input circuit. The latter is there to allow balancing out the resistance tolerances and setting the gain accurately to +1.

III. CIRCUIT SPECIFICATIONS

A. Power Supply Requirements

1. Power Supply 1:  $+22.000 \pm 0.002$  VDC  
(Pin 37) at 10 ma.
2. Power Supply 2:  $-22.000 \pm 0.002$  VDC  
(Pin 41) at 10 ma.

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ISSUED NOV 28 1977		Schenectady, N.Y.	LOCATION	CONT ON SHEET <b>3</b> SH NO. <b>2</b>

273-5  
273-314  
273-2  
273-12  
273-71  
273-13  
273-22  
273-22  
PRINTS TC

REV NO. <b>0 A</b>	TITLE	CONT ON SHEET <b>4</b>	SH NO. <b>3</b>
P3K-AL-0464-A01	TEST INSTRUCTIONS FOR PLANT COMMUNICATIONS ANALOG (CONTROL VALVE FLOW REFERENCE SIGNAL) FIRST MADE FOR EHC MARK II (PLANT COMMUNICATIONS)		
CONT ON SHEET <b>4</b>	SH NO. <b>3</b>		

### III. CIRCUIT SPECIFICATIONS (continued)

#### A. Power Supply Requirements (continued)

3. Power Supply 3:  $+15.0 \pm 0.1$  VDC  
(Pin 21) at 30 ma

4. Power Supply 4:  $-15.0 \pm 0.1$  VDC  
(Pin 20) at 30 ma

CAUTION THE VOLTAGE BETWEEN THE COMMON (PIN 25) AND THE ZERO VOLT BUS (PIN 39) MUST NOT EXCEED 15V PEAK.

#### B. Operating Signal Levels

1. The input (Pins 8, 9, and 10, 11, 12) are designed to receive -10 VDC to +10 VDC.

#### C. Output Load

1. The output load should not exceed 2K ohm  
(Pins 22 and 23)

#### D. Individual Stage Performance Specifications

1. Power Supply (CR1, 2, 3, & 4)

a. TP1:  $+15.7 \pm 1.0$  VDC

b. TP2:  $-15.7 \pm 1.0$  VDC

2. Acceptable offset on all amplifiers after zeroing is  $\pm 1.0$  mv DC at zero input.

3. Overall gain is +1 adjustable.

### IV. SET POINTS

A. The gain should be set to +1.

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P3K-AL-0464-A01

REV. NO. <u>DA</u> P3K-AL-0464-A01 CONT ON SHEET <u>-</u> SH NO. <u>4</u>	TITLE TEST INSTRUCTIONS FOR PLANT COMMUNICATIONS ANALOG (CONTROL VALVE FLOW REFERENCE SIGNAL) FIRST MADE FOR EHC MARK II (PLANT COMMUNICATIONS)
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REVISIONS

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EHC DESIGN ENGINEERING

DATE

5/27/75

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11-22-77

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