

70A102720

CONT. ON 0.2 SH.NO. 0.1

F.C.F. 70A102720
FMF: AJH

DATE: 8-4-70

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Issue Date
AUG 14 1970

COMPUTER
PHOENIX, ARIZ.

Dwg. No. 70A102720
Cont. on 0.2

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AJH

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D. Itkin/Res.

SYSTEM SPECIFICATION

SUN STUDS, INC.

AJH

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GENERAL NOTES

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PROCESS

COMPUTER
PHOENIX, ARIZ.

Dwg. No. 70A102721
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System Description Index

1.0 System Description

1.1 Installation Background

1.2 Computer Application

1.3 Hardware and Software

1.4 System Block Diagram

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REVISIONS

1.0 System Description

1.1 Installation Background

The GE-PAC 30 computer will be installed in the Sun Studs, Inc. new Stud Mill located at Roseburg, Oregon.

1.2 Computer Application

The computer will control the chipping and sawing functions of an automated "Stud" sawmill. Scan data for the logs and subsequently produced cants will be given to the computer from an external scan system data processor. The computer will utilize the furnished data to calculate an optimum cut cylinder and then direct chipper heads, band mill saws, carriage positioning and speed to produce the desired number and sizes of cants. The required cant chipping will be controlled by the computer utilizing the furnished data from the Cant Photoelectric scanner.

1.3 Hardware and Software

1.3.1 Hardware

Item	Model No.	Qty.	Description
1	30-02	1	Control Processor
2	30-21	1	HRDW MPY/DIV and BLK I/O
3	30-23	1	Power Fail Det.
4	30-24	1	Auto Restart

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1.3 Hardware and Software

1.3.1 Hardware (continued)

<u>Item</u>	<u>Model No.</u>	<u>Qty.</u>	<u>Description</u>
5	30-30	1	Memory Protect
6	31-16	1	32K Bytes of core memory
7	38-10	2	System Cabinet
8	38-21	1	Expansion Chassis
9	38-30	1	Power Supply Expansion
10	34-00	1	ASR35 Interface
11	34-50	1	ASR35 Teletype
12	34-06	1	H.S. Paper Tape Reader Interface
13	34-56	1	H.S. Paper Tape Reader
14	36-20	6	16-Sense Line Modules & Interface
15	36-51	4	16-Control Line Modules & Interface
16	36-10	3	8-line Interrupt Module & Interface
17	36-70	3	Byte I/O Module
18	36-80	1	Digital I/O Multiplexor
19	36-83	1	128-Point Output Module
20	36-88	2	32-Relay Closure Panel
21	36-00	1	60 Hz Clock

1.3.2 Software

A total effort of 21 man-months of programming is required.

1.4 System Block Diagram

A block diagram of the system is shown in Figure 1.0

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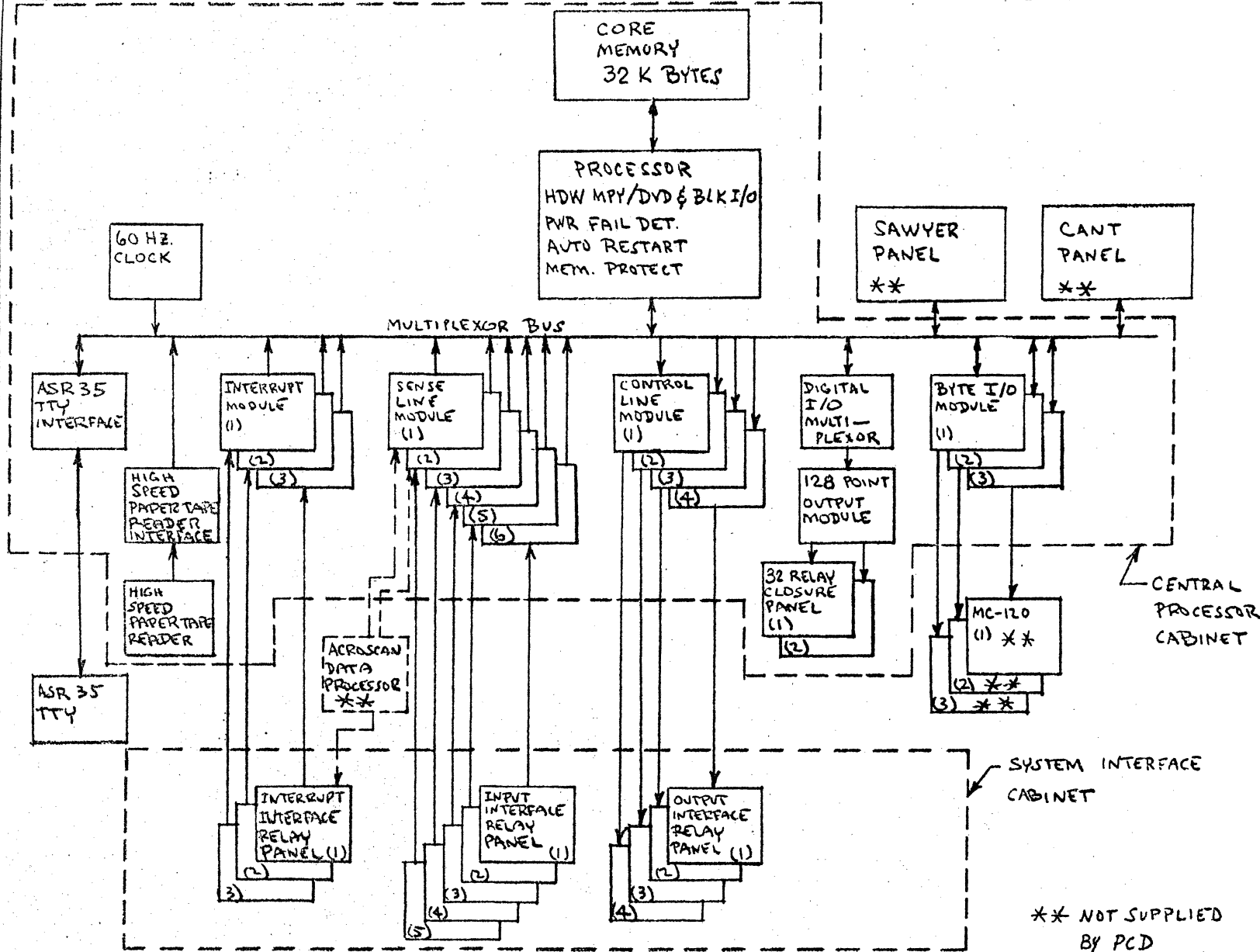


FIGURE 1.0 SYSTEM BLOCK DIAGRAM

70A102722

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SUN STUDS, INC.

AJH

SH.NO.2.0

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PROCESS

COMPUTER
PHOENIX, ARIZ.

Dwg. No. 70A102722

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SCOPE INDEX

- 2.0 Scope
- 2.1 Contractural Documents
- 2.2 Responsibility
- 2.3 System Documentation

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	SYSTEM SPECIFICATION					
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2.0 <u>Scope</u> The extent of Process Computer Department activity with regard to this requisition is delineated below. 2.1 <u>Contractural Documents</u> Sun Studs, Inc, has signed a Class IV sales agreement for a GE-PAC 30 computer system. Pertinent documents relating to the requisition are as follows: 1) Customer specifications as continuously revised and finalized July 15, 1970. (H.C. Mason & Associates Project #346) 2) Proposition number 482-35397 3) Requisition number 471-54354-1 4) Contract number 76994 5) SID number AJH 2.2 <u>Responsibility</u> Process Computer Department will provide computer hardware and software to meet the requirements of the system as described in the applicable Sales Agreement and System Specifications. The hardware and software provisions are detailed in Section 5 and 3 of the System Specifications, respectively. 2.3 <u>System Documentation</u> The System Documentation will consist of the applicable Instruction Books, Maintenance Manuals, Software Manuals, System Specification and Pertinent Miscellaneous drawings. The distribution of the System Documentation will be per the applicable Class IV Sales Agreement as follows:						REVISIONS
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	SYSTEM SPECIFICATION			
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2.3.1 <u>Documentation to Customer</u> The following documentation shall be sent to: Sun Studs, Inc. c/o Mr. Jon Walker P.O. Box 1127 Roseburg, Oregon 97470 1) One (1) copy of each of applicable Instruction Books, Maintenance Manuals, and Software Manuals. 2) Three (3) copies each of all pertinent miscellaneous drawings except the System Specification. 3) Three (3) copies each of the following System Specification drawings 70A102723 70A102724 70A102726 70A102727 2.3.2 <u>Documentation to others</u> 2.3.2.1 The following shall be sent to the indicated locations in the amounts listed for each location 1) All applicable miscellaneous drawings for the System 2) System Specifications DWG. NOS. 70A102820 through 70A102728 a) 2 copies to L. Ford, I&SE, GE Co. P.O. Box 909 Portland, Oregon 97207 b) 1 copy to H. Coon, ISD, GE Co. P.O. Box 909 Portland, Oregon 97207				REVISIONS
				PRINTS TO
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				SH NO. 2.3

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SYSTEM SPECIFICATION
SUN STUDS INC.

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GENERAL NOTES

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D. ITRIN

P-17-70

APPROVED BY: R. Preisling

DATE: 8-1-69

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ISSUED 10-15-69

B AUG. 25-1970

Made By

A. P. Marchena

Issue Date

10-15-69

PROCESS

COMPUTER
PHOENIX, ARIZ.

Dwg. No. 70A102725

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5.0

HARDWARE INDEX

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- 5.1 CABINET INFORMATION
- 5.2 DESCRIPTION OF STANDARD EQUIPMENT
- 5.3 NUMERICAL CONTROL DRIVE & INTERFACE
- 5.4 INTERCABINET CABLES
- 5.5 TEST CABLES
- 5.6 PROCESS OUTPUTS AND INTERFACE
- 5.7 PROCESS INPUTS AND INTERFACE
- 5.8 PROCESS INTERRUPTS AND INTERFACE
- 5.9 SYSTEM CARD FILE AND DEVICE ARRANGEMENT.
- 5.10 CABINET ARRANGEMENT

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5.1 HARDWARE INFORMATION

- a. The computer system hardware will be housed in two standard GE/PAC 30 cabinets. Each cabinet shall have the following dimension: 70" high, 24.19" wide and 32.25" deep.
- b. Ultimately these cabinets will be installed at the customer site bolted to each other as shown in paragraph 5.12. However, for shipment purposes, each cabinet will be shipped as a unit.
- c. External cable communication with this cabinet complex will be done thru the cabinets lower rear entry.
- d. Interconnecting cables between cabinets will be plug connected at least at one end. On site connections of intercabinet cables to terminal boards should be avoided.
- e. The Process Computer Department will supply the following system cables:
 1. Intercabinet signal and power cables
 2. Computer cabinet to customer outlet power cable.
 3. Computer to Teletype data cable.
 4. Teletype power cable to customer outlet.
 5. Data cables to three MC-120 numerical control machines which are located near the computer system complex as shown in paragraph 5.10.
- f. Cabinetry and Teletype paint and finishing requirements will be PCD standard equipment finishing.
- g. Formal site arrangement will not be prepared by PCD.

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5.2 <u>DESCRIPTION OF STANDARD EQUIPMENT</u>			REVISIONS
A. <u>PROCESSOR</u>			B
1) CENTRAL PROCESSOR - HIGHER PERFORMANCE PREWIRED FOR TWO CONTROLLER CARDS AND PROGRAMMERS CONSOLE CARD.			
B. <u>PROCESSOR OPTIONS</u>			
1) HARDWARE MULTIPLY/DIVIDE AND BLOCK I/O FOR 30-02 PROCESSOR			
2) POWER FAIL DETECT FOR 30-02 PROCESSOR			
3) AUTOMATIC RESTART FOR 30-02 PROCESSOR			
4) HARDWIRED MEMORY PROTECT			
5) CLOCK			
C. <u>CORE MEMORY</u>			
1) 32K BYTES WITH PARITY (8K BYTES IN BASIC CHASSIS, 24K BYTES IN 38-21 CHASSIS)			
D. <u>MEMORY INPUT/OUTPUT</u>			
(NONE)			
E. <u>BULK MEMORY</u>			
(NONE)			
F. <u>PERIPHERALS</u>			
1) ASR 35 INTERFACE			
2) ASR 35 TELETYPEWRITER			
3) HIGH SPEED PAPERTAPE READER INTERFACE			
4) 300 CH/SEC PAPER TAPE READER			
G. <u>OTHER PERIPHERAL INTERFACES</u>			
(NONE)			
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GENERAL ELECTRIC

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		Sun Studs, Inc.	
5.2 <u>DESCRIPTION OF STANDARD EQUIPMENT (cont)</u>			REVISIONS
H. <u>SYSTEM MODULES-ANALOG</u>			B
(NONE)			
I. <u>SYSTEM MODULES-DIGITAL</u>			
<u>DIGITAL INPUTS</u>			
1) SENSE LINE MODULES FOR 16 SENSE LINES	36-20	6	
2) 8 LINE INTERRUPT MODULES	36-10	3	
<u>DIGITAL OUTPUTS</u>			
1) CONTROL LINE MODULES-16 BUFFERED			
CONTROL LINES	36-51	4	
<u>DIGITAL I/O MODULES</u>			
1) BYTE INPUT/OUTPUT MODULES-DATA AND CONTROL			
FOR 8 LINES	36-70	3	
2) DIGITAL I/O MULTIPLEXER CONTROLLER	36-80	1	
3) OUTPUT MODULE	36-83	2	
4) RELAY CLOSURE PANEL	36-88	2	
J. <u>COMMUNICATION MODULES</u>			
(NONE)			
K. <u>CABINETS, EXPANSION CHASSIS, POWER SUPPLY</u>			
1) SYSTEM CABINET TO HOUSE BASIC AND EXPANSION			
CHASSIS (3 TOTAL)	38-10	1	
2) EXPANSION CHASSIS-PREWired FOR 24K BYTES			
MEMORY, PLUS 5 CONTROLLER CARDS SLOTS	38-21	1	
3) EXPANSION CHASSIS-PREWired FOR 13 CONTROLLER			
CARDS	38-23	1	
4) POWER SUPPLY EXPANSION	38-30	1	
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5.2 DESCRIPTION OF STANDARD EQUIPMENT (Con't)

L. ADDITIONAL CABINETS

- 1) SECOND SYSTEM CABINET TO HOUSE ADDITIONAL
HARDWARE REQUIRED. THIS CABINET WILL HAVE THE SAME
OUTSIDE DIMENSIONS AND GENERAL APPEARANCE OF SYSTEM
CABINET SPECIFIED IN PARAGRAPH 5.2.K.1. (38-10).

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5.3 NUMERICAL CONTROL DRIVE AND INTERFACE

1. THE GE/PAC 30 CENTRAL PROCESSOR WILL CONTROL THREE (3) MARK CENTURY 120 NUMERICAL POSITIONING CONTROL MACHINES, MODEL II, TWO-MOTION DIRECTORS.
2. THE GE/PAC 30 COMPUTER WILL COMMUNICATE WITH THESE MACHINES USING THE BYTE I/O* MODULES FOR DATA TRANSFER AND DATA CONTROL (ONE MODULE PER MACHINE).., AND THE INTERRUPT MODULE FOR MACHINE CONTROL, THROUGH AN INTER-FACE-TERMINATION PACKAGE.
3. REQUISITION ENGINEERING WILL HAVE THE RESPONSIBILITY TO DESIGN AND IMPLEMENT THE INTERFACE-TERMINATION PACKAGE AND POWER SUPPLY IF REQUIRED.
4. REQUISITION ENGINEERING WILL DEVELOP AND ISSUE THE SPECIFICATIONS FOR THE MODIFICATIONS OF THE MARK CENTURY 120 MACHINES.
5. THE HARDWARE REQUIRED FOR THE IMPLEMENTATION OF THIS INTERFACE-TERMINATION PACKAGE WILL BE HOUSED IN THE SECOND SYSTEM CABINET ORDERED ELSEWHERE IN THIS SPECIFICATION.
6. PCD WILL FURNISH THE CABLES NEEDED TO CONNECT THE INTERFACE-TERMINATION PACKAGE TO THE MARK CENTURY 120 MACHINES.

* BYTE I/O MODULES HAVE BEEN SPECIFIED FOR THIS FUNCTION, HOWEVER, THEY MAY BE ELIMINATED OR SUBSTITUTED IF NECESSARY IN ORDER TO ACHIEVE A MORE EFFICIENT INTERFACE DESIGN.

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5.3 NUMERICAL CONTROL DRIVE AND INTERFACE(Cont'd)

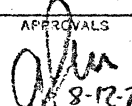
7. THE CABLE LENGTHS WILL BE AS FOLLOWS:

<u>COMPUTER</u>	<u>MC-120 N°</u>	<u>LENGTH (IN FEET)</u>
CABINET #2	#1	8
CABINET #2	#2	11
CABINET #2	#3	14

NOTE THAT ABOVE DIMENSIONS INDICATE CABLE LENGTHS FROM NUMERICAL CONTROL MACHINES TO LOWER REAR ENTRY OF SYSTEM CAB.

8. TWO COMPUTER INTERRUPTS ORIGINATED FROM EACH OF THE THREE MARK CENTURY 120 NUMERICAL CONTROL MACHINES WILL BE RELAY BUFFERED. THE RELAY COIL WILL BE 24 VOLTS DC.

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5.4 Intercabinet Cables

PCD will supply all intercabinet cables and terminations including daughter cables termination to the relay interface panels.

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5.5 Test Cables

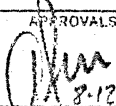
PCD will supply mating connectors and pigtail type cable extensions, 6 feet in length, for the following devices daughter cables.

DEVICE	NUMBER OF CABLE EXTENSION	SETS
8 Line Interrupt Module	3	
Sense Line Module	6	
Control Line Module	4	
32 Relay Panel 36-88	2	

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5.6.0 Process Outputs and Interface

5.6.1 The computer system will consist of a total of one hundred and twenty-eight (128) contact closures.

Sixty-four (64) contact closures will be generated from four (4) Control Line modules and sixty-four (64) contact closures will be generated from the Digital I/O Multiplexor through two, 32 relays, chassis.

5.6.2 The outputs from the Control Line modules will require special computer-process interfacing. Requisition Engineering will design and build the required number of interfacing relay panels to accommodate the 64 contact closures from the Control Line modules. The relay contacts will have the appropriate AC arc suppression for 117V AC and a contact rating of 100 VA. These relay chassis will be mounted in the system cabinet.

5.6.2.1 Four sets of digital displays will be driven from the computer, under program control, in BCD code, using thirty-six (36) of the above mentioned relay outputs. PCD will furnish the necessary wiring, termination, power supply, diode boards and digital indicators required to display the following numerical information on customer operator panels supplied by others, PCD will not supply the interconnecting cables between the system cabinet and the digital displays.

a) One three-digit display to be mounted by others on customer's Cant panel. The left most unit will

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		Sun Studs, Inc.	

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5.6.2.1 (continued)

indicate digits 0 thru 7. The other two display units will indicate digits 0 thru 9. A total of eleven (11) output relays will be used to drive this display.

b) One (1) three-digit display same as a) above except that this display will be mounted by others on customer's Sawyer Panel.

c) Two (2) two-digit displays to be mounted by others on customer's Sawyer Panel. The left most unit of each two-digit display will indicate digits 0 thru 7. The remaining display unit will indicate digits 0 thru 9. A total of fourteen (14) output relays will be used to drive these displays.

5.6.2.2 The remaining 28 relay interfaced output contacts from the Control Line module drives will be used for process functions. The customer will supply and switch 117V AC power thru these relay contacts.

5.6.3 Two chassis, with 32 relays each, driven from the Digital I/O Multiplexor controller will be mounted on the rear rack of the computer cabinet. These output contacts will be used for process functions. The customer will supply and switch 117V AC power through these relay contacts therefore, these relay contacts shall have contact arc suppression in order to reduce electrical interference to a minimum within the computer cabinet.

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5.7.0 Process Inputs and Interface

5.7.1 The computer system will sense a total of ninty-six (96) digital inputs through six (6) Sense Line modules.

5.7.2 Twenty-three (23) inputs will be read directly into the Sense Line module from equipment built and supplied by others. This equipment will possibly be mounted in the upper part of the computer cabinet..

A daughter board cable and part of a second daughter board cable from the sense line modules (see System Specifications, Section 6, drawing number 70A102726, for bit assignment) will be dressed and terminated to an amphenol connector MS3106A28-21P. This cable should terminate to mating connector MS3102A28-21S on the above mentioned equipment supplied by others.

5.7.3 The remaining seventy-three (73) inputs will necessitate special signal conditioning.

Requisition Engineering will design and build the interface required to condition process signal levels to Sense Line module input levels. This interface will consist of relays, a connector to terminate daughter board cables from the Sense Line modules and terminal boards for customer's signal cable termination. This interface hardware will be mounted in the system cabinet.

5.7.3.1 The computer digital input interface relay coil rating will be 117V AC., $\pm$ 10V. The customer will supply the power to activate relay coils.

5.7.3.2 Some of these inputs will sense pushbuttons and thumb-wheel switches contact closures located on two customer

PRINTS TO

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ISSUED	8-12-70	8-12-70	LOS ANGELES DISTRICT	LOCATION	CONT ON SHEET 5.14 SH NO. 5.13

REV NO.	TITLE		CONT ON SHEET 5.15	SH NO. 5.14	
	SYSTEM SPECIFICATION				
CONT ON SHEET	SH NO.	FIRST MADE FOR Sun Studs, Inc.	AJH		
5.7.3.2 (continued) panels built by others (see drawing 70A102726 for bit assignment). Cable connections will be furnished by the customer.				REVISIONS	
				B	
					PRINTS TO
MADE BY	A. Marchena	APPROVALS	PCD	DIV GR	70A102725
ISSUED	8-12-70	8-12-70	LOS ANGELES DISTRICT	DEPT.	
				LOCATION	CONT ON SHEET 5.15
					SH NO. 5.14

REV NO.	TITLE	CONT ON SHEET	SH NO.
	SYSTEM SPECIFICATION	5.16	5.15
CONT ON SHEET	SH NO.	FIRST MADE FOR	AJH
		Sun Studs, Inc.	

REVISIONS

B

5.8.0 Process Interrupts and Interface

5.8.1 The computer system will accept a total of twenty-four (24) process interrupts using three (3) Eight Line Interrupt modules. Two (2) interrupts will be brought indirectly into the Interrupt module from customer's equipment possibly mounted in the computer cabinet. Six (6) interrupts will originate at the Mark Century controllers and the remaining sixteen will be generated by the process. Panels required for signal interface and customer cable terminations will be mounted in the System cabinet.

5.8.2 Two (2) interrupt signals are originated at the customer equipment mentioned in paragraph 5.7.2. These interrupt signals will be picked up at the Amphenol connector specified in paragraph 5.7.2 and terminated on the proper Eight Line Interrupt module as indicated in System Specification, Section 6, drawing number 70A102726.

5.8.3 Six (6) interrupt lines, two (2) from each of Mark Century numerical control unit, will be connected to an 8 line Interrupt module.

The numerical control machine interrupt signal voltage level is 24V DC., therefore, Requisition Engineering will design and build the required interface to condition these signals in order to be compatible with 8 Line Interrupt module input signal voltage level.

PCD will supply the cable interconnecting the numerical control machines to the interrupt interface.

PRINTS TO

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				SH NO.	5.15

REV
NO.

TITLE

SYSTEM SPECIFICATION

CONT ON SHEET

SH NO.

FIRST MADE FOR Sun Studs, Inc.

AJH

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5.8.4 Sixteen (16) interrupt input points will be used by the process switching 117V AC. Requisition Engineering will design and build the required interface to condition these process signal levels in order to be compatible with the 8 Line Interrupt module input signal voltage level.

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8-12-70

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DEPT.

70A102725

LOS ANGELES DISTRICT

LOCATION

CONT ON SHEET 5.17

SH NO. 5.16

CODE IDENT NO.

REV NO.

TITLE

SYSTEM SPECIFICATION

CONT ON SHEET

SH NO.

FIRST MADE FOR Sun Studs, Inc. AJH

5.9 System Card File and Device Arrangement

The basic computer chassis, memory expansion chassis and I/O device expansion chassis will be arranged as shown on the sketch below. Digital output multiplexor and computer power supplies are also shown.

REVISIONS

B

Slot	DEV#	DEV#	DEV#	Slot
25	1B	03	08	25
24	1A	02	07	24
23	19	01	06	23
22	18		05	22
21	17		04	21
20	16		03	20
19	15		02	19
18	14		01	18
17	13			17
16	12			16
15	11			15
14	10			14
13	09			13
12	08			12
11	07			11
10	06			10
9	05			9
8	04			8
7	03			7
6	02			6
5	01			5
4	00			4
3	00			3
2	00			2
1	00			1
0	00			0

38-23 CHASSIS

30-02 CHASSIS

30-21 CHASSIS

POWER SUPPLY

POWER SUPPLY

TWO 36-83's

36-88 RELAY PANEL

36-88 RELAY PANEL

CABINET REAR

BLOWER

FRONT

MADE BY

A. Marchena

APPROVALS

PCD

DIV OR DEPT.

70A102725

ISSUED

8-12-70

8-12-70

LOS ANGELES DISTRICT

LOCATION

CONT ON SHEET 5.18

SH NO. 5.18

PRINTS TO

TITLE

SYSTEM SPECIFICATION

CABINET ARRANGEMENT

FIRST MADE FOR SUN STUDS INC.

AJH

SH NO.

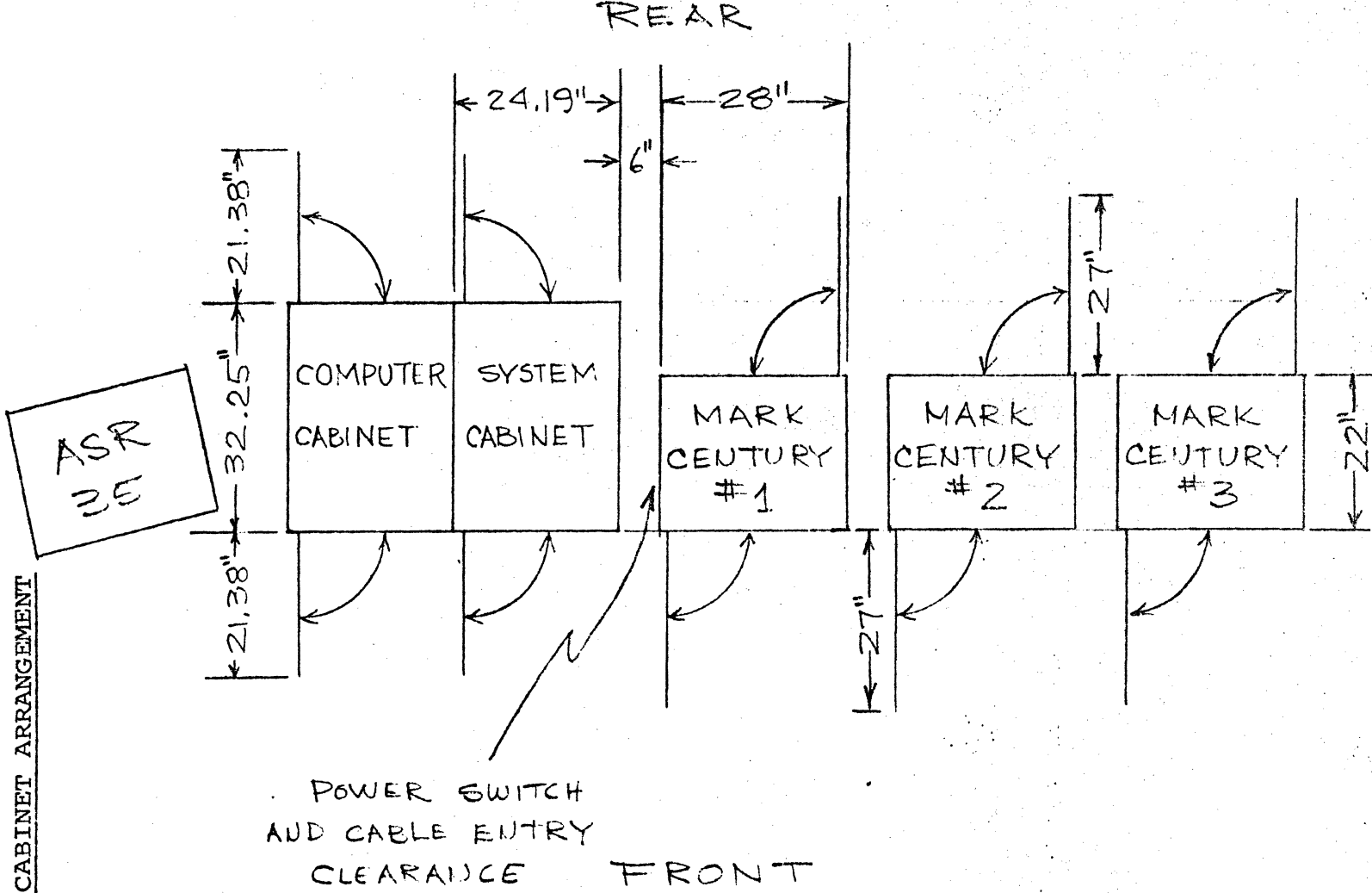
CONT ON SHEET

5.10

CABINET ARRANGEMENT

REVISIONS

B



PRINTS TO

70A102725

DIV OR DEPT.

PCD

LOCATION

WESTERN REGION

APPROVALS

10-14-69

MADE BY A. P. Marchena

ISSUED 10/14/69

CONT ON SHEET F

SH NO. 5.10

70A1 02726

SYSTEM SPECIFICATION
SUN STUDS, INC. AJH

CONT. ON 6.0.1 SH. NO. 6.0

GENERAL NOTES

F.C.F. 70A102720
FMF: AJH

APPROVED BY:

D. Itkin

DATE :

10-20-70
10-1-70

REVISION STATUS

REISSUED.

A Issue

Made By

D. Itkin

Issue Date 1970

PROCESS

COMPUTER
PHOENIX, ARIZ.

Dwg. No. 70A102726
Cont. on 6.0.1

Sh. No. 6.0

REV NO.	TITLE		CONT ON SHEET 6.1.0 SH NO. 6.0.1
	SYSTEM SPECIFICATION		
CONT ON SHEET	SH NO.	FIRST MADE FOR Sun Studs, Inc.	AJH

6.0 I/O SUMMARY INDEX

6.1 DEVICE PRIORITY ASSIGNMENT SUMMARY

6.2 COMPUTER INPUTS

6.3 COMPUTER INTERRUPTS

6.4 COMPUTER OUTPUTS

REVISIONS

PRINTS TO

MADE BY D. Itkin	APPROVALS 10-20-70 <i>D.E. Itkin</i>	PCD	DIV OR DEPT.	70A102726
ISSUED OCT 14 1970	LOS ANGELES DISTRICT		LOCATION	CONT ON SHEET 6.1.0 SH NO. 6.0.1

2

3

4

5

GENERAL ELECTRIC

70C180190

Z 1

APPLIED PRACTICES	PORTALS	TIME	TEMP	TEST
	✓	+	+	+

TITLE
TABLE OF CONTENTS
FIRST MADE FOR AJH

TABLE OF CONTENTS

SYSTEM BLOCK DIAGRAM	SH. 2
I/O TERMINATION PANELS:	
SENSE LINE INTERFACE	SH. 3
CONTROL LINE INTERFACE	SH. 4
INTERRUPT LINE INTERFACE (UNIT 0)	SH. 5
INTERRUPT LINE INTERFACE (UNIT 1)	SH. 6
AC BUFFERED INT. PANEL	SH. 7
I/O CABINET POWER	SH. 8

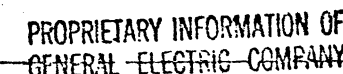
PROPRIETARY INFORMATION OF
GENERAL ELECTRIC COMPANY

REVISIONS	PRINTS TO

ISS. # 1416 '70
JAN 15 1970

PROC COMP
PHOENIX

70C180190
Z 1



1. SHEET NUMBERS SHOWN IN I/O PANEL BLOCKS (IN S-1 CAB) REFER TO LOGIC FOR THAT PANEL.
2. CUSTOMER MOUNTED WITHIN C-CAB.

SENSE LINE MODULE INTERFACE

FIRST MADE FOR AJH

SENSE LINE
MODULE
REF:
FUNCTIONAL
SCHEMATIC
*70B113242

APPLIED PRACTICES	SURFACES	TEMPERATURE	WINDS
✓	✓	✓	✓

RELAY BUFFER PANEL

SENSE LINE MODULE

SIGNAL NAME
AS LISTED IN
SENSE LINE
MOD.F.S.*

SEE FIG. 1

I/O PANEL

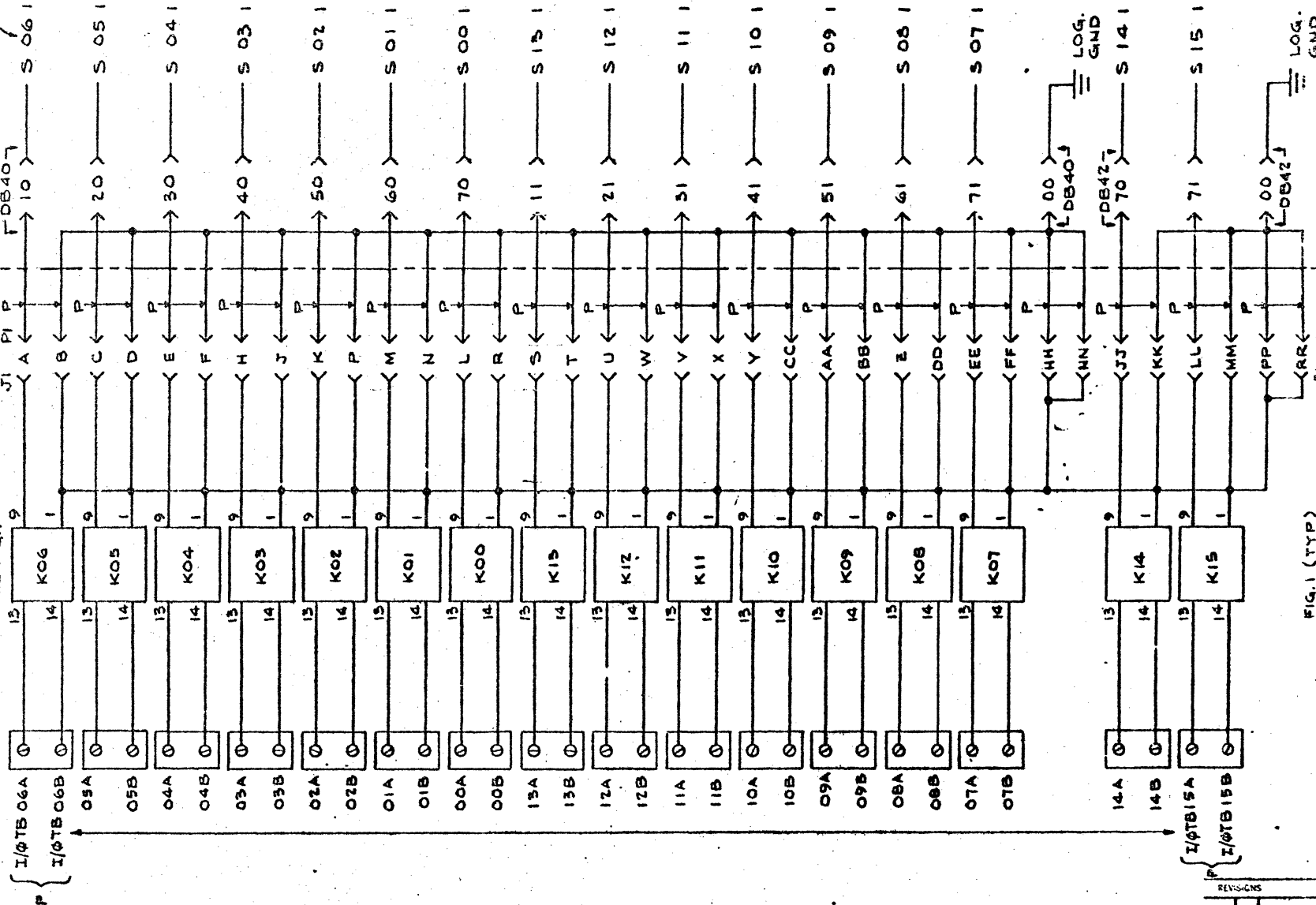
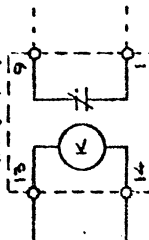


FIG. 1 (TYP)



CUST.
TERM.

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28 OCT 69
JAN 15 1970

PROCESS COMPUTER
PHOENIX

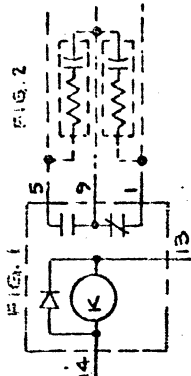
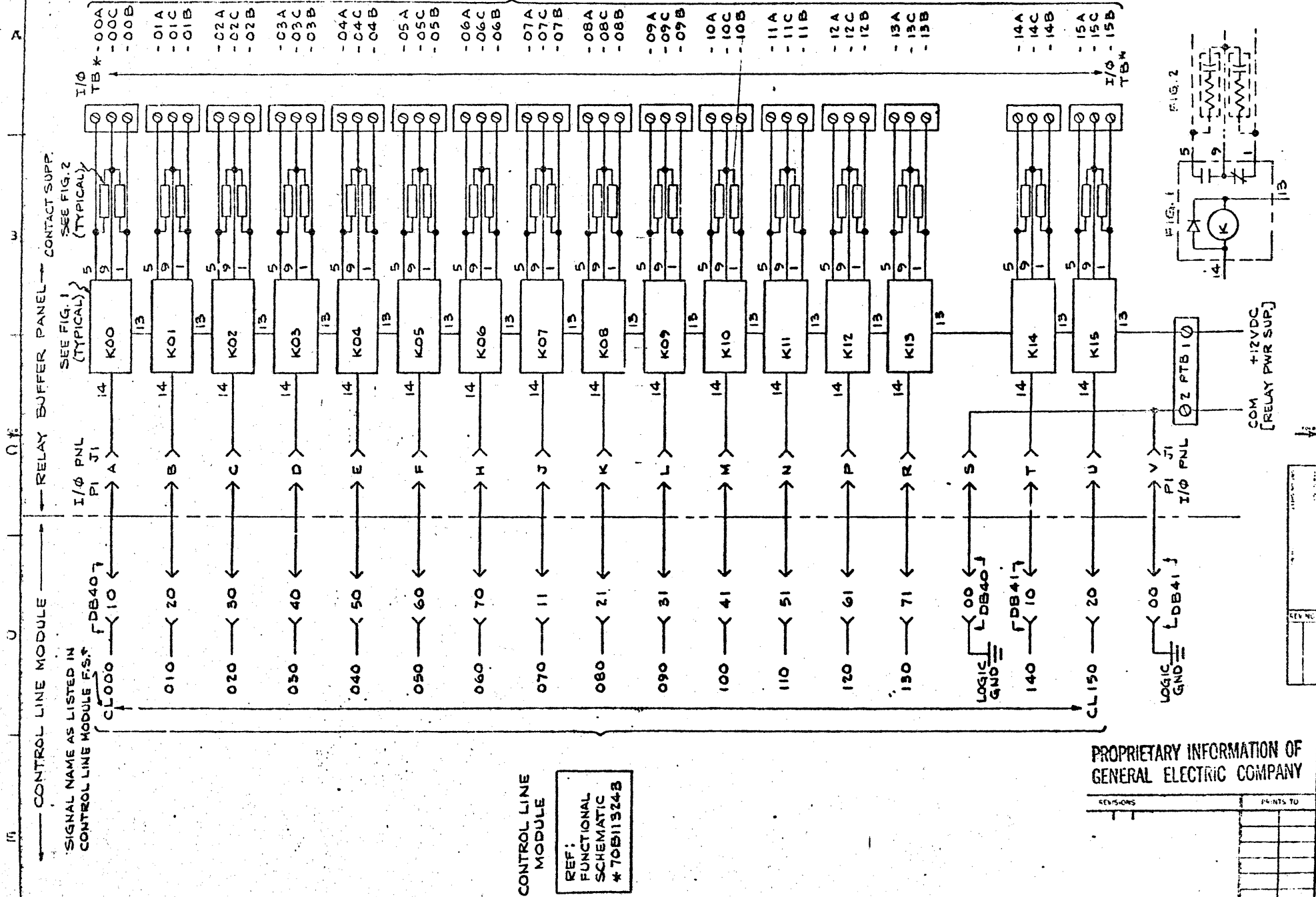
70C180190

CONTROL LINE MODULE INTERFACE

FIRST MADE BY AJH

APPLIED PRACTICES	SURFACES	TESTING	REVISIONS	DATE
✓				

CUST. TERM.



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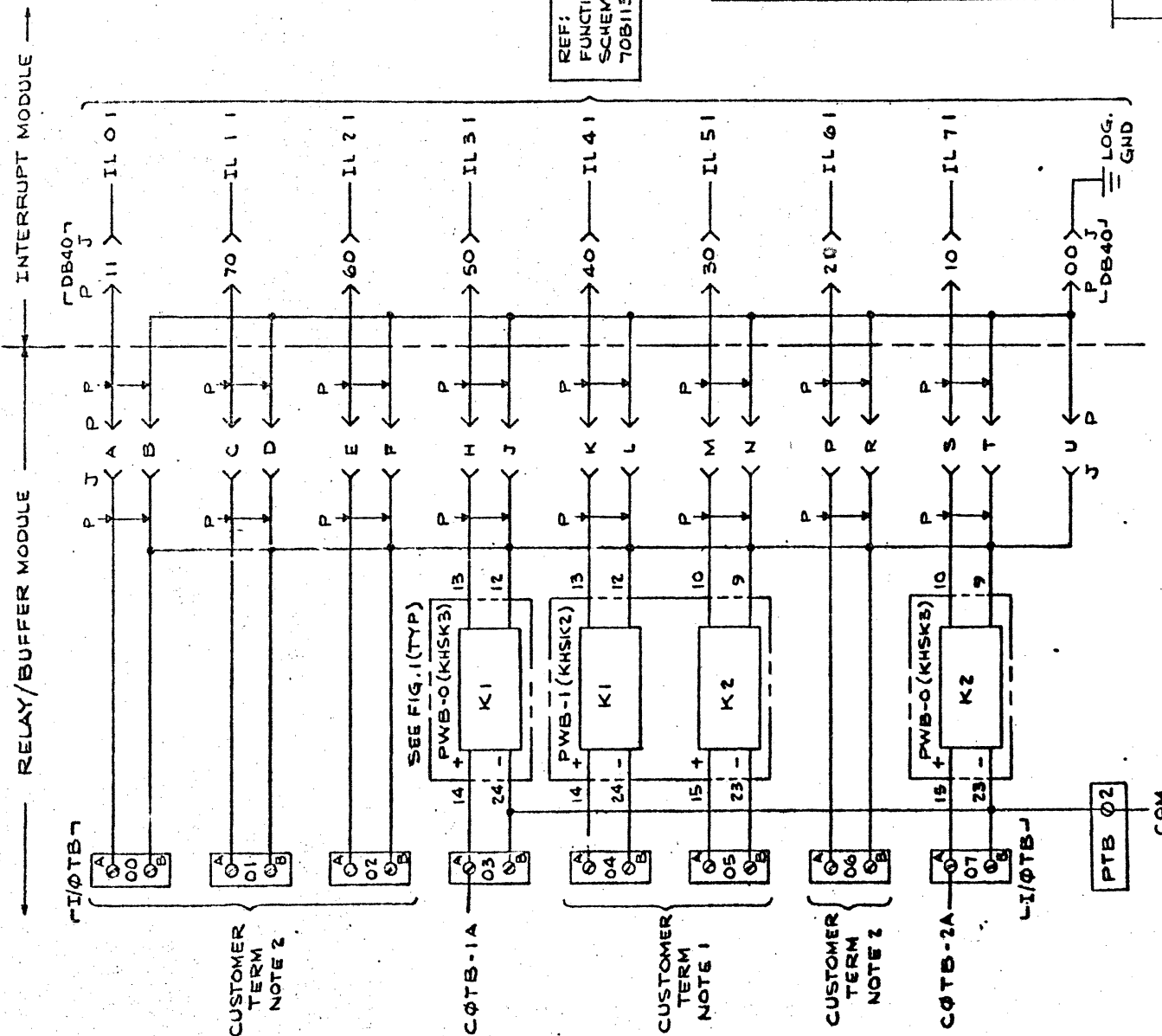
REF:
FUNCTIONAL
SCHEMATIC
* 70B11324B

8 LINE INTERRUPT MODULE
INTERFACE (UNIT 0)

MADE FOR AJH

REF:
FUNCTIONAL
SCHEMATIC
70B113380

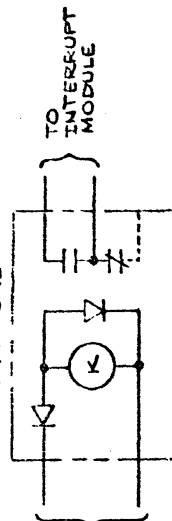
APPLIED PRACTICES	SURFACES	CHARACTERISTICS	TESTS	REMARKS
	✓			



NOTES:

1. PWB-O (RELAY COIL +12VDC),
PWB-1 (RELAY COIL +24VDC).
2. +5V = FALSE.
OV = TRUE FOR API.

FIG. 1
TYPICAL



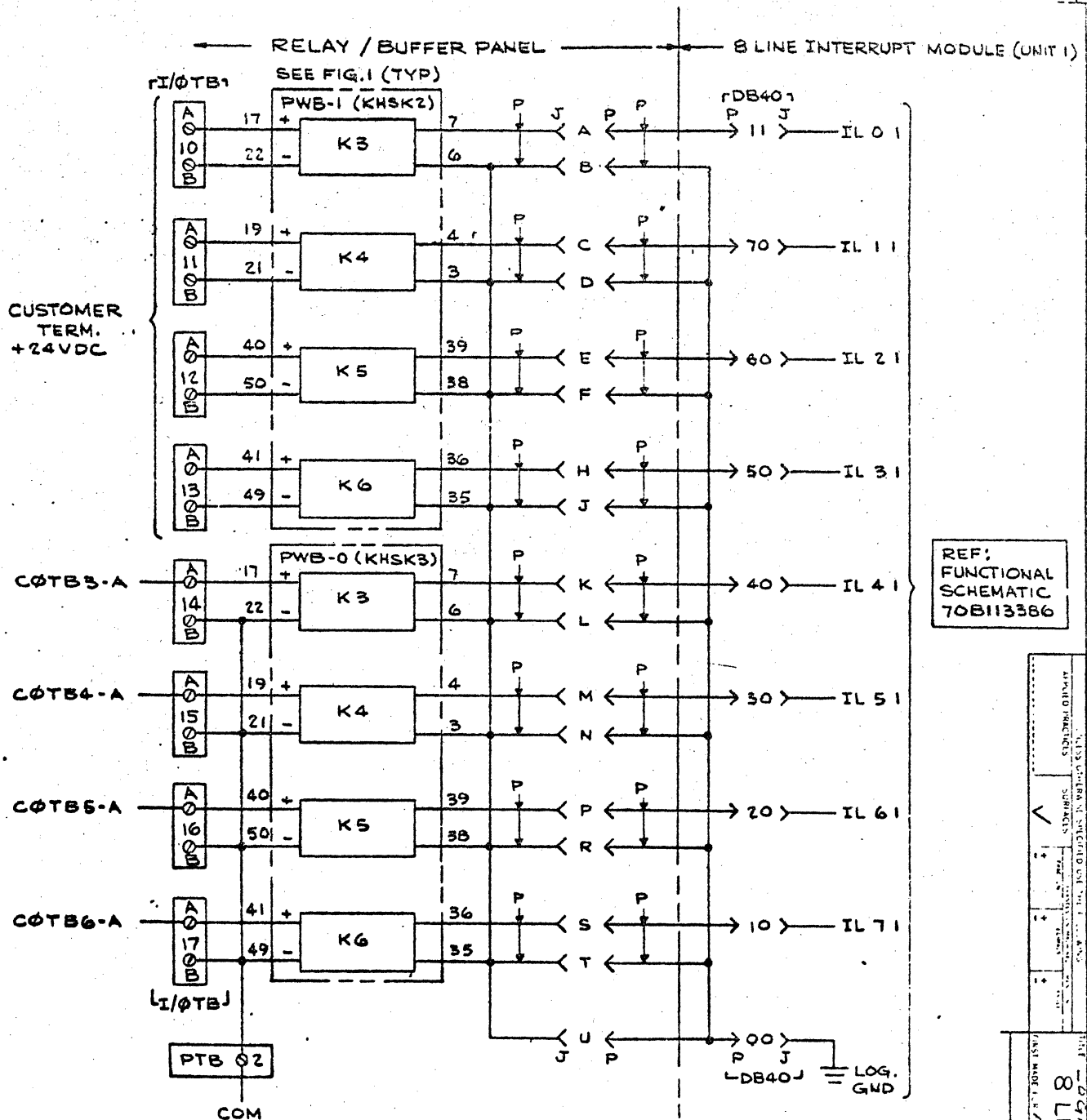
SEE NOTE 1

PROPRIETARY INFORMATION OF
GENERAL ELECTRIC COMPANY

18 NOV 69
JAN 15 1970

PROC COMP
PHOENIX

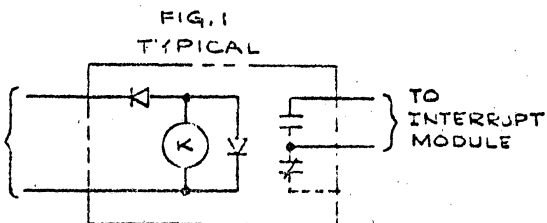
70C180190



NOTES:

1. PWB-0 (RELAY COIL +12VDC),
PWB-1 (RELAY COIL +24VDC),
2. +5V = FALSE,
0V = TRUE FOR API,

SEE NOTE 1



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GENERAL ELECTRIC
8 LINE INTERRUPT MODULE
INTERFACE (UNIT 1)

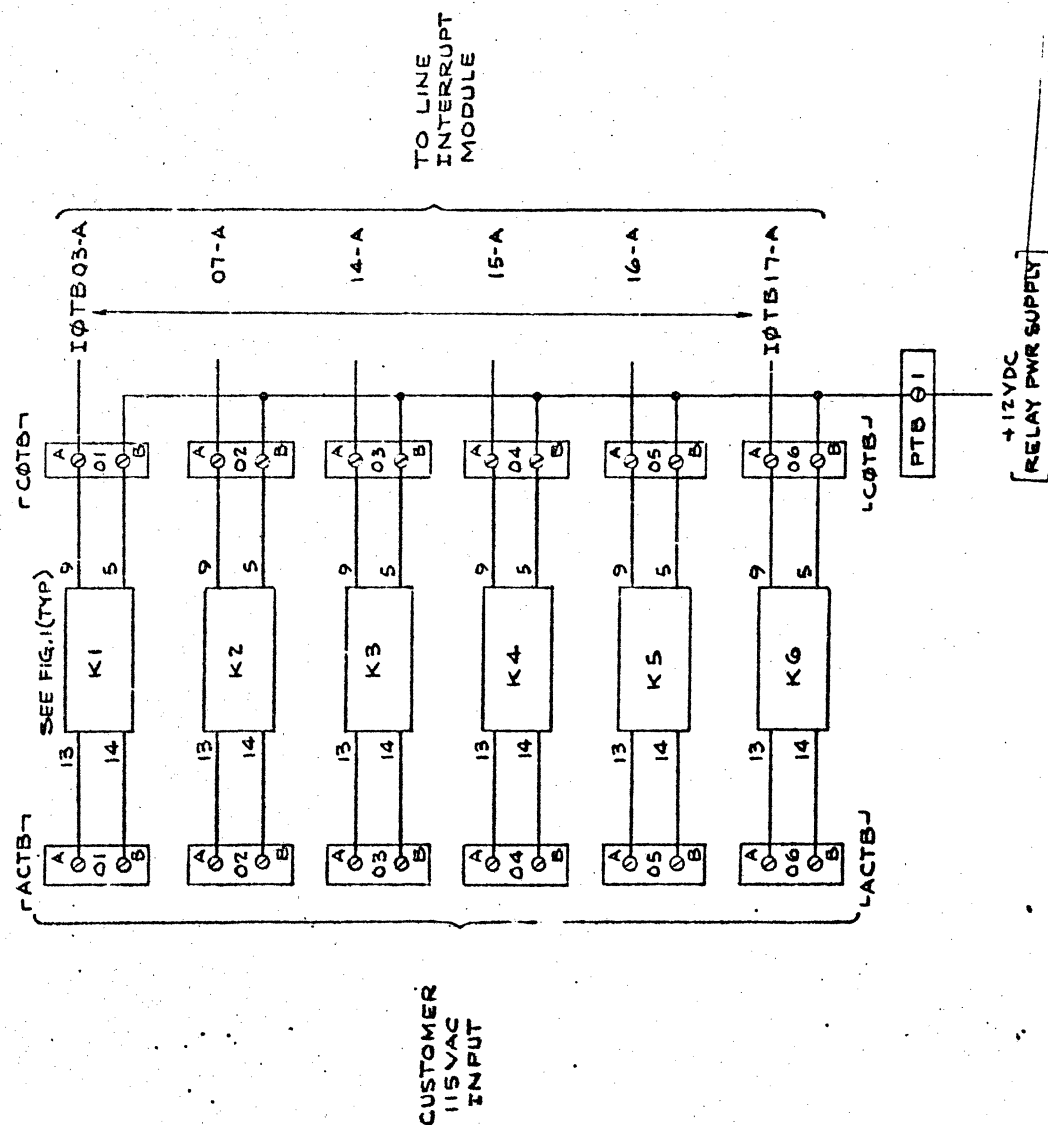
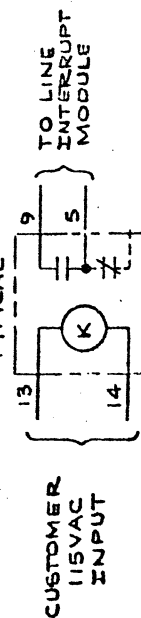


FIG. 1
TYPICAL



PROPRIETARY INFORMATION OF
GENERAL ELECTRIC COMPANY

2

3

4

5

GENERAL ELECTRIC

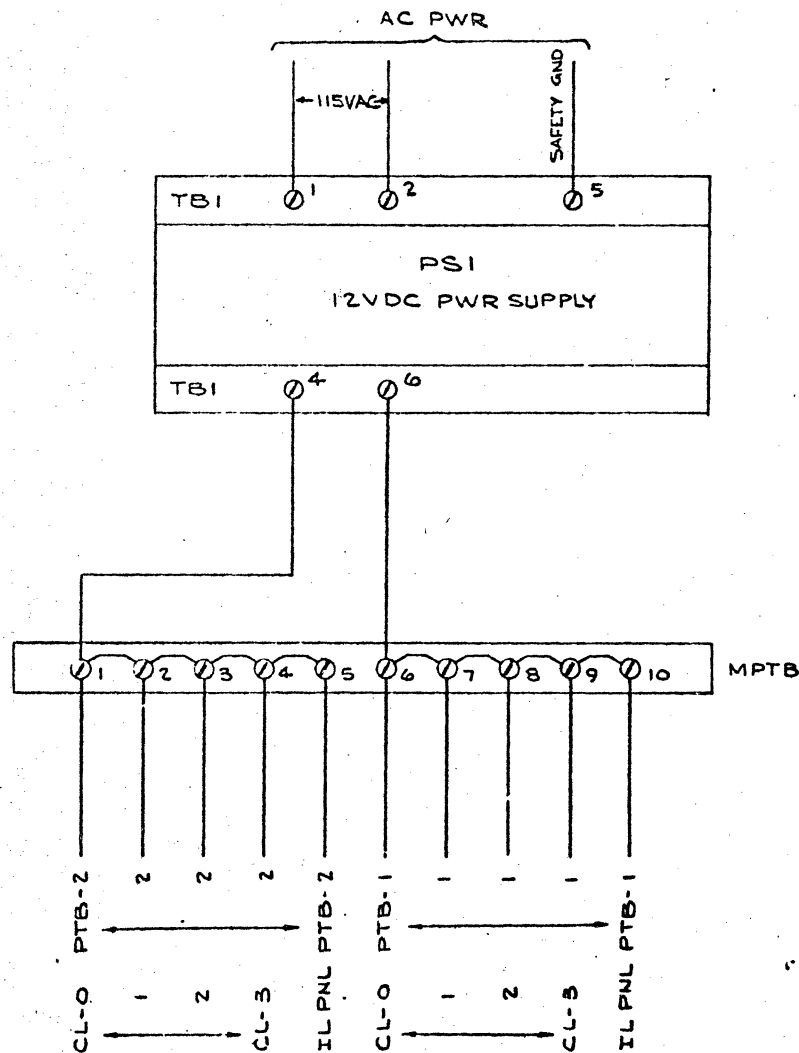
70C180190

APPLIED FACILITIES

✓

MADE IN U.S.A.

I/O CABINET POWER



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GENERAL ELECTRIC COMPANY

REVISIONS

7 JAN 70
JAN 15 1970

PROCESS COMPUTER
PHOENIX

70C18019
F 5

TITLE INDEX FIELD AIDS		FCF 70X106452	GENERAL ELECTRIC PROCESS COMPUTER		PL 70X106451	SECT 5	ISSUED	1	2
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ITEM NO.	REV CODE	IDENTIFICATION NO.	DESCRIPTION	ZONE	GROUP NO. AND QUANTITY								ROUTING
					73	77	73	77	73	77	73	77	
000A			FMF AJH										N
001		70C180190	SYSTEM INTERFACE LOGIC		X								Z-2
002A		PCP-176	MANUAL, SCHEMATIC										N
003A		PCP-177	MANUAL, SCHEMATIC										N
004A		02-011F01	MANUAL, SCHEMATIC										N
005A		70B113344	SCHEMATIC										N
006A		70B113366	SCHEMATIC										N
007		70B113243	CONTROL LINE MOD, SCHEM		X								Z-2
008		70B113239	BYTE I/O MODULE, SCHEM		X								Z-2
009		70B113242	SENSE LINE MODULE, SCHEM		X								Z-2
010		70A110047	30-2 PROCESSOR PROD SPEC		X								Z-2
011		70A110403	HS ARITH&I/O PROD SPEC		X								Z-2
012		70A110866	PWR FAIL SAFE DECT CONTR		X								Z-2
013		70A110167	30-2 AUTO START PROD SPE		X								Z-2
014A		70A111179	PRODUCT SPEC.										N
015		70A110048	31-02, 03, 12, 13 PROD SPEC		X								Z-2
016A		70A111185	PRODUCT SPEC.										N
017		70A110086	TTY SYSTEMS PRODUCT SPEC		X								Z-2
018		70A110855	HSPTR UNI CONTR PROD SPE		X								Z-2
019A		70A111418	PRODUCT SPEC.										N
020A		70A111199	PRODUCT SPEC.										N
021		70A110860	SENSE LINE MOD PROD SPEC		X								Z-2
022		70A110858	CONTR LINE MOD PROD SPEC		X								Z-2
023		70A110396	BYTE I/O MOD PROD SPEC		X								Z-2
024A		70A111217	PRODUCT SPEC.										N

REVISIONS	1	01/19/70	AN	AN	AN	AN	AN						
MADE BY	TEMPLETON		MO	DAY	YR	APPROVAL	DATE ISSUED	DISTRIBUTION CODE	PL 70X106451	SECT	SECT	SAL NO	CONT ON
8	01	15	70	HSN	02	02	70	K6-2	PL 70X106451	16	ISSUED	1	2

TITLE INDEX FIELD AIDS		FCI 70X106452	GENERAL ELECTRIC PROCESS COMPUTER		PL 70X106451	SECT 5	SM NO 3	CONT ON 4
						ISSUED		SHEET

ITEM NO.	REV CODE	IDENTIFICATION NO.	DESCRIPTION	ZONE	GROUP NO. AND QUANTITY								ROUTING
					73	77 73	77 73	77 73	77 73	77 73	77 73	77 73	
030A		PCP-185	INFORMATION DWG		1								N
031		70A110426	SENS LINE MOD, TEST PRCDR	X									Z-2
032		70A110849	CONTROL LINE MOD INFORMA	X									Z-2
033		70A111118	EXPANSION CHASSIS INSTAL	X									Z-2
034		70A111258	PWR SUP 230V CONVER INFO	X									Z-2
035A		06-003	TEST TAPE										N
036A		06-004	TEST TAPE										N
037A		06-016	TEST TAPE										N
038A		06-018	TEST TAPE										N
039A		06-045	TEST TAPE										N
040A		06-041	TEST TAPE										N
041A		06-017	TEST TAPE										N
042A		06-040	TEST TAPE										N
043		70A111601	MOD 30-2 TEST SPEC	X									Z-2
044		70A110706	MEMORY PROTECT TEST SPEC	X									Z-2
045		70A110795	TELETYPE INTERF TEST SPE	X									Z-2
046		70A110018	TELETYPE SYS, TEST SPEC	X									Z-2
047		70A110798	HSPTR INTERFACE TEST SPE	X									Z-2
048A		70A111287	TEST SPEC										N
049A		70A111266	TEST SPEC										N
050		70A110807	SENSE LINE MOD, TEST SPEC	X									Z-2
051A		70A111270	TEST SPEC										N
052A		70A111272	TEST SPEC										N
053		70A110811	POWER SUPPLY TEST SPEC	X									Z-2
054		70A110073	SPR PTS, 30-2, OPTION 1	X									Z-2

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MADE BY		TEMPLETON		APPROVAL		DATE ISSUED		DISTRIBUTION CODE		PL 70X106451		SECT 5	
8		01 15 70		HSN		02 02 70		K6-2		PL 70X106451		SM NO 3	
		MO DAY YR		MO DAY YR		MO DAY YR				ISSUED		SHEET	

TITLE		FCI		GENERAL ELECTRIC		PL		SECT		SH. NO.		CONT. ON													
INDEX F. AIDS		70X106452		PROCESS COMPUTER		70X106451		ISSUED		4		7													
ITEM NO.		REV CODE		IDENTIFICATION NO.		DESCRIPTION		ZONE		GROUP NO. AND QUANTITY								ROUTING							
17-20		21-36		37-60		61-64		73-77		73-77		73-77		73-77		73-77		73-77		73-77		73-77		73-77	
075				70A110096		SPR PTS, LEV3 MEM PAR/PRO		X																	
076				70A110095		SPR PTS, 4K 8K MEM W/OPAR		X																	
077				70A110083		SPR PTS, TTY CNTRLR, LVL 3		X																	
078				70A110100		SPR PTS, TP RDR UNI-DIRCT		X																	
079				70A111294		SPR PTS, 8 LINE INTERRUPT		X																	
080				70A110887		SPR PTS, REL CLOS MODULE		X																	
081				70A111295		SPR PTS, BYTE I/O MODULE		X																	
082A				70A111299		SPARE PARTS																			
083A				PCP-129		PROGRAM LIST																			

REVISIONS		A - 01/15/70		AN - ISSUE		AN -		AN -		AN -		AN -	
MADE BY		S		TEMPLETON		01 15 70		APPROVAL		HSN		02 02 70	
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