FILE FOLDER

DESCRIPTION ON TAB:

PH 6C127. Engineering Study

Bldg 54

☐ **Outside/inside of actual folder did not contain hand written information**

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P.# 6C127. Engineering Study. BLDG 54

10 DEC 1985

4280
MAIN

Base Maintenance Officer

Public Works Officer

ENGINEERING STUDY; REQUEST FOR (PROJECT 6C127)

Encl: (1) TAVSC Officer's Work Request #007-86 of 21 Nov 85

1. It is requested that an engineering study of all circuits supplying power to the Instructional Television Section be performed to determined the causes of voltage instability which is allegedly responsible for frequent equipment breakdowns causing the television studio to become inoperative.

2. It is further requested that adequate measures to correct the above described situation be determined and that a cost estimate be prepared and returned to Base Maintenance Operations for assessment and follow-up action.

3. Further information regarding the equipment involved and power requirements may be obtained by contacting Warrant Officer Colston at Bldg 54, extension 3733.

W. M. RICE

Writer: G. J. Lynn, OPS, X5809
Typist: S. Schmitz, 5 Dec 85

☆ U.S.GPO:1983-0-610-262/184

WORK REQUEST (MAINTENANCE MANAGEMENT)
NAVFAC 9-11014/20 REV. 2-68) S/N 0105-LF-002-7510
Supersedes NAVDOCKS 2351

PRI # 7

(PW Department see Instructions in NAVFAC MO-321)

Requestor see Instructions on Reverse Side

PART I—REQUEST (Filled out by Requestor)

1. FROM	2. REQUEST NO.
Officer in Charge, Training and Audiovisual Support Center	007-86
3. TO Base Maintenance Officer Via: Assistant Chief of Staff, Training and Operations	**4. DATE OF REQUEST** 21 Nov 85
5. REQUEST FOR ☐ COST ESTIMATE ☒ PERFORMANCE OF WORK	**5a. REQUEST WORK START** ASAP
6. FOR FURTHER INFORMATION CALL WO Colston, ext 3733/1516	**7. SKETCH/PLAN ATTACHED** ☐ YES ☒ NO

8. DESCRIPTION OF WORK AND JUSTIFICATION *(Including location, type, size, quantity, etc.)*

To provide urgently needed installation of two voltage stabilizers for the Instructional Television Section, Building 54. Stabilizers are on hand at TAVSC.

JUSTIFICATION is provided on attached sheet.

9. FUNDS CHARGEABLE	10. SIGNATURE *(Requesting Official)*
	L. L. Colston

PART II—COST ESTIMATE
(Filled out by Maintenance Control Division if estimate requested)

11. TO:	12. ESTIMATE NO.

13. COST ESTIMATE	
a. Labor	$
b. Material	$
c. Overhead and/or Surcharge	$
d. Equipment Rental/Usage	$
e. Contingency	$
f. TOTAL	$

14. SKETCH/PLAN ATTACHED ☐ YES ☐ NO

15.

☐ APPROVED. PROGRAMMING TO START IN _____

☐ APPROVED. BASED ON PRESENT WORKLOAD, THIS JOB CAN BE PROGRAMMED TO START IN _____ IF AUTHORIZED BY 25TH OF _____ AND FUNDS ARE MADE AVAILABLE.

☐ DISAPPROVED. *(See Reverse Side)*

16. SIGNATURE	17. DATE

PART III—ACTION (Filled out by Requestor)

18. TO:

19. AUTHORIZATION TO PROCEED IS ATTACHED *(Check one if other than PW funds are involved)* ☐ NAVCOMPT 140 ☐ OTHER	20. WORK REQUESTED ☐ HAS BEEN CANCELLED ☐ HAS BEEN DEFERRED ☐ WILL BE PERFORMED BY OTHERS
21. SIGNATURE	22. DATE 21 Nov 85

(See Part IV on Reverse Side)

#907-86

An emergency requirement exists to install two voltage stablizers - each with a dedicated 110 - 120 VAC line - to steady the AC power supply for the ITV studio control booth. The present 110 VAC power source has been continually fluctuating to intolerable levels, often reaching the levels of 140 - 190 VAC. As regards equipment which must operate daily at these dangerous levels, the situation has become critical. Much of the equipment is vital, unique to studio operations, for example, the Time Base Corrector, which if deadlined, renders the entire studio deadlined until repairs are accomplished. During studio productions, equipment as equally critical as the Time Base Corrector must frequently be adjusted in an attempt to cope with the excess voltage. There is a limit to these remedial stop-gap measures, however, and the situation has become increasing impossible for technicians to handle. On 15, 18, and 19 Nov 85, the entire ITV studio was rendered inoperable, with essential pieces of control booth equipment having suffered serious electrical overloads, requiring many expensive man-hours of commercial repair.

Until the voltage stablizers are installed, the frequency of prolonged control booth deadlining, due to extensive equipment damage, will increase, threatening to preempt such regular TV programming as Focus, and The Lejeune Report.

The voltage stablizers are on hand at the TAVSC.

Memorandum

DATE: 1 November 1984

FROM: 04

TO: 02
Via: 10

SUBJ: OPEN END A&E CONTRACT #84-B-7949 FOR ELECTRICAL ENGINEERING PROJECTS

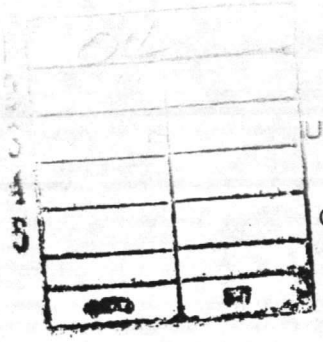
Encl: (1) BMaintDiv ltr 4330 MAIN of 30 Oct 84

1. It is requested that negotiations for the subject contract be cancelled based on information provided in the enclosure.

E. L. ROUSE

Copy to:
408
404

☆ U.S. GOVERNMENT PRINTING OFFICE: 1983-605-010:8460



UNITED STATES MARINE CORPS
Base Maintenance Division
Marine Corps Base
Camp Lejeune, North Carolina 28542

IN REPLY REFER TO
4330
MAIN
30 Oct 84

From: Base Maintenance Officer, Marine Corps Base, Camp Lejeune
To: Public Works Officer, Marine Corps Base, Camp Lejeune (Attn: Mr. Rouse)

Subj: FY-85 M-1 CONTRACTS

1. It is requested that design of contracts 84-7935 and 84-7876 for electrical repairs be delayed until further notice.

J. L. Sellers

J. L. SELLERS
By direction

Power Conditioner Installation Handbook

RTE DELTEC

FORMERLY:

GOULD

Electronics

POWER CONVERSION DIVISION

2727 Kurtz Street
San Diego, CA 92110
Telephone (619) 291-4211
TWX 910-335-1241

1. Introduction

1.1 GENERAL DESCRIPTION

Gould Conditioners have been designed to isolate critical loads from their primary (utility) power source. In addition, several of the product lines will provide a regulated output voltage within a specified input voltage range. Table 1 indicates the basic capabilities of the various Gould conditioners. Your sales representative can provide detailed specifications for each model.

TABLE 1. Product Capability Guide

PRODUCT LINE	COMMON-MODE NOISE REDUCTION	TRANSVERSE-MODE NOISE REDUCTION	OUTPUT VOLTAGE REGULATION	AUDIBLE NOISE LEVEL @ 3 FEET
SIT/DT	YES	SLIGHT	NO	40 dBA
DLC	YES	YES	YES	55-75 dBA
GPC	YES	YES	YES	55-65 dBA
GSC	YES	YES	YES	40-55 dBA
GT	SLIGHT	YES	YES	42 dBA

1.2 SCOPE

This document contains the information necessary to install both single-phase (one-unit) and three-phase (three-unit) configurations of the Terminal Block Input/Output models of the following product lines:

SIT/DT Super Isolation Transformers
GPC Power Conditioners
GSC Stepping Conditioners
DLC Line Conditioners

For maximum adaptablity, this handbook defines all pertinent system variables so that the user can apply the system to precise individual needs. The information covered includes grounding considerations, ampacity equations, circuit breaker and wire selection, and warranty information.

II. System Connections

Proper wiring connections and grounding are important factors in assuring that the Gould conditioner achieves optimum performance. Improper connections can defeat the noise suppression features of the unit.

This handbook contains general wiring recommendations. If they conflict with local electrical codes, Gould suggests that local codes should govern the installation.

If three units are to be used in a three-phase installation, refer to the label on the power conditioners to determine whether they are to be connected in a Wye or Delta input configuration.

For maximum isolation between system input and output, follow these guidelines:

A. Do not run input and output conductors through the same conduit.

B. Do not run the input and output conductors through the same junction box.

C. Do not run the output conductors in the same conduit with any other feeder system leads that are not associated with the critical load.

D. Dedicated grounding is preferred for the best possible operation. If local codes or other constraints make this method of grounding impractical, the conditioner may be connected with a non-dedicated ground.

III. Grounding

3.1 NON-DEDICATED GROUNDING (See Figures 1, 3, or 5)

Because the performance of a power conditioner may be degraded by a contaminated building ground, non-dedicated grounding should be avoided. Use this technique only when it is absolutely necessary to satisfy local codes or physical demands.

3.2 DEDICATED GROUNDING (See Figures 2, 4, or 6)

During installation care must be taken to assure that motors, vending machines, refrigerators, and other equipment are not, and will not be, tied to the dedicated ground.

Most installations can be grounded by driving a 3/8-inch by 8-foot ground rod into the earth within 100 feet of the critical load. Connect this rod to the conditioner housing using the same size wire as used in the feeder circuit.

If the installation site is in a multi-story building, connect the housing to the building's structural steel to achieve dedicated grounding. Choose a point that is close to the conditioner, bolt a wire to the structure, and and then connect it to the unit housing.

Connecting the housing to structural steel provides a better ground than running a wire to a separate ground rod in the basement.

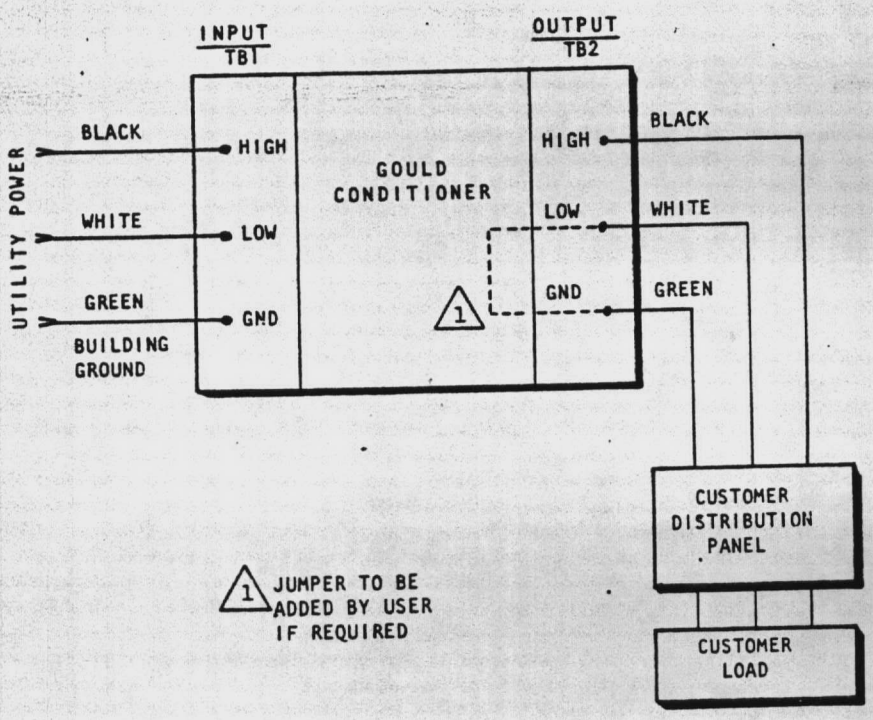


Figure 1. Non-dedicated ground installation for a single-unit with single-phase input and output.

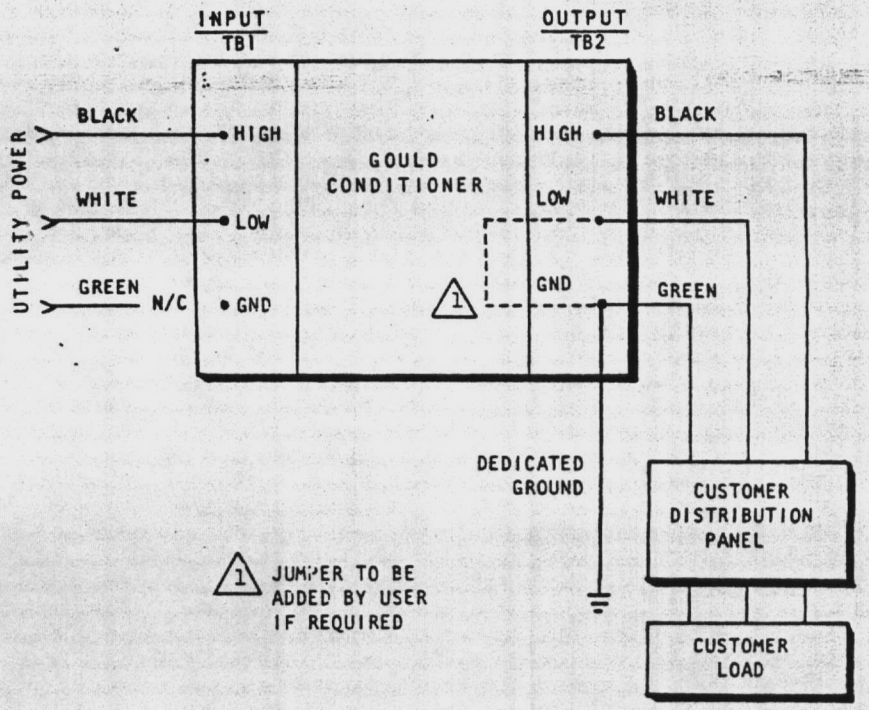


Figure 2. Dedicated ground installation for a single unit with single-phase input and output.

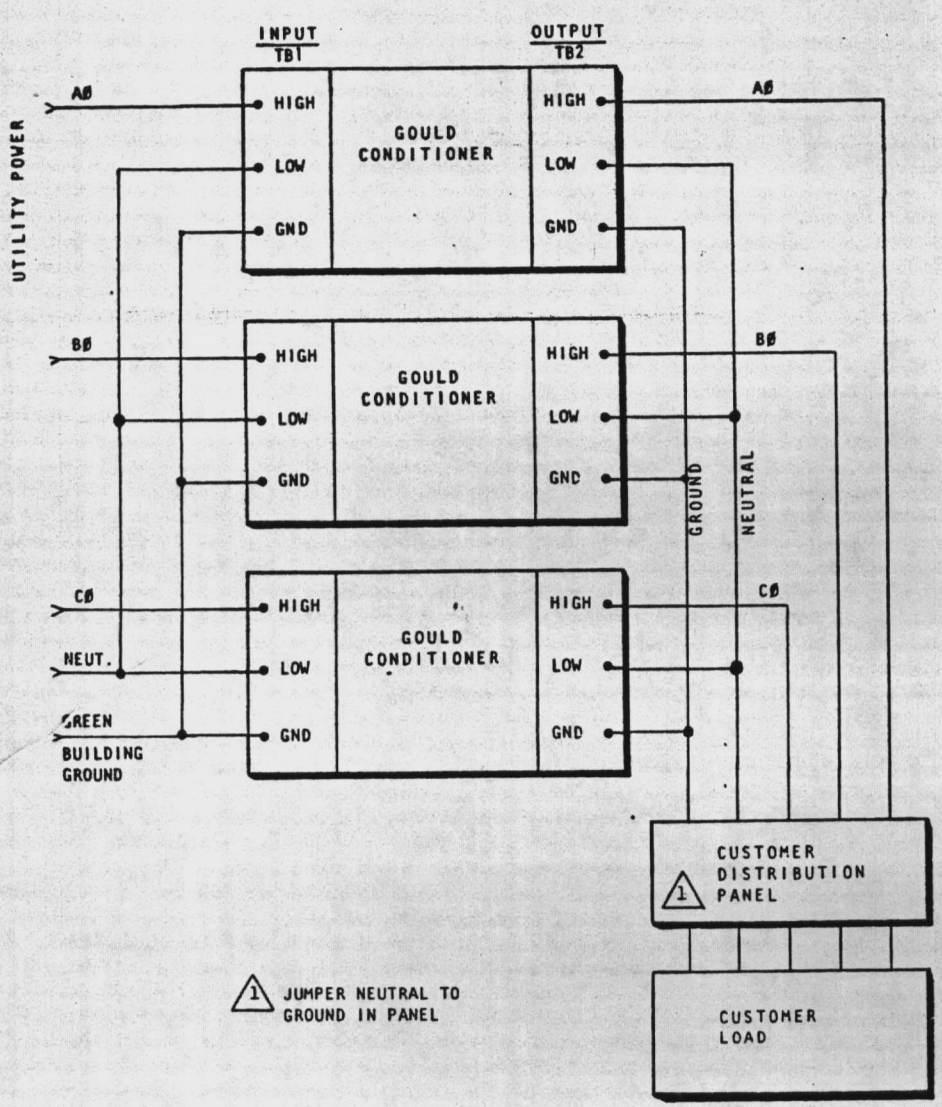


Figure 3. Non-dedicated ground installation for a three-unit three-phase configuration with four-wire Wye input and output.

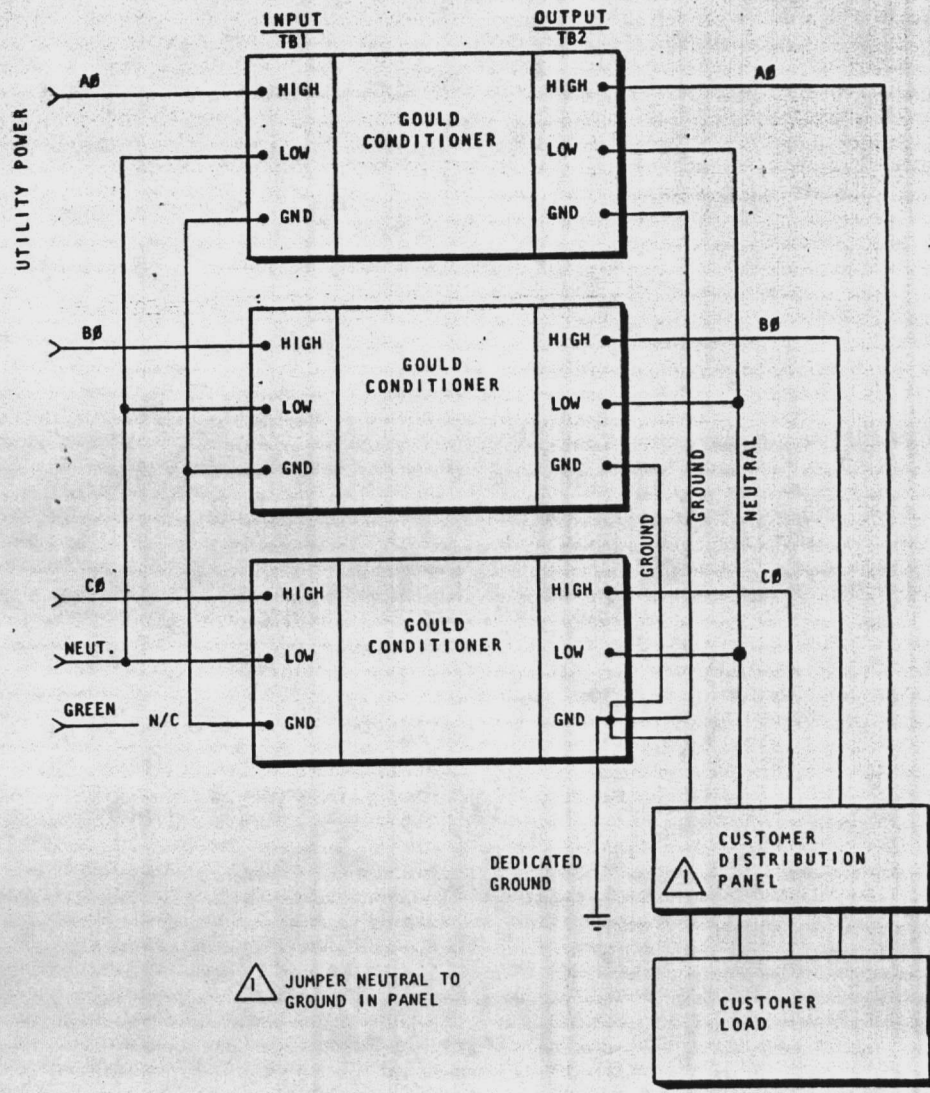


Figure 4. Dedicated ground installation for a three-unit three-phase configuration with four-wire Wye input and output.

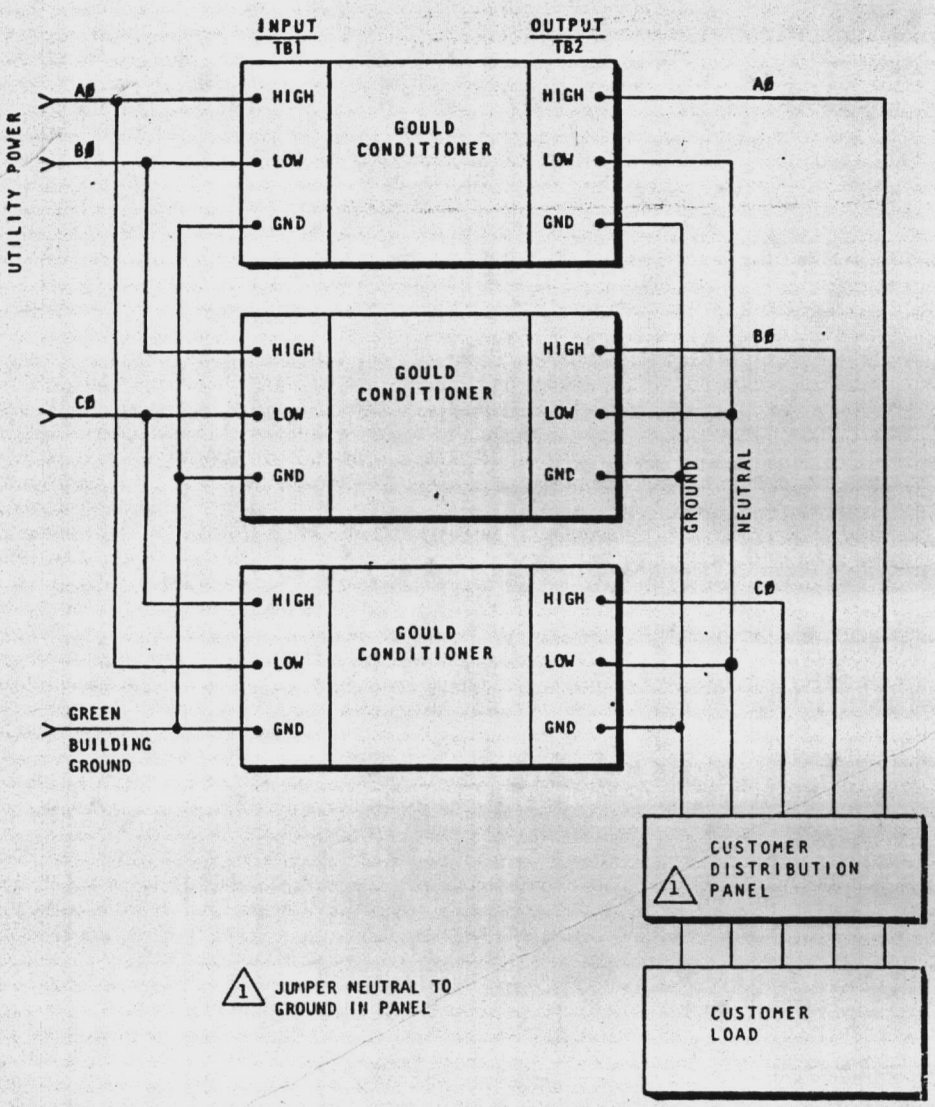


Figure 5. Non-dedicated ground installation for a three-unit three-phase configuration with three-wire Delta input and four-wire Wye output.

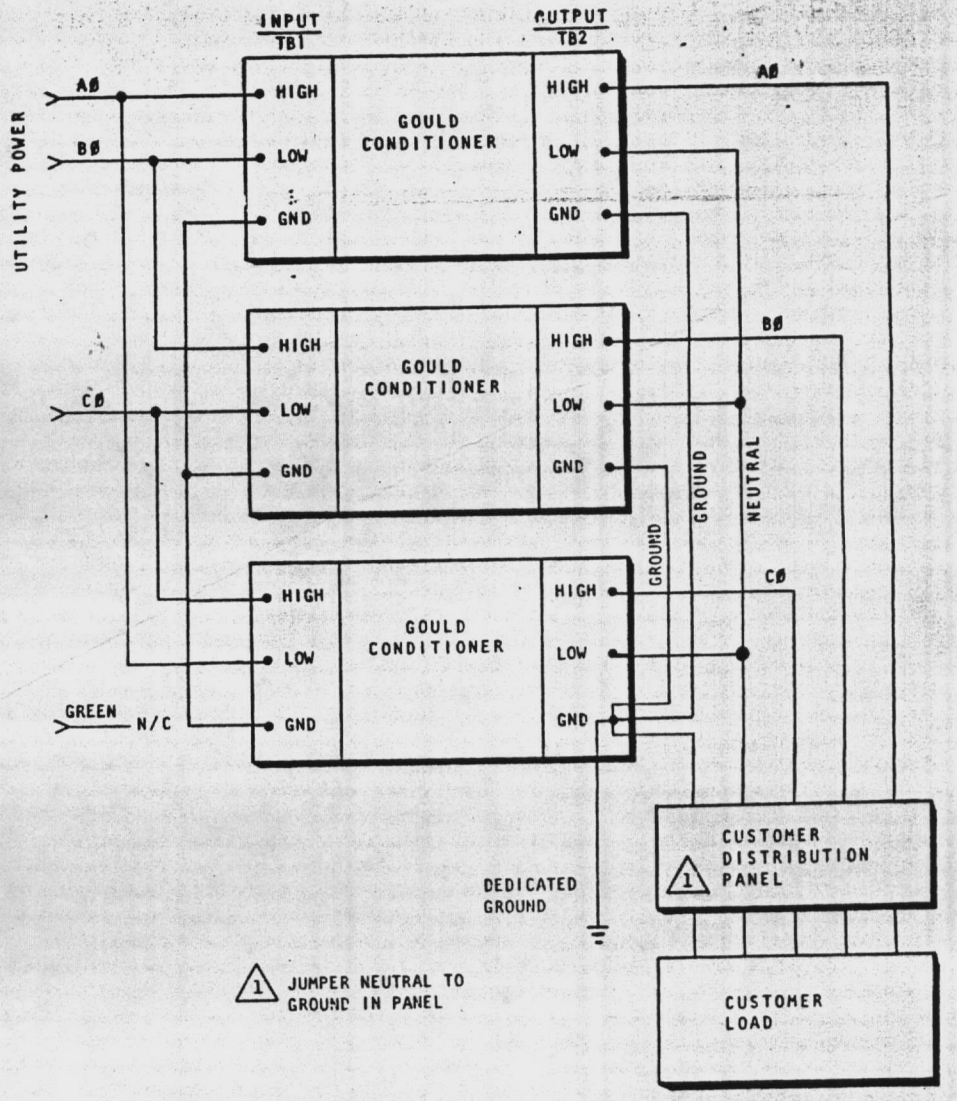


Figure 6. Dedicated ground installation for a three-unit three-phase configuration with three-wire Delta input and four-wire Wye output.

IV. Circuit Breaker Selection

Table 2 provides equations to calculate the input and output current of Gould's power conditioners so that circuit breakers and wiring may be properly sized.

Gould recommends slow-trip circuit breakers (motor-start delay curve). They should be selected based upon both voltage and current ratings.

TABLE 2. Ampacity Equations[1] for Circuit Breaker and Wire Selection

PRODUCT	#Ø	MAX INPUT CURRENT	MAX OUTPUT CURRENT
DLC/GPC GSC/GT	1	$(1.6 \times VA)/E_{IN}$[2]	VA/E_{OUT}[3]
DLC/GPC GSC/GT	3	$(1.6 \times VA)/(1.73 \times E_{LL\ IN})$[4]	$VA/(3 \times E_{LN\ OUT})$[5]
SIT/DT	1	$(1.05 \times VA)/E_{IN}$	VA/E_{OUT}
SIT/DT	3	$(1.05 \times VA)/(1.73 \times E_{LL\ IN})$	$VA/(3 \times E_{LN\ OUT})$

[1] Worst case amperage considering full-rated load, low input voltage, and device efficiency.

[2] E_{IN} = Nominal Input Voltage

[3] E_{OUT} = Nominal Output Voltage

[4] $E_{LL\ IN}$ = Nominal Line-to-Line Input Voltage

[5] $E_{LN\ OUT}$ = Nominal Line-to-Neutral Output Voltage

V. Wire Selection

Once ampacity has been determined from Table 2, use Table 3, based on the wire gage table in Article 310 of the National Electric Code (NEC), to determine wire sizing.

TABLE 3. Allowable Ampacities of Insulated Conductors Rated 0-2000 Volts, 60° to 90°C

Not more than three conductors in raceway cable or Earth (directly buried), based on an Ambient Temperature of 30°C (86°F)

CONDUCTOR DESCRIPTION	ALLOWABLE AMPACITY FOR COPPER CONDUCTOR			
TEMPERATURE RATING	60°C (140°F)	75°C (167°F)	85°C (185°F)	90°C (194°F)
TYPE	*RUW, *T, *TW, *UF	*FEPW, *RH, *RHW, *RUH, *THW, *THWN, *XHHW, *USE, *ZW	V, MI	TA, TBS, SA, AVB, SIS, *FIP, *FEPB, *RHH, *THHN, *†XHHW
GAGE				
18	....	....	....	14
16	....	....	18	18
14	*20	*20	25	*25
12	*25	*25	30	*30
10	*30	*35	40	*40
8	40	50	55	55
6	55	65	70	75
4	70	85	95	95
3	85	100	110	110
2	95	115	125	130
1	110	130	145	150
0	125	150	165	170
00	145	175	190	195
000	165	200	215	225
0000	195	230	250	260

Correction Factors

Ambient Temp °C (°F)	For ambient temperatures over 30°C, multiply the ampacities shown above by the appropriate correction factor to determine the maximum allowable load current.			
31-40 (86-104)	.82	.88	.90	.91
41-45 (105-113)	.71	.82	.85	.87
46-50 (114-122)	.58	.75	.80	.82
51-60 (123-141)	...	.58	.67	.71
61-70 (142-158)	...	.35	.52	.58
71-80 (159-176)	...	...	.30	.41

* Load current rating and overcurrent protection shall not exceed:
15 amperes for 14 AWG,
20 amperes for 12 AWG,
30 amperes for 10 AWG

† For dry locations only. See 75°C column for wet locations.

GOULD
Electronics

Warranty

Gould Inc., Power Conversion Division warrants each equipment it manufactures, when properly applied and operated within specified conditions, against failure due to faulty materials or workmanship for a period of one year from the date of original shipment from the factory. The warranty covers repair or replacement of defective parts. Replacement parts are FOB Gould's factory, while in-field warranty repair labor is FOB the Gould Service office nearest the installation site. Actual travel expenses from the Service office to the jobsite will be borne by the customer. Gould products repaired or replaced pursuant to this warranty shall be warranted for the unexpired portion of the warranty applying to the original product.

Excepted from this warranty is equipment which has been abused or operated outside the limits of its electrical or environmental specifications. When an alarmed failure or field test suggests that the Gould equipment may be faulty, whether in or out of the warranty period, a full report of the difficulty should be telephoned to the Customer Service Department at the number listed below. Upon receipt of this report, the Service Department will provide the assistance required to repair the equipment.

Gould will not be liable for any associated costs incurred by the user, installing contractor, or wholesaler as a direct or indirect result of failure or in the replacement of defective, in-warranty material unless prior approval has been granted by Gould. **Unauthorized returns of units for in-warranty repairs will be subject to an inspection and handling charge of $150 plus any repair and all transportation charges. Authorization may be obtained from Gould's Customer Service Department.**

Equipment repaired beyond the effective date of the warranty or when abnormal usage has occurred will be charged at applicable rates and the user will be advised of the estimate of such charges before Gould commences repair. When ordering replacement parts, specify:

(1) Model number and serial number of the equipment,
(2) Part number, description and quantity required,
(3) Date of purchase of original equipment,
(4) Any special shipping or quotation instructions.

Any technical advice furnished before or after delivery in regard to use or application of Gould's equipment is furnished without charge and on the basis that it represents Gould's best judgment under the circumstances, but it is used at the recipient's sole risk.

This warranty is expressly in lieu of all other warranties, expressed or implied, including, without limitation, any implied warranty or merchantability or fitness for a particular purpose, and of any other obligation or liability on the part of Gould. The sole and exclusive remedy for breach of any warranty, express or implied, concerning Gould products and the only obligation of Gould hereunder shall be the repair or replacement of defective equipment, components, or parts; or, at Gould's option, refund of the purchase price or substitution with a new replacement product. Gould shall in no way be responsible for consequential damages of any kind or nature whatsoever resulting from the breach of any warranty, express or implied.

Gould Inc., Power Conversion Division
2727 Kurtz Street
San Diego, California 92110
Toll Free: (800) 854-2658
In California: (619) 291-4211
TWX: 910-335-1241