

ARGUS[®]

Load Disconnect Panel And Control Module

020-505-B0



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Power

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Load Disconnect Panel And Control Module

020-505-B0

The following documents and drawings are included in this manual to provide the necessary information required for routine operation and fault diagnosis of the unit.

- **Warranty Policy:** 048-507-10
- **Installation and Operation Instructions:** 020-014-C0 Rev C
- **1200A Main Parts List:** 020-505-20
- **1200A Assembly and Outline Drawing:** 020-505-04
- **Panel Schematic:** 020-017-05
- **Control Module PCB Parts List (48 Volt):** 700-084-20
- **Control Module PCB Schematic (48 Volt):** 700-084-05
- **Control Module PCB Parts List (24 Volt):** 700-086-20
- **Control Module PCB Schematic (24 Volt):** 700-086-05
- **Factory Service Information:** 048-527-10

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WARRANTY AND REPAIR INFORMATION

Warranty Policy

Argus Technologies Ltd. warrants all equipment manufactured by it to be free from defects in parts and labor, excluding third party OEM materials (example: air conditioners, batteries), for a period of two years from the date of shipment from the factory. For third party products the OEM's warranty shall apply. The liability of Argus applies solely to repairing, replacing or issuing credit (at Argus' sole discretion) for any equipment manufactured by it and returned by the customer during the warranty period. The terms of the warranty are Ex Works (EXW) from Argus' factory service location.

Argus reserves the right to void the warranty if:

- (1) identification marks or serial numbers are removed or altered in any way,
- (2) invoice is unpaid, or
- (3) defect is the result of misuse, neglect, improper installation, environmental conditions, non-authorized repair, alteration or accident.

Argus shall not be liable to the customer or other parties for any loss of profits, loss of use, costs for removal or installation of defective equipment, damages or consequential damages based upon equipment failure during or after the warranty period. There shall be no other obligations either expressed or implied. Argus will not honor warranties for batteries and other third party products without prior written Argus authorization.

Freight Policy

Customer is responsible for all shipping and handling charges (COD and freight collect will not be accepted without prior approval from Argus Technologies).

Terms of Payment (North America)

Payment terms are net 30 days subject to prior credit approval. All other orders require payment before shipping.

Terms of Payment (International)

Payment terms are subject to prior approval and are typically through Tele-Transfer.

Return Material Policy

Our RMA policy is designed to ensure prompt, efficient and high quality factory service. A Return Material Authorization (RMA) number must be obtained before products can be accepted for servicing by the Argus factory. For returns to an authorized service center (refer to "Authorized Service Centers" for locations), please consult the individual service center for specific return policies and instructions.

To obtain a RMA number for a factory return, customers must call the appropriate location with the product serial and model number, as well as a brief description of the problem, shipment instructions and billing details.

The original packing container should be used whenever possible. Both the shipping documents and the outside of the box must have the RMA # clearly marked and the product shipped prepaid to the Argus factory service center. Argus will endeavor to repair products within five working days of receipt. Repairs to the returned product are warranted for a period of six months. A service charge may be applied if no fault is found in the returned product. Argus will not accept products without an RMA number.

Business Hours

Argus North American office hours are 7:30 am to 5:00 pm (Pacific Standard Time) Monday to Friday.

Factory Service Centers

Canada and International

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Burnaby, BC, V5J 4M5 Canada
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Fax: +1 604 436 1233
Email: returns@argusdcpower.com

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Argus Technologies Inc.
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Fax: +1-360 647 0498
Email: returns-usa@argusdcpower.com

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2.1 Introduction

Please read this manual thoroughly prior to use in order to become familiar with the unit's numerous features and operating procedures. To obtain a maximum degree of safety, follow the prescribed sequences as outlined.

This manual incorporates warnings and notes to the user. Points that are vital to the proper operation or safety of the operator are indicated by the heading; WARNING. Points that are important to the performance or ease of use of the equipment are covered by a notation that is underlined.

2.2 ARGUS Numbering system

ARGUS Technologies uses a eight digit drawing number system which is broken into three blocks. The first three digits describe the category of the product ie. rectifier or fuse panel. The next three digits indicate the sequence in which the product number was allocated in a particular category. The last two digits indicate the type of drawing ie:

- 05 Schematic
- 06 Outline Drawing
- 20 Bill of Material

Argus Technologies uses a eight digit part numbering system for all components and sub-assemblies. Each part is covered by its own unique number. Due to the quantity, categories are not listed in this manual.

3.1 Scope

This instruction manual covers the installation and operation of the Argus Load Disconnect Panel & accompanying Control Module.

3.2 Introduction

The load disconnect panels are used to remove the load from the discharge circuit in the event that the system voltage drops below preset minimums. The unit can be configured for either 24 or 48VDC operation. In addition to load disconnect control the module can provide additional alarms.

Options available are:

- List 0: Basic Unit including main control & Voltmeter
- List 01: 24 Volt Operation
- List 02: 48 Volt Operation
- List 19: 19" Mounting
- List 23: 23" Mounting
- List 80: Basic Control Module
- List 81: Hi/Low Volts Alarm
- List 83: Fuse/Breaker Alarm

The Alarm Indicators operate in Real Time.

All alarms have two sets of form A dry contacts associated with them and are available for customer connection.

3.3 Indicators, Controls

List Option 0 - Indicators

- 3.3.01 Test Mode - Red

List Option 0 - Controls

- 3.3.02 Test/Normal

List Option 81 - Indicators

- 3.3.03 High Volts Alarm - Red
- 3.3.04 Low Volts Alarm - Red

List Option 82 - Indicators

- 3.3.05 Load Out Alarm - Red

List Option 82 - Controls

- 3.3.06 Manual (Load in/Load out)/Automatic

List Option 83 - Indicators

- 3.3.07 Fuse/breaker alarm - Red

3.4 DESCRIPTIONS OF INDICATORS, CONTROLS

3.4.01 Test Mode Indicator

This lamp illuminates to indicate the SD03 is switched into the test mode and is obtaining its sensing voltages from an external power source.

3.4.02 Test/Normal Switch

This switch changes the source of the sensing voltage from the discharge bus to an external power supply for use in calibrating the unit. The switch is a “locking” type so as to prevent accidental operation of the switch.

3.4.05 High Voltage Alarm

This lamp illuminates when the voltage on the discharge bus exceeds a preset value, and stays “on” until the condition clears. NOTE: There is an approximate 5 second delay prior to an alarm being indicated to compensate for line transients and false alarms.

3.4.06 Low Volts Alarm

This lamp illuminates when the voltage on the discharge bus goes below a preset value, and stays latched “on” until the condition clears. There is an approximate 5 second delay prior to an alarm being indicated to compensate for line transients and false alarms.

3.4.07 Fuse/Breaker Alarm

This lamp illuminates when any distribution fuses/breakers open, and stays latched “on” until until the condition clears.

3.4.08 Load out Alarm

This lamp illuminates when the load has been dropped out of the circuit via the load disconnect contactor. There is an approximately 5 second delay prior to an alarm being indicated to compensate for line transients and false alarms.

3.4.09 Manual (load in/load out)/Automatic

This switch provides for manual control of the load disconnect contactor when in either the “IN” or “OUT” position or enables the load disconnect to operate automatically when in the “AUTO” position.

4.0 Installation Instructions

4.1 Tools Required

- Phillips screw driver (Tip size 1/4")
- Slotted screw driver (Blade size 1/8")
- Slotted screw driver (Blade size .09" x .02") or tweaker
- 4-1/2 Digit Digital Voltmeter

4.2 Inspection

All ARGUS products are shipped in rugged, double walled boxes, to minimize shock that may occur during transporting. Packaging assemblies and methods are tested to National Safe Transit Association standards.

Prior to uncrating of the unit, note any damage to the shipping container. Uncrate the unit and inspect the exterior. If any damage is observed, contact the carrier immediately.

4.3 Mounting

The unit should be mounted to the rack using two #12 - 24 x 1/2" screws on each side. A captive type of drive such as phillips head is preferred to eliminate the possibility of slippage and scratching of the unit's exterior.

4.4 Input Connections

Terminal blocks can accommodate wire sizes #14 AWG to #22 AWG.

- Connect +ve Power to Terminal TB1-1
- Connect +ve Sense to terminal TB1-2
- Connect -ve Power to Terminal TB1-3
- Connect -ve Sense to Terminal TB1-4
- Connect Distribution fuse alarms to TB2-5
- Connect Load Disconnect to Terminal TB4-22

Note: Above Terminals refer to the terminal on the panel PCB.

4.5 Output Connections

Terminal blocks can accommodate wire sizes #14 AWG to #22 AWG.

All alarms provide 2 sets of Form A contacts which are available on terminal blocks. For further information on contacts see schematic. The load disconnect control output is via TB4-22

5.0 Adjustments

5.1 Factory Settings/Ranges

24 Volt Units

<u>Function</u>	<u>Range</u>	<u>Factory Setting</u>
High Volts Alarm	22-30	27.0V
- Low Volts Alarm	20-28	24.0V
- Load "IN"	22-30	25.0V
- Load "OUT"	20-28	21.0V

48 Volt Units

<u>Function</u>	<u>Range</u>	<u>Factory Setting</u>
- High Volts Alarm	44-60	54.0V
- Low Volts Alarm	40-56	48.0V
- Load "IN"	44-60	50.0V
- Load "OUT"	40-56	42.0V

5.2 Setup and Adjustments

WARNING: To prevent the load disconnect contactor (If option is supplied) from operating during the setup of the Hi/Low Voltage alarm, place the "IN/OUT/AUTO" Switch in the "IN" position & return the switch to the "AUTO" position after the adjustment is complete. :**WARNING**

5.2.1 High Volts Adjust

This potentiometer raises or lowers the setting at which the high voltage alarm operates. To raise the setting rotate the potentiometer counter clockwise. For High Volts Setup (Low = -14V; High = -1V; w.r.t. pin 2 on U1):

- Place Test/Normal switch in the "Test" position.
- Adjust R8 (High Volts) fully CCW.
- Using external Test supply set sense voltage to desired High voltage trip point (e.g. 27.0V).
- Monitor pin 2 on U1 (TP5). It should be low.
- Adjust R8 CW until pin 2 on U1 (TP5) goes high.
- "High volts" alarm lamp should illuminate after 1-2 seconds.
- Place Test/Normal switch in the "Normal" position.

5.2.2 Low Volts Adjust

This potentiometer raises or lowers the setting at which the high voltage alarm operates. To lower the setting rotate the potentiometer clockwise. For Low Volts Setup (Low = -14V; High = -1V; w.r.t. pin 13 on U1)

- Place Test/Normal switch in the "Test" position.
- Adjust R23 (Low volts) fully CW.
- Using external test supply set sense voltage to desired low voltage trip point (e.g. 24.0V).
- Monitor pin 13 on U1 (TP7). It should be low.
- Adjust R23 C.C.W. until pin 13 on U1 (TP7) goes high. "Low volts" alarm lamp should illuminate after 1-2 seconds.
- Place Test/Normal switch in the "Normal" position.

5.2.3 Load out/in Adjust

This potentiometer raises or lowers the setting at which the load is dropped out of the circuit. To lower the setting rotate the potentiometer clockwise. For load setup (Low = -14V; High = -1V; w.r.t. pin 13 on U2)

- Place "IN-OUT-AUTO" switch in "IN" position.
- Place Test/Normal switch in the "Test" position.
- Place "IN-OUT-AUTO" switch in "Auto" position.
- Adjust Pot R56 (LOAD-IN) fully CCW; R43 fully CW.
- Using external test supply, set sense voltage to the desired value for load to drop out of circuit (e.g. 21.0V).
- Monitor pin 13 on U2 (TP9). It should be low.
- Adjust Pot R43 (LOAD OUT) CCW until pin 13 on U2 (TP9) goes high. "LOAD OUT" lamp should illuminate after 1-2 seconds if the "LOAD OUT" Lamp is not already illuminated.
- Set sense voltage to the desired value for load to cut into circuit (e.g. 25.0V).
- Monitor pin 2 on U2 (TP11). It should be low.
- Adjust pot R56 (LOAD IN) CW until pin 2 on U2 (TP11) goes high. "LOAD OUT" lamp should extinguish after 1-2 seconds.
- Recheck the setting by increasing & decreasing the sense voltage.
- Ensure that the "LOAD OUT" indicator has extinguished before proceeding.
- Place "IN-OUT-AUTO" switch in "IN" position.
- Place Test/Normal switch in the "Normal" position.
- Place "IN-OUT-AUTO" switch in "AUTO" position.

6.0 Schematics and Parts Lists

The drawings that follow are included in this section to provide the necessary information required for routine operation and fault diagnosis.

BILL OF MATERIAL
1200A CONTACTOR PANEL

APPROVED: _____

ISSUED: _____

ITEM	QTY	P/N	REV	DESCRIPTION	CIRCUIT DESIGNATION OR REMARKS
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List 0; Basic Parts

1	2	610-454-13	C	Bar, Shunt, 1200A	Dwg (C) 610-454-00
2	6	640-030-10		Standoff Insulator, 1" thick, 1/4-20 Inserts	
3	1	535-011-10		Terminal Block, 2 Position, Double Row, 10mm Centers	
4	6	630-114-10		Screw, Set, 1/4-20 x 1"	
5	6	633-011-10		Washer, Flat, 1/4"	
6	6	633-035-10		Washer, Lock, Split Ring 1/4"	
7	6	634-014-10		Nut, 1/4-20, Hex	
8	6	630-069-10		Screw, Mach, 1/4-20 x 3/8", Truss Hd	
9	4	630-059-10		Screw, Mach, #10-32 x 3/8" Phl	
10	4	633-034-10		Washer, Lock, Split Ring, #10	
11	1	954-160-10		Label, CAUTION, Load Disconnection	
12-15				NOT USED	
16	4	630-103-10		Screw, Cap, 3/8-16 x 1" Hex Hd	
17	4	633-017-10		Washer, Flat, 3/8"	
18	4	633-037-10		Washer, Split Ring, 3/8"	
19-20				NOT USED	
21	1	630-027-10		Screw, Mach, #6-32 x 3/4" Phd Phl	
22	1	633-031-10		Washer, Lock, Split Ring, #6	
23	1	634-004-10		Nut, #6-32, Hex	
24				NOT USED	
25	1	301-001-10		Diode, 1A, 600V 1N4005	
26	2	538-046-10		Wire Term, Crimp, 16-14 AWG .250 x .032", F, Quick, Blue	
27	2	538-056-10		Wire Term, Crimp, 22-18 AWG .187 x .020", F, Quick, Red	
28-29				NOT USED	

List 1 ; 24VDC Add:

30	1	491-051-10		Relay, 1200A SPST-NO, 24VDC Coil, Chassis Mount	
----	---	------------	--	--	--

List 2 ; 48VDC Add:

30	1	491-088-10		Rly, 1200A, SPST-NO, 48VDC, 152 Ohm, Aux Sw, Chassis Mount	
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BILL OF MATERIAL
1200A CONTACTOR PANEL

APPROVED: _____

ISSUED: _____

ITEM	QTY	P/N	REV	DESCRIPTION	CIRCUIT DESIGNATION OR REMARKS
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List 11 ; Form B Contacts

Move shorting jumpers (J1 - J8) on item 46
to normally closed (NC) position

List 19/50 ; 19" Gray Add:

40	1	610-651-P1-044 B		Panel, Front (19")	Dwg (B) 610-651-00
	REF	084-044-01	A	Slkscn,Fr Pnl,1200A Contactor Panel	Dwg (B) 084-044-00

List 23/50 ; 23" Gray Add:

40	1	610-652-P1-044 B		Panel, Front (23")	Dwg (B) 610-652-00
	REF	084-044-01	A	Slkscn,Fr Pnl,1200A Contactor Panel	Dwg (B) 084-044-00

List 70 ; SD03 PCB Blank Add:

45	1	610-400-P1	A	Blank Panel	Dwg (B) 610-400-00
22	4	633-031-10		Washer, Lock, Split Ring, #6	
23	4	634-004-10		Nut, #6-32, Hex	

List 81 ; 24VDC Control Add:

46	1	700-086-20		Assembly, PCB, (24V)	
		List 0,82,83			
47	4	652-008-10		Support, PCB, 1/2" High, Screw Mount	
48	2	591-027-P1	A	Switch Guard	Dwg (A) 591-027-00
49-50				NOT USED	

List 82 ; 48 VDC Control Add:

46	1	700-084-20		Assembly, PCB, (48V)	
		List 0,82,83			
47	4	652-008-10		Support, PCB, 1/2" High, Screw Mount	
48	2	591-027-P1	A	Switch Guard	Dwg (A) 591-027-00

List 83 ; High/Low Volts Alarm Add:

1 List 81 to
Item 46

List 84 ; Manual Disconnect Switch Add:

48	1	591-027-P1	A	Switch Guard	Dwg (A) 591-027-00
51	1	421-014-10		Switch Toggle, DPDT	

BILL OF MATERIAL
1200A CONTACTOR PANEL

APPROVED: _____

ISSUED: _____

ITEM	QTY	P/N	REV	DESCRIPTION	CIRCUIT DESIGNATION OR REMARKS
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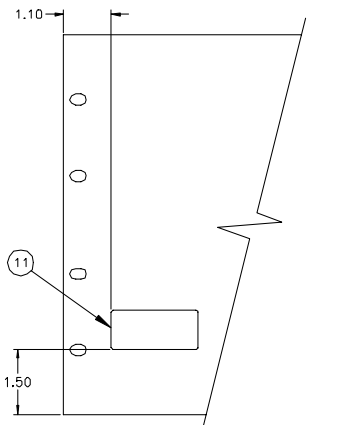
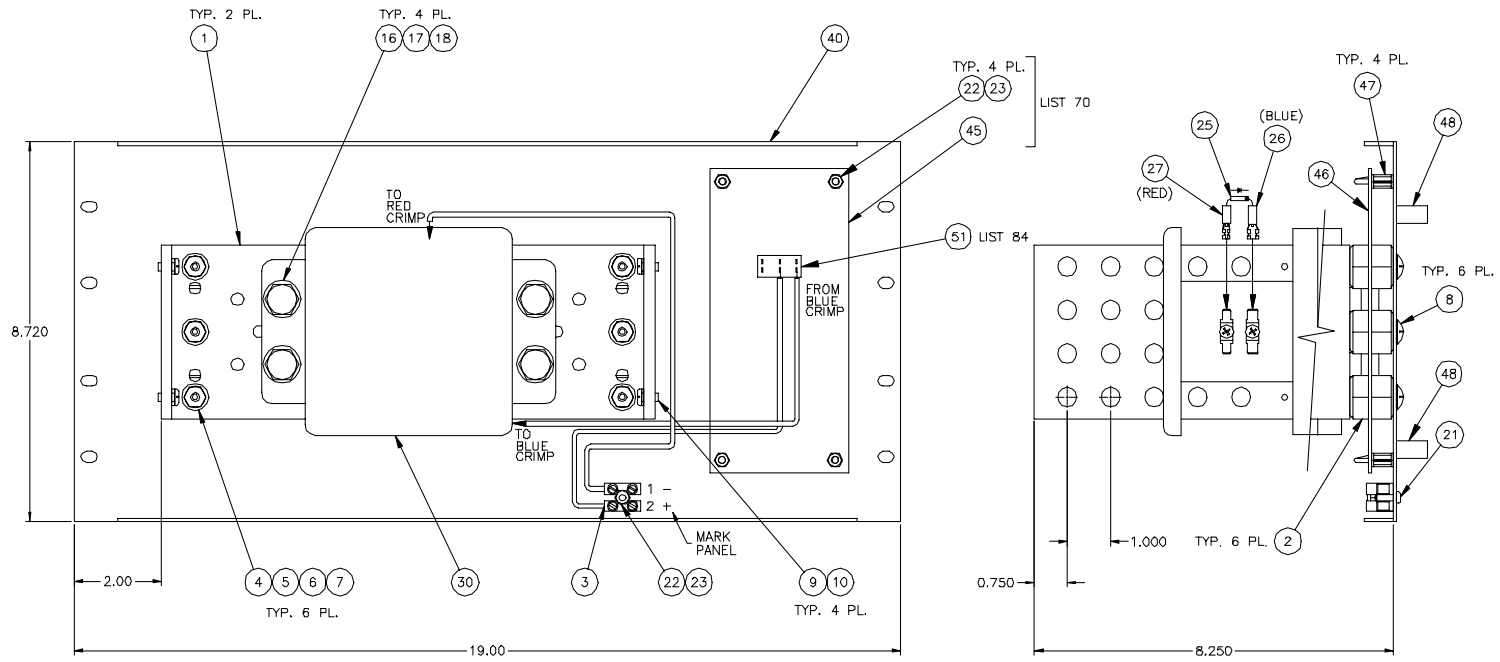
References:

REF	020-505-04	C	Dwg (B), Assembly, 1200A Contactor Panel
REF	020-505-05	B	Dwg (B), Schematic, 1200A Contactor Panel
AVAIL	020-505-A0		Doc (A), ATP, 1200A Contactor Panel

Revisions:

P/A	1994-10-28	First Release
A	1994-12-05	Production Release, Items added:4-10,16-18,21-23,31-34,48 Item changed: 40,51 Items deleted: 52
B	1995-12-13	Item 11 Added Item 48 Qty Changed
C	1997-12-01	Item #17 P/N corrected (was 630-017-10)
D	2005-10-11	List Options Affected: 2 Items Affected: 10,30-34,REFs

REVISIONS			
LTR	DESCRIPTION	DATE	APPD.
B	REV'D. SEE HISTORY COPY	95/12	W.E.S.
C	REMOVED R1 FROM LIST 2.	05/10	



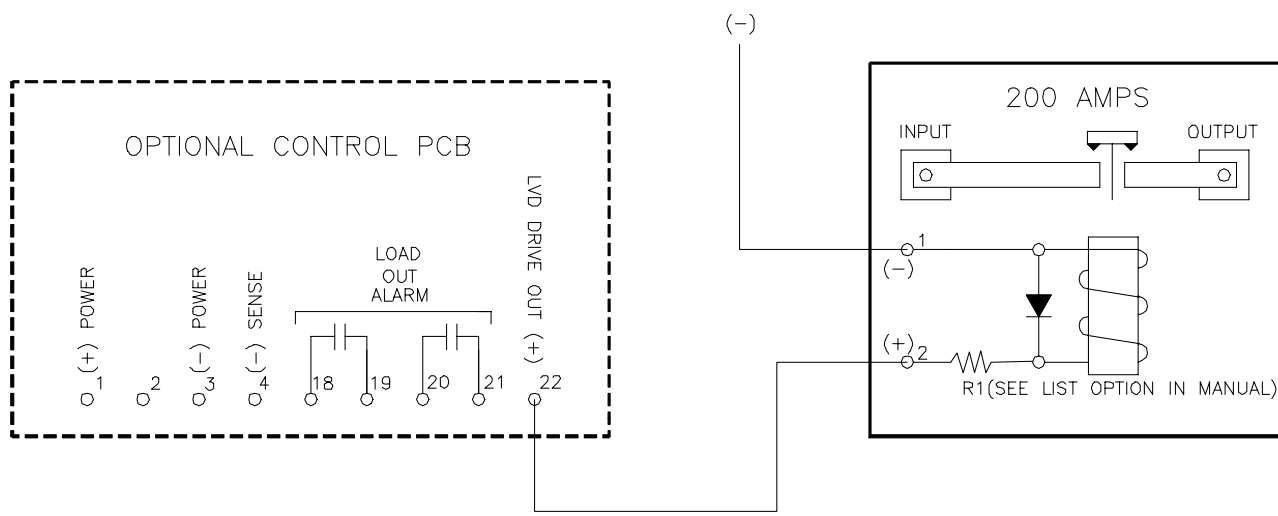
PARTIAL FRONT VIEW
LABEL PLACEMENT DETAIL

NOTE:
DRILL 1/2" HOLE IN BLANK PLATE ONLY,
INSTALL LOCKWASHER FROM BEHIND
LIST 70,84 ONLY.

PARTS LIST: 020-505-20

LTR	DESCRIPTION	QTY
FINISHED HOLE LEGEND		
THESE DESIGNS AND SPECIFICATIONS ARE THE PROPERTY OF ARGUS TECHNOLOGIES AND SHALL NOT BE COPIED OR USED FOR MANUFACTURING WITHOUT ITS WRITTEN CONSENT.		
DESIGN	W.E.S. 94/11	MATERIAL
DRAWN	DED 94/11	
CHECKED	W.E.S. 94/12	FINISH
APPROVED:		
TOLERANCES		SCALE N.T.S.
TITLE ASSEMBLY, 1200A CONTACTOR PANEL		
ISSUE DATE		SHEET 1 OF 1
SIZE B	DWG NO. 020 - 505 - 04	REV C

REVISIONS			
LTR	DESCRIPTION	DATE	APPD



A	DESCRIPTION	QTY
	FINISHED HOLE LEGEND	
<small>THESE DESIGNS AND SPECIFICATIONS ARE THE PROPERTY OF ARGUS TECHNOLOGIES AND SHALL NOT BE COPIED OR USED FOR MANUFACTURING WITHOUT ITS WRITTEN CONSENT.</small>		
DESIGN	S.K. 96-03-04	MATERIAL
DRAWN	S.K. 96-03-04	
CHECKED		FINISH
APPROVED		
TOLERANCES		SCALE N / A
TITLE SCHEMATIC 200A CONTACTOR PANEL		
ISSUE DATE		SHEET 1 OF 1
SIZE B	DWG NO. 020-017-05	REV A

BILL OF MATERIAL
ASSEMBLY, PCB,
SDO3 SUPERVISORY PANEL, 48V

APPROVED: _____
ISSUED: _____

ITEM	QTY	NEW P/N	KITTING	DESCRIPTION	CIRCUIT DESIGNATION OR REMARKS
------	-----	---------	---------	-------------	-----------------------------------

List 0:

1	1	700-084-10	1	PCB Fabricated	
2	1	535-024-10	1	Terminal Block, 4 Position	TB1
3				NOT USED	
4	1	520-013-10	1	Fuse Holder	xF1
5	2	545-003-10	1	Test Point .080"	TJ1, TJ2
6	2/3	540-029-10		Header Strip	J1 - J8
7	1	654-014-10	1	Spacer, LED	DS1
8		545-076-10	1	Turret, Hollow	TP4
9	3	521-005-10	1	Socket, IC 14 Pin	xU1 - xU3
10	1	421-010-10	1	Switch, Toggle, Locking DPDT	SW1
11	1	460-013-10	1	Fuse, 3A, 60VDC	F1 (UL)
12	1	200-019-10	1	Capacitor, Electrolytic 220uF/25V	C1
13	1	194-001-10	1	Capacitor, Polyester 10nF/50V	C2
14	1	200-048-10	1	Capacitor, Electrolytic 220uF/63V	C3
15	1	194-003-10	1	Capacitor, Polyester 100n/50V	C5
16	4	201-007-10	1	Capacitor, Tantalum 15uF/25V	C6, 7, 9, 10
17	4	194-002-10		Capacitor, Polyester 22n/50	C11 - 14
18	1	314-004-10	1	Diode, Zener, 5W, 15V 1N5352B	D1
19	1	312-009-10	1	Diode, Zener, 500mW, 5.1V 1N5231B	D2
20	9	310-001-10	1	Diode, 1N4148	D3, 5, 8, 14, 15, 17, 18, 21, 22
21	8	540-032-10	1	Shorting Jumper	J1 - J8
22	1	535-037-10	1	Terminal Block 8 Position	TB3
23	6	301-001-10	1	Diode, IN4005	D7,9,10,12,13,19
24	1	392-005-10	1	LED, Red	DS1
25	4	322-007-10	1	Transistor, PNP, 80V MPS A56	Q 1, 2, 3, 5
26	3	115-014-10	1	Resistor, Met-Film 2W 2.2K	R1-R3
27	1	110-040-10	1	Resistor, Met-Film 1/4W 5.62K 1%	R4
28	2	110-088-10	1	Resistor, Met-Film 1/4W 9.76K 1%	R7, 41
29	14	110-074-10	1	Resistor, Met-Film 1/4W 100K 1%	R9,14,15,24,29,30, 48,49,51,57,58 63,64,65
30	18	110-046-10	1	Resistor, Met-Film 1/4W 10K 1%	R10,11,13,18,25,26 28,33,38,44,45,47 53,55,59,60,62,68

BILL OF MATERIAL
ASSEMBLY, PCB,
SDO3 SUPERVISORY PANEL, 48V

APPROVED: _____
ISSUED: _____

ITEM	QTY	NEW P/N	KITTING	DESCRIPTION	CIRCUIT DESIGNATION OR REMARKS
31	8	110-086-10	1	Resistor, Met-Film 1/4W 1M 1%	R12,16,27,31, 46,50,61,66
32	4	110-064-10	1	Resistor, Met-Film 1/4W 47.5K 1%	R17, 32, 37, 67
33	5	110-036-10	1	Resistor, Met-Film 1/4W 4.75K 1%	R19, 34, 39, 52, 69
34	1	110-089-10	1	Resistor, Met-Film 1/4W 11.5K 1%	R22
35	1	110-048-10	1	Resistor, Met-Film 1/4W 12.1K 1%	R42
36	1	110-020-10	1	Resistor, Met-Film 1/4W 1% 1K	R54
37	4	656-005-10		Socket, Transistor	Q1-3,5
38-50				NOT USED	

List 81 - High/Low Volts Alarm Add:

7	2	654-014-10	1	Spacer, LED	DS3, DS4
24	2	392-005-10	1	LED, Red	DS3, DS4
51	1	361-203-10	1	IC Comparator, Quad LM339A	U1
52	2	130-017-10	1	Trimpot 5K	R8, R23
53	2	490-003-10	1	Relay 1A DPDT 48V	K2, K3
54-60				NOT USED	

List 82 - Load Disconnect Control Add:

7	1	654-014-10	1	Spacer, led	DS5
24	1	392-005-10	1	LED, Red	DS5
51	1	361-203-10	1	IC Comparator, Quad LM339A	U2
52	2	130-017-10	1	Trimpot 5K	R43, R56
53	1	490-003-10	1	Relay, 1A DPDT 48V	K4
61	1	301-002-10	1	Diode, 3A/200V, IN5402	D16
62	1	421-009-10	1	Switch, Toggle DPDT, Centre Off	SW2
63	1	366-004-10	1	IC, Nand Gate, ML4011B	U3
64	1	323-004-10	1	Transistor, PNP, TIP 127	Q4
65	1	535-031-10	1	Terminal Block, 5 POS	TB4
67-70				NOT USED	

BILL OF MATERIAL
ASSEMBLY, PCB,
SDO3 SUPERVISORY PANEL, 48V

APPROVED: _____
 ISSUED: _____

ITEM	QTY	NEW P/N	KITTING	DESCRIPTION	CIRCUIT DESIGNATION OR REMARKS
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List 83 - Distribution Fuse/Bkr Alarm Add:

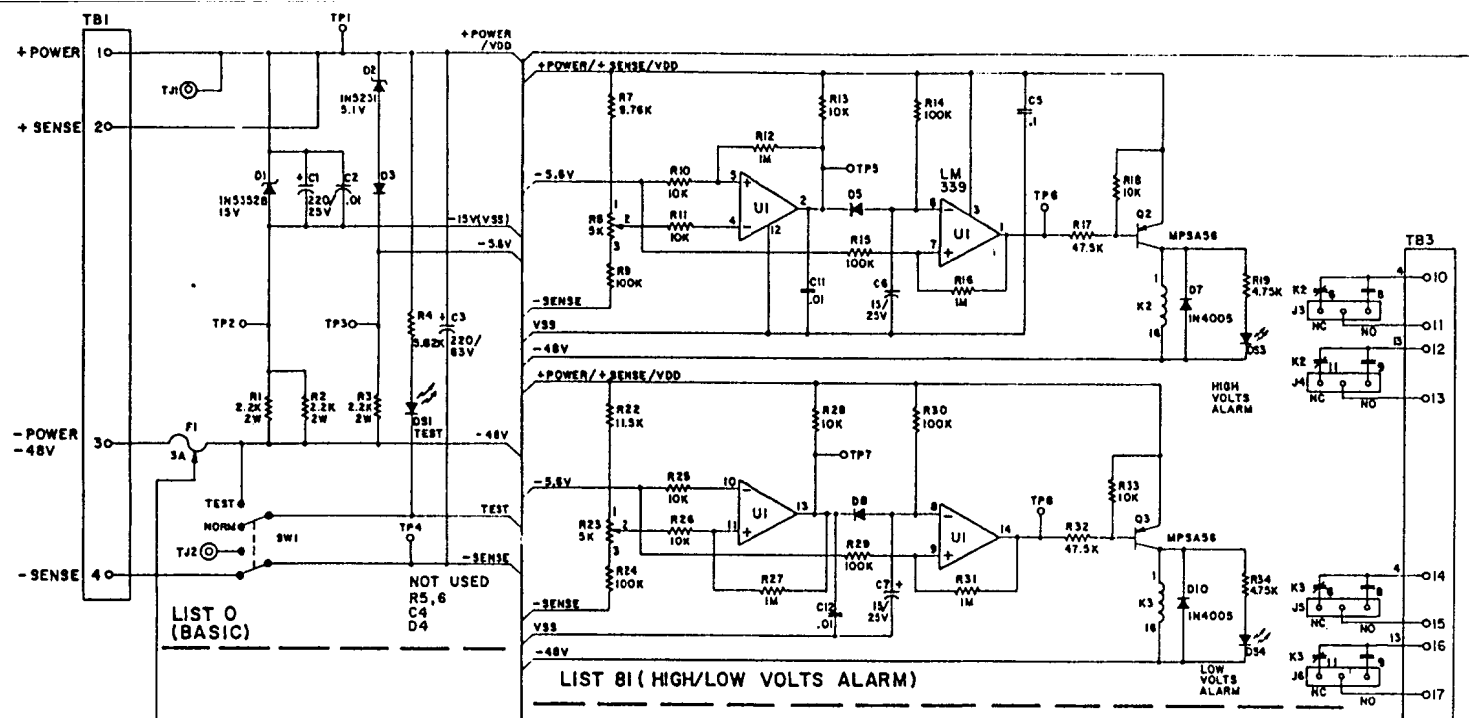
7	1	654-014-10	1	Spacer, LED	DS2
65	1	535-031-10	1	Terminal Block, 5 Position	TB2
24	1	392-005-10	1	LED, Red	DS2
53	1	490-003-10	1	Relay 1A DPDT 48V	K1

REF 700-084-04 Drawing - Assembly
 REF 700-084-05 Drawing - Schematic

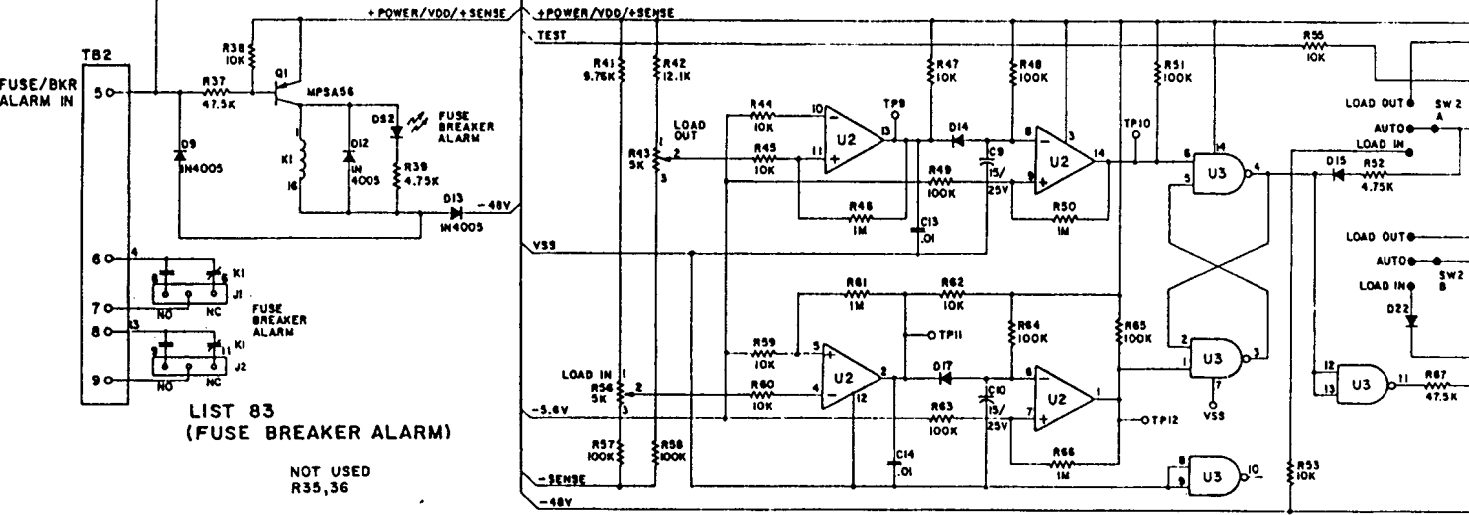
Revisions

P/-	88-10-03	Original Release
A	89-02-10	Items Qty Changed, 418, 419
B	90-01-29	Items 208, 217, 218, 415, 419 changed
C	90-06-20	Moved items from Lists 81,82, to List 0
D	91-09-23	Revised, see history copy

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
-	REVISED, SEE HISTORY COPY	07/89	<i>[Signature]</i>
A	R12, 27, 46, 61 WERE 2.2M, R+2 WAS 11.5K	02/90	<i>[Signature]</i>
B	ADDED C11-14, J1-8	09/90	<i>[Signature]</i>



- NOTES:
1. ALL RESISTORS IN OHMS 1/4W 1% UNLESS OTHERWISE SPECIFIED.
 2. ALL CAPACITORS IN MICROFARADS 50V UNLESS OTHERWISE SPECIFIED.
 3. ALL DIODES ARE IN4148 UNLESS OTHERWISE SPECIFIED.



NOT USED
R20, 21, 35, 36
C8
D11, 6

LAST USED
R69 D22
Q5 U3
C14 TP12
TB4 K4
SW2 DS5
J8

DRAWN	DED	10/88
CHECKED	<i>[Signature]</i>	10/88
MATERIAL	<i>[Signature]</i>	10/90
WEIGHT		
REDUCTION AVAILABLE		
APPLICATION		

LTR	SIZE AND DESCRIPTION	PLATED	QTY
	FINISHED HOLE LEGEND		
ALPHA TECHNOLOGIES			
TITLE SCHEMATIC PANEL SUPERVISORY SD03 (48V)			
ISSUED DATE	SIZE	DRAWING NO.	REV
	C	700-084-05	B
TOLERANCES	SCALE	N/A	SHEET 1 OF 1

BILL OF MATERIAL
ASSEMBLY, PCB,
SDO3 SUPERVISORY PANEL (24V)

APPROVED: _____
ISSUED: _____

ITEM	QTY	NEW P/N	REV	DESCRIPTION	CIRCUIT DESIGNATION OR REMARKS
------	-----	---------	-----	-------------	-----------------------------------

List 0 - Basic Unit

1	1	700-084-10	B	PCB Fabricated	
2	1	535-024-10		Terminal Block, 4 Position	TB1
3				NOT USED	
4	1	520-013-10		Fuse Holder	XF1
5	2	545-003-10		Test Point .080"	TJ1, TJ2
6	2/3	540-029-10		Header Strip	J1 - J8
7	1	654-014-10		Spacer, LED	DS1
8	1	545-076-10		Turret Hollow	TP4
9	3	521-005-10		Socket, IC 14 Pin	XU1-3
10	1	421-010-10		Switch, Toggle, Locking DPDT	SW1
11	1	460-013-10		Fuse, 3A, 60VDC	F1(UL)
12	1	200-019-10		Capacitor, Electrolytic, 220uF/25V	C1
13	1	194-001-10		Capacitor, Polyester, 10nF/50V	C3
14	1	200-048-10		Capacitor, Electrolytic, 220uF/63V	C3
15	1	194-003-10		Capacitor, Polyester, 100nF/50V	C5
16	4	201-007-10		Capacitor, Tantalum, 15uF/25V	C6,7,9,10
17	4	194-002-10		Capacitor, Polyester, 22nF/50V	C11-14
18	1	314-004-10		Diode, Zener, SW, 15V, IN5352B	D1
19	1	312-009-10		Diode, Zener, 500mW, 5V, IN5231B	D2
20	9	310-001-10		Diode, IN4148	D3,5,8,14,15,17 18,21,22
21	8	540-032-10		Shorting Jumper	J1-8
22	1	535-037-10		Terminal Block, 8 Pos.	TB3
23	6	301-001-10		Diode, IN4005	D7,9,10,12,13,19
24	1	392-005-10		LED, Red	DS1
25	4	322-007-10		Transistor, PNP, 80V, MPS A56	Q1-3,5
26				NOT USED	
27	1	112-028-10		Resistor, MF, 1/2W, 2.74K, 1%	R4
28	2	110-088-10		Resistor, MF, 1/4W, 9.76K, 1%	R7,41
29	10	110-074-10		Resistor, MF, 1/4W, 100K, 1%	R14,15,29,30,48 49,51,63,64,65
30	18	110-046-10		Resistor, MF, 1/4W, 10K, 1%	R10,11,13,18,25,26, 28,33,38,44,45,47, 53,55,59,60,62,68
31	8	110-086-10		Resistor, MF, 1/4W, 1M, 1%	R12,16,27,31,46,50, 61,66

BILL OF MATERIAL
ASSEMBLY, PCB,
SDO3 SUPERVISORY PANEL (24V)

APPROVED: _____
ISSUED: _____

ITEM	QTY	NEW P/N	REV	DESCRIPTION	CIRCUIT DESIGNATION OR REMARKS
32	4	110-064-10		Resistor, MF, 1/4W, 47.5k, 1%	R17,32,37,67
33	1	110-036-10		Resistor, MF, 1/4W, 4.75k, 1%	R52
34	1	110-089-10		Resistor, MF, 1/4W, 11.5k, 1%	R22
35				NOT USED	
36	1	110-020-10		Resistor, MF, 1/4W, 1K, 1%	R54
37	4	656-005-10		Socket, Transistor	Q1-3,5
38	2	112-029-10		Resistor, MF, 1/2W, 511 ohm	R1,2
39	1	112-010-10		Resistor, MF, 1/2W, 1k	R3
40	4	110-063-10		Resistor, MF, 1/4W, 43.2k, 1%	R9,24,57,58
41	4	110-028-10		Resistor, MF, 1/4W, 2.43k, 1%	R19,34,39,69
42	1	110-049-10		Resistor, MF, 1/4W, 13.0k, 1%	R42
43-50				NOT USED	

List 81 - High/Low Volts Alarm, Add:

7	2	654-014-10		Spacer, LED	DS3,4
24	2	392-005-10		LED, Red	DS3,4
51	1	361-203-10		IC Comparator, Quad, LM339A	U1
52	2	130-017-10		Trimpot, 5K	R8,23
54	2	490-002-10		Relay, 1A DPDT, 24V	K2,3
55-60				NOT USED	

List 82 - Load Disconnect Control, Add:

7	1	654-014-10		Spacer, LED	DS5
24	1	392-005-10		LED, Red	DS5
51	1	361-203-10		IC, comparator, Quad, LM339A	U2
52	2	130-017-10		Trimpot, 5K	R43,56
54	1	490-002-10		Relay, 1A DPDT, 24V	K4
61	1	301-002-10		Diode, 3A/200V, IN5402	D16
62	1	421-009-10		Switch, Toggle DPDT, Centre Off	SW2
63	1	366-004-10		IC, Nand Gate, ML4011B	U3
64	1	323-004-10		Transistor, PNP, TIP127	Q4
65	1	535-031-10		Terminal Block, 5 POS	TB4
66-70				NOT USED	

BILL OF MATERIAL
ASSEMBLY, PCB,
SDO3 SUPERVISORY PANEL (24V)

APPROVED: _____
 ISSUED: _____

ITEM	QTY	NEW P/N	REV	DESCRIPTION	CIRCUIT DESIGNATION OR REMARKS
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List 83 - Distribution Fuse/Bkr, Alarm, Add:

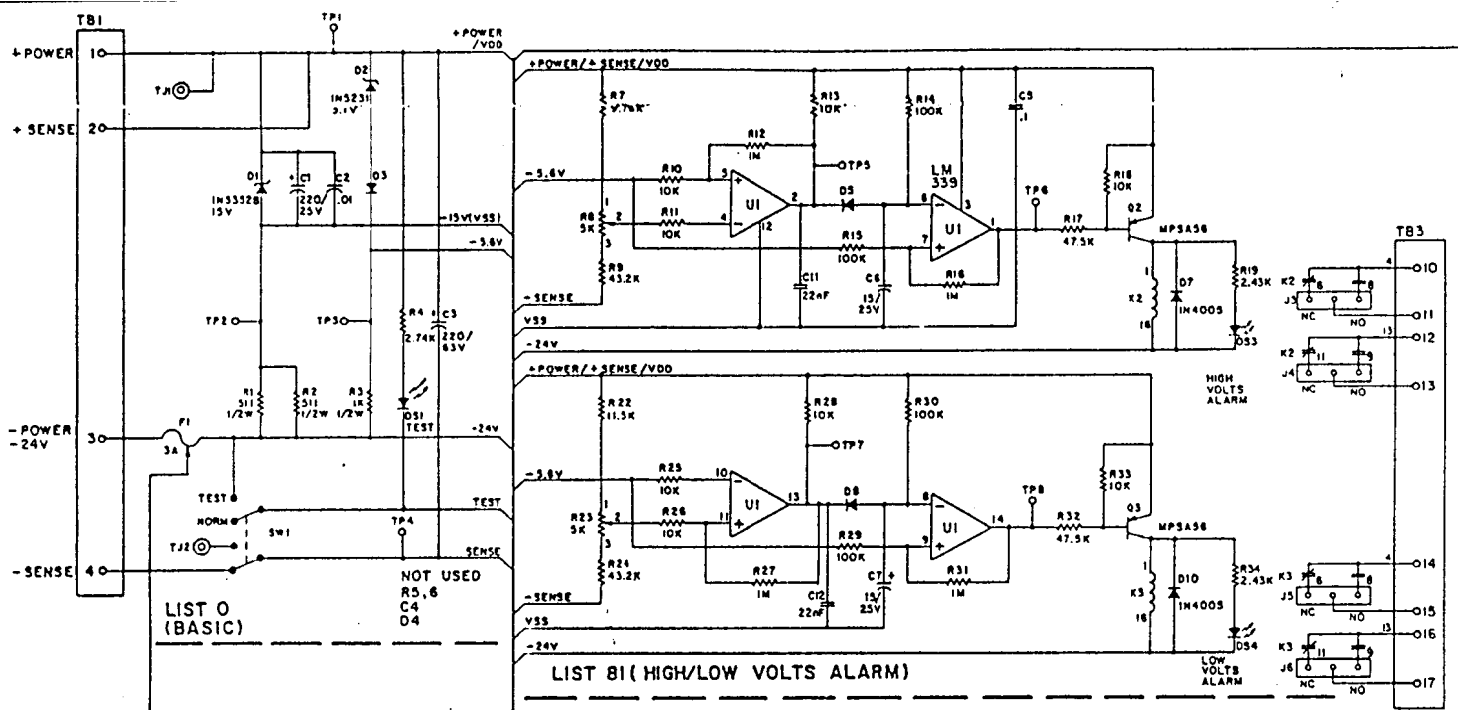
7	1	654-014-10		Spacer, LED	DS2
24	1	392-005-10		LED, Red	DS2
54	1	490-002-10		Relay, 1A DPDT, 24V	K1
65	1	535-031-10		Terminal Block, 5 POS	TB4

REF 700-084-04 Drawing (B), Assembly
 REF 700-086-05 Drawing (C), Schematic

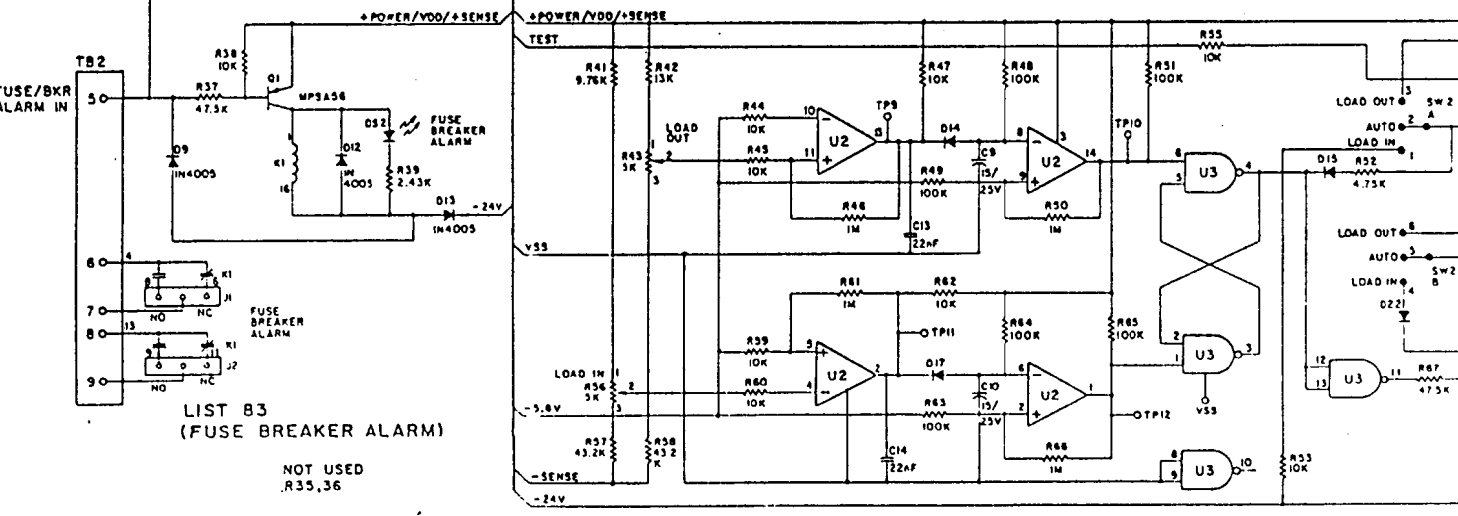
Revisions

A	91-09-17	First Release
B	91-09-19	See history copy for revisions
C	92-02-06	Item 27 added.
C	95-06-19	Revision change in item 1.

LTR	DESCRIPTION	DATE	APPROVED
A	REVISED, SEE HISTORY COPY	07/89	<i>[Signature]</i>
B	R3, 27, 42 WERE 2.2K, R42 WAS 11.5K	02/90	<i>[Signature]</i>
C	ADDED C11-14, J1-8	10/90	<i>[Signature]</i>



- NOTES:
- ALL RESISTORS IN OHMS 1/4W 1% UNLESS OTHERWISE SPECIFIED.
 - ALL CAPACITORS IN MICROFARADS 50V UNLESS OTHERWISE SPECIFIED.
 - ALL DIODES ARE 1N4148 UNLESS OTHERWISE SPECIFIED.



- NOT USED
R20, 21, 35, 36
C8
D11, 6
- LAST USED
- R69 D22
 - O5 U3
 - C14 TP12
 - TB4 K, 4
 - SW2 DS5
 - J8

LTR		SIZE AND DESCRIPTION	DATE	DTY
FINISHED HOLE LEGEND				
ALPHA TECHNOLOGIES				
TITLE SCHEMATIC PANEL SUPERVISORY SDO3 (24V)				
ISSUED DATE	SIZE	DRAWING NO	REV	
	C	700-086-05	C	
TOLERANCES	SCALE	SHEET	1 OF 1	
	N/A			

DRAWN	DED	03/89
CHECKED		07/87
MATERIAL		
WEIGHT		
REDUCTION AVAILABLE		
OIB - 008 - 20	THESE DESIGNS & SPECIFICATIONS ARE THE PROPERTY OF ALPHA TECHNOLOGIES AND SHALL NOT BE COPIED OR USED FOR MANUFACTURING WITHOUT ITS WRITTEN CONSENT.	
USED ON		
APPLICATION		

FACTORY SERVICE INFORMATION

Technical Support

Technical support staff are available for answering general questions related to installation, operation and maintenance of Argus products. In Canada and the USA, call Argus toll free 7:30 am to 5:00 pm Pacific Standard Time at:

+1-888 GO ARGUS

(+1-888-462-7487)

For emergencies, call +1-888-GO-ARGUS 24 hours a day, seven days a week.
Customers outside Canada and the USA, call +1-604-436-5547 for technical support.

Training

Argus offers various levels of product and technical training. These workshops provide a mix of theory and hands on application for qualified customers. Please consult your sales representative for course schedules, locations and costs, or visit our website at www.argusdcpower.com.

Factory Repair and Servicing

All service, beyond initial adjustments, should be carried out by qualified factory service personnel. For these procedures, please contact Argus Technologies at the locations listed to the right.

Product Returns

Before returning any product for service, please obtain a Return Material Authorization (RMA) number from an Argus factory service representative. The representative will require the model and serial number, as well as a brief description of the problem prior to issuing the RMA number. All material must be pre-authorized before being returned.

See document 048-507-10 "Warranty and Repair Information" for more details.

Moving and Storage

Units must be suitably packed in the original shipping container (or equivalent) prior to re-shipping. The box should be completely enclosed and constructed of wood or double-wall, corrugated cardboard. At least 3" of foam or shock absorbing packing material must surround the unit.

Factory Service Centers

Canada and International

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USA

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