APPENDIX F

DRAWINGS

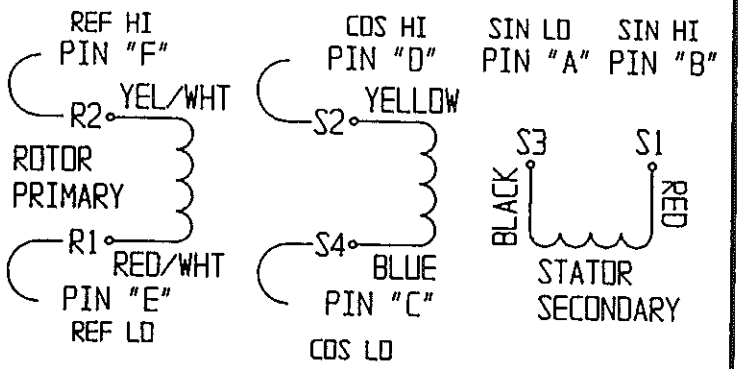
F-2

A-63542 Sheet 1 of 1

UNLESS OTHERWISE SPECIFIED ANG. DIM. ±1 DEGREE	XX DEC. PLACES ±.015 IN. XXX DEC. PLACES ±.005 IN.	DO NOT SCALE DWG. USE DIMENSIONS ONLY. ALL DIMENSIONS ARE INCHES UNLESS OTHERWISE SPECIFIED	DWG. NO. A-63542	ISSUE 2

PHASE A (BROWN LEAD) - PIN "A"
PHASE B (RED LEAD) - PIN "B"
PHASE C (WHITE LEAD) - PIN "C"
CASE GROUND (GREEN w/ YELLOW STRIPE LEAD) - PIN "D"

MOTOR LEAD CONNECTIONS



RESOLVER CONNECTION DIAGRAM

THERMOSTAT (BLACK LEADS) - PINS "T" & "U"
TACH (BLACK LEAD) - PIN "R"
(WHITE LEAD) - PIN "S"
BRAKE (BLUE LEADS) - PINS "N" & "P"

THERMOSTAT, TACH & BRAKE CONNECTIONS (LOCATED IN RESOLVER CABLE ASSEMBLY)

NOTES:
1 - WITH A PHASE SEQUENCE A, C, B MOTOR ROTATION SHALL BE C.W. FACING MOUNTING END.
2 - THERMOSTAT PRESET TO OPEN AT 170°C ±5°C AND CLOSE AT 132°C ±5°C, NORMALLY CLOSED, CONTACTS RATED TO 4 AMPS, 120 V.A.C.
3 - OPTIONAL TACH - WITH ROTATION PER NOTE #1, A POSITIVE VOLTAGE IS GENERATED ON PIN "R" WITH RESPECT TO PIN "S".

B COPY CODE

CAD DWG.

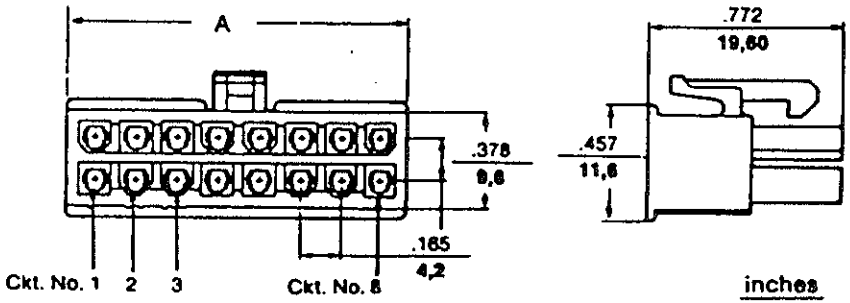
ISS.	ECN NO.	DATE	APP'D.	ISS.	ECN NO.	DATE	APP'D.
				2	85244 LLS	05-17-93	

Kollmorgen Industrial Drives
RADFORD, VIRGINIA

MOTOR CONNECTION

DWN. BY:	DATE	CHK. BY:	DATE	APP'D. BY:	DATE	SCALE	DWG. NO.	ISSUE
TDG	11-03-92			CJF	11-09-92	1:1	A-63542	2

DWG NO	ISSUE
A-83908	1



NOTES

1.) USE PIN # A-83909 - _ _ _ WITH THIS CONNECTOR.

2.) MATERIAL: UL 94V-0 NYLON

DASH NO.	Circuits	Dim. A	Dim. B	Dim. C
002	2	.213 5,4	—	.606 15,4
004	4	.378 9,6	.165 4,2	.772 19,6
006	6	.543 13,8	.331 8,4	.937 23,8
008	8	.709 18,0	.496 12,6	1.102 28,0
010	10	.874 22,2	.661 16,8	1.268 32,2
012	12	1.039 26,4	.827 21,0	1.433 36,4
014	14	1.205 30,6	.992 25,2	1.598 40,6
016	16	1.370 34,8	1.157 29,4	1.764 44,8
018	18	1.535 39,0	1.323 33,6	1.928 49,0
020	20	1.701 43,2	1.488 37,8	2.094 53,2
022	22	1.866 47,4	1.654 42,0	2.60 57,4
024	24	2.031 51,6	1.819 46,2	2.425 61,6

NUMBER OF CIRCUITS

APPROVED VENDOR: MOLEX #(39-01-2__51)

				COPY CODE
			8	

UNLESS OTHERWISE SPECIFIED
XX DEC PLACES ± .015
XXX DEC PLACES ± .005
ANG DIM ± 1°

DO NOT SCALE DWG USE DIMENSIONS ONLY
ALL DIMENSIONS ARE INCHES
UNLESS OTHERWISE SPECIFIED

ISS	ECN NO	DATE	APP'D	ISS	ECN NO	DATE	APP'D

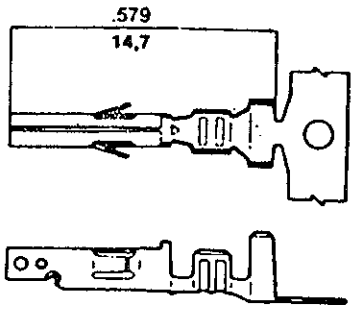
DW'N BY	V.A.
DATE	11/29/88
CH'K BY	
APP'D BY	CJF
DATE	12-6-88

Kollmorgen Industrial Drives
RADFORD, VIRGINIA

PURCHASE SPEC. FOR MINI-FIT, JR. SERIES CONNECTOR

SCALE	DWG NO	ISSUE
~	A-83908	1

DWG. NO	ISSUE
A-83909	2



inches
mm

DASH NO.	PART NO. 5556 Female	Wire Size	Insulation Diameter	Plating	FORM
-001	39-00-0078	AWG #16	.071" - .122" (1,8mm-3,1mm)	Tin Plated Brass	LOOSE
-002	• 39-00-0039	AWG #18-24	.051"-.118" (1,3mm-3mm)		
-003	• 39-00-0047	AWG #22-28	.035"- .071" (0,9-1,8mm)		
-004	39-00-0080	AWG #16	.071" - .122" (1,8mm-3,1mm)	Tin Plated Phosphor Bronze	
-005	• 39-00-0060	AWG #18-24	.051"-.118" (1,3mm-3mm)		
-006	39-00-0090	AWG #16	.071" - .122" (1,8mm-3,1mm)	30 microinches Gold Plated Brass	
-007	39-00-0056	AWG #18-24	.051"-.118" (1,3mm-3mm)		
-008	39-00-0085	AWG #22-28	.035"-.071" (0,9-1,8mm)		
[2] -009	39-00-0038	AWG #18-24	.051"-.118" (1,3mm-3mm)	TIN PLATED BRASS	CHAIN

APPROVED VENDOR: MOLEX

			B	COPY CODE

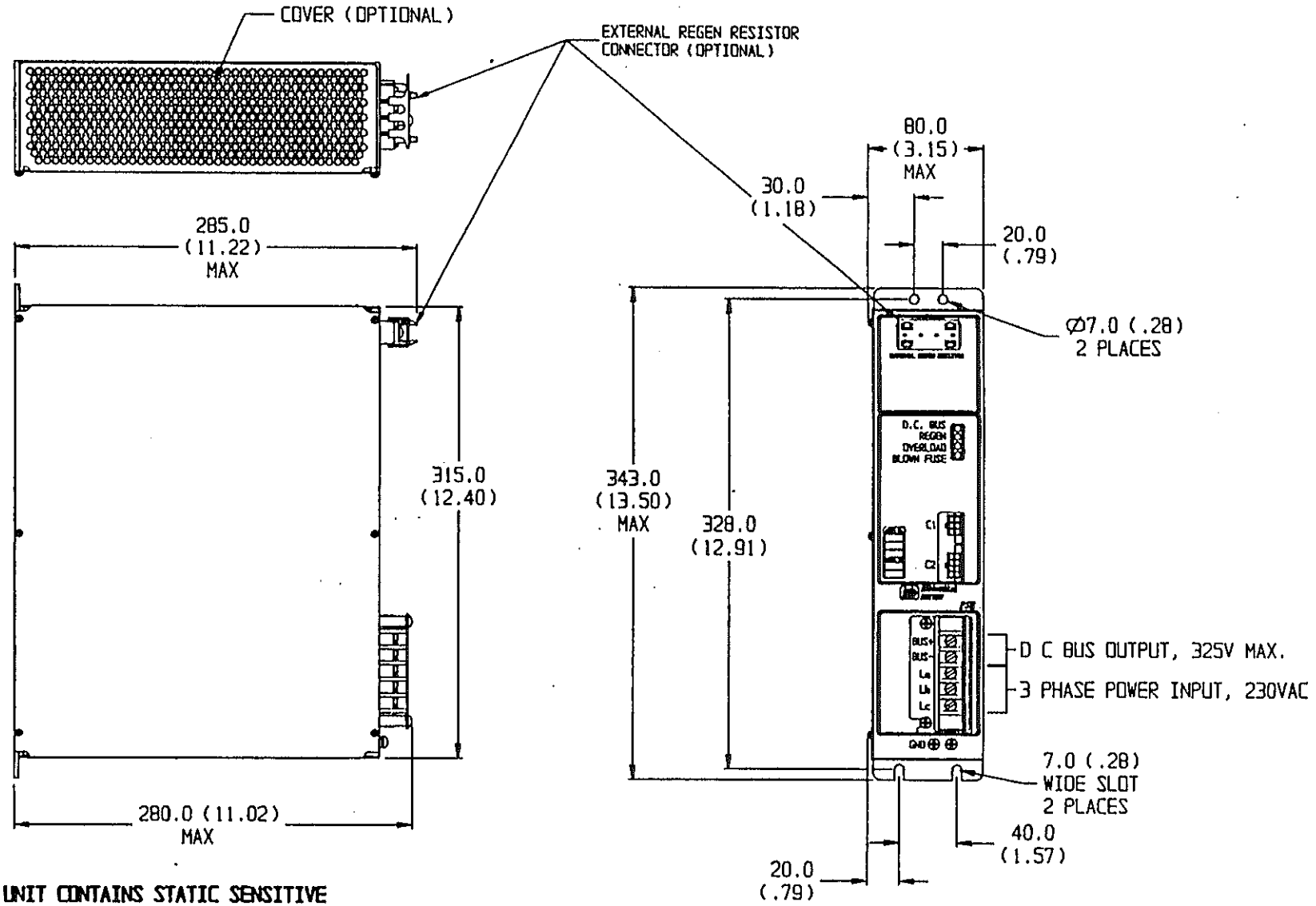
Kollmorgen Industrial Drives
RADFORD, VIRGINIA

PURCHASE SPEC. FOR
MINI-FIT, JR SERIES TERMINALS

UNLESS OTHERWISE SPECIFIED	ISS	ECN NO	DATE	APP'D	ISS	ECN NO	DATE	APP'D	DWN BY	DATE
XX DEC PLACES ± .015 XXX DEC PLACES ± .005 ANG DIM ± 1°					2	83689 V. Allie	8-23-90	CK	V.A.	11-29-88
DO NOT SCALE DWG. USE DIMENSIONS ONLY ALL DIMENSIONS ARE INCHES UNLESS OTHERWISE SPECIFIED									CH'R BY	
									APP'D BY	12-6-88

SCALE:	DWG NO	ISSUE
—	A-83909	2

UNLESS OTHERWISE SPECIFIED ANG. DIM. ±1°	(METRIC) X DEC. PLACES ±.4 XX DEC. PLACES ±.13	(INCHES) XX DEC. PLACES ±.015 IN. XXX DEC. PLACES ±.005 IN.	DO NOT SCALE DWG. USE DIMENSIONS ONLY. ALL DIMENSIONS ARE MILLIMETERS WITH INCHES IN PARENTHESES, UNLESS OTHERWISE SPECIFIED.	DWG. NO. A-84385	ISSUE 3



THIS UNIT CONTAINS STATIC SENSITIVE MATERIAL, HANDLE ACCORDINGLY.

CAD DWG. (D-31)

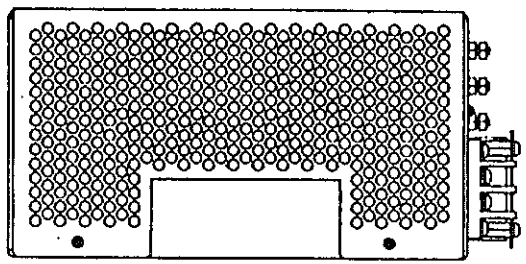
	C I B	COPY CODE		ISS.	ECN NO.	DATE	APP'D.
ISS.	ECN NO.	DATE	APP'D.	2	83564 LLS	3/90	GHE
				3	84111 EWR	8/91	

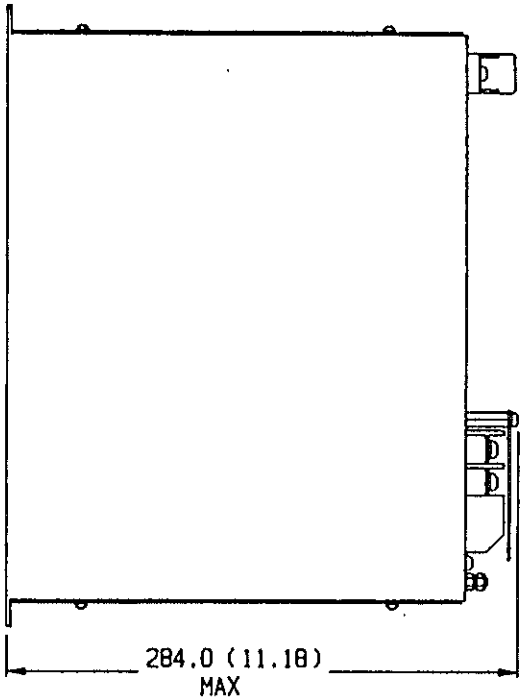
Kollmorgen Industrial Drives
RADFORD, VIRGINIA

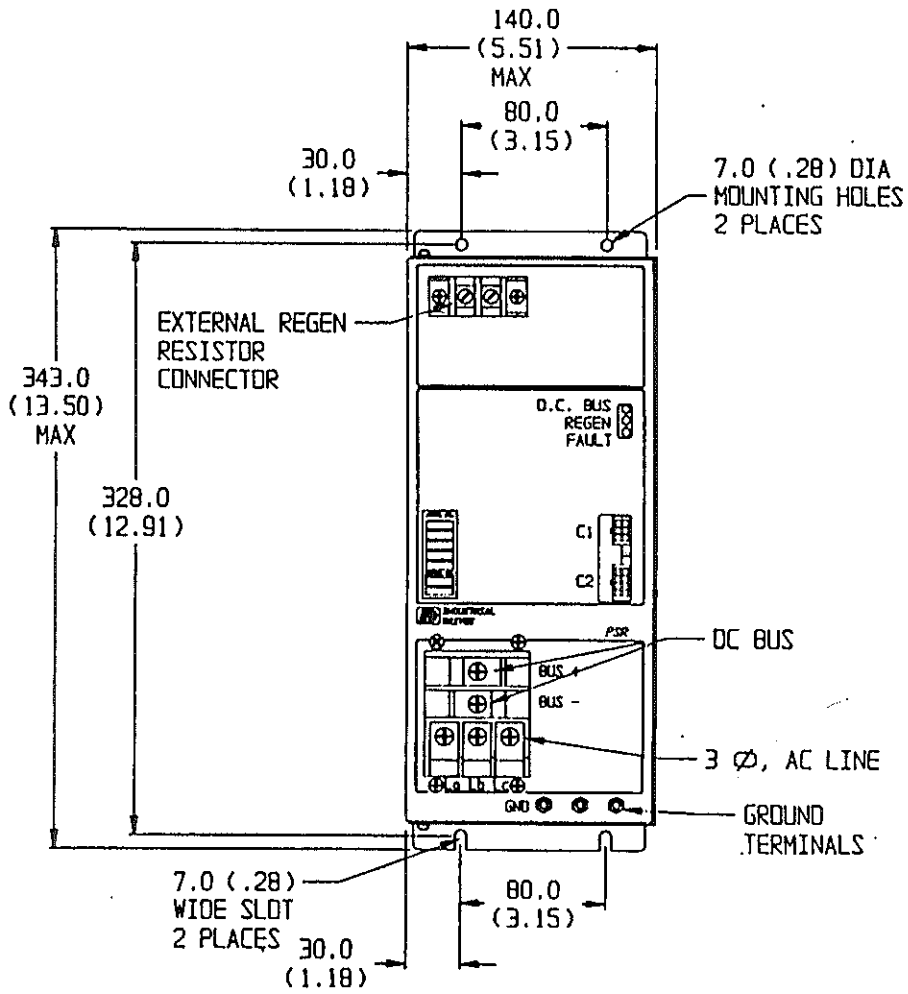
OUTLINE & DIMENSION
PSR-4/5-12 & 20 AMP

DWN. BY:	DATE	CHK. BY:	DATE	APP'D. BY:	DATE	PLOT SCALE	DWG. NO.	ISSUE
FMJ	11-89			SCM	1-30-90	1:4	A-84385	3

UNLESS OTHERWISE SPECIFIED ANG. DIM. ±1 DEGREE	(METRIC) X DEC. PLACES ±.4 XX DEC. PLACES ±.13	(INCHES) XX DEC. PLACES ±.015 IN. XXX DEC. PLACES ±.005 IN.	DO NOT SCALE DWG. USE DIMENSIONS ONLY. ALL DIMENSIONS ARE MILLIMETERS WITH INCHES IN PARENTHESES. UNLESS OTHERWISE SPECIFIED.	DWG. NO. A-93031	ISSUE 2







THIS UNIT CONTAINS STATIC SENSITIVE MATERIAL, HANDLE ACCORDINGLY.

CAD DWG.

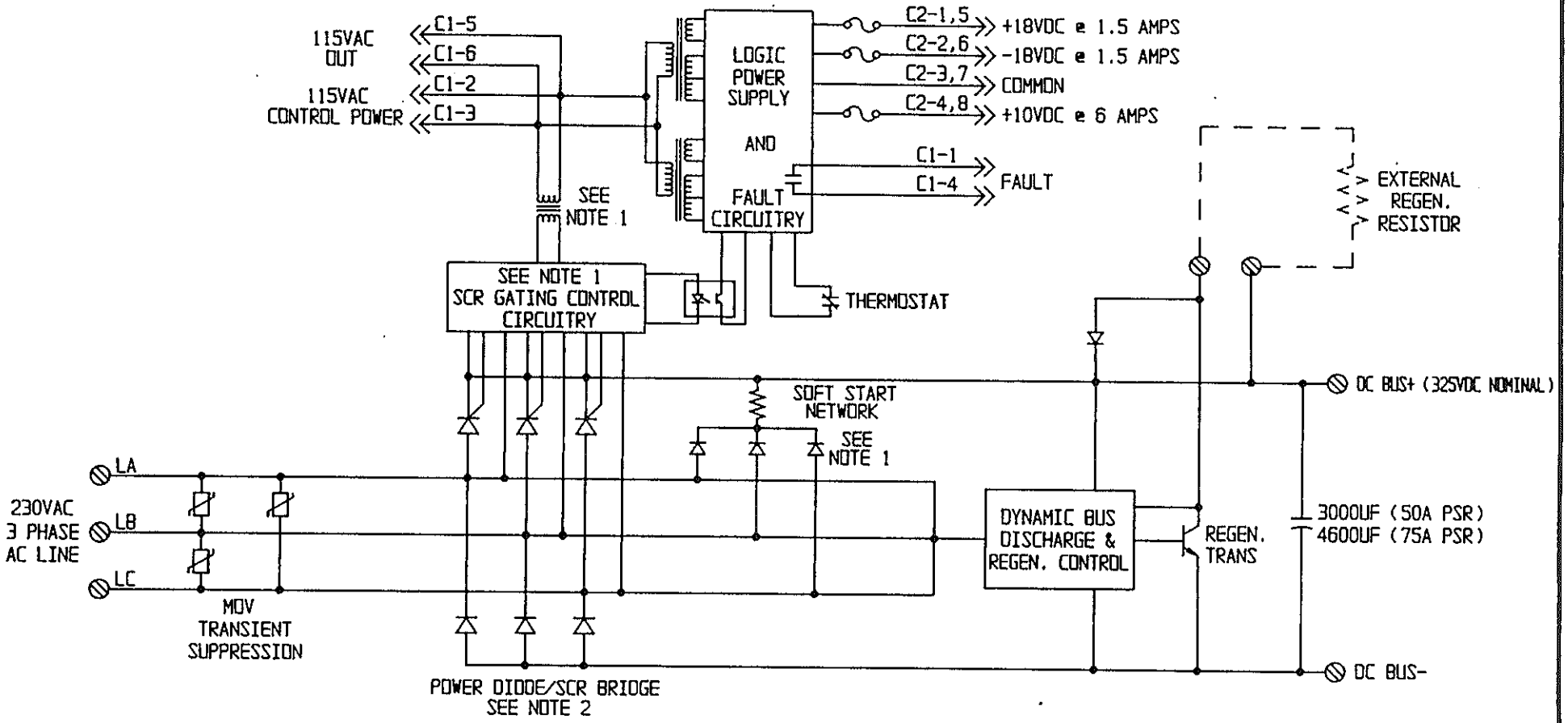
ISS.	ECN NO.	DATE	APP'D.
C	B	COPY CODE	
2	84111 EMR	8-05-91	

Kollmorgen Industrial Drives
RADFORD, VIRGINIA

OUTLINE & DIMENSION
PSR4/5-50 & 75 AMP

DWN. BY:	DATE	CHK. BY:	DATE	APP'D. BY:	DATE	SCALE	DWG. NO.	ISSUE
VA	1-09-91	FDD	3-19-91	MP	3-19-91	1:4	A-93031	2

DWG. NO.	ISSUE
A-93092	1



NOTES:
1. OMIT ON VERSION WITHOUT SOFT START.
2. SCRS ARE REPLACED WITH DIODES ON VERSION WITHOUT SOFT START.

CAD DWG. (D-38)

ISS.	ECN NO.	DATE	APP'D.
C	B	COPY CODE	

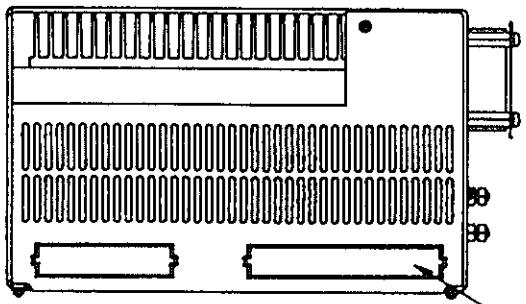
ISS.	ECN NO.	DATE	APP'D.

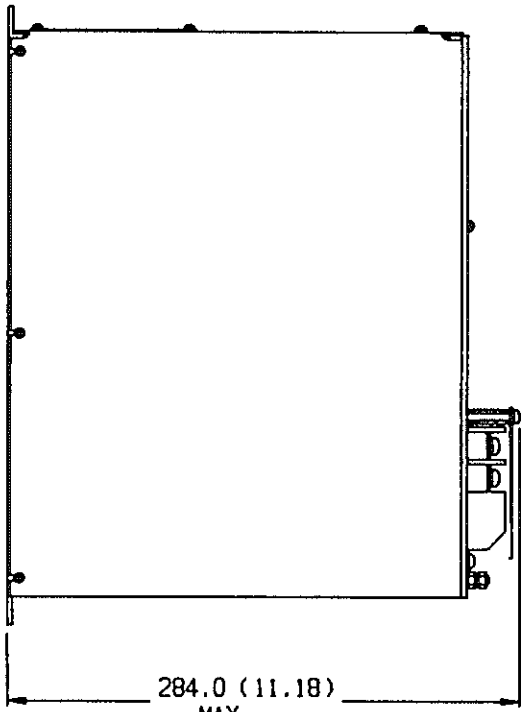
INDUSTRIAL DRIVES
RADFORD, VIRGINIA
A KOLLMORGEN DIVISION

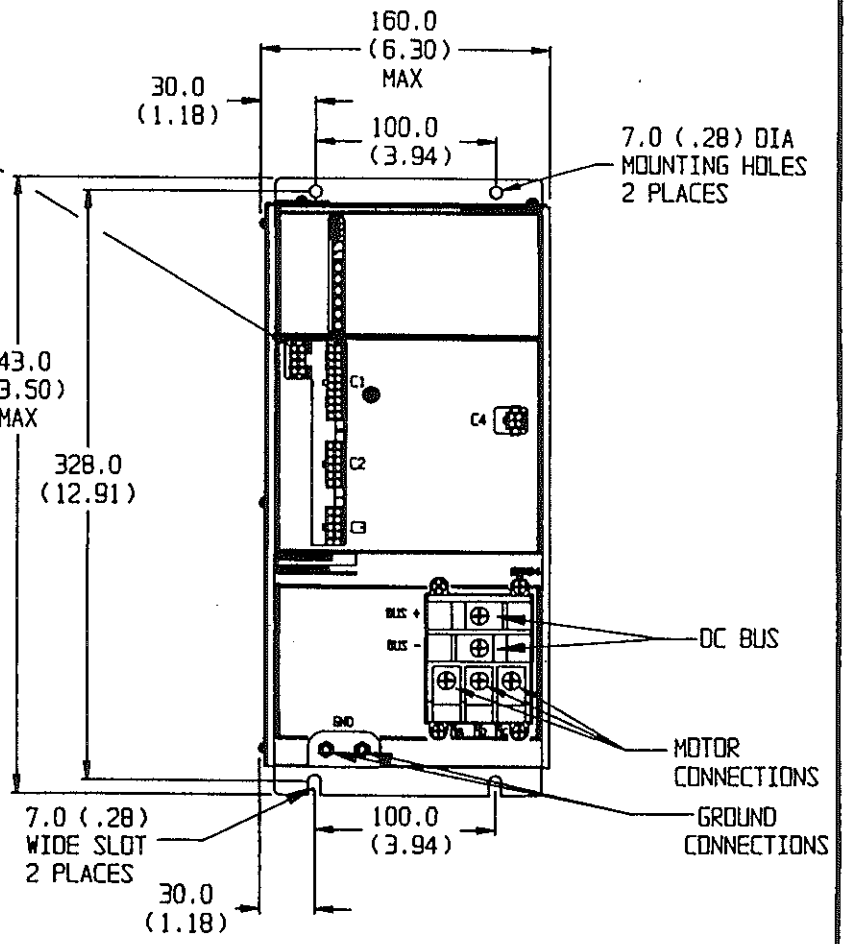
PRS4/5 50A/75A
(WITH & WITHOUT SOFT START)
SIMPLIFIED SCHEMATIC

DWN. BY:	DATE	CK. BY:	DATE	APP'D. BY:	DATE	PLOT SCALE	DWG. NO.	ISSUE
TG	3-4-91	FDD	3-19-91	MP	3-19-91	1:2	A-93092	1

UNLESS OTHERWISE SPECIFIED ANG. DIM. ±1°	(METRIC) X DEC. PLACES ±.4 XX DEC. PLACES ±.13	(INCHES) XX DEC. PLACES ±.015 IN. XXX DEC. PLACES ±.005 IN.	DO NOT SCALE DWG. USE DIMENSIONS ONLY. ALL DIMENSIONS ARE MILLIMETERS WITH INCHES IN PARENTHESES. UNLESS OTHERWISE SPECIFIED.	DWG. NO. A-93112	ISSUE 2







THIS UNIT CONTAINS STATIC SENSITIVE MATERIAL, HANDLE ACCORDINGLY.

CAD DWG.

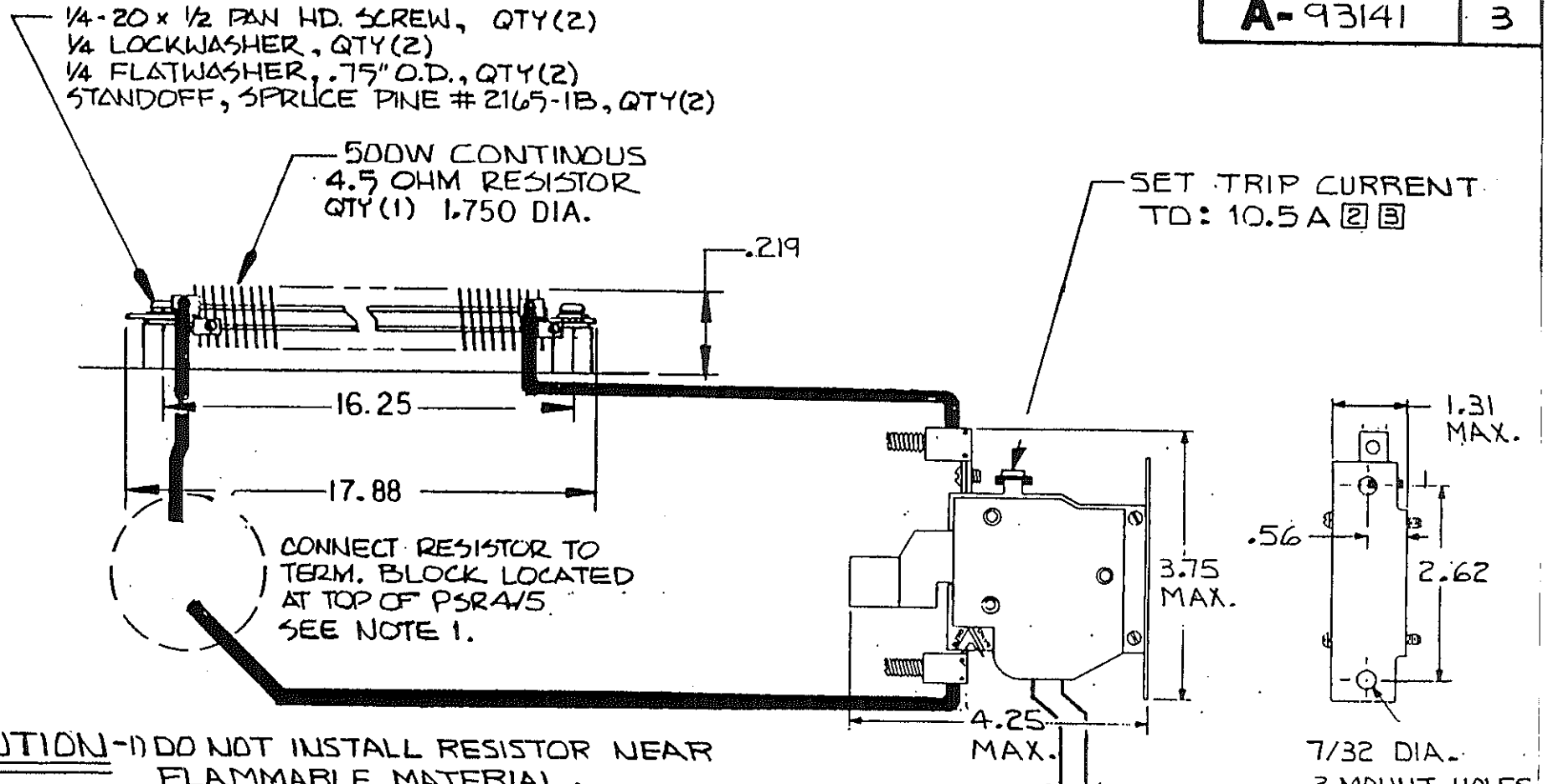
ISS.	ECN NO.	DATE	APP'D.
B			
C	COPY CODE		
2	84919 TOG	1-7-93	CJF

Kollmorgen Industrial Drives
RADFORD, VIRGINIA

OUTLINE & DIMENSION
BDS4-55 AMP

DWN. BY:	DATE	CHK. BY:	DATE	APP'D. BY:	DATE	SCALE	DWG. NO.	ISSUE
EWR	07-12-91	CJF		CJF	7-17-91	1:4	A-93112	2

DWG NO	ISSUE
A-93141	3



CAUTION - 1) DO NOT INSTALL RESISTOR NEAR FLAMMABLE MATERIAL.

NOTES: [2] 2) SHOCK HAZARD & RESISTOR CONNECTED TO HIGH VOLTAGE.

1. RECOMMENDED WIRE: # 8AWG, 125°C
2. BOTTOM STANDOFFS ARE THREADED 1/4-20 x 3/8" DP FOR MOUNTING RESISTORS TO PANELS, ETC.
3. OUTPUT CONTACTS: WIRED TO DROP MAIN LINES WHEN CONTACTS OPEN ON OVERLOAD.

UNLESS OTHERWISE SPECIFIED XX DEC. PLACES ±.010 XXX DEC. PLACES ±.005 ANG. DIM. ± 1° DO NOT SCALE DWG. USE DIMENSIONS ONLY ALL DIMENSIONS ARE INCHES UNLESS OTHERWISE SPECIFIED	ISS.	ECN NO.	DATE	APP'D	ISS.	ECN NO.	DATE	APP'D	DW'N BY	DATE
					2	83926 OWENS	3/29/91	CJF	OWENS	1-10-91
					3	84007 GEARHEART	5/21/91	CJF	CH'K BY	
									APP'D BY	
									CJF	11591

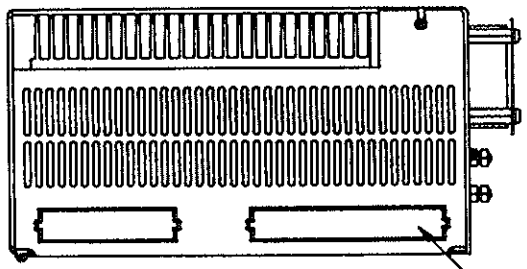
		B	COPY CODE

Kollmorgen Industrial Drives
RADFORD, VIRGINIA

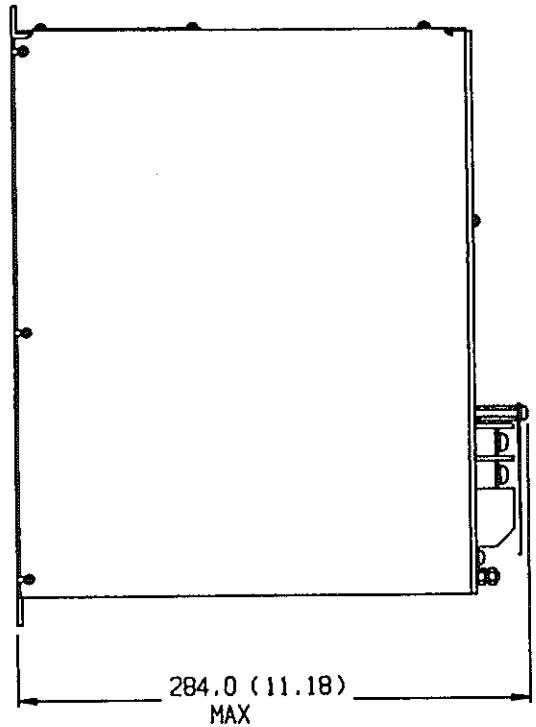
WIRING & MOUNTING DIAG.
ER-20

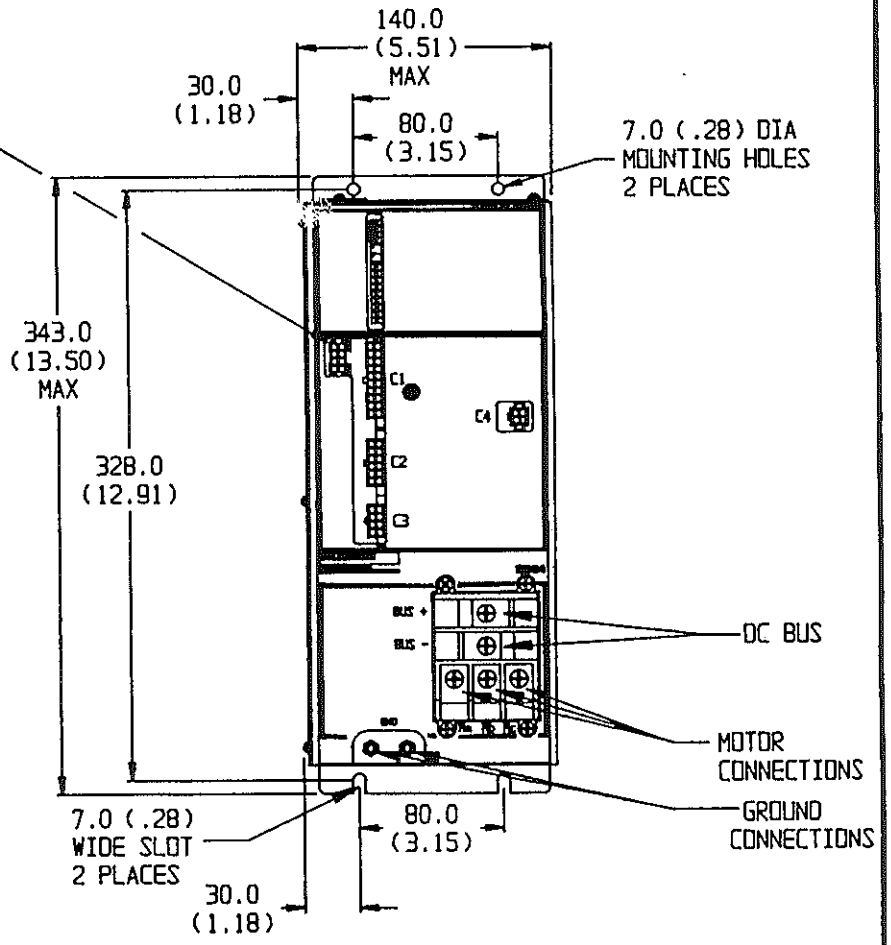
SCALE:	DWG. NO.	ISSUE
~	A-93141	3

UNLESS OTHERWISE SPECIFIED ANG. DIM. ±1°	(METRIC) X DEC. PLACES ±.4 XX DEC. PLACES ±.13	(INCHES) XX DEC. PLACES ±.015 IN. XXX DEC. PLACES ±.005 IN.	DO NOT SCALE DWG. USE DIMENSIONS ONLY. ALL DIMENSIONS ARE MILLIMETERS WITH INCHES IN PARENTHESES. UNLESS OTHERWISE SPECIFIED.	DWG. NO. A-93156	ISSUE 3



POSSIBLE OPTION BOARD CONNECTOR(S)





THIS UNIT CONTAINS STATIC SENSITIVE MATERIAL, HANDLE ACCORDINGLY.

CAD DWG.

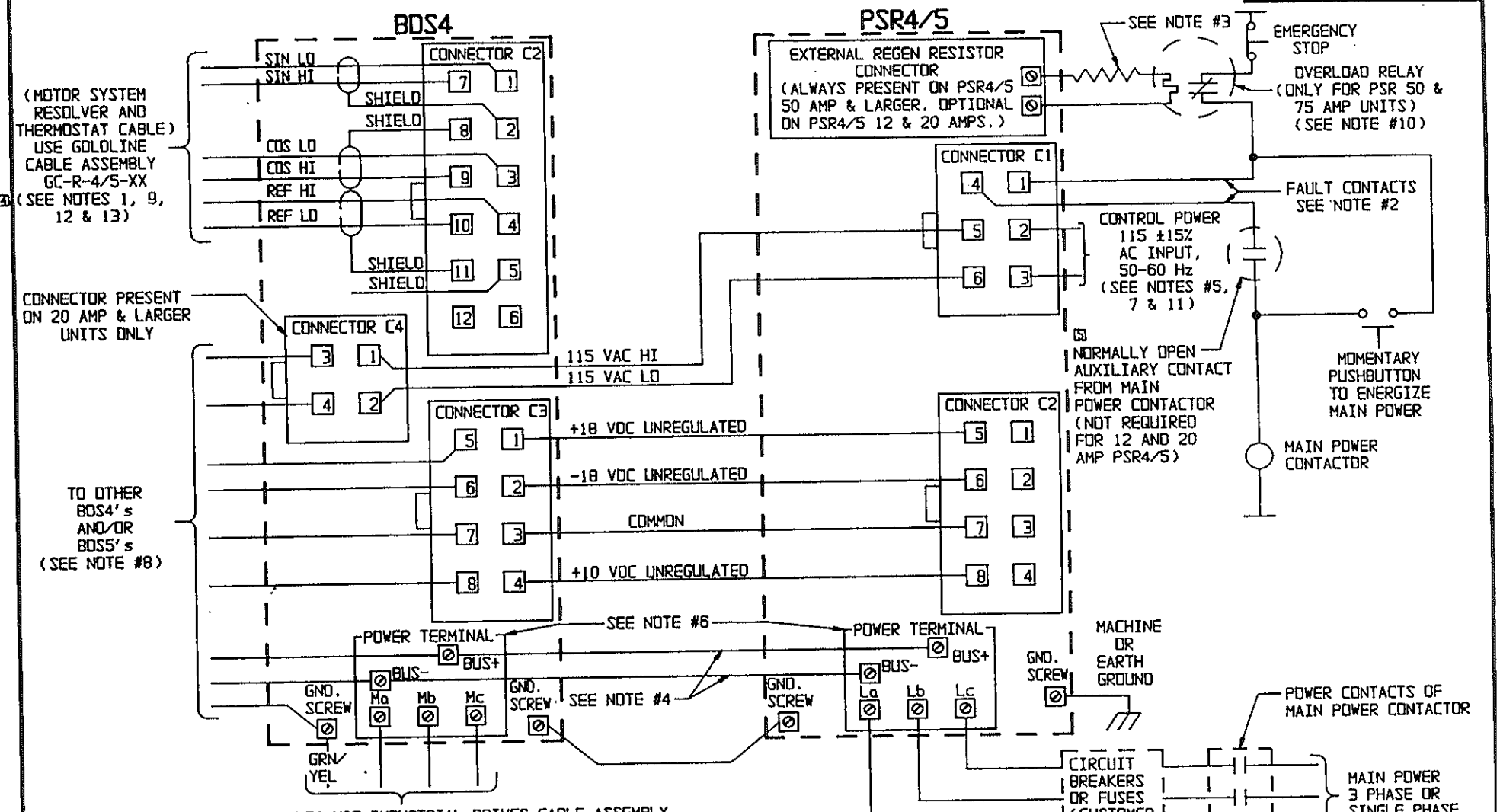
ISS.	ECN NO.		DATE	APP'D.
2	84107	TDG	8-6-91	CJF
3	84919	TDG	1-7-93	CJF

	C	B	COPY CODE	ISS.	ECN NO.	DATE	APP'D.

Kollmorgen Industrial Drives
RADFORD, VIRGINIA

OUTLINE & DIMENSION
BDS4A-30 & 40 AMP

DWN. BY:	DATE	CHK. BY:	DATE	APP'D. BY:	DATE	SCALE	DWG. NO.	ISSUE
EWR	07-12-91			CJF	07-17-91	1:4	A-93156	3



(MOTOR POWER CABLE) USE INDUSTRIAL DRIVES CABLE ASSEMBLY. EXAMPLE: MODEL NO. FOR A B-20X MOTOR IS GC-M2-4/5-XX (SEE NOTES 9 & 12). THERMAL OVERLOAD PROTECTION IS NOT PROVIDED INTERNAL TO AMPLIFIER AND MUST BE PROVIDED EXTERNAL. REFER TO NATIONAL ELECTRICAL CODE FOR PROPER SIZING OF OVERLOAD PROTECTION.

SEE NOTES ON LAST PAGE

CAD DWG.

		C	B	COPY CODE
ISS.	ECN NO.	DATE	APP'D.	
7	85118 TDG	3-22-93	CJF	
8	85244 LLS	5-17-93	CJF	

ISS.	ECN NO.	DATE	APP'D.
2	84451 TDG	4-30-92	CJF
3	84719 EWR	9-01-92	CJF
4	84837 TDG	11-3-92	CJF
5	84924 TDG	1-11-93	CJF
6	84968 EWR	2-4-93	CJF

Kollmorgen Industrial Drives
RADFORD, VIRGINIA

DWN. BY:	DATE	CHK. BY:	DATE	APP'D. BY:	DATE
VA	1-09-91	F.D.D.	6-01-91	C.J.F.	6-01-91

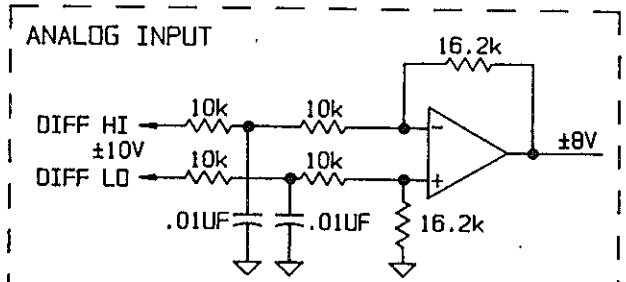
BDS4 WIRING DIAGRAM
(PSR4/5 & MOTOR CONNECTIONS)

PLOT SCALE	DWG. NO.	SHEET 1 OF 5	ISSUE
1:1	A-93231		8

DWG. NO. SHEET 2 OF 5	ISSUE
A-93231	8

DIFFERENTIAL VELOCITY OR CURRENT COMMAND INPUT SCALED FOR ±10 VOLTS = FULL SCALE.
SEE CIRCUIT TO THE RIGHT (ANALOG INPUT)

ANALOG INPUT



DIFF LO
DIFF HI

ADDITIONAL SINGLE ENDED INPUT TO THE VELOCITY LOOP.

AUX. IN

* AN EXTERNAL RESISTOR TO COMMON MAY BE USED TO PROGRAM THE PEAK CURRENT LIMIT OF THE AMPLIFIER AS FOLLOWS:
75% OF I PEAK WITH 8.6K ohm
50% OF I PEAK WITH 3.5K ohm
OR A POSITIVE VOLTAGE FROM 0 VDC TO 7.5 VDC MAY BE USED TO ADJUST THE PEAK CURRENT FROM 7.5% TO 100% OF ITS RATING.

ENABLE
I LIMIT
RESET
TORQUE HOLD
COMMON
SHIELD
COMMON
SHIELD
COMMON
SHIELD

I MONITOR IS A COMMON-REFERENCED SIGNAL SCALED FOR FULL CURRENT = 8 VOLTS. THIS SIGNAL HAS A 3K ohm RESISTOR IN LINE.

I MONITOR

TACH MONITOR IS A COMMON-REFERENCED SIGNAL SCALED FOR 8 VOLTS AT MAXIMUM SYSTEM SPEED AS STATED ON THE TL SHEET. THIS SIGNAL HAS A 3K ohm RESISTOR IN LINE

TACH MONITOR

11	1								
12	2								
13	3								
14	4	SHIELD							
15	5								
16	6	SHIELD							
17	7								
18	8								
19	9								
20	10								

CONNECTOR C1

OUTPUT FAULT

OUTPUT FAULT IS A COMMON-REFERENCED, OPEN COLLECTOR SIGNAL. THE OUTPUT MAXIMUM RATING IS 30 VDC AND 25 MA.

FOLDBACK

FOLDBACK IS A COMMON-REFERENCED, OPEN COLLECTOR SIGNAL. THE OUTPUT MAXIMUM RATING IS 30 VDC AND 25 MA.

OVERTEMP

OVERTEMP IS A COMMON-REFERENCED, OPEN COLLECTOR SIGNAL. THE OUTPUT MAXIMUM RATING IS 30 VDC AND 25 MA.

DRIVE-UP RELAY
DRIVE-UP RELAY

THE DRIVE-UP RELAY ACTS IN CONJUNCTION WITH THE ENABLE CIRCUIT IN ONE OF TWO POSSIBLE MODES: DRIVE-UP MODE OR O.K. TO ENABLE. THE RELAY CAN DRIVE UP TO 1 AMP RESISTIVE, AND THE CONTACTS ARE RATED FOR 115 VAC. THE RELAY MUST BE DERATED FOR INDUCTIVE LOADS.

CAD DWG.

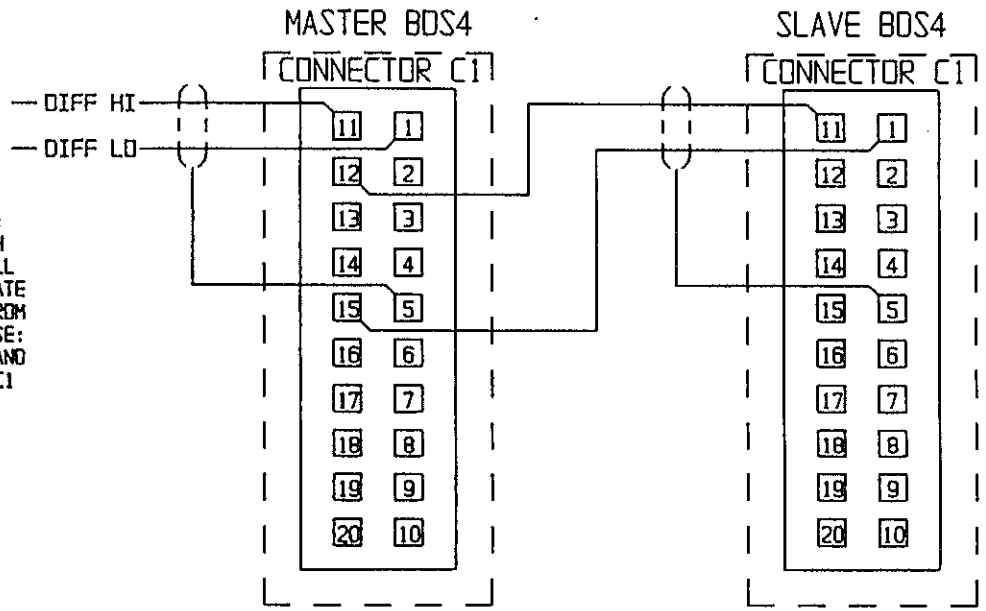
				COPY CODE		ISS.	ECN NO.	DATE	APP'D.
ISS.	ECN NO.	DATE	APP'D.						

Kollmorgen Industrial Drives
RADFORD, VIRGINIA

DWN. BY:	DATE	CHK. BY:	DATE	APP'D. BY:	DATE
VA	2-20-91				

BOS4 WIRING DIAGRAM
(C1 CUSTOMER I/O)

PLOT SCALE	DWG. NO.	SHEET 2 OF 5	ISSUE
1:1	A-93231		8



SPEED COMMAND INPUT:
PIN 11 POSITIVE WITH RESPECT TO PIN 1 WILL CAUSE MASTER TO ROTATE CLOCKWISE VIEWING FROM SHAFT END. TO REVERSE: INTERCHANGE PIN 11 AND PIN 1 OF CONNECTOR C1 ON THE MASTER UNIT.

CONNECTION SHOWN IS FOR MASTER AND SLAVE TO ROTATE IN SAME DIRECTION. TO ENABLE MASTER AND SLAVE TO ROTATE IN OPPOSITE DIRECTION: INTERCHANGE PIN 11 AND PIN 1 OF CONNECTOR C1 ON THE SLAVE UNIT.

SYSTEM SETUP:

1) THE MASTER UNIT REQUIRES A MASTER (M) TYPE COMPENSATION CARD - DESIGNATED I.E. BDS4-230XXOXA2M
   THE SLAVE UNIT REQUIRES A SLAVE (S) TYPE COMPENSATION CARD - DESIGNATED I.E. BDS4-230XXOXA2S

2) FOR PROPER LOAD SHARING BETWEEN THE MASTER AND SLAVE UNITS, THE FOLLOWING ADJUSTMENTS MUST BE MADE ON THE SLAVE UNIT (THE STABILITY AND COMMAND SCALE POTS NOW FUNCTION AS TORQUE GAIN ADJUSTMENTS):
   A) ADJUST THE STABILITY POT FULLY COUNTER-CLOCKWISE
   B) ADJUST THE COMMAND SCALE POT FULLY CLOCKWISE
   C) ADJUST THE CURRENT LIMIT POT FULLY CLOCKWISE
   D) UNDER LOADED CONDITIONS, THE LOAD SHARING MAY BE IMPROVED SLIGHTLY BY COMPARING EACH UNITS CURRENT MONITOR SIGNAL:
      TO INCREASE LOAD ON THE SLAVE UNIT, ADJUST IT'S STABILITY POT CLOCKWISE
      TO DECREASE LOAD ON THE SLAVE UNIT, ADJUST IT'S COMMAND SCALE POT COUNTER-CLOCKWISE.

3) MASTER/SLAVE OPERATION IS INCOMPATIBLE WITH BRUSH TACH SYSTEMS.

CAD DWG.

ISS.	ECN NO.	DATE	APP'D.

COPY CODE

ISS.	ECN NO.	DATE	APP'D.

Kollmorgen Industrial Drives
RADFORD, VIRGINIA

DWN. BY:	DATE	CHK. BY:	DATE	APP'D. BY:	DATE
VA	2-19-91				

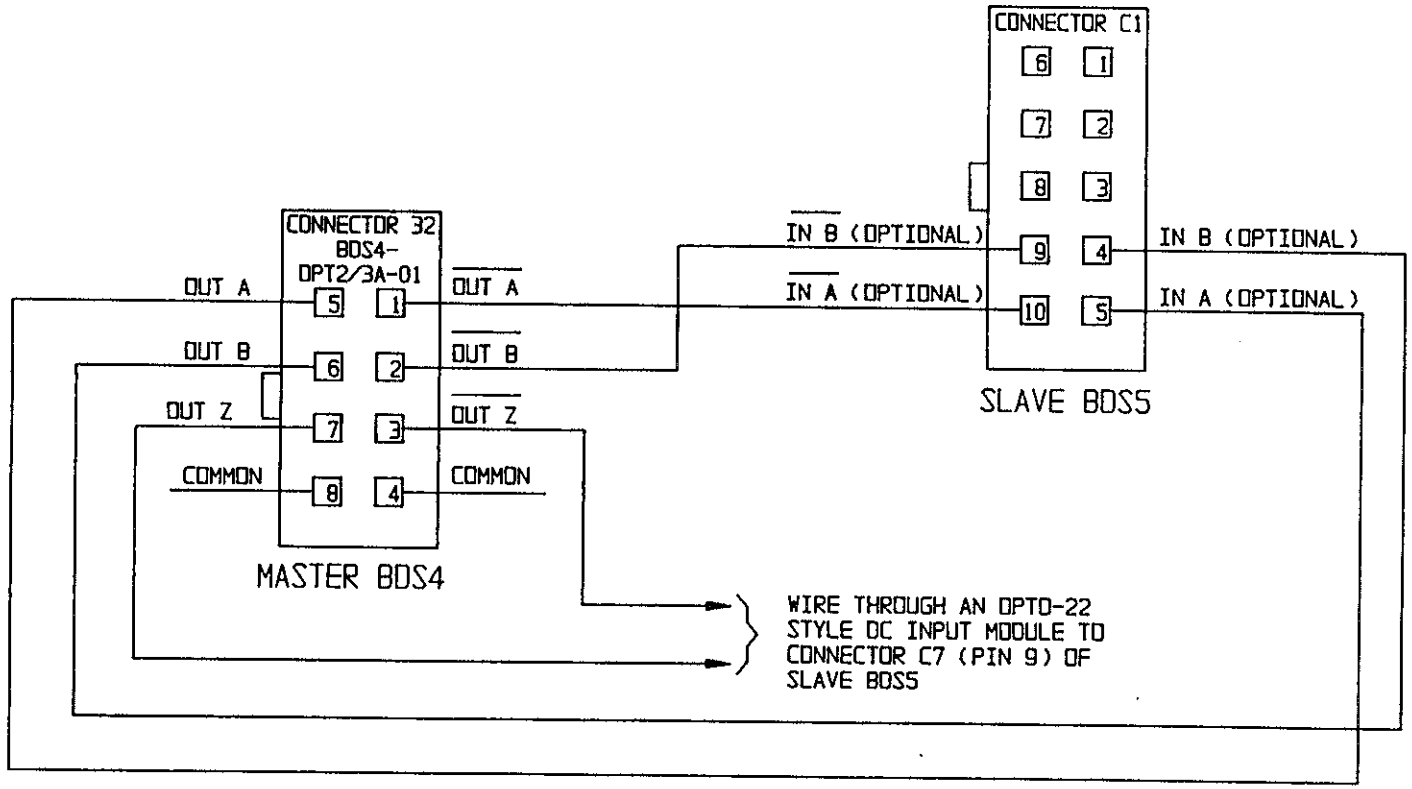
BDS4 WIRING DIAGRAM
(MASTER/SLAVE OPERATION)

PLOT SCALE	DWG. NO.	SHEET 3 OF 5	ISSUE
1:1	A-93231		8

DWG. NO.	SHEET 4 OF 5	ISSUE
A-93231		8

NOTES:
A. THE COMMONS OF MASTER BDS4 AND SLAVE BDS5 MUST BE CONNECTED. THIS IS ACCOMPLISHED THROUGH CONNECTOR C3 IN THE BDS4 AND CONNECTOR C4 IN THE BDS5 IF THEY SHARE ONE PSR4/5.

B. IF THE BDS5 USES THE OPTIONAL ANALOG INPUT CARD (BDS5-OPT1), THE OPTIONAL ENCODER INPUTS IN CONNECTOR C1 ARE NOT ALLOWED.



MASTER BDS4 AND SLAVE BDS5

CAD DWG.

ISS.	ECN NO.	DATE	APP'D.

COPY CODE

ISS.	ECN NO.	DATE	APP'D.

Kollmorgen Industrial Drives
RADFORD, VIRGINIA

DWN. BY:	DATE	CHK. BY:	DATE	APP'D. BY:	DATE
VA	2-19-91				

BDS4 WIRING DIAGRAM
(OPTIONAL ENCODER EQUIVALENT)

PLOT SCALE	DWG. NO.	SHEET 4 OF 5	ISSUE
1:1	A-93231		8

NOTES: (ALL WIRES TO BE COPPER WITH MIN. TEMP RATING OF 60°C)

DWG. NO. SHEET 5 OF 5	ISSUE
A-93231	8

1. WARNING: THE MOTOR THERMOSTAT AUTOMATICALLY RESETS WHEN THE MOTOR COOLS. THE CUSTOMER IS RESPONSIBLE FOR LATCHING THIS SIGNAL TO INHIBIT OPERATION AFTER A MOTOR THERMOSTAT FAULT. CONNECT THERMOSTAT USING TWISTED PAIR WIRE.

2. CAUTION: THE PRS4/5 FAULT CONTACTS (RATED 115 VAC 1AMP) MUST BE WIRED IN SERIES WITH THE OVERLOAD RELAY AS SHOWN ON SHEET 1.
   ON 12 & 20 AMP PSR4/5: THIS CONTACT IS NORMALLY OPEN AND WILL CLOSE WITHIN 250 MSEC. AFTER APPLICATION OF CONTROL AND MAIN POWER. THIS CONTACT OPENS IN FAULT CONDITIONS.
   ON 50 & 75 AMP PSR4/5 THIS CONTACT CLOSES ON APPLICATION OF CONTROL POWER AND WILL OPEN IN FAULT CONDITION.

3. WARNING: RESISTOR IS CONNECTED TO HIGH VOLTAGE; ENSURE SUFFICIENT ELECTRICAL CLEARENCE WHEN MOUNTING. RESISTOR MAY BECOME VERY HOT DURING OPERATION. DO NOT MOUNT NEAR MATERIALS THAT ARE FLAMMABLE OR DAMAGED BY HEAT. VENTILATION MAY BE REQUIRED.
   SEE WIRING DRAWING FOR SPECIFIC REGEN RESISTOR KIT. EACH KIT HAS DIFFERENT SERIES/PARALEL RESISTOR CONNECTIONS TO OBTAIN SPECIFIC RESISTANCE AND POWER RATING.

4. WIRE SIZES, BREAKERS AND FUSES FOR PSR4/5:
   PSR4/5-X12 HAS A MAXIMUM MAIN POWER INPUT CURRENT OF 12 AMPS RMS,
   PSR4/5-X20 HAS A MAXIMUM MAIN POWER INPUT CURRENT OF 20 AMPS RMS,
   PSR4/5-X50 HAS A MAXIMUM MAIN POWER INPUT CURRENT OF 50 AMPS RMS,
   PSR4/5-X75 HAS A MAXIMUM MAIN POWER INPUT CURRENT OF 75 AMPS RMS.

   THE ACTUAL APPLICATION MAY REQUIRE LESS CURRENT. USE 600 VAC INSULATED WIRE AND REFER TO LOCAL ELECTRICAL CODES FOR PROPER WIRE SIZE FOR THE CURRENTS LISTED ABOVE. FUSES FOR MAIN POWER SHOULD BE A U.L. RATED TIME DELAY TYPE, SUCH AS, BUSS FRN-R SERIES.

   THE POWER BUS BETWEEN A PSR4/5 AND BDS4 SHOULD USE THE FOLLOWING WIRE GAUGE WITH 600 VAC INSULATION:
   PSR4/5-X12, 14 AWG (OR LARGER) WIRE,
   PSR4/5-X20, 10 AWG WIRE,
   PSR4/5-X50, 8 AWG (OR LARGER) WIRE,
   PSR4/5-X75, 8 AWG (OR LARGER) WIRE.

5. ALL SIGNAL AND CONTROL WIRES TO BE 22-18 AWG WIRE. THE CRIMP TERMINALS FOR 22-18 AWG WIRE ARE SUPPLIED FOR USE WITH BDS4 CONNECTORS C1, C2, C3, C4, OPTION CONNECTOR AND PSR4/5 CONNECTORS C1 & C2. FOR 16 AWG WIRE USE MOLEX #39-00-0078 TERMINALS.

6. IN THE BDS4 3 AMP THRU 20 AMP AND THE PSR4/5 12 AMP AND 20 AMP, THE SCREWS IN THE POWER TERMINAL BLOCKS ARE CAPTIVE. DO NOT ATTEMPT TO REMOVE THEM TO USE RING TERMINALS. USE LOCKING SPRING SPADE TERMINALS SUCH AS HOLLINGSWORTH #XSS20954S OR #SS20947SF FOR 16 AWG WIRE AND #XSS20836 OR #SS20832F FOR 12/10 AWG WIRE.

7. ALL AC LINES SHOULD BE TWISTED CABLES.

8. THE TOTAL NUMBER OF AXES ALLOWED, PER PSR4/5, DEPENDS ON THE PSR4/5 MODEL AND THE COMBINATION OF BDS4's AND/OR BDS5's:
   PSR4/5-X12: A MAXIMUM OF 4 BDS4s OR 3 BDS5s,
   PSR4/5-X20: A MAXIMUM OF 4 BDS4s OR 3 BDS5s,
   PSR4/5-X50: A MAXIMUM OF 6 BDS4s OR 6 BDS5s,
   PSR4/5-X75: A MAXIMUM OF 6 BDS4s OR 6 BDS5s.
   (IF THE BDS's ARE MIXED, THEN THE TOTAL NUMBER OF AXES THAT CAN BE USED WOULD BE THE MAXIMUM GIVEN FOR THE BDS5s.)

   AXIS EXPANSION ON THE PSR4/5 50 AND 75 AMP UNITS ARE ALSO LIMITED TO A MAXIMUM OF 4 BDS4s OR 3 BDS5s ON EITHER SIDE OF THE PSR4/5.

9. XX IN THE CABLE NUMBER STANDS FOR CABLE LENGTH IN METERS. CABLE LENGTH IS AVAILABLE FROM 3 TO 75 METERS IN INCREMENTS OF 3 METERS.

10. A THERMAL OVERLOAD RELAY IS SUPPLIED IN THE REGEN RESISTOR KIT FOR THE 50 AND 75 AMP PSR4/5's. THE THERMAL OVERLOAD RELAY, INCLUDED IN THE KIT, WAS SIZED FOR YOUR RESISTANCE AND POWER RATING. THE OUTPUT CONTACTS OF THE RELAY MUST BE WIRED TO DROP POWER TO THE MAIN POWER CONTACTOR IN A FAULT CONDITION, AS SHOWN ON SHEET 1.

11. DO NOT WIRE CONTROL POWER (PSR4/5 CONNECTOR C1) THROUGH THE MAIN POWER CONTACTOR. THIS IS SO THAT CONTROL POWER WON'T BE REMOVED IF PSR4/5 FAULT CONTACTS OPEN (THIS WOULD TURN OFF ANY FAULT LEDS).

12. ALL SHIELDED CABLES MUST HAVE SHIELD CONTINUITY FOR THE FULL LENGTH OF THE CABLE.

13. RESOLVER CABLE MUST BE INDIVIDUALLY SHIELDED PAIRS.

14. RECOMMENDED TORQUES FOR CONNECTION TO TERMINAL BLOCKS AND GROUND.

A. BDS4/5-3 TO 20 AMP AND PSR4/5-12 AND 20 AMP
   MAX TORQUE PER UL IS 12 IN/LB, EXTERNAL REGEN, MAIN POWER AND BUS CONNECTION.
   MAX TORQUE 12 IN/LB GROUND SCREW

B. BDS4/5-30 TO 55 AMP
   MAX TORQUE 20 IN/LB MOTOR, BUS CONNECTION AND GROUND STUD

C. PSR4/5-50 TO 75 AMP
   MAX TORQUE 20 IN/LB MAIN POWER, BUS CONNECTION AND GROUND STUD
   MAX TORQUE 12 IN/LB EXTERNAL REGEN CONNECTION

FOR GROUNDING TO MACHINE OR EARTH GROUND, A SCREW LUG SHOULD BE ATTACHED TO GROUND SCREW OR STUD. RECOMMENDED TORQUE OF 12 IN/LB FOR GROUND SCREWS AND 20 IN/LB FOR GROUND STUDS. MAY ALSO REFER TO NATIONAL ELECTRICAL CODE (NEC) OR UL STANDARD 486B FOR RECOMMENDED TORQUES

THERMAL OVERLOAD PROTECTION DOES NOT PROVIDE INTERNAL TO AMPLIFIER AND MUST BE PROVIDED EXTERNAL. REFER TO NATIONAL ELECTRICAL CODE FOR PROPER SIZING OF OVERLOAD PROTECTION.

CAD DWG.

ISS.	ECN NO.	DATE	APP'D.	COPY CODE

ISS.	ECN NO.	DATE	APP'D.

Kollmorgen Industrial Drives
RADFORD, VIRGINIA

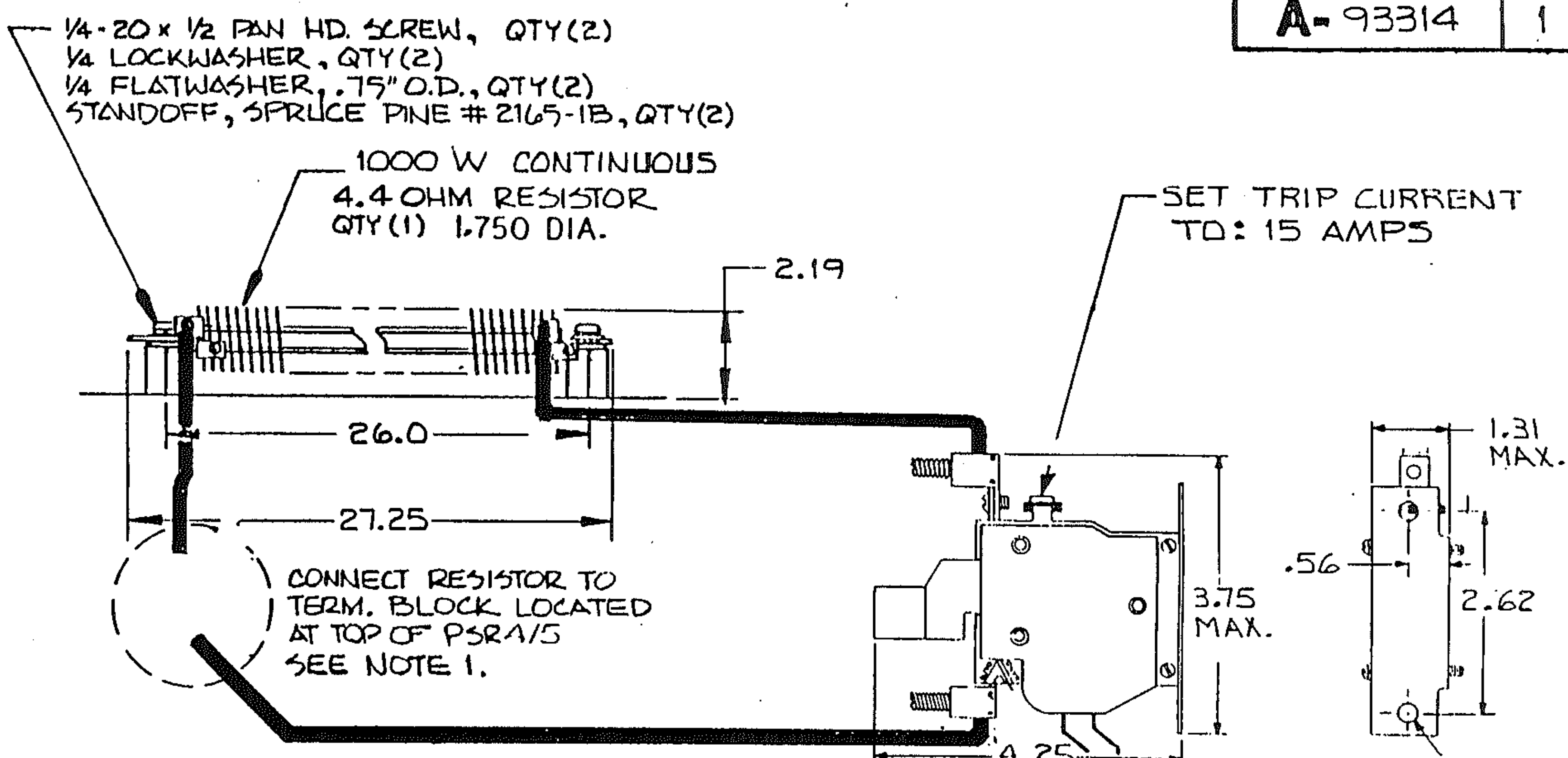
BDS4 WIRING DIAGRAM
(NOTES)

DWN. BY:	DATE	CHK. BY:	DATE	APP'D. BY:	DATE	SCALE	DWG. NO. SHEET 5 OF 5	ISSUE
VA	2-13-91					1:1	A-93231	8

A-93231 Sheet 5 of 5

F-15

DWG NO **A- 93314** ISSUE 1



CAUTION - 1) DO NOT INSTALL RESISTOR NEAR FLAMMABLE MATERIAL.

2) SHOCK HAZARD & RESISTOR CONNECTED TO HIGH VOLTAGE.

NOTES:

1. RECOMMENDED WIRE: # 8AWG, 125°C
2. BOTTOM STANDOFFS ARE THREADED 1/4-20 x 3/8" DP FOR MOUNTING RESISTORS TO PANELS, ETC.
3. OUTPUT CONTACTS: WIRED TO DROP MAIN LINES WHEN CONTACTS OPEN ON OVERLOAD.

B COPY CODE

Kollmorgen Industrial Drives
RADFORD, VIRGINIA

UNLESS OTHERWISE SPECIFIED
XX DEC. PLACES ±.010
XXX DEC. PLACES ±.005
ANG. DIM. ±1°

DO NOT SCALE DWG. USE DIMENSIONS ONLY
ALL DIMENSIONS ARE INCHES
UNLESS OTHERWISE SPECIFIED

ISS.	ECN NO.	DATE	APP'D	ISS.	ECN NO.	DATE	APP'D

DW'N BY	DATE
TDG	5-21-91
CH'K BY	
APP'D BY	
CW	5 23 91

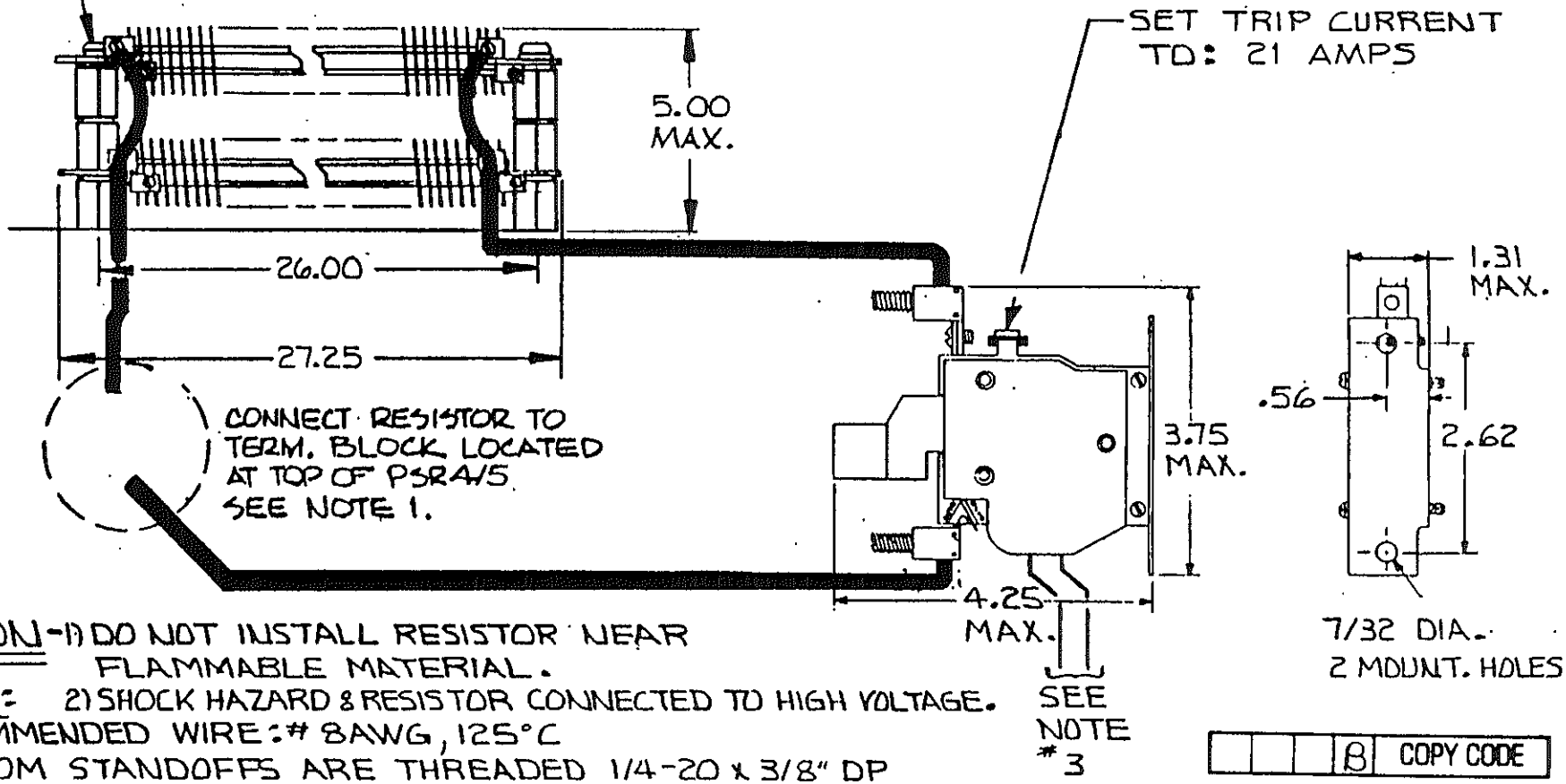
WIRING & MOUNTING DIAG.
ER-21

SCALE:	DWG. NO.	ISSUE
~	A- 93314	1

DWG NO	ISSUE
A- 93315	1

1/4-20 x 1/2 PAN HD. SCREW QTY (2)
1/4 LOCKWASHER QTY (2)
1/4 FLATWASHER QTY (2)
1/4-20 x 1/2 THREADED STUD QTY (4)
STAND-OFF, SPRUCE PINE #2165-1B QTY (6)
4.5 OHM RESISTOR, 500 W QTY (2)

RATED POWER: 1000 W
TOTAL RESISTANCE: 2.25 Ω



CAUTION - 1) DO NOT INSTALL RESISTOR NEAR FLAMMABLE MATERIAL.
2) SHOCK HAZARD & RESISTOR CONNECTED TO HIGH VOLTAGE.

NOTES:
1. RECOMMENDED WIRE: # 8AWG, 125°C
2. BOTTOM STANDOFFS ARE THREADED 1/4-20 x 3/8" DP FOR MOUNTING RESISTORS TO PANELS, ETC.
3. OUTPUT CONTACTS: WIRED TO DROP MAIN LINES WHEN CONTACTS OPEN ON OVERLOAD.

B COPY CODE

UNLESS OTHERWISE SPECIFIED	ISS.	ECN NO.	DATE	APP'D	ISS	ECN NO.	DATE	APP'D	DW'N BY	DATE
XX DEC. PLACES ±.015									TDG	5-21-91
XXX DEC. PLACES ±.005									CH'K BY	
ANG. DIM. ± 1°										
DO NOT SCALE DWG. USE DIMENSIONS ONLY									APP'D BY	
ALL DIMENSIONS ARE INCHES										5-21-91
UNLESS OTHERWISE SPECIFIED										

Kollmorgen Industrial Drives
RADFORD, VIRGINIA

WIRING & MOUNTING DIAG.
ER-22

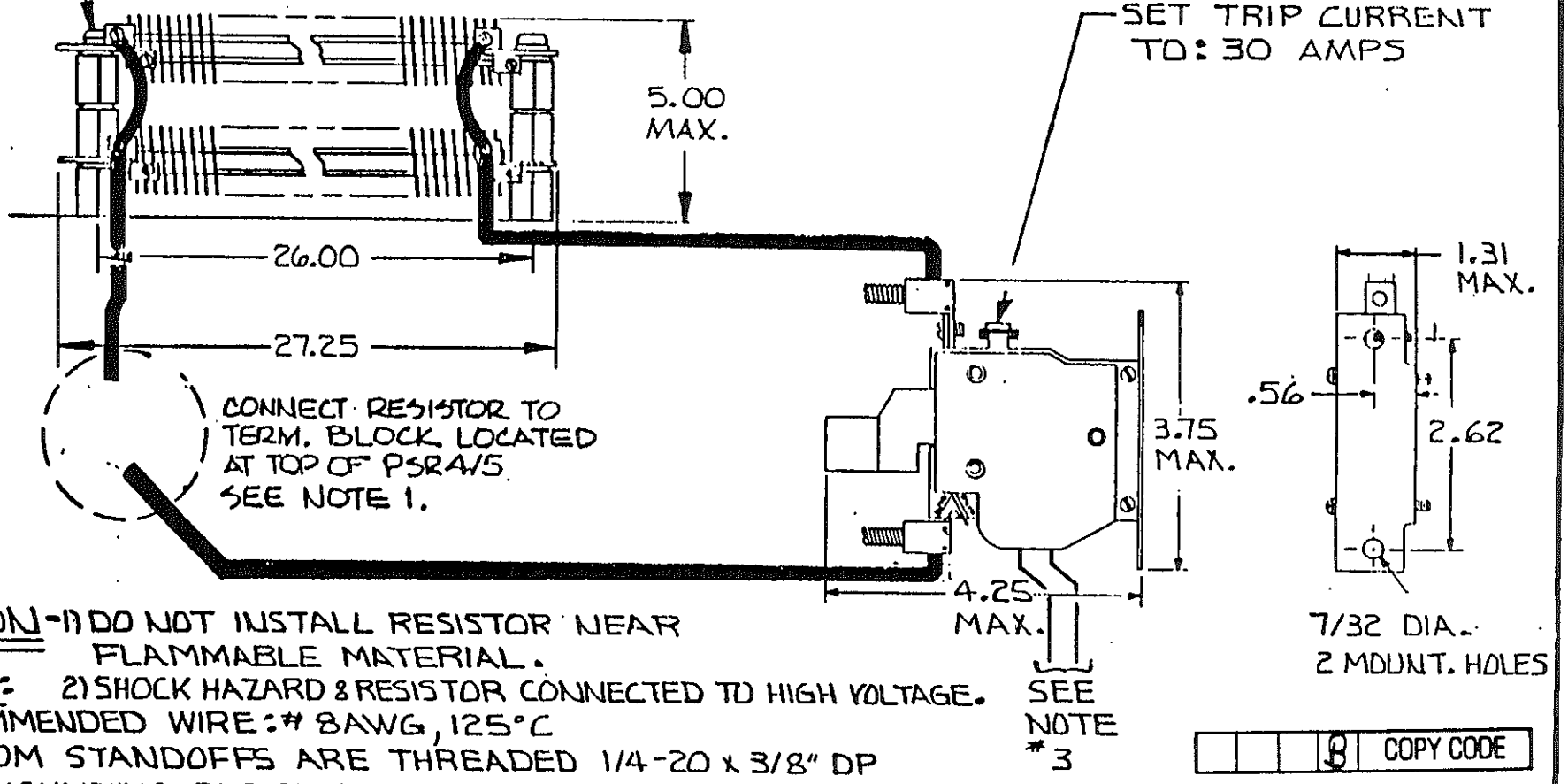
SCALE:	DWG. NO.	ISSUE
—	A- 93315	1

DWG NO	ISSUE
A-93316	1

1/4-20 x 1/2 PAN HD. SCREW QTY (2)
1/4 LOCKWASHER QTY (2)
1/4 FLATWASHER QTY (2)
1/4-20 x 1/2 THREADED STUD QTY (4)
STAND-OFF, SPRUCE PINE #2165-1B QTY (6)
4.4 OHM RESISTOR, 1000 W QTY (2)

RATED POWER: 2000 W
TOTAL RESISTANCE: 2.2 Ω

SET TRIP CURRENT TO: 30 AMPS



CAUTION-1) DO NOT INSTALL RESISTOR NEAR FLAMMABLE MATERIAL.

NOTES: 2) SHOCK HAZARD & RESISTOR CONNECTED TO HIGH VOLTAGE.

1. RECOMMENDED WIRE: # 8AWG, 125°C
2. BOTTOM STANDOFFS ARE THREADED 1/4-20 x 3/8" DP FOR MOUNTING RESISTORS TO PANELS, ETC.
3. OUTPUT CONTACTS: WIRED TO DROP MAIN LINES WHEN CONTACTS OPEN ON OVERLOAD.

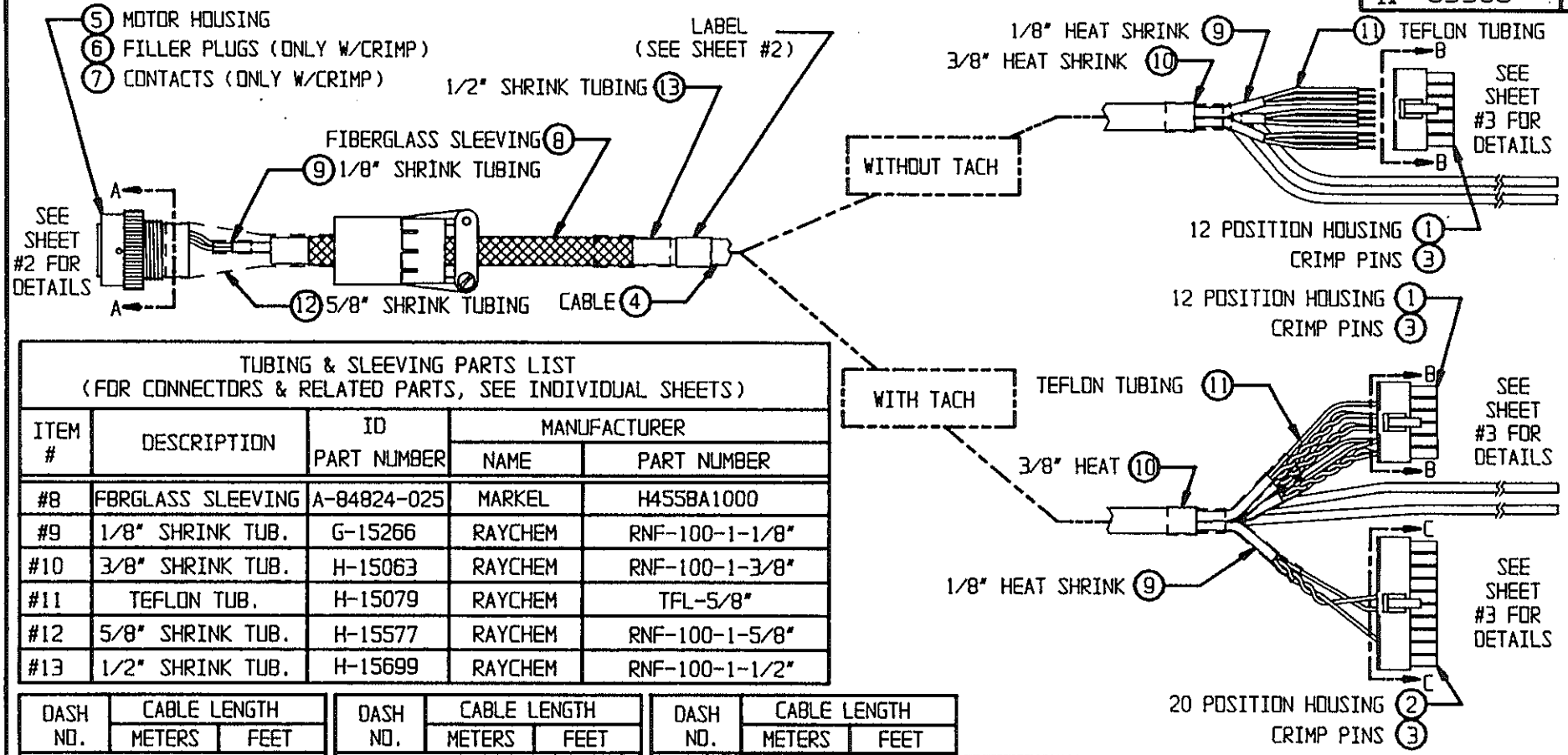
COPY CODE B

UNLESS OTHERWISE SPECIFIED	ISS.	ECN NO.	DATE	APP'D	ISS	ECN NO.	DATE	APP'D	DW'N BY	DATE
XX DEC. PLACES ±.015 XXX DEC. PLACES ±.005 ANG. DIM. ±1°									TDG	5-21-91
DO NOT SCALE DWG. USE DIMENSIONS ONLY ALL DIMENSIONS ARE INCHES UNLESS OTHERWISE SPECIFIED									CH'K BY	
									APP'D BY	5/23/91

Kollmorgen Industrial Drives
RADFORD, VIRGINIA

WIRING & MOUNTING DIAG.
ER-23

SCALE:	DWG. NO.	ISSUE
—	A-93316	1



TUBING & SLEEVING PARTS LIST
(FOR CONNECTORS & RELATED PARTS, SEE INDIVIDUAL SHEETS)

ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#8	FBRGLASS SLEEVING	A-84824-025	MARKEL	H455BA1000
#9	1/8" SHRINK TUB.	G-15266	RAYCHEM	RNF-100-1-1/8"
#10	3/8" SHRINK TUB.	H-15063	RAYCHEM	RNF-100-1-3/8"
#11	TEFLON TUB.	H-15079	RAYCHEM	TFL-5/8"
#12	5/8" SHRINK TUB.	H-15577	RAYCHEM	RNF-100-1-5/8"
#13	1/2" SHRINK TUB.	H-15699	RAYCHEM	RNF-100-1-1/2"

DASH NO.	CABLE LENGTH METERS	CABLE LENGTH FEET
-003	3	10
-006	6	20
-009	9	30
-012	12	40
-015	15	50
-018	18	60
-021	21	70
-024	24	80

DASH NO.	CABLE LENGTH METERS	CABLE LENGTH FEET
-027	27	90
-030	30	100
-033	33	110
-036	36	120
-039	39	130
-042	42	140
-045	45	150
-048	48	160

DASH NO.	CABLE LENGTH METERS	CABLE LENGTH FEET
-051	51	170
-054	54	180
-057	57	190
-060	60	200

PART NUMBER DESCRIPTION

GOLDLINE CABLE — GC-RXX-4/5-XX — CABLE LENGTH (IN METERS)
BDS4 or 5 AMPLIFIER

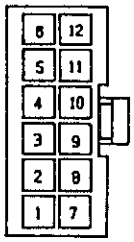
R =THERMOSTAT/RESOLVER
RT =THERMOSTAT/RESOLVER/TACH
RB =THERMOSTAT/RESOLVER/BRAKE
RBT =THERMOSTAT/RESOLVER/BRAKE/TACH

ISS.	ECN NO.	DATE	APP'D.
C	COPY CODE		
B	COPY CODE		
2	84691 EWR	8-21-92	FDD
3	84797 EWR	10-5-92	

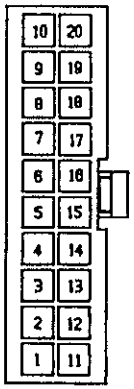
Kollmorgen Industrial Drives
RADFORD, VIRGINIA

GOLDLINE AMPLIFIER ASSEMBLY
GUIDE FOR RESOLVER CABLES

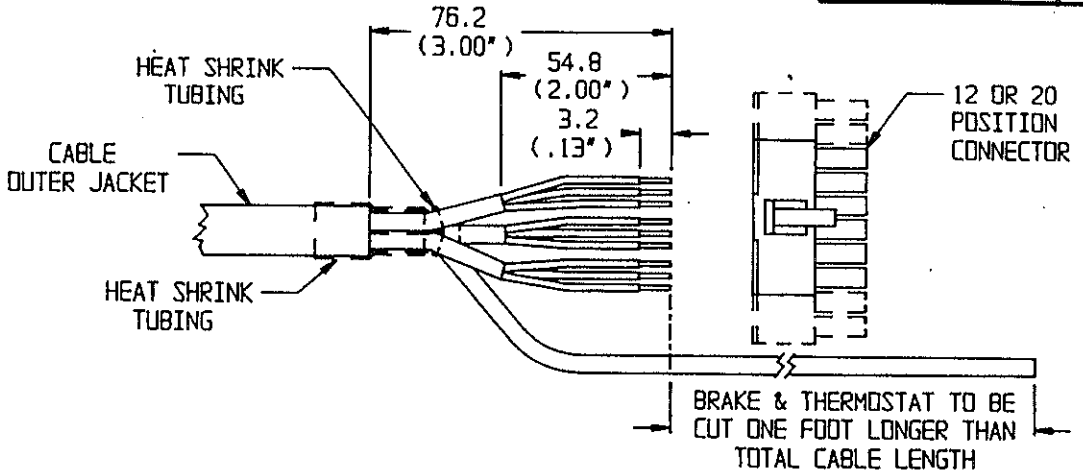
DWN. BY:	DATE	CK. BY:	DATE	APP'D. BY:	DATE	SCALE	DWG. NO.	SHEET 1 OF 11	ISSUE
EWR	05-18-92					1:1	A-93369		3



DETAIL B - B



DETAIL C - C



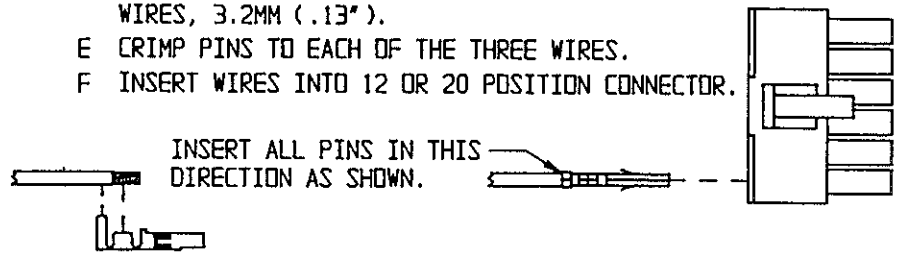
CONNECTOR ASSEMBLY PROCEDURE

STEP 1 BEFORE ANY OUTER JACKET HAS BEEN REMOVED FROM THE CABLE, SLIDE A SECTION OF HEAT SHRINK TUBING ONTO THE CABLE.

STEP 2 STRIP THE CABLE OUTER JACKET BACK, 381MM (15.00"). THIS WILL EXPOSE THE INDIVIDUAL FOIL SHIELDS.

STEP 3 ACCORDING TO THE CONNECTION CHART, SELECT ONE OF THE WIRE PAIRS AND COMPLETE THE FOLLOWING OPERATIONS. SEE NOTE #1.

- A REMOVE THE FOIL SHIELD FROM THE WIRE.
- B COVER SHIELD WIRE WITH TUBING.
- C COVER THE THREE LEADS WITH HEAT SHRINK.
- D USE STRIPPING PLIERS TO STRIP INSULATION FROM INDIVIDUAL WIRES, 3.2MM (.13").
- E CRIMP PINS TO EACH OF THE THREE WIRES.
- F INSERT WIRES INTO 12 OR 20 POSITION CONNECTOR.



STEP 4 PERFORM STEP 3 FOR EACH REMAINING PAIRS.

STEP 5 SLIDE THE HEATSHRINK TUBING, FROM STEP #1, ONTO THE END OF THE CABLE AND SHRINK, AS SHOWN ABOVE.

NOTE:

1. FOR CABLE ASSEMBLY GC-R-4/5-XX .....SEE SHEET #4 OR 5
   FOR CABLE ASSEMBLY GC-RB-4/5-XX ....SEE SHEET #6 OR 7
   FOR CABLE ASSEMBLY GC-RT-4/5-XX ....SEE SHEET #8 OR 9
   FOR CABLE ASSEMBLY GC-RBT-4/5-XX ...SEE SHEET #10 OR 11

		C	B	COPY CODE	ISS.	ECN NO.	DATE	APP'D.
ISS.	ECN NO.	DATE	APP'D.					

Kollmorgen Industrial Drives
RADFORD, VIRGINIA

GOLDLINE AMPLIFIER ASSEMBLY GUIDE FOR RESOLVER CABLES

DWN. BY:	DATE	CHK. BY:	DATE	APP'D. BY:	DATE	SCALE	DWG. NO. SHEET 3 OF 11	ISSUE
EWR	08-12-92					1:1	A-93369	3

(W/SOLDERED MOTOR CONNECTOR)
GOLDLINE RESOLVER CABLE WITH THERMOSTAT (GC-R-4/5-XX)

PARTS LIST

CABLE				
ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#4	4 PAIR	A-81948	BELDEN	8725

MOTOR CONNECTOR AND ACCESSORIES				
ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#5	MOTOR HOUSING	A42867-1419	SOURIAU	851-06EC14-19S50

BDS4 C2 OR BDS5 C3 AND ACCESSORIES				
ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#1	12 POS. HOUSING	A-83908-012	MOLEX	39-01-2125
#3	CRIMP PIN	A-83909-002	MOLEX	39-00-0039
	CRIMP TOOL	N/A	MOLEX	HTR-60622

CONNECTION CHART

MOTOR CONNECTION ITEM #5	* CABLE ITEM #4	BDS4 C2 or BDS5 C3 ITEM #1	BDS4 C1 ITEM #2
TERMINAL A	RED	TERMINAL 7	N/C
TERMINAL B	BLACK	TERMINAL 1	
N/C	SHIELD	TERMINAL 8	
TERMINAL C	WHT/YEL	TERMINAL 3	
TERMINAL D	WHT/GRN	TERMINAL 9	
N/C	SHIELD	TERMINAL 2	
TERMINAL E	WHT/RED	TERMINAL 10	
TERMINAL F	WHT/BLK	TERMINAL 4	
N/C	SHIELD	TERMINAL 5	
TERMINAL N			
TERMINAL P		N/C	
TERMINAL R			
TERMINAL S		N/C	
TERMINAL T	GREEN	CUSTOMER	
TERMINAL U	WHITE	THERMOSTAT	
N/C	SHIELD	HOOK-UP	

SEE SHEET 2 AND 3 FOR CONNECTOR DETAILS.
* THIS CABLE ASSEMBLY TO BE LABELED "GC-R-4/5-XX".
CABLE LENGTH

		C	B	COPY CODE	ISS.	ECN NO.	DATE	APP'D.
ISS.	ECN NO.	DATE	APP'D.					

Kollmorgen Industrial Drives
RADFORD, VIRGINIA

GOLDLINE AMPLIFIER ASSEMBLY
GUIDE FOR RESOLVER CABLES

DWN. BY:	DATE	CHK. BY:	DATE	APP'D. BY:	DATE	SCALE	DWG. NO. SHEET 5 OF 11	ISSUE
EWR	08-12-92					1:1	A-93369	3

DWG. NO.	SHT 7 OF 11	ISSUE
A-93369		3

(W/SOLDERED MOTOR CONNECTOR)
GOLDLINE RESOLVER CABLE WITH THERMOSTAT AND BRAKE (GC-RB-4/5-XX)

PARTS LIST

CABLE				
ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#4	6 PAIR	A-84819	BELDEN	87778

MOTOR CONNECTOR AND ACCESSORIES				
ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#5	MOTOR HOUSING	A42867-1419	SOURIAU	851-06EC14-19S50

BDS4 C2 OR BDS5 C3 AND ACCESSORIES				
ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#1	12 POS. HOUSING	A-83908-012	MOLEX	39-01-2125
#3	CRIMP PIN	A-83909-002	MOLEX	39-00-0039
	CRIMP TOOL	N/A	MOLEX	HTR-60622

CONNECTION CHART

MOTOR CONNECTION ITEM #5	* CABLE ITEM #4	BDS4 C2 or BDS5 C3 ITEM #1	BDS4 C1 ITEM #2
TERMINAL A	RED	TERMINAL 7	N/C
TERMINAL B	BLACK	TERMINAL 1	
N/C	SHIELD	TERMINAL 8	
TERMINAL C	GREEN	TERMINAL 3	
TERMINAL D	BLACK	TERMINAL 9	
N/C	SHIELD	TERMINAL 2	
TERMINAL E	WHITE	TERMINAL 10	
TERMINAL F	BLACK	TERMINAL 4	
N/C	SHIELD	TERMINAL 5	
TERMINAL N	BLUE	CUSTOMER	
TERMINAL P	BLACK	BRAKE	
N/C	SHIELD	HOOK-UP	
TERMINAL R	SEE NOTE #1	N/C	
TERMINAL S			
TERMINAL T	YELLOW	CUSTOMER	
TERMINAL U	BLACK	THERMOSTAT	
N/C	SHIELD	HOOK-UP	

SEE SHEET 2 AND 3 FOR CONNECTOR DETAILS.

* THIS CABLE ASSEMBLY TO BE LABELED "GC-RB-4/5-XX".
CABLE LENGTH

NOTE:

1. RESOLVER END: CUT-OFF REMAINING PAIR 12.7MM (1/2") FROM CABLE JACKET AND FOLD BACK OVER JACKET, PLACE UNDER HEAT SHRINK. MOTOR END: CUT-OFF REMAINING PAIR EVEN WITH CABLE JACKET.

		C	B	COPY CODE	ISS.	ECN NO.	DATE	APP'D.
ISS.	ECN NO.	DATE	APP'D.					

Kollmorgen Industrial Drives
RADFORD, VIRGINIA

GOLDLINE AMPLIFIER ASSEMBLY GUIDE FOR RESOLVER CABLES

DWN. BY:	DATE	CHK. BY:	DATE	APP'D. BY:	DATE	SCALE	DWG. NO.	SHEET 7 OF 11	ISSUE
EWR	08-12-92					1:1	A-93369		3

(W/SOLDERED MOTOR CONNECTOR)
GOLDLINE RESOLVER CABLE WITH THERMOSTAT AND TACH (GC-RT-4/5-XX)

PARTS LIST

CABLE				
ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#4	6 PAIR	A-84819	BELDEN	87778

MOTOR CONNECTOR AND ACCESSORIES				
ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#5	MOTOR HOUSING	A42867-1419	SOURIAU	851-06EC14-19S50

BDS4 C2 OR BDS5 C3 AND ACCESSORIES				
ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#1	12 POS. HOUSING	A-83908-012	MOLEX	39-01-2125
#3	CRIMP PIN	A-83909-002	MOLEX	39-00-0039
	CRIMP TOOL	N/A	MOLEX	HTR-60622

BDS4 C1 AND ACCESSORIES				
ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#2	20 POS. HOUSING	A-83908-020	MOLEX	39-01-2205
#3	CRIMP PIN	A-83909-002	MOLEX	39-00-0039
	CRIMP TOOL	N/A	MOLEX	HTR-60622

CONNECTION CHART

MOTOR CONNECTION ITEM #5	* CABLE ITEM #4	BDS4 C2 or BDS5 C3 ITEM #1	BDS4 C1 ITEM #2
TERMINAL A	RED	TERMINAL 7	N/C
TERMINAL B	BLACK	TERMINAL 1	
N/C	SHIELD	TERMINAL 8	
TERMINAL C	GREEN	TERMINAL 3	
TERMINAL D	BLACK	TERMINAL 9	
N/C	SHIELD	TERMINAL 2	
TERMINAL E	WHITE	TERMINAL 10	
TERMINAL F	BLACK	TERMINAL 4	
N/C	SHIELD	TERMINAL 5	
TERMINAL N	SEE NOTE #1		
TERMINAL P		N/C	
TERMINAL R	BROWN		TACH TERM. 12
TERMINAL S	BLACK	N/C	TACH TERM. 16
N/C	SHIELD		TACH TERM. 5
TERMINAL T	YELLOW	CUSTOMER THERMOSTAT HOOK-UP	N/C
TERMINAL U	BLACK		
N/C	SHIELD		

SEE SHEET 2 AND 3 FOR CONNECTOR DETAILS.

* THIS CABLE ASSEMBLY TO BE LABELED "GC-RT-4/5-XX". (XX = CABLE LENGTH)

NOTE:

1. RESOLVER END: CUT-OFF REMAINING PAIR 12.7MM (1/2") FROM CABLE JACKET AND FOLD BACK OVER JACKET, PLACE UNDER HEAT SHRINK. MOTOR END: CUT-OFF REMAINING PAIR EVEN WITH CABLE JACKET.

ISS.	ECN NO.	DATE	APP'D.
C			
B	COPY CODE		

ISS.	ECN NO.	DATE	APP'D.

Kollmorgen Industrial Drives
RADFORD, VIRGINIA

GOLDLINE AMPLIFIER ASSEMBLY GUIDE FOR RESOLVER CABLES

DWN. BY:	DATE	CHK. BY:	DATE	APP'D. BY:	DATE	SCALE	DWG. NO.	SHEET	ISSUE
EWR	08-12-92					1:1	A-93369	9 OF 11	3

DWG. NO. SHT 11 OF 11	ISSUE
A-93369	3

(W/SOLDERED MOTOR CONNECTOR)
GOLDLINE RESOLVER CABLE WITH THERMOSTAT, BRAKE, AND TACH (GC-RBT-4/5-XX)

PARTS LIST

CABLE				
ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#4	6 PAIR	A-84819	BELDEN	87778

MOTOR CONNECTOR AND ACCESSORIES				
ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#5	MOTOR HOUSING	A42867-1419	SOURIAU	851-06EC14-19S50

BDS4 C2 OR BDS5 C3 AND ACCESSORIES				
ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#1	12 POS. HOUSING	A-83908-012	MOLEX	39-01-2125
#3	CRIMP PIN	A-83909-002	MOLEX	39-00-0039
	CRIMP TOOL	N/A	MOLEX	HTR-60622

BDS4 C1 AND ACCESSORIES				
ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#2	20 POS. HOUSING	A-83908-020	MOLEX	39-01-2205
#3	CRIMP PIN	A-83909-002	MOLEX	39-00-0039
	CRIMP TOOL	N/A	MOLEX	HTR-60622

CONNECTION CHART

MOTOR CONNECTION ITEM #5	* CABLE ITEM #4	BDS4 C2 or BDS5 C3 ITEM #1	BDS4 C1 ITEM #2
TERMINAL A	RED	TERMINAL 7	N/C
TERMINAL B	BLACK	TERMINAL 1	
N/C	SHIELD	TERMINAL 8	
TERMINAL C	GREEN	TERMINAL 3	
TERMINAL D	BLACK	TERMINAL 9	
N/C	SHIELD	TERMINAL 2	
TERMINAL E	WHITE	TERMINAL 10	
TERMINAL F	BLACK	TERMINAL 4	
N/C	SHIELD	TERMINAL 5	
TERMINAL N	BLUE	CUSTOMER	
TERMINAL P	BLACK	BRAKE	
N/C	SHIELD	HOOK-UP	
TERMINAL R	BROWN		TACH TERM. 12
TERMINAL S	BLACK	N/C	TACH TERM. 16
N/C	SHIELD		TACH TERM. 5
TERMINAL T	YELLOW	CUSTOMER	N/C
TERMINAL U	BLACK	THERMOSTAT	
N/C	SHIELD	HOOK-UP	

SEE SHEET 2 AND 3 FOR CONNECTOR DETAILS.
* THIS CABLE ASSEMBLY TO BE LABELED "GC-RBT-4/5-XX".
CABLE LENGTH

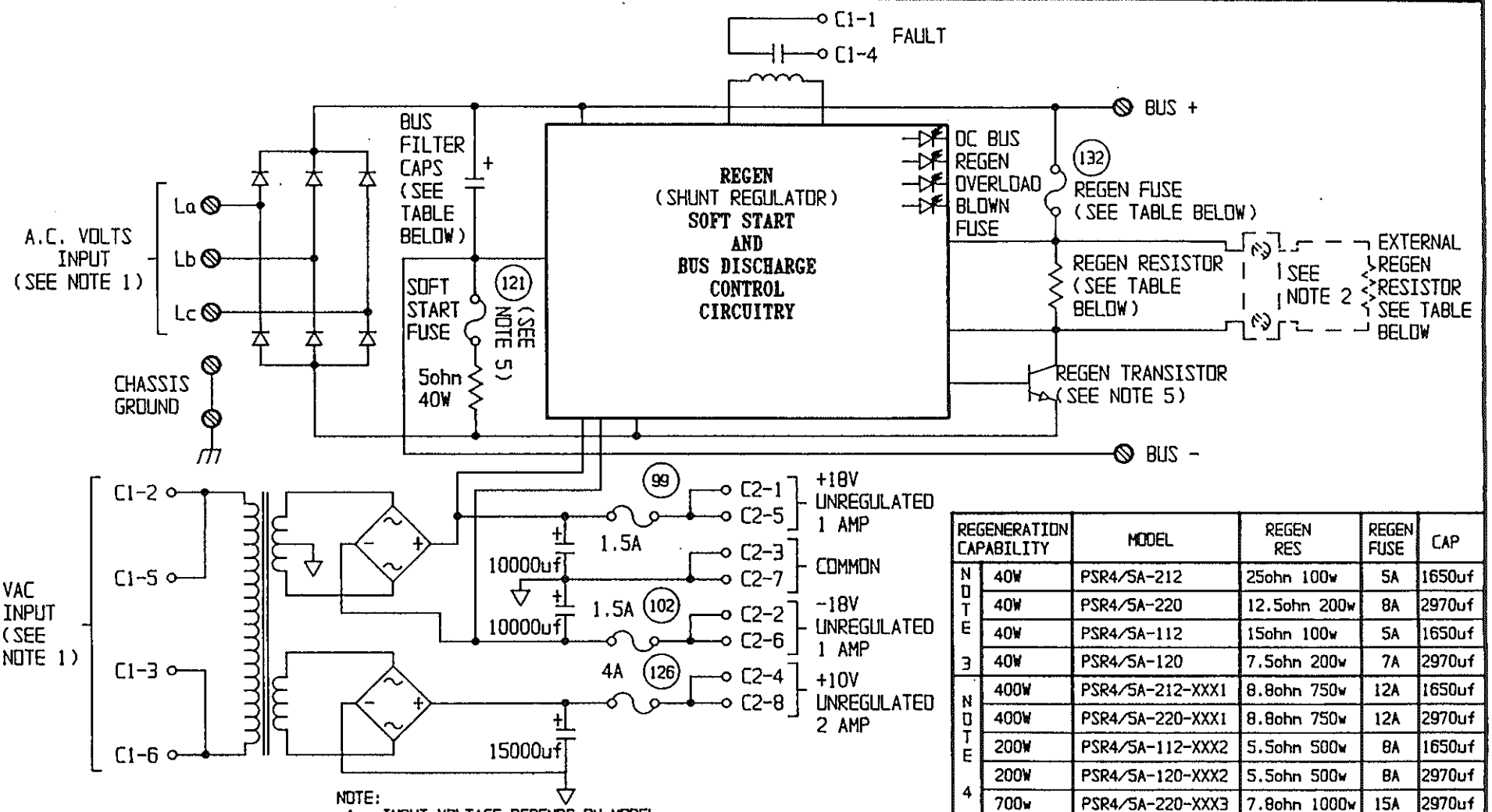
		C	B	COPY CODE	ISS.	ECN NO.	DATE	APP'D.
ISS.	ECN NO.	DATE	APP'D.					

Kollmorgen Industrial Drives
RADFORD, VIRGINIA

GOLDLINE AMPLIFIER ASSEMBLY GUIDE FOR RESOLVER CABLES

DWN. BY:	DATE	CHK. BY:	DATE	APP'D. BY:	DATE	SCALE	DWG. NO. SHEET 11 OF 11	ISSUE
EWR	05-18-92					1:1	A-93369	3

UNLESS OTHERWISE SPECIFIED ANG. DIM. ±1 DEGREE	XX DEC. PLACES ±.015 IN. XXX DEC. PLACES ±.005 IN.	DO NOT SCALE DWG. USE DIMENSIONS ONLY. ALL DIMENSIONS ARE INCHES UNLESS OTHERWISE SPECIFIED	DWG. NO. A-93408	ISSUE 1



REGENERATION CAPABILITY		MODEL	REGEN RES	REGEN FUSE	CAP
NOTE 3	40W	PSR4/5A-212	25ohn 100w	5A	1650uf
	40W	PSR4/5A-220	12.5ohn 200w	8A	2970uf
	40W	PSR4/5A-112	15ohn 100w	5A	1650uf
	40W	PSR4/5A-120	7.5ohn 200w	7A	2970uf
NOTE 4	400W	PSR4/5A-212-XXX1	8.8ohn 750w	12A	1650uf
	400W	PSR4/5A-220-XXX1	8.8ohn 750w	12A	2970uf
	200W	PSR4/5A-112-XXX2	5.5ohn 500w	8A	1650uf
	200W	PSR4/5A-120-XXX2	5.5ohn 500w	8A	2970uf
	700w	PSR4/5A-220-XXX3	7.8ohn 1000w	15A	2970uf
0		PSR4/5A-X12-XX8X	OPEN	OPEN	1650uf

NOTE:
1 - INPUT VOLTAGE DEPENDS ON MODEL.
2 - TERMINAL BLOCK PROVIDED ONLY ON EXTERNAL REGEN RESISTOR MODELS. NO INTERNAL REGEN RESISTOR PROVIDED ON EXTERNAL RESISTOR MODELS.
3 - THESE VALUES FOR INTERNAL REGEN ONLY.
4 - THESE VALUES FOR EXTERNAL REGEN ONLY.
5 - VALUE DEPENDS ON MODEL.

		B	C	COPY CODE

ISS.	ECN NO.	DATE	APP'D.	ISS.	ECN NO.	DATE	APP'D.

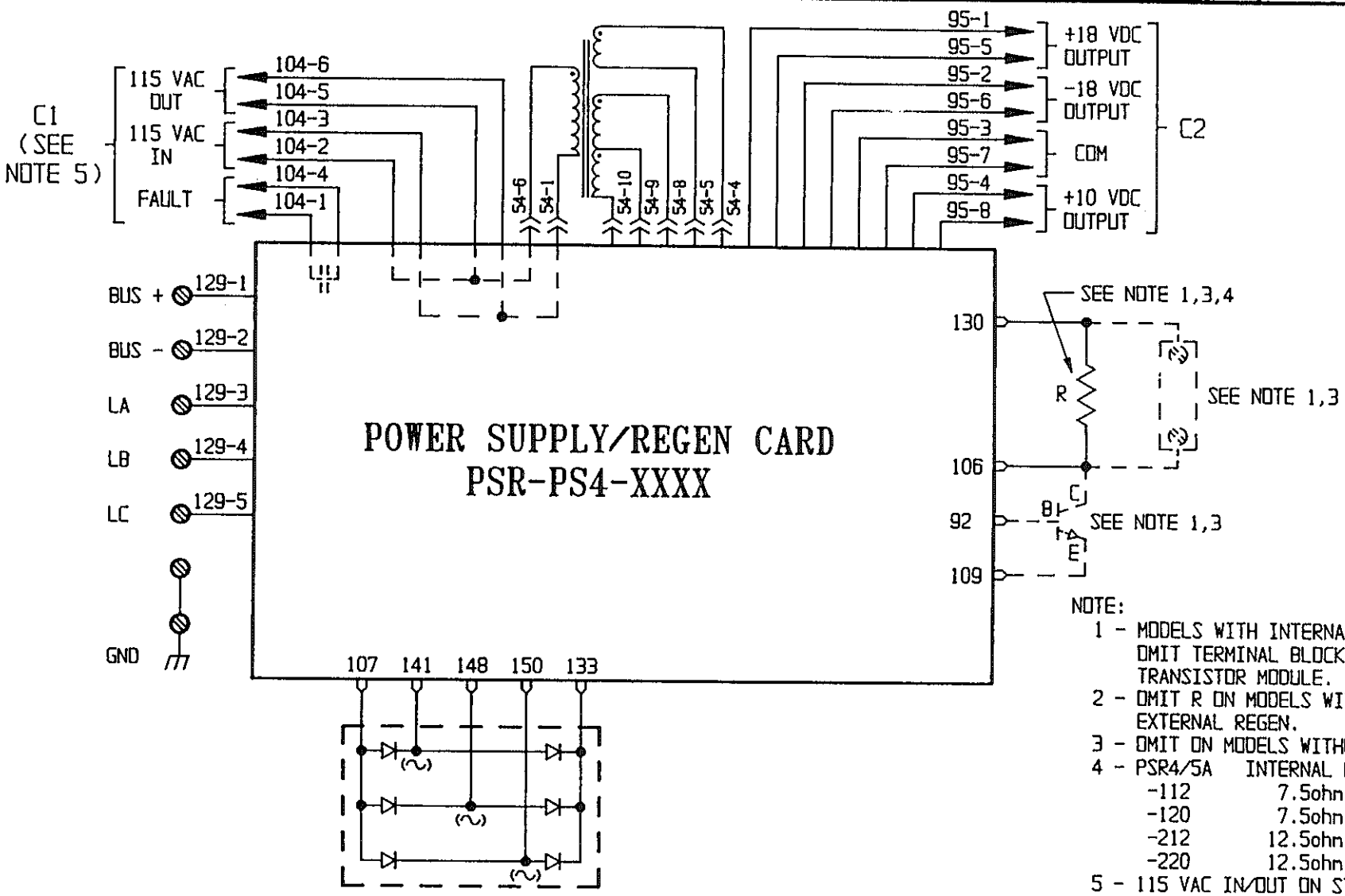
CAD DWG. (D-112)

INDUSTRIAL DRIVES
RADFORD, VIRGINIA
A KOLLMORGEN DIVISION

PSR4/5A-12 & 20AMP SIMPLIFIED SCHEMATIC

DWN. BY:	DATE	CK. BY:	DATE	APP'D. BY:	DATE	SCALE	DWG. NO.	ISSUE
LLS	05-22-92				6-1-92	1/1	A-93408	1

UNLESS OTHERWISE SPECIFIED ANG. DIM. ±1 DEGREE	XX DEC. PLACES ±.015 IN. XXX DEC. PLACES ±.005 IN.	DO NOT SCALE DWG. USE DIMENSIONS ONLY. ALL DIMENSIONS ARE INCHES UNLESS OTHERWISE SPECIFIED	DWG. NO. A-93409	ISSUE 1



NOTE:
1 - MODELS WITH INTERNAL REGEN OMIT TERMINAL BLOCK AND TRANSISTOR MODULE.
2 - OMIT R ON MODELS WITH EXTERNAL REGEN.
3 - OMIT ON MODELS WITHOUT REGEN.
4 - PSR4/5A INTERNAL R VALUE

-112	7.5ohn 100w
-120	7.5ohn 100w
-212	12.5ohn 100w
-220	12.5ohn 100w

5 - 115 VAC IN/OUT ON STANDARD MODEL
230 VAC IN/OUT ON SPECIAL

CAD DWG. (D-112)

		C	B	COPY CODE						
ISS.	ECN NO.	DATE	APP'D.	ISS.	ECN NO.	DATE	APP'D.			

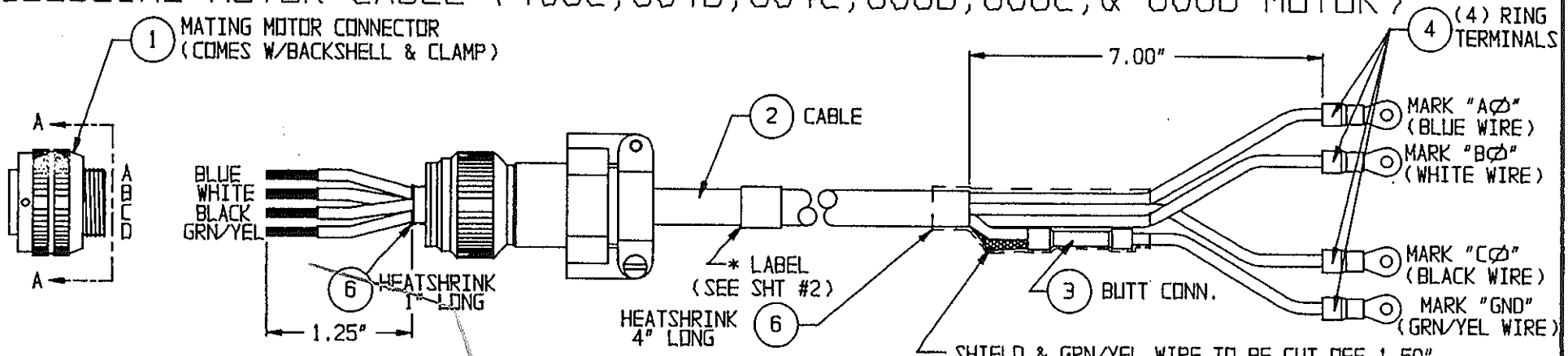
INDUSTRIAL DRIVES
RADFORD, VIRGINIA
A KOLLMORGEN DIVISION

PSR4/5A
INTERNAL SCHEMATIC

DWN. BY:	DATE	CHK. BY:	DATE	APP'D. BY:	DATE	SCALE	DWG. NO.	ISSUE
LLS	05-18-92				5-1-92	1/1	A-93409	1

DWG. NO.	SHEET 4 OF 8	ISSUE
A-93414		3

(W/SOLDERED CONNECTOR)
GOLDLINE MOTOR CABLE (406C, 604B, 604C, 606B, 606C, & 606D MOTOR)



PARTS LIST

CABLE				
ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#2	4 CONUCTOR #8 AWG	A-93553-001	OMNI	ID0804TBTPR-FLEX

MOTOR CONNECTOR AND ACCESSORIES				
ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#1	MOTOR PLUG	A-43642	VEAM	CIR 06F-22-22S

ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#4	RING TERMINAL	A-79406-002	HOLLINGSWORTH	R3027BF
	CRIMP TOOL	N/A	HOLLINGSWORTH	#H6E
#3	BUTT CONN.	A-80654-004	HOLLINGSWORTH	B4047BF
#6	3/4" SHRINK TUB.	G-17634	RAYCHEM	RNF-100-1-3/4"

* THIS CABLE ASSEMBLY TO BE LABELED "GC-M4B or M6B-4/5-XX".

CABLE LENGTH (IN METERS)

		B	C	COPY CODE	ISS.	ECN NO.	DATE	APP'D.
ISS.	ECN NO.	DATE	APP'D.					

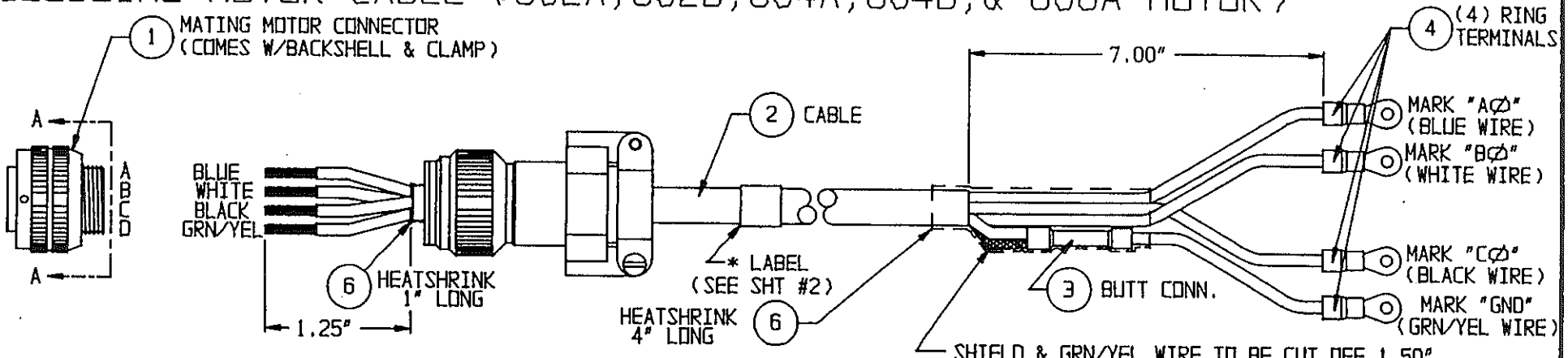
Kollmorgen Industrial Drives
RADFORD, VIRGINIA

GOLDLINE AMPLIFIER ASSEMBLY GUIDE FOR MOTOR CABLES (30, 40, & 55 AMP)

DWN. BY:	DATE	CHK. BY:	DATE	APP'D. BY:	DATE	SCALE	DWG. NO.	SHEET 4 OF 8	ISSUE
EWR	09-28-92					1:1	A-93414		3

DWG. NO.	SHEET 6 OF 8	ISSUE
A-93414		3

(W/SOLDERED CONNECTOR)
GOLDLINE MOTOR CABLE (802A, 802B, 804A, 804B, & 806A MOTOR)



SHIELD & GRN/YEL WIRE TO BE CUT OFF 1.50" BEYOND CABLE JACKET AND INSERTED INTO LARGE END OF BUTT CONNECTOR (STRIP GRN/YEL WIRE 3/8"), DO NOT DISCARD THE SECTION OF GRN/YEL WIRE THAT IS CUT OFF, IT WILL BE INSERTED INTO OTHER END OF BUTT CONNECTOR.

PARTS LIST

CABLE				
ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#2	4 CONUCTOR #8 AWG	A-93553-001	OMNI	ID0804T8TPR-FLEX

MOTOR CONNECTOR AND ACCESSORIES				
ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#1	MOTOR PLUG	A-43828	VEAM	CIR 06F-32-17S

ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#4	RING TERMINAL	A-79406-002	HOLLINGSWORTH	R3027BF
	CRIMP TOOL	N/A	HOLLINGSWORTH	#H6E
#3	BUTT CONN.	A-80654-004	HOLLINGSWORTH	B4047BF
#6	3/4" SHRINK TUB.	G-17634	RAYCHEM	RNF-100-1-3/4"

* THIS CABLE ASSEMBLY TO BE LABELED "GC-M8A-4/5-XX".
CABLE LENGTH (IN METERS)

		B	C	COPY CODE	ISS.	ECN NO.	DATE	APP'D.
ISS.	ECN NO.	DATE	APP'D.					

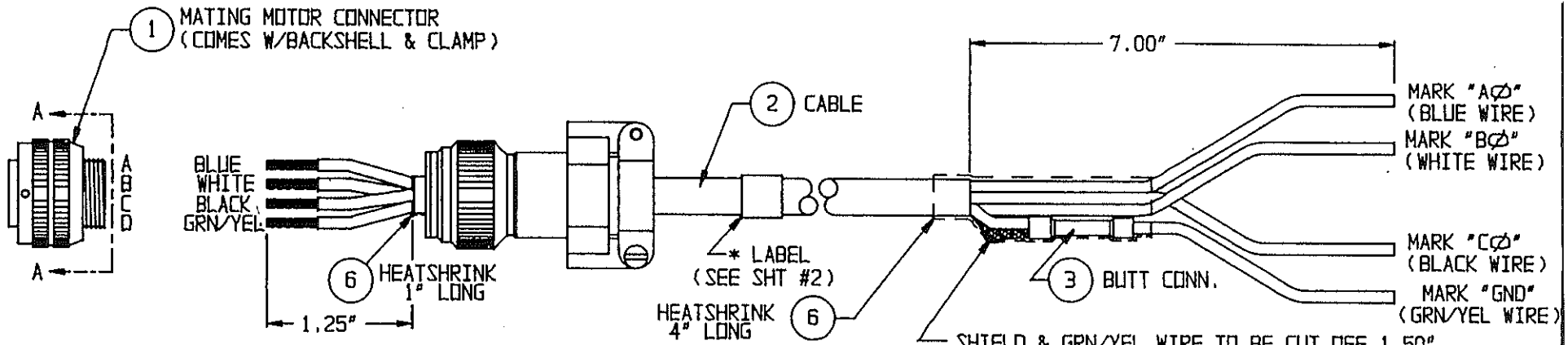
Kollmorgen Industrial Drives
RADFORD, VIRGINIA

GOLDLINE AMPLIFIER ASSEMBLY GUIDE FOR MOTOR CABLES (30, 40, & 55 AMP)

DWN. BY:	DATE	CHK. BY:	DATE	APP'D. BY:	DATE	SCALE	DWG. NO.	SHEET 6 OF 8	ISSUE
EWR	08-28-92					1:1	A-93414		3

DWG. NO.	SHEET 8 OF 8	ISSUE
A-93414		3

(W/SOLDERED CONNECTOR)
GOLDLINE MOTOR CABLE (804C & 806B MOTOR)



PARTS LIST

CABLE				
ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#2	4 CONUCTOR #4 AWG	A-93553-005	OMNI	ID0404TBTPR-FLEX

MOTOR CONNECTOR AND ACCESSORIES				
ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#1	MOTOR PLUG	A-43828	VEAM	CIR 06F-32-17S

ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
	CRIMP TOOL	N/A	HOLLINGSWORTH	#H6E
#3	BUTT CONN.	A-80654-004	HOLLINGSWORTH	B4047BF
#6	3/4" SHRINK TUB.	G-17634	RAYCHEM	RNF-100-1-3/4"

* THIS CABLE ASSEMBLY TO BE LABELED "GC-M8B-4/5-XX".
CABLE LENGTH (IN METERS)

ISS.	ECN NO.	DATE	APP'D.
B			
C			

COPY CODE	ISS.	ECN NO.	DATE	APP'D.

Kollmorgen Industrial Drives
RADFORD, VIRGINIA

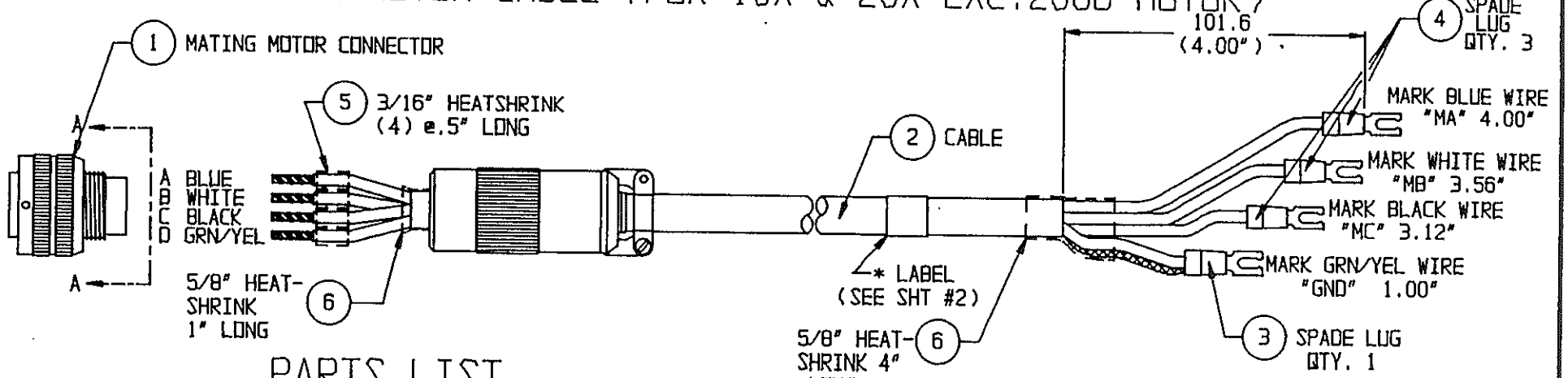
GOLDLINE AMPLIFIER ASSEMBLY
GUIDE FOR MOTOR CABLES
(30, 40, & 55 AMP)

DWN. BY:	DATE	CHK. BY:	DATE	APP'D. BY:	DATE	SCALE	DWG. NO.	SHEET 8 OF 8	ISSUE
EWR	08-28-92					1:1	A-93414		3

DWG. NO. A-93421 | SHEET 4 OF 8 | ISSUE 3

+ (SOLDERED) +

GOLDLINE MOTOR CABLE (FOR 10X & 20X EXC.2060 MOTOR)



PARTS LIST

CABLE				
ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#2	4 CONDUCTOR	A-93553-004	OMNI	ID1604TBTPR-FLEX

MOTOR CONNECTOR AND ACCESSORIES				
ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#1	MOTOR PLUG	A-42867-145	SOURIAU	851-06EC14-5550

AMPLIFIER END				
ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#4	SPADE LUG	A-84268-002	HOLLINGSWORTH	XSS20836
#3	SPADE LUG	A-84267-002	HOLLINGSWORTH	XSS20836
	CRIMP TOOL	N/A	HOLLINGSWORTH	#H6E

TUBING & SLEEVING PARTS LIST				
ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#5	3/16" SHRINK TUB.	G-15265	RAYCHEM	RNF-100-1-3/16"
#6	5/8" SHRINK TUB.	H-15577	RAYCHEM	RNF-100-1-5/8"

* THIS CABLE ASSEMBLY TO BE LABELED "GC-M1 or M2A-4/5-XX".

CABLE LENGTH (IN METERS)

CAD DWG.

ISS.	ECN NO.	DATE	APP'D.	COPY CODE: B C	ISS.	ECN NO.	DATE	APP'D.

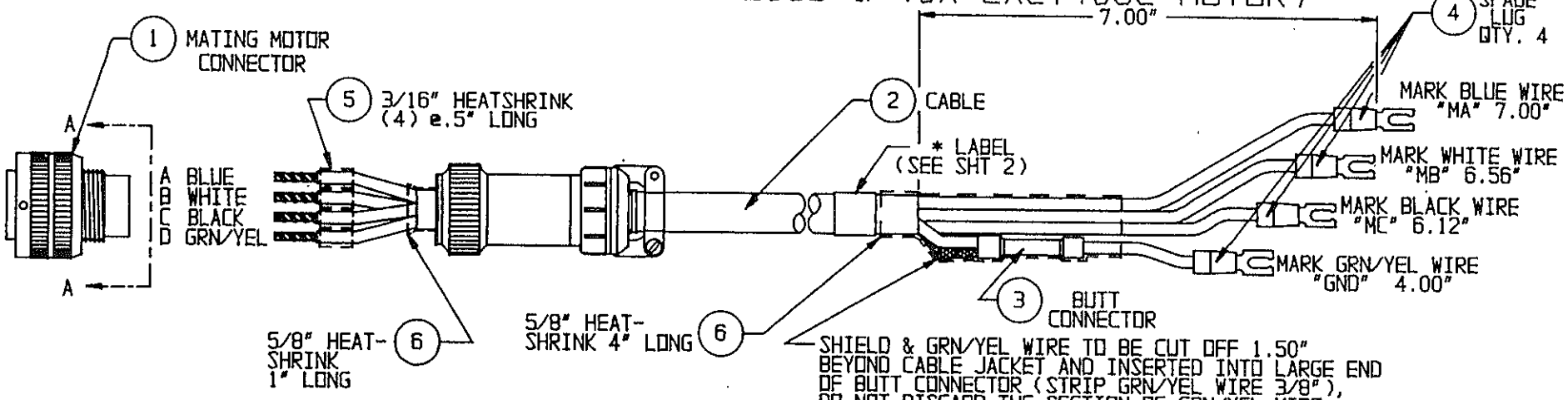
Kollmorgen Industrial Drives
RADFORD, VIRGINIA

GOLDLINE AMPLIFIER ASSEMBLY GUIDE FOR MOTOR CABLES (3 THRU 20 AMP)

DWN. BY:	DATE	CHK. BY:	DATE	APP'D. BY:	DATE	SCALE	DWG. NO.	SHEET 4 OF 8	ISSUE
EWR	05-18-92					1:1	A-93421		3

+ (SOLDERED) +

GOLDLINE MOTOR CABLE (FOR 206D & 40X EXC.406C MOTOR)



SHIELD & GRN/YEL WIRE TO BE CUT OFF 1.50" BEYOND CABLE JACKET AND INSERTED INTO LARGE END OF BUTT CONNECTOR (STRIP GRN/YEL WIRE 3/8"), DO NOT DISCARD THE SECTION OF GRN/YEL WIRE THAT IS CUT OFF. IT WILL BE INSERTED INTO OTHER END OF BUTT CONNECTOR.

PARTS LIST

CABLE				
ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#2	4 CONDUCTOR	A-93535-003	OMNI	ID1204TBTPR-FLEX

MOTOR CONNECTOR AND ACCESSORIES				
ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#1	MOTOR PLUG	A-43173	VEAM	CIR. 06F-18-10S

ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#4	SPADE LUG	A-84267-002	HOLLINGSWORTH	XSS20836
#3	BUTT CONN.	A-80654-003	HOLLINGSWORTH	B40468F
	CRIMP TOOL	N/A	HOLLINGSWORTH	#H6E

ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#5	3/16" SHRINK TUB.	G-15265	RAYCHEM	RNF-100-1-3/16"
#6	5/8" SHRINK TUB.	H-15577	RAYCHEM	RNF-100-1-5/8"

* THIS CABLE ASSEMBLY TO BE LABELED "GC-M2B or M4A-4/5-XX".

CABLE LENGTH (IN METERS)

CAD DWG.

		B	C	COPY CODE	ISS.	ECN NO.	DATE	APP'D.
ISS.	ECN NO.	DATE	APP'D.					

Kollmorgen Industrial Drives
RADFORD, VIRGINIA

DWN. BY:	DATE	CHK. BY:	DATE	APP'D. BY:	DATE
EWR	05-18-92				

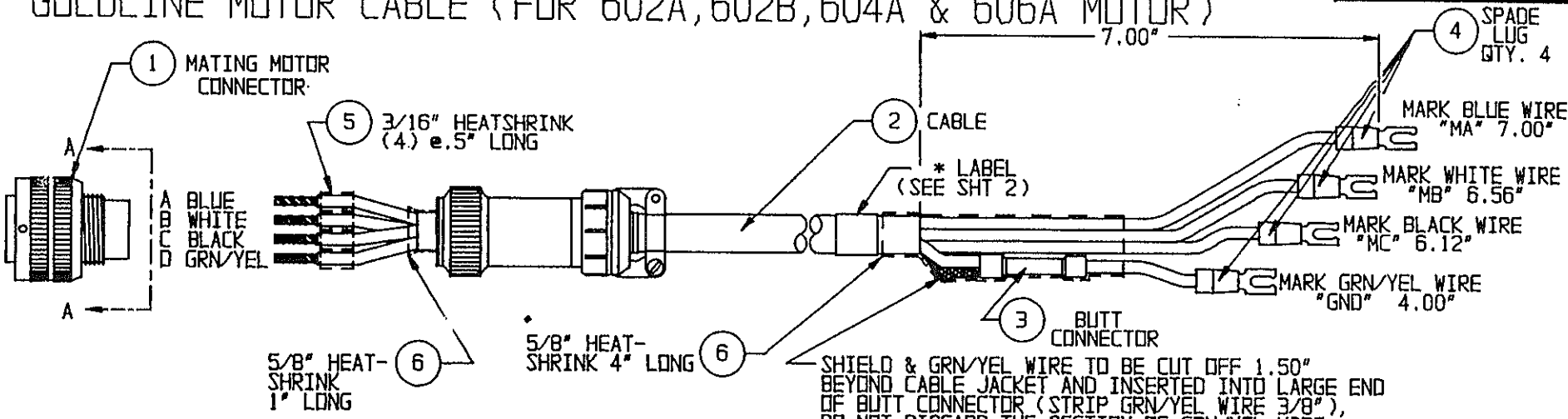
GOLDLINE AMPLIFIER ASSEMBLY
GUIDE FOR MOTOR CABLES
(3 THRU 20 AMP)

SCALE	DWG. NO.	SHEET 6 OF 8	ISSUE
1:1	A-93421		3

+ (SOLDERED) +

DWG. NO.	SHEET 8 OF 8	ISSUE
A-93421		3

GOLDLINE MOTOR CABLE (FOR 602A, 602B, 604A & 606A MOTOR)



SHIELD & GRN/YEL WIRE TO BE CUT OFF 1.50" BEYOND CABLE JACKET AND INSERTED INTO LARGE END OF BUTT CONNECTOR (STRIP GRN/YEL WIRE 3/8"), DO NOT DISCARD THE SECTION OF GRN/YEL WIRE THAT IS CUT OFF. IT WILL BE INSERTED INTO OTHER END OF BUTT CONNECTOR.

PARTS LIST

CABLE

ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#2	4 CONDUCTOR	A-93553-003	OMNI	ID1204TBTPR-FLEX

MOTOR CONNECTOR AND ACCESSORIES

ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#1	MOTOR PLUG	A-43642	VEAM	CIR. 06F-22-22S

ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#4	SPADE LUG	A-84267-002	HOLLINGSWORTH	XSS20836
#3	BUTT CONN.	A-80654-003	HOLLINGSWORTH	B40468F
	CRIMP TOOL	N/A	HOLLINGSWORTH	#H6E

ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#5	3/16" SHRINK TUB.	G-15265	RAYCHEM	RNF-100-1-3/16"
#6	5/8" SHRINK TUB.	H-15577	RAYCHEM	RNF-100-1-5/8"

* THIS CABLE ASSEMBLY TO BE LABELED "GC-M6A-4/5-XX".

CABLE LENGTH (IN METERS)

CAD DWG.

ISS.	ECN NO.	DATE	APP'D.
B			
C			

ISS.	ECN NO.	DATE	APP'D.

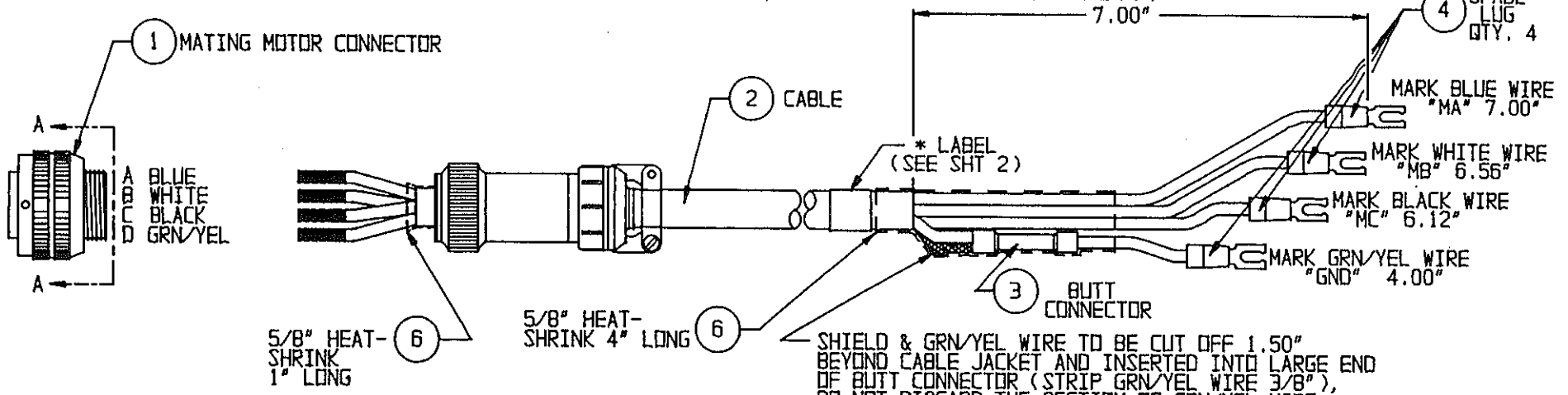
Kollmorgen Industrial Drives
RADFORD, VIRGINIA

DRN. BY:	DATE	CHK. BY:	DATE	APP'D. BY:	DATE
EWR	05-18-92				

GOLDLINE AMPLIFIER ASSEMBLY GUIDE FOR MOTOR CABLES (3 THRU 20 AMP)

SCALE	DWG. NO.	SHEET 8 OF 8	ISSUE
1:1	A-93421		3

+ (SOLDERED MOTOR CONNECTOR) +
GOLDLINE MOTOR CABLE (FOR 40X EXC.406C MOTOR)



PARTS LIST

CABLE				
ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#2	4 COND.(12 AWG)	A-93553-003	OMNI	ID1204TBTPR-FLEX

MOTOR CONNECTOR AND ACCESSORIES				
ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#1	MOTOR PLUG	A-93299	BENDIX	MS3106E-18-10S

ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#4	SPADE LUG	A-84267-002	HOLLINGSWORTH	XSS20836
#3	BUTT CONN.	A-80654-003	HOLLINGSWORTH	B4046BF
	CRIMP TOOL	N/A	HOLLINGSWORTH	#H6E

ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#6	5/8" SHRINK TUB.	H-15577	RAYCHEM	RNF-100-1-5/8"

* THIS CABLE ASSEMBLY TO BE LABELED "GCA-M4A-4/5-XX".

CABLE LENGTH (IN METERS)

CAD DWG.

		B	C	COPY CODE	ISS.	ECN NO.	DATE	APP'D.
ISS.	ECN NO.	DATE	APP'D.					

Kollmorgen Industrial Drives
RADFORD, VIRGINIA

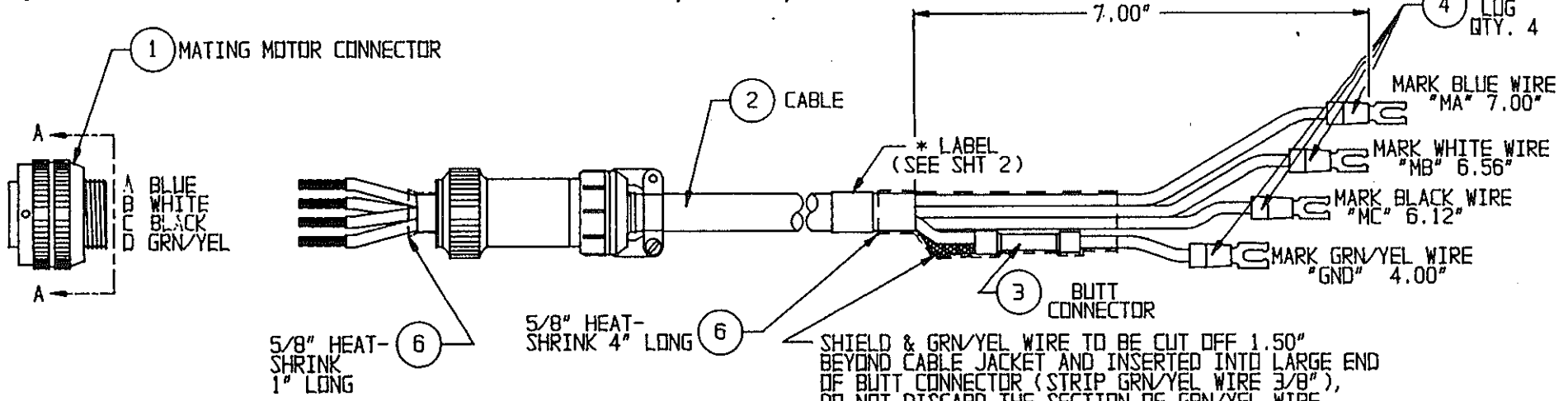
DWN. BY:	DATE	CHK. BY:	DATE	APP'D. BY:	DATE
EWR	10-07-92				

GOLDLINE AMPLIFIER ASSEMBLY GUIDE FOR MOTOR CABLES (3 THRU 20 AMP)

SCALE	DWG. NO.	SHEET 4 OF 6	ISSUE
1:1	A-93538		4

DWG. NO.	SHEET 6 OF 6	ISSUE
A-93538		4

+ (SOLDERED MOTOR CONNECTOR) +
GOLDLINE MOTOR CABLE (FOR 602A, 602B, 604A & 606A MOTOR)



PARTS LIST

CABLE				
ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#2	4 COND.(12 AWG)	A-93553-003	OMNI	ID1204TBTPR-FLEX

MOTOR CONNECTOR AND ACCESSORIES				
ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#1	MOTOR PLUG	A-63197	BENDIX	MS3106E-22-22S

ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#4	SPADE LUG	A-84267-002	HOLLINGSWORTH	XSS20836
#3	BUTT CONN.	A-80654-003	HOLLINGSWORTH	B4046BF
	CRIMP TOOL	N/A	HOLLINGSWORTH	#H6E

ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#6	5/8" SHRINK TUB.	H-15577	RAYCHEM	RNF-100-1-5/8"

* THIS CABLE ASSEMBLY TO BE LABELED "GCA-M6A-4/5-XX".

CABLE LENGTH (IN METERS)

CAD DWG.

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ISS.	ECN NO.	DATE	APP'D.					

Kollmorgen Industrial Drives
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GOLDLINE AMPLIFIER ASSEMBLY GUIDE FOR MOTOR CABLES (3 THRU 20 AMP)

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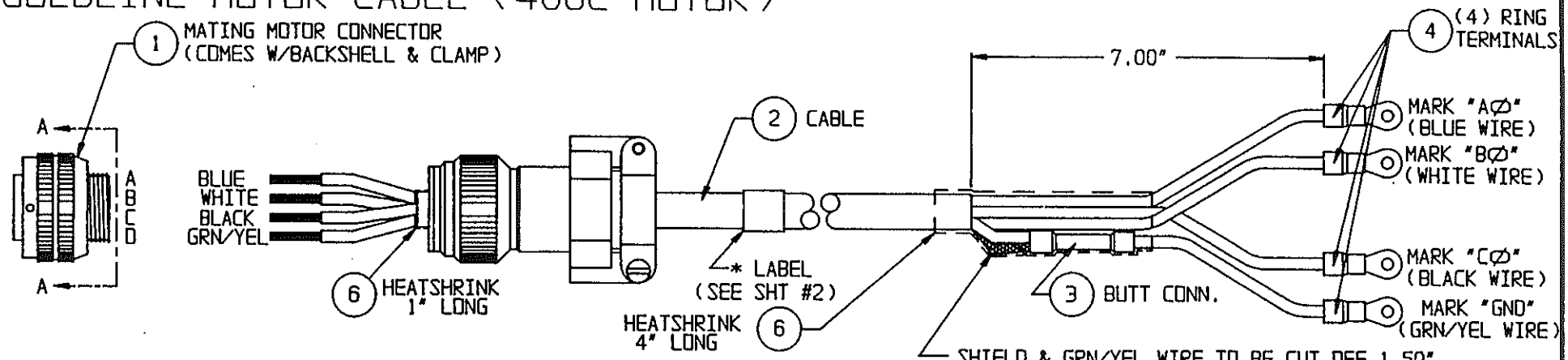
EWR	10-07-92					1:1	A-93538		4

DWG. NO.	SHEET 4 OF 9	ISSUE
A-93539		3

(W/SOLDERED CONNECTOR)

GOLDLINE MOTOR CABLE (406C MOTOR)



PARTS LIST

CABLE				
ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#2	4 CONUCTOR #8 AWG	A-93553-001	OMNI	ID0804T8TPR-FLEX

MOTOR CONNECTOR AND ACCESSORIES				
ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#1	MOTOR PLUG	A-63197	BENDIX	MS3106E-22-22S

ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#4	RING TERMINAL	A-79406-002	HOLLINGSWORTH	R30278F
	CRIMP TOOL	N/A	HOLLINGSWORTH	#H6E
#3	BUTT CONN.	A-80654-004	HOLLINGSWORTH	B4047BF
#6	3/4" SHRINK TUB.	G-17634	RAYCHEM	RNF-100-1-3/4"

* THIS CABLE ASSEMBLY TO BE LABELED "GCA-M4B-4/5-XX".

CABLE LENGTH (IN METERS)

		B	C	COPY CODE	ISS.	ECN NO.	DATE	APP'D.
ISS.	ECN NO.	DATE	APP'D.					

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GOLDLINE AMPLIFIER ASSEMBLY GUIDE FOR MOTOR CABLES (30, 40, & 55 AMP)

DWN. BY:	DATE	CHK. BY:	DATE	APP'D. BY:	DATE	SCALE	DWG. NO.	SHEET 4 OF 9	ISSUE
EWR	10-01-92					1:1	A-93539		3

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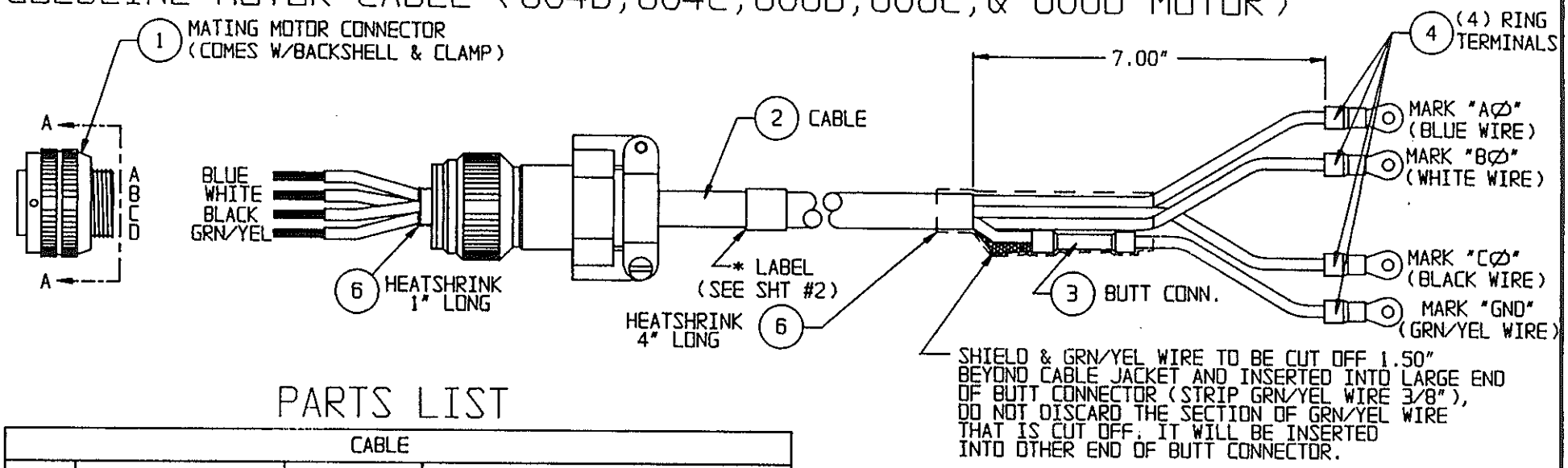
GOLDLINE MOTOR CABLE (604B, 604C, 606B, 606C, & 606D MOTOR) (W/SOLDERED CONNECTOR)



PARTS LIST

CABLE

ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#2	4 CONUCTOR #8 AWG	A-93553-001	OMNI	ID0804TBTPR-FLEX

MOTOR CONNECTOR AND ACCESSORIES

ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#1	MOTOR PLUG	A-63197	BENDIX	MS3106E-22-22S

ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#4	RING TERMINAL	A-79406-002	HOLLINGSWORTH	R30278F
	CRIMP TOOL	N/A	HOLLINGSWORTH	#H6E
#3	BUTT CONN.	A-80654-004	HOLLINGSWORTH	B4047BF
#6	3/4" SHRINK TUB.	G-17634	RAYCHEM	RNF-100-1-3/4"

* THIS CABLE ASSEMBLY TO BE LABELED "GCA-M68-4/5-XX".
CABLE LENGTH (IN METERS)

ISS.	ECN NO.	DATE	APP'D.
B			
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COPY CODE

ISS.	ECN NO.	DATE	APP'D.

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GOLDLINE AMPLIFIER ASSEMBLY GUIDE FOR MOTOR CABLES (30, 40, & 55 AMP)

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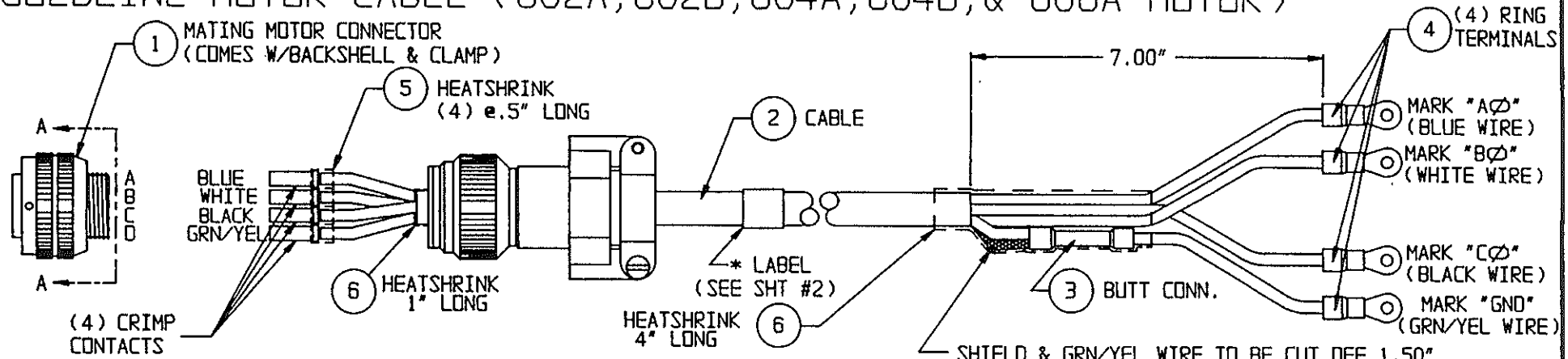
(W/CRIMPED CONNECTOR)

GOLDLINE MOTOR CABLE (802A, 802B, 804A, 804B, & 806A MOTOR)



PARTS LIST

CABLE				
ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#2	4 CONUCTOR #8 AWG	A-93553-001	OMNI	I00804TBTPR-FLEX

MOTOR CONNECTOR AND ACCESSORIES				
ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#1	MOTOR PLUG	A-93613-004	POWELL	IN75-69622-22S
	CRIMP CONTACTS	A-93614-004	POWELL	10-40793
	CRIMP TOOL	N/A	BENDIX	M22520/1-01

ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#4	RING TERMINAL	A-79406-002	HOLLINGSWORTH	R30278F
	CRIMP TOOL	N/A	HOLLINGSWORTH	#H6E
#3	BUTT CONN.	A-80654-004	HOLLINGSWORTH	B40478F
#5	3/16" SHRINK TUB.	G-15265	RAYCHEM	RNF-100-1-3/16"
#6	3/4" SHRINK TUB.	G-17634	RAYCHEM	RNF-100-1-3/4"

* THIS CABLE ASSEMBLY TO BE LABELED "GCA-M8A-4/5-XX".
CABLE LENGTH (IN METERS)

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GOLDLINE AMPLIFIER ASSEMBLY GUIDE FOR MOTOR CABLES (30, 40, & 55 AMP)

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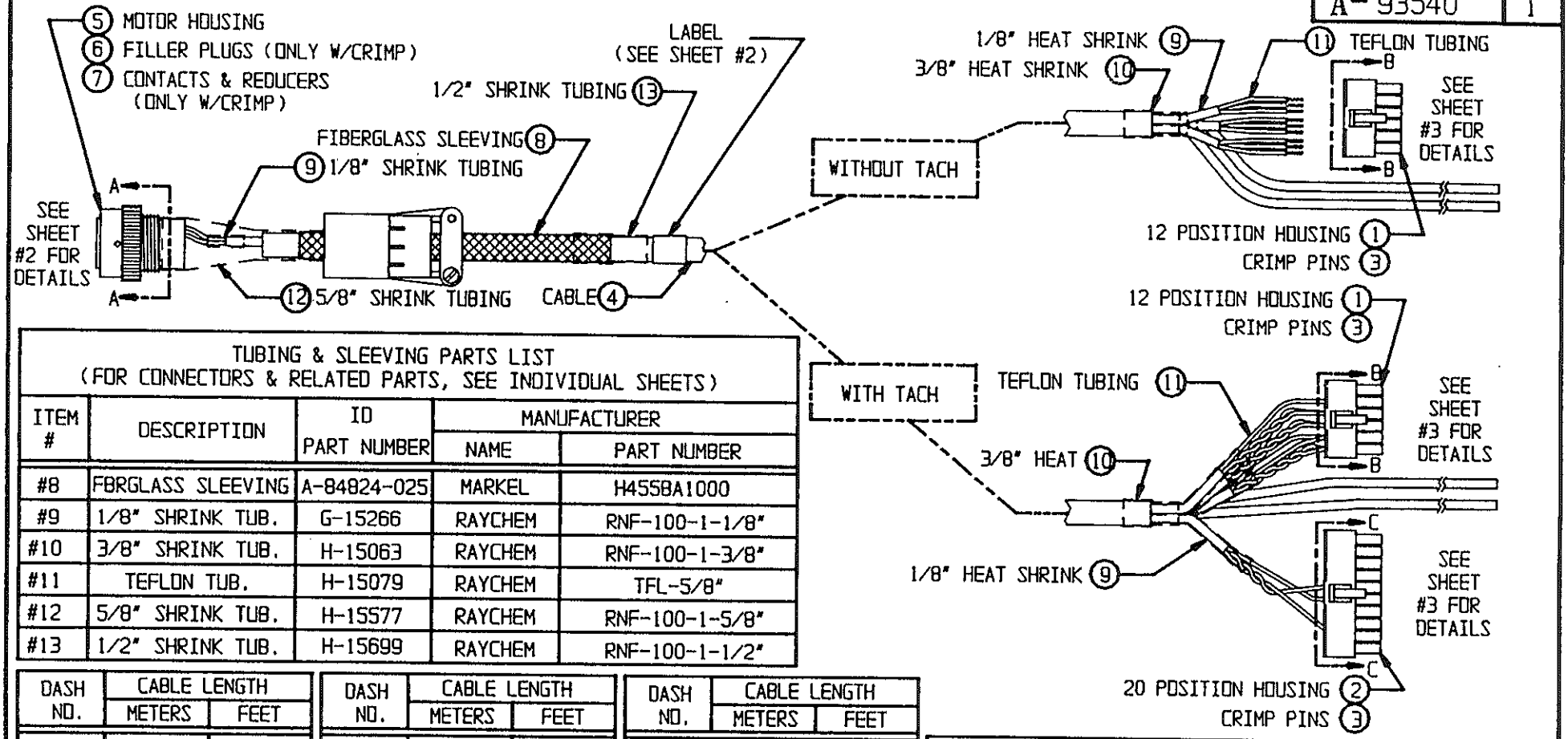

TUBING & SLEEVING PARTS LIST
(FOR CONNECTORS & RELATED PARTS, SEE INDIVIDUAL SHEETS)

ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#8	FBRGLASS SLEEVING	A-84824-025	MARKEL	H455BA1000
#9	1/8" SHRINK TUB.	G-15266	RAYCHEM	RNF-100-1-1/8"
#10	3/8" SHRINK TUB.	H-15063	RAYCHEM	RNF-100-1-3/8"
#11	TEFLON TUB.	H-15079	RAYCHEM	TFL-5/8"
#12	5/8" SHRINK TUB.	H-15577	RAYCHEM	RNF-100-1-5/8"
#13	1/2" SHRINK TUB.	H-15699	RAYCHEM	RNF-100-1-1/2"

DASH NO.	CABLE LENGTH METERS	CABLE LENGTH FEET
-003	3	10
-006	6	20
-009	9	30
-012	12	40
-015	15	50
-018	18	60
-021	21	70
-024	24	80

DASH NO.	CABLE LENGTH METERS	CABLE LENGTH FEET
-027	27	90
-030	30	100
-033	33	110
-036	36	120
-039	39	130
-042	42	140
-045	45	150
-048	48	160

DASH NO.	CABLE LENGTH METERS	CABLE LENGTH FEET
-051	51	170
-054	54	180
-057	57	190
-060	60	200

PART NUMBER DESCRIPTION

GOLDLINE CABLE — GCA-RXX-4/5-XX — CABLE LENGTH (IN METERS); BDS4 or 5 AMPLIFIER

R =THERMOSTAT/RESOLVER
RT =THERMOSTAT/RESOLVER/TACH
RB =THERMOSTAT/RESOLVER/BRAKE
RBT=THERMOSTAT/RESOLVER/BRAKE/TACH

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ISS.	ECN NO.	DATE	APP'D.
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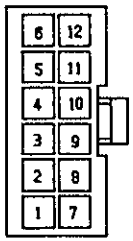
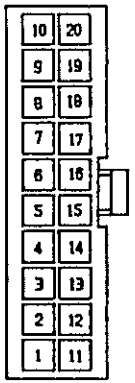
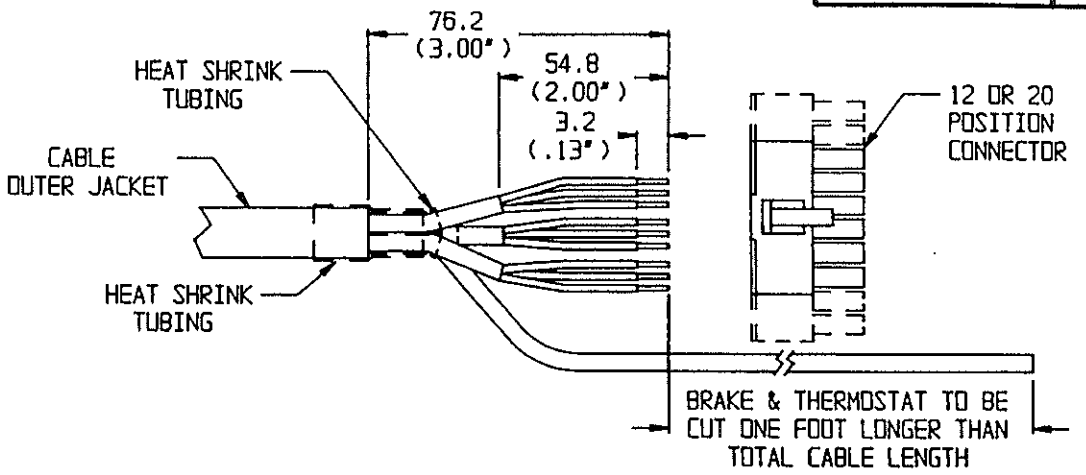


DETAIL B - B



DETAIL C - C



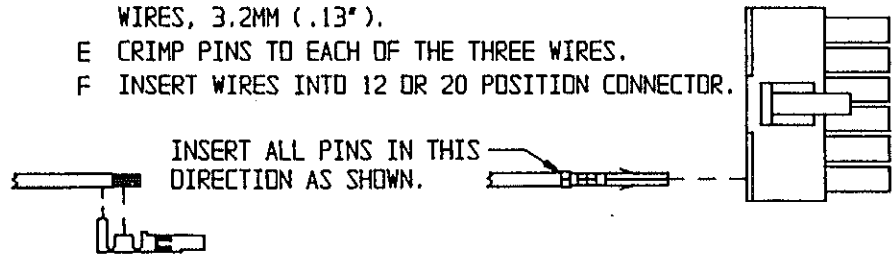
CONNECTOR ASSEMBLY PROCEDURE

STEP 1 BEFORE ANY OUTER JACKET HAS BEEN REMOVED FROM THE CABLE, SLIDE A SECTION OF HEAT SHRINK TUBING ONTO THE CABLE.

STEP 2 STRIP THE CABLE OUTER JACKET BACK, 381MM (15.00"). THIS WILL EXPOSE THE INDIVIDUAL FOIL SHIELDS.

STEP 3 ACCORDING TO THE CONNECTION CHART, SELECT ONE OF THE WIRE PAIRS AND COMPLETE THE FOLLOWING OPERATIONS. SEE NOTE #1.

- A REMOVE THE FOIL SHIELD FROM THE WIRE.
- B COVER SHIELD WIRE WITH TUBING.
- C COVER THE THREE LEADS WITH HEAT SHRINK.
- D USE STRIPPING PLIERS TO STRIP INSULATION FROM INDIVIDUAL WIRES, 3.2MM (.13").
- E CRIMP PINS TO EACH OF THE THREE WIRES.
- F INSERT WIRES INTO 12 OR 20 POSITION CONNECTOR.



STEP 4 PERFORM STEP 3 FOR EACH REMAINING PAIRS.

STEP 5 SLIDE THE HEATSHRINK TUBING, FROM STEP #1, ONTO THE END OF THE CABLE AND SHRINK, AS SHOWN ABOVE.

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(W/SOLDERED MOTOR CONNECTOR)
GOLDLINE RESOLVER CABLE WITH THERMOSTAT (GCA-R-4/5-XX)

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PARTS LIST

CABLE				
ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#4	4 PAIR	A-81948	BELDEN	8725

MOTOR CONNECTOR AND ACCESSORIES				
ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#5	MOTOR HOUSING	G-10158	BENDIX	MS3106E-22-14S

BDS4 C2 OR BDS5 C3 AND ACCESSORIES				
ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#1	12 POS. HOUSING	A-83908-012	MOLEX	39-01-2125
#3	CRIMP PIN	A-83909-002	MOLEX	39-00-0039
	CRIMP TOOL	N/A	MOLEX	HTR-60622

CONNECTION CHART

MOTOR CONNECTION ITEM #5	* CABLE ITEM #4	BDS4 C2 or BDS5 C3 ITEM #1	BDS4 C1 ITEM #2
TERMINAL A	RED	TERMINAL 7	N/C
TERMINAL B	BLACK	TERMINAL 1	
N/C	SHIELD	TERMINAL 8	
TERMINAL C	WHT/YEL	TERMINAL 3	
TERMINAL D	WHT/GRN	TERMINAL 9	
N/C	SHIELD	TERMINAL 2	
TERMINAL E	WHT/RED	TERMINAL 10	
TERMINAL F	WHT/BLK	TERMINAL 4	
N/C	SHIELD	TERMINAL 5	
TERMINAL N			
TERMINAL P		N/C	
TERMINAL R			
TERMINAL S		N/C	
TERMINAL T	GREEN	CUSTOMER	
TERMINAL U	WHITE	THERMOSTAT	
N/C	SHIELD	HOOK-UP	

SEE SHEET 2 AND 3 FOR CONNECTOR DETAILS.

* THIS CABLE ASSEMBLY TO BE LABELED "GCA-R-4/5-XX".

CABLE LENGTH

		B	C	COPY CODE	ISS.	ECN NO.	DATE	APP'D.
ISS.	ECN NO.	DATE	APP'D.					
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RADFORD, VIRGINIA

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GUIDE FOR RESOLVER CABLES

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(W/SOLDERED MOTOR CONNECTOR)
GOLDLINE RESOLVER CABLE WITH THERMOSTAT AND BRAKE (GCA-RB-4/5-XX)

PARTS LIST

CABLE				
ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#4	6 PAIR	A-84819	BELDEN	87778

MOTOR CONNECTOR AND ACCESSORIES				
ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#5	MOTOR HOUSING	G-10158	BENDIX	MS3106E-22-14S

BDS4 C2 OR BDS5 C3 AND ACCESSORIES				
ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#1	12 POS. HOUSING	A-83908-012	MOLEX	39-01-2125
#3	CRIMP PIN	A-83909-002	MOLEX	39-00-0039
	CRIMP TOOL	N/A	MOLEX	HTR-60622

CONNECTION CHART

MOTOR CONNECTION ITEM #5	* CABLE ITEM #4	BDS4 C2 or BDS5 C3 ITEM #1	BDS4 C1 ITEM #2
TERMINAL A	RED	TERMINAL 7	N/C
TERMINAL B	BLACK	TERMINAL 1	
N/C	SHIELD	TERMINAL 8	
TERMINAL C	GREEN	TERMINAL 3	
TERMINAL D	BLACK	TERMINAL 9	
N/C	SHIELD	TERMINAL 2	
TERMINAL E	WHITE	TERMINAL 10	
TERMINAL F	BLACK	TERMINAL 4	
N/C	SHIELD	TERMINAL 5	
TERMINAL N	BLUE	CUSTOMER	
TERMINAL P	BLACK	BRAKE	
N/C	SHIELD	HOOK-UP	
TERMINAL R	SEE NOTE #1	N/C	
TERMINAL S			
TERMINAL T	YELLOW	CUSTOMER	
TERMINAL U	BLACK	THERMOSTAT	
N/C	SHIELD	HOOK-UP	

SEE SHEET 2 AND 3 FOR CONNECTOR DETAILS.
* THIS CABLE ASSEMBLY TO BE LABELED "GCA-RB-4/5-XX".
CABLE LENGTH

NOTE:
1. RESOLVER END: CUT-OFF REMAINING PAIR 12.7MM (1/2") FROM CABLE JACKET AND FOLD BACK OVER JACKET, PLACE UNDER HEAT SHRINK. MOTOR END: CUT-OFF REMAINING PAIR EVEN WITH CABLE JACKET.

		B	C	COPY CODE	ISS.	ECN NO.	DATE	APP'D.
ISS.	ECN NO.	DATE	APP'D.					

Kollmorgen Industrial Drives
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GOLDLINE AMPLIFIER ASSEMBLY GUIDE FOR RESOLVER CABLES

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(W/SOLDERED MOTOR CONNECTOR)
GOLDLINE RESOLVER CABLE WITH THERMOSTAT AND TACH (GCA-RT-4/5-XX)

PARTS LIST

CABLE				
ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#4	6 PAIR	A-84819	BELDEN	87778

MOTOR CONNECTOR AND ACCESSORIES				
ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#5	MOTOR HOUSING	G-10158	BENDIX	MS3106E-22-14S

BDS4 C2 OR BDS5 C3 AND ACCESSORIES				
ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#1	12 POS. HOUSING	A-83908-012	MOLEX	39-01-2125
#3	CRIMP PIN	A-83909-002	MOLEX	39-00-0039
	CRIMP TOOL	N/A	MOLEX	HTR-60622

BDS4 C1 AND ACCESSORIES				
ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#2	20 POS. HOUSING	A-83908-020	MOLEX	39-01-2205
#3	CRIMP PIN	A-83909-002	MOLEX	39-00-0039
	CRIMP TOOL	N/A	MOLEX	HTR-60622

CONNECTION CHART

MOTOR CONNECTION ITEM #5	* CABLE ITEM #4	BDS4 C2 or BDS5 C3 ITEM #1	BDS4 C1 ITEM #2
TERMINAL A	RED	TERMINAL 7	N/C
TERMINAL B	BLACK	TERMINAL 1	
N/C	SHIELD	TERMINAL 8	
TERMINAL C	GREEN	TERMINAL 3	
TERMINAL D	BLACK	TERMINAL 9	
N/C	SHIELD	TERMINAL 2	
TERMINAL E	WHITE	TERMINAL 10	
TERMINAL F	BLACK	TERMINAL 4	
N/C	SHIELD	TERMINAL 5	
TERMINAL N	SEE NOTE #1		
TERMINAL P		N/C	
TERMINAL R	BROWN		TACH: TERM. 12
TERMINAL S	BLACK	N/C	TACH: TERM. 16
N/C	SHIELD		TACH: TERM. 5
TERMINAL T	YELLOW	CUSTOMER	N/C
TERMINAL U	BLACK	THERMOSTAT	
N/C	SHIELD	HOOK-UP	

SEE SHEET 2 AND 3 FOR CONNECTOR DETAILS.

* THIS CABLE ASSEMBLY TO BE LABELED "GCA-RT-4/5-XX". (CABLE LENGTH)

NOTE:

1. RESOLVER END: CUT-OFF REMAINING PAIR 12.7MM (1/2") FROM CABLE JACKET AND FOLD BACK OVER JACKET, PLACE UNDER HEAT SHRINK. MOTOR END: CUT-OFF REMAINING PAIR EVEN WITH CABLE JACKET.

		B	C	COPY CODE	ISS.	ECN NO.	DATE	APP'D.
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(W/SOLDERED MOTOR CONNECTOR)
GOLDLINE RESOLVER CABLE WITH THERMOSTAT, BRAKE, AND TACH (GCA-RBT-4/5-XX)

PARTS LIST

CABLE				
ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#4	6 PAIR	A-84819	BELDEN	87778

MOTOR CONNECTOR AND ACCESSORIES				
ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#5	MOTOR HOUSING	G-10158	BENDIX	MS3106E-22-14S

BDS4 C2 OR BDS5 C3 AND ACCESSORIES				
ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#1	12 POS. HOUSING	A-83908-012	MOLEX	39-01-2125
#3	CRIMP PIN	A-83909-002	MOLEX	39-00-0039
	CRIMP TOOL	N/A	MOLEX	HTR-60622

BDS4 C1 AND ACCESSORIES				
ITEM #	DESCRIPTION	ID PART NUMBER	MANUFACTURER NAME	MANUFACTURER PART NUMBER
#2	20 POS. HOUSING	A-83908-020	MOLEX	39-01-2205
#3	CRIMP PIN	A-83909-002	MOLEX	39-00-0039
	CRIMP TOOL	N/A	MOLEX	HTR-60622

CONNECTION CHART

MOTOR CONNECTION ITEM #5	* CABLE ITEM #4	BDS4 C2 or BDS5 C3 ITEM #1	BDS4 C1 ITEM #2
TERMINAL A	RED	TERMINAL 7	N/C
TERMINAL B	BLACK	TERMINAL 1	
N/C	SHIELD	TERMINAL 8	
TERMINAL C	GREEN	TERMINAL 3	
TERMINAL D	BLACK	TERMINAL 9	
N/C	SHIELD	TERMINAL 2	
TERMINAL E	WHITE	TERMINAL 10	
TERMINAL F	BLACK	TERMINAL 4	
N/C	SHIELD	TERMINAL 5	
TERMINAL N	BLUE	CUSTOMER	
TERMINAL P	BLACK	BRAKE	
N/C	SHIELD	HOOK-UP	
TERMINAL R	BROWN		TACH TERM. 12
TERMINAL S	BLACK	N/C	TACH TERM. 16
N/C	SHIELD		TACH TERM. 5
TERMINAL T	YELLOW	CUSTOMER	N/C
TERMINAL U	BLACK	THERMOSTAT	
N/C	SHIELD	HOOK-UP	

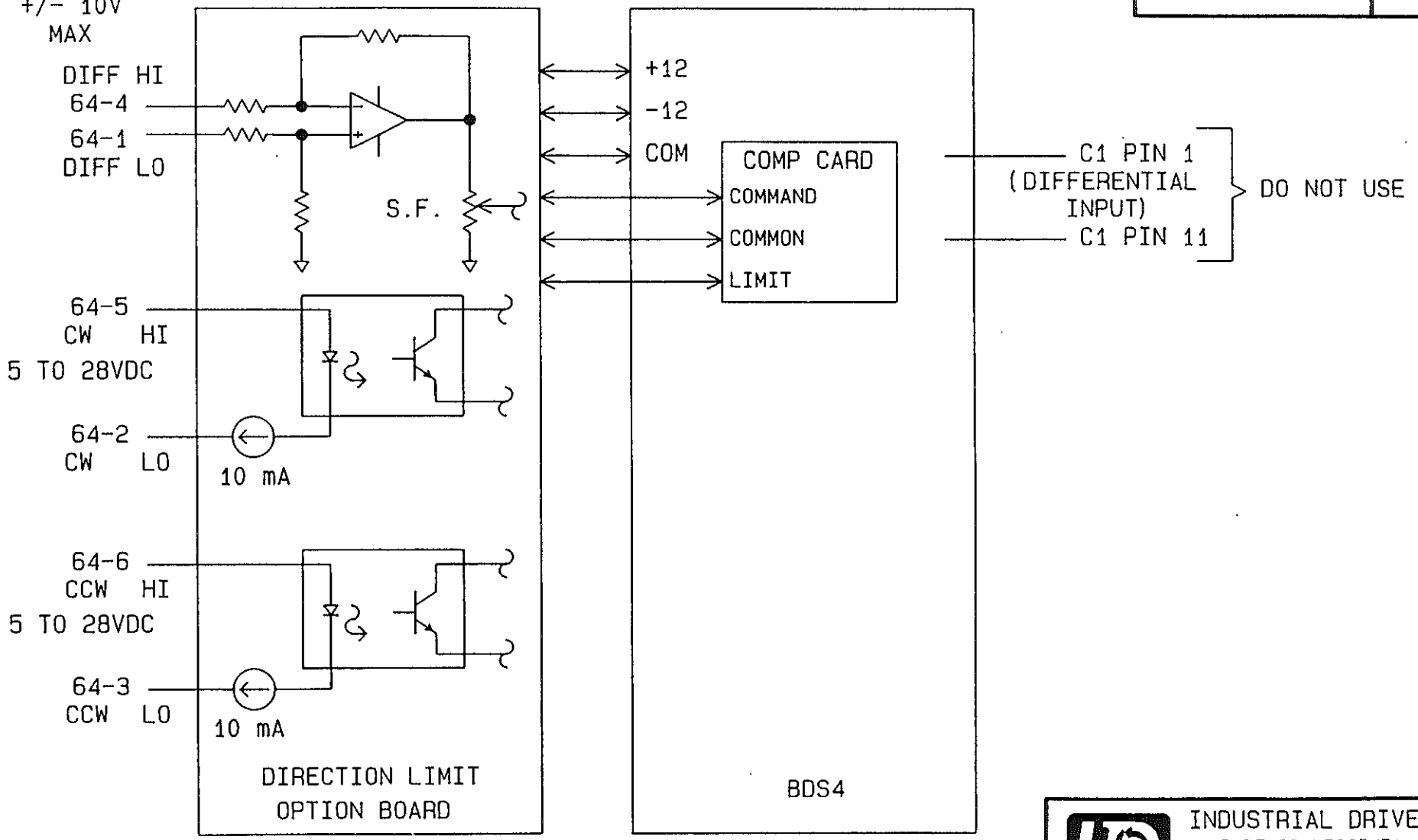
SEE SHEET 2 AND 3 FOR CONNECTOR DETAILS.
* THIS CABLE ASSEMBLY TO BE LABELED "GCA-RBT-4/5-XX".
CABLE LENGTH

		B	C	COPY CODE	ISS.	ECN NO.	DATE	APP'D.
ISS.	ECN NO.	DATE	APP'D.					

Kollmorgen Industrial Drives
RADFORD, VIRGINIA

GOLDLINE AMPLIFIER ASSEMBLY GUIDE FOR RESOLVER CABLES

DWN. BY:	DATE	CK. BY:	DATE	APP'D. BY:	DATE	SCALE	DWG. NO.	SHEET 11 OF 11	ISSUE
EWR	10-07-92					1:1	A-93540		1



DWG. NO.	ISSUE
A- 93541	1

INDUSTRIAL DRIVES
RADFORD, VIRGINIA
A KOLLMORGEN DIVISION

BDS4 DIRECTION LIMIT
WIRING DIAGRAM

SCALE	DWG. NO.	ISSUE
	A- 93541	1

COPY CODE: C B

DW'N BY: JMT — DATE: 7-1-92

CH'K BY:

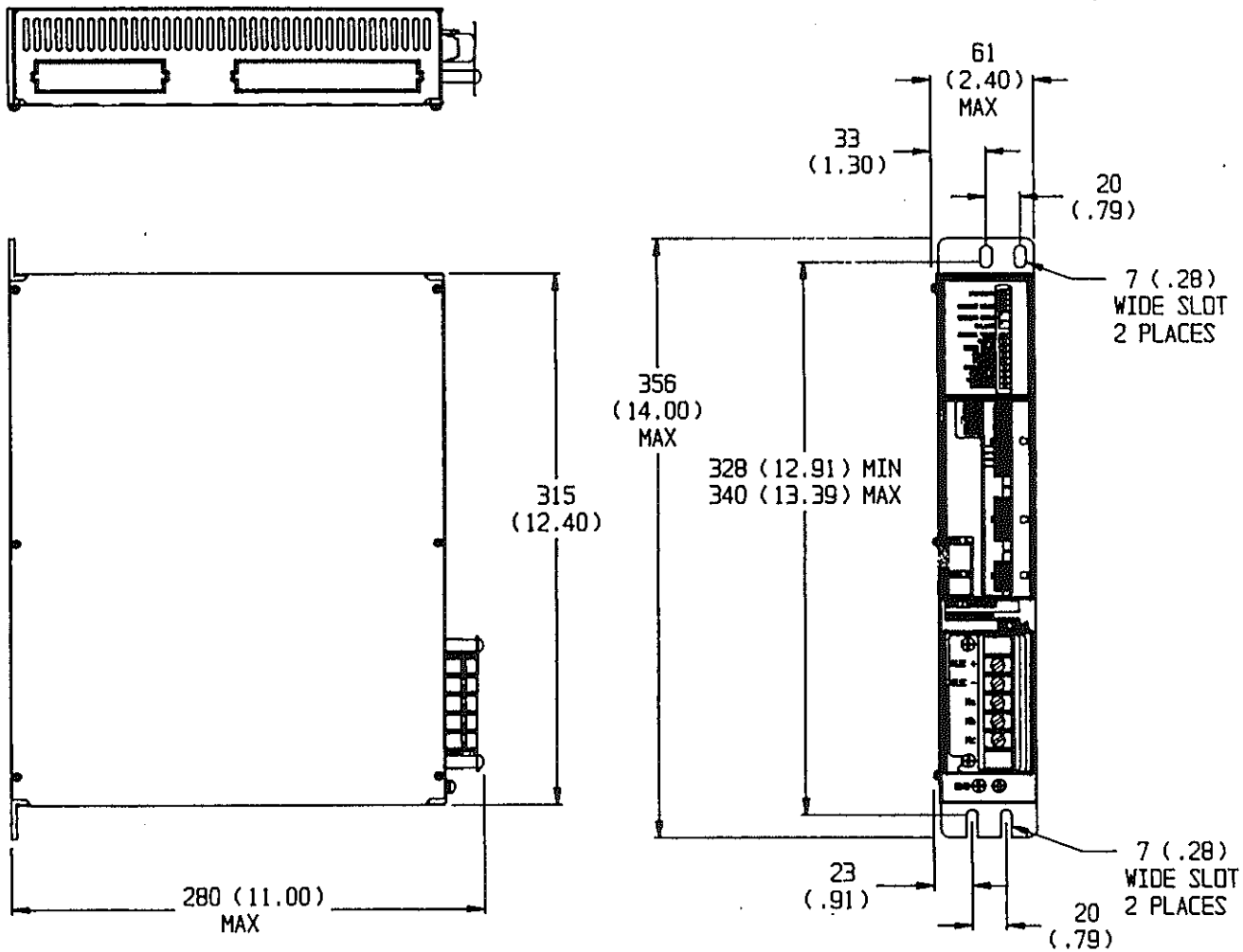
APP'D BY:

UNLESS OTHERWISE SPECIFIED
XX DEC. PLACES ±.015
XXX DEC. PLACES±.005
ANG. DIM.±1 DEG.

DO NOT SCALE DWG. USE DIMENSIONS ONLY
ALL DIMENSIONS ARE INCHES
UNLESS OTHERWISE SPECIFIED

ISS.	ECN NO.	DATE	APP'D	ISS.	ECN NO.	DATE	APP'D

UNLESS OTHERWISE SPECIFIED ANG. DIM. ±1°	(METRIC) X DEC. PLACES ±.4 XX DEC. PLACES ±.13	(INCHES) XX DEC. PLACES ±.015 IN. XXX DEC. PLACES ±.005 IN.	DO NOT SCALE DWG. USE DIMENSIONS ONLY. ALL DIMENSIONS ARE MILLIMETERS WITH INCHES IN PARENTHESES. UNLESS OTHERWISE SPECIFIED.	DWG. NO. A-93567	ISSUE 2



THIS UNIT CONTAINS STATIC SENSITIVE MATERIAL, HANDLE ACCORDINGLY.

CAD DWG.

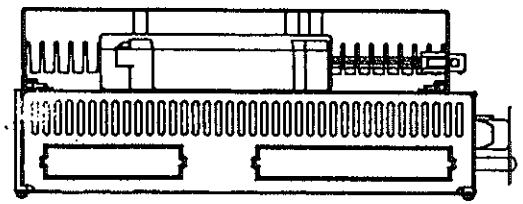
ISS.	ECN NO.	DATE	APP'D.
B C I	COPY CODE		
2	84919 TDG	1-7-93	

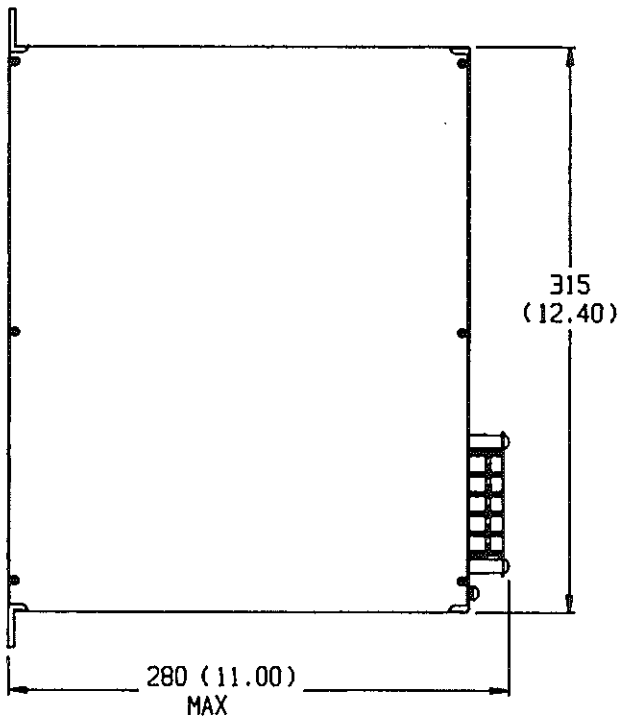
Kollmorgen Industrial Drives
RADFORD, VIRGINIA

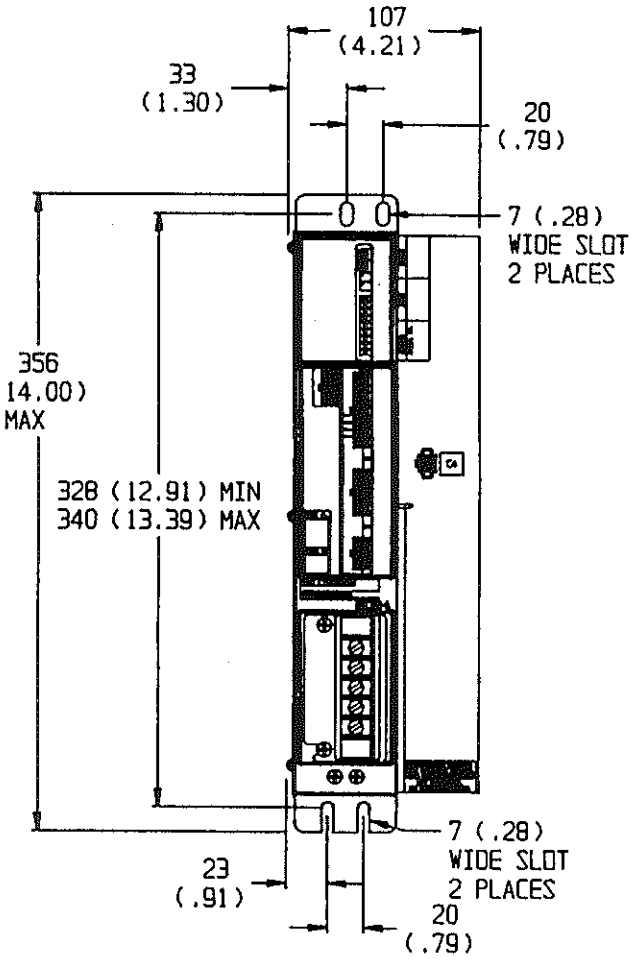
OUTLINE & DIMENSION
BDS4A-3 & 6 AMP

DWN. BY:	DATE	CHK. BY:	DATE	APP'D. BY:	DATE	PLOT SCALE	DWG. NO.	ISSUE
EWR	8-03-92			CJF	8-03-92	1:4	A-93567	2

UNLESS OTHERWISE SPECIFIED ANG. DIM. ±1°	(METRIC) X DEC. PLACES ±.4 XX DEC. PLACES ±.13	(INCHES) XX DEC. PLACES ±.015 IN. XXX DEC. PLACES ±.005 IN.	DO NOT SCALE DWG. USE DIMENSIONS ONLY. ALL DIMENSIONS ARE MILLIMETERS WITH INCHES IN PARENTHESES. UNLESS OTHERWISE SPECIFIED.	DWG. NO. A-93568	ISSUE 2







THIS UNIT CONTAINS STATIC SENSITIVE MATERIAL, HANDLE ACCORDINGLY.

CAD DWG.

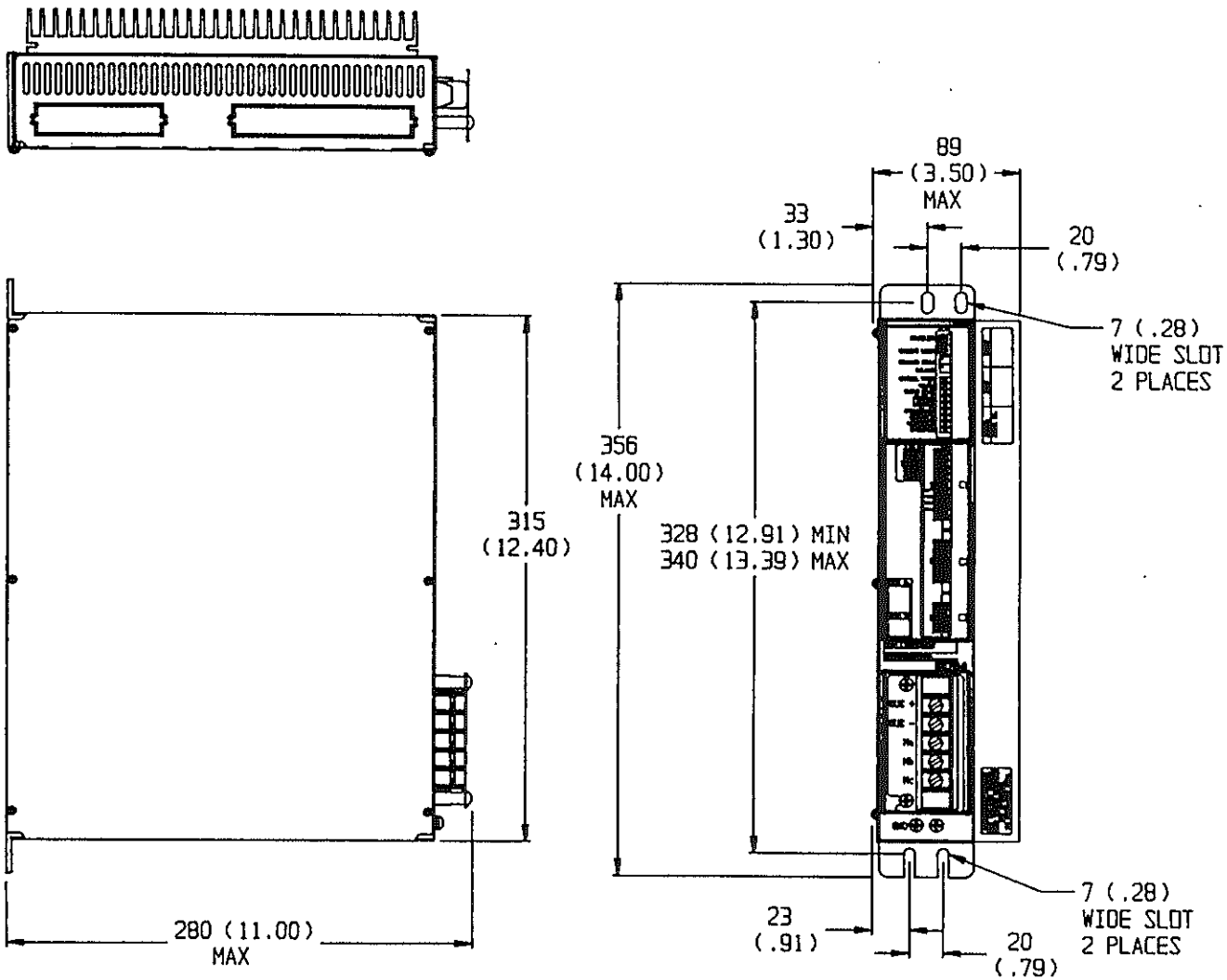
	B	C	I	COPY CODE	ISS.	ECN NO.	DATE	APP'D.
ISS.	ECN NO.			DATE	APP'D.	2	84919 TDG	1-7-93	

Kollmorgen Industrial Drives
RADFORD, VIRGINIA

OUTLINE & DIMENSION
BDS4A-20AMP

DWN. BY:	DATE	CK. BY:	DATE	APP'D. BY:	DATE	PLOT SCALE	DWG. NO.	ISSUE
EWR	8-03-92			CJF	8-03-92	1:4	A-93568	2

UNLESS OTHERWISE SPECIFIED ANG. DIM. ±1°	(METRIC) X DEC. PLACES ±.4 XX DEC. PLACES ±.13	(INCHES) XX DEC. PLACES ±.015 IN. XXX DEC. PLACES ±.005 IN.	DO NOT SCALE DWG. USE DIMENSIONS ONLY. ALL DIMENSIONS ARE MILLIMETERS WITH INCHES IN PARENTHESES. UNLESS OTHERWISE SPECIFIED.	DWG. NO. A-93572	ISSUE 2



THIS UNIT CONTAINS STATIC SENSITIVE MATERIAL, HANDLE ACCORDINGLY.

CAD DWG.

	B	C	I	COPY CODE	ISS.	ECN NO.	DATE	APP'D.
ISS.	ECN NO.			DATE	APP'D.	2	84919 TOG	1-7-93	CJF

Kollmorgen Industrial Drives
RADFORD, VIRGINIA

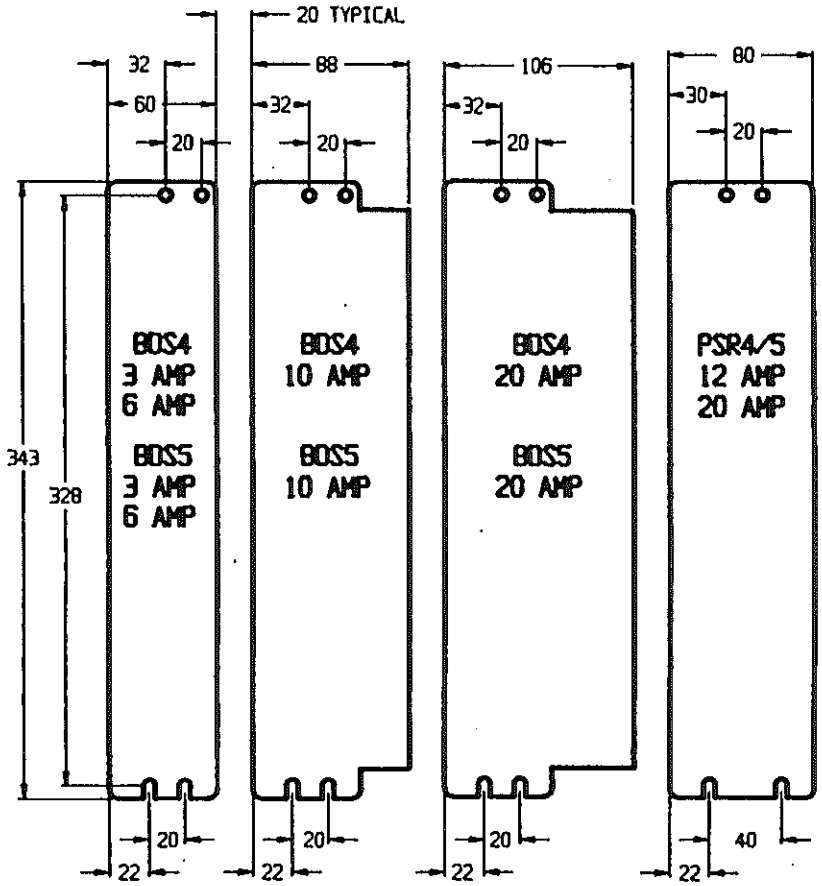
OUTLINE & DIMENSION
BDS4A-10 AMP

DWN. BY:	DATE	CHK. BY:	DATE	APP'D. BY:	DATE	PLOT SCALE	DWG. NO.	ISSUE
EWR	8-03-92			CJF	8-03-92	1:4	A-93572	2

F-48

A-93656 Sheet 1 of 2

THIRD ANGLE PROJECTION METRIC	UNLESS OTHERWISE SPECIFIED ANG. DIM. ±1 DEGREE	METRIC X DEC. PLACES ±.4 XX DEC. PLACES ±.13	[INCHES] XX DEC. PLACES ±.015 IN. XXX DEC. PLACES ±.005 IN.	DO NOT SCALE DWG. USE DIMENSIONS ONLY. ALL DIMENSIONS ARE MILLIMETERS. UNLESS OTHERWISE SPECIFIED.	DWG. NO. SHT 1 OF 2 A-93656	ISSUE 1



1-A 25mm MINIMUM FREE SPACE SHOULD BE MAINTAINED AROUND THE SYSTEM.
2-LOCATE THE HIGHEST CURRENT BDS4/5 AMPLIFIER NEXT TO THE PSR4/5 POWER SUPPLY AND REMAINING BDS4/5 AMPLIFIERS IN DESCENDING ORDER.

			B	COPY CODE

CAD DWG.

ISS.	ECN NO.	DATE	APP'D.	ISS.	ECN NO.	DATE	APP'D.

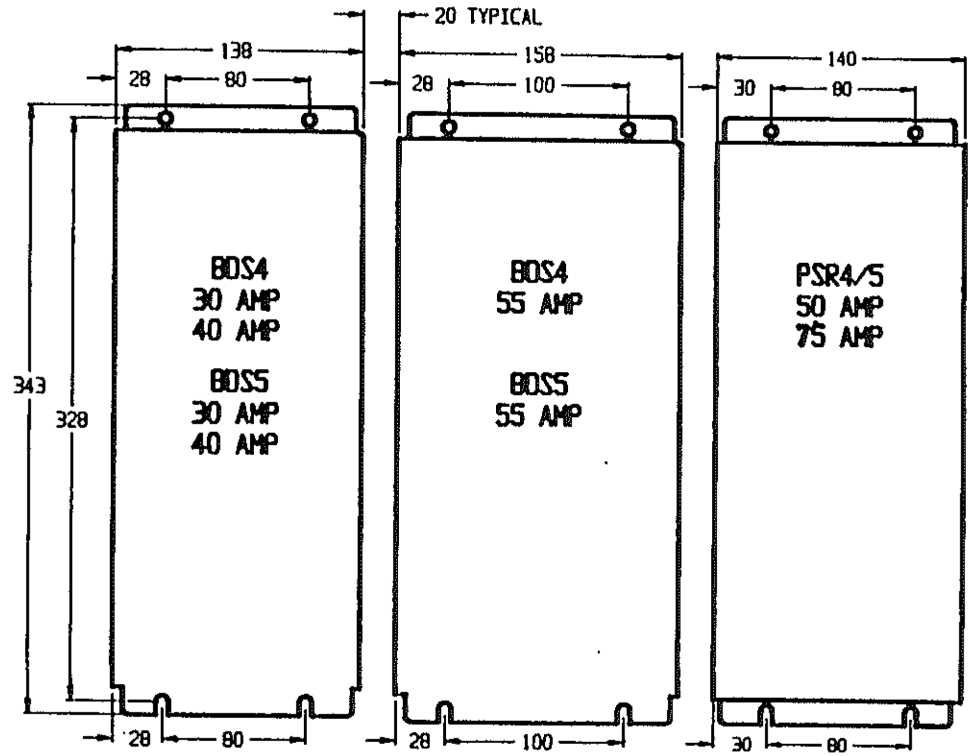
Kollmorgen Industrial Drives
RADFORD, VIRGINIA

MOUNTING HOLE PATTERN
BDS4, BDS5, PSR4/5

DWN. BY:	DATE	CHK. BY:	DATE	APP'D. BY:	DATE	SCALE	DWG. NO.	SHT	ISSUE
TOG	11-06-92			CJF	11-12	1:4	A-93656	1 OF 2	1

THIRD ANGLE PROJECTION	UNLESS OTHERWISE SPECIFIED ANG. DIM. ±1 DEGREE	METRIC X DEC. PLACES ±.4 XX DEC. PLACES ±.13	(INCHES) XX DEC. PLACES ±.015 IN. XXX DEC. PLACES ±.005 IN.	DO NOT SCALE DWG. USE DIMENSIONS ONLY. ALL DIMENSIONS ARE MILLIMETERS. UNLESS OTHERWISE SPECIFIED.	DWG. NO. SHT 2 OF 2 A- 93656	ISSUE 1

METRIC



SEE NOTES ON SHEET 1.

COPY CODE

ISS.	ECN NO.	DATE	APP'D.	ISS.	ECN NO.	DATE	APP'D.

CAD DWG.

Kollmorgen Industrial Drives
RADFORD, VIRGINIA

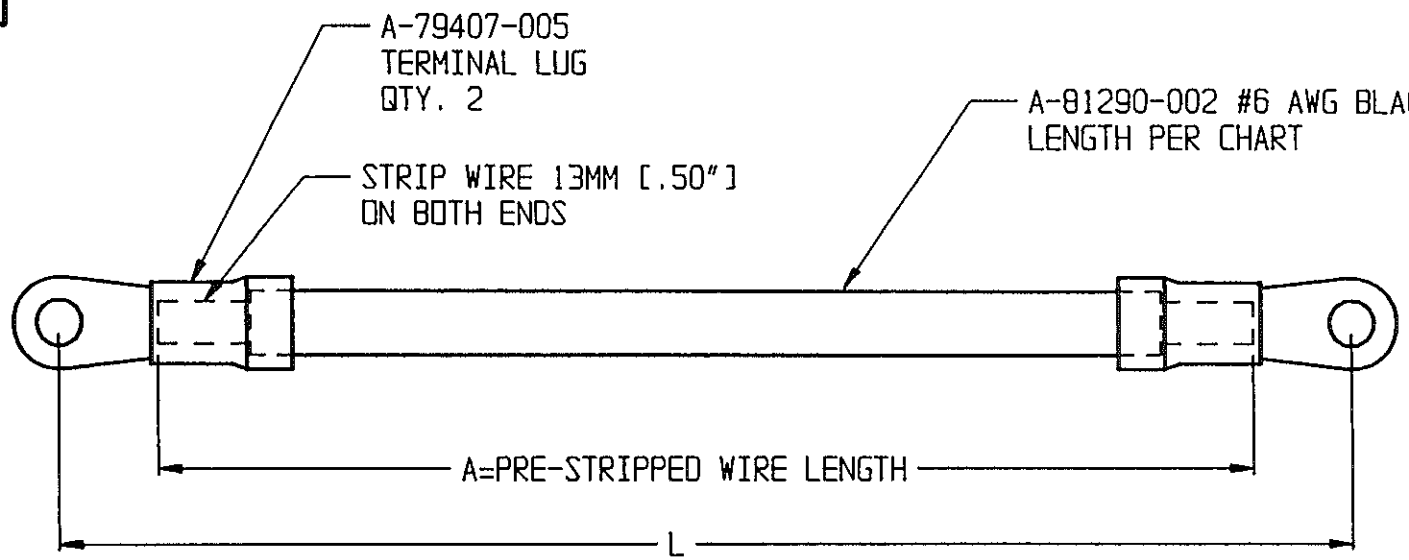
MOUNTING HOLE PATTERN
BDS4, BDS5, PSR4/5

DWN. BY:	DATE	CK. BY:	DATE	APP'D. BY:	DATE	SCALE	DWG. NO.	SHT 2 OF 2	ISSUE
TOG	11-06-92					1/4	A- 93656		1

F-50

A-93700 Sheet 1 of 1

THIRD ANGLE PROJECTION METRIC	UNLESS OTHERWISE SPECIFIED ANG. DIM. ±1 DEGREE	METRIC X DEC. PLACES ±.4 XX DEC. PLACES ±.13	(INCHES) XX DEC. PLACES ±.015 IN. XXX DEC. PLACES ±.005 IN.	DO NOT SCALE DWG. USE DIMENSIONS ONLY. ALL DIMENSIONS ARE MILLIMETERS WITH INCHES IN BRACKETS. UNLESS OTHERWISE SPECIFIED.	DWG. NO. A-93700	ISSUE 2



DASH NO.	A		L	
	MM	IN	MM	IN
100	72.5	2.86	100	3.94
120	94.5	3.72	122	4.80
160	132.5	5.22	160	6.30
180	152.5	6.00	180	7.09
200	174.5	6.87	202	7.95
220	192.5	7.58	220	8.66
240	212.5	8.37	240	9.45

B C COPY CODE

CAD DWG.

ISS.	ECN NO.	DATE	APP'D.

ISS.	ECN NO.	DATE	APP'D.
2	85246 LLS	05-17-92	CJF

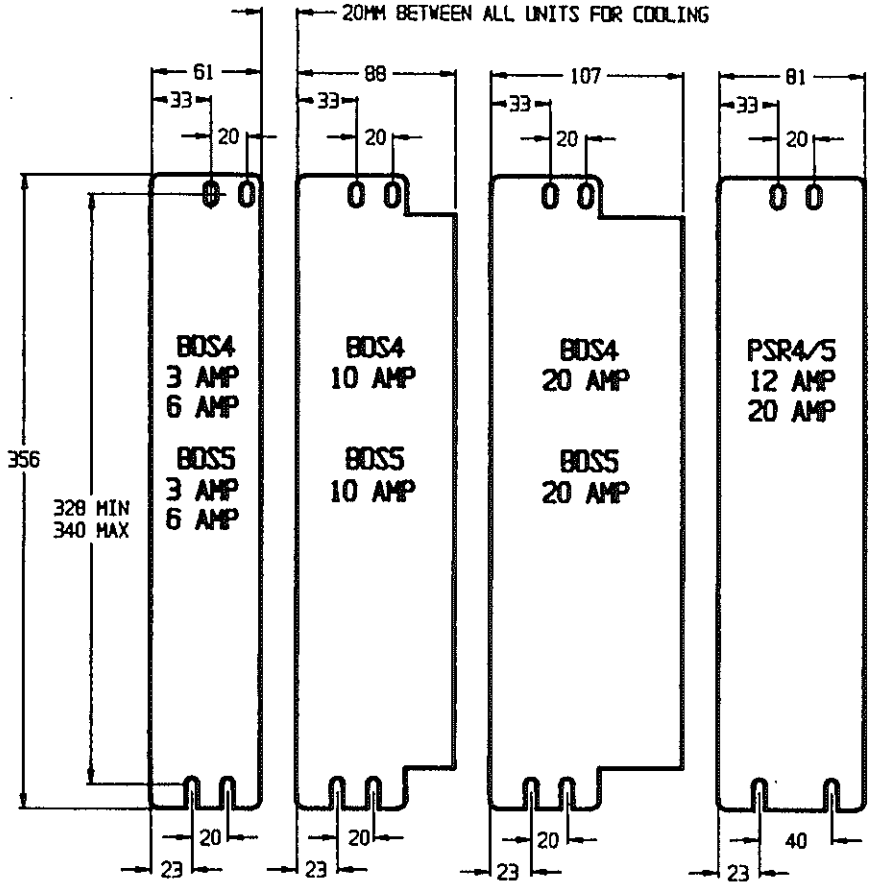
Kollmorgen Industrial Drives
RADFORD, VIRGINIA

DC BUS CABLE ASSEMBLY
FOR BDS4/5 & PSR4/5

DWN. BY:	DATE	CHK. BY:	DATE	APP'D. BY:	DATE	SCALE	DWG. NO.	ISSUE
TDG	12-15-92			CJF	12-18-92	1:1	A-93700	2

THIRD ANGLE PROJECTION	UNLESS OTHERWISE SPECIFIED ANG. DIM. ±1 DEGREE	METRIC X DEC. PLACES ±.4 XX DEC. PLACES ±.13	[INCHES] XX DEC. PLACES ±.015 IN. XXX DEC. PLACES ±.005 IN.	DO NOT SCALE DWG. USE DIMENSIONS ONLY. ALL DIMENSIONS ARE MILLIMETERS. UNLESS OTHERWISE SPECIFIED.	DWG. NO. SHT 1 OF 2 A-93703	ISSUE 2

METRIC



1-A 25mm MINIMUM FREE SPACE SHOULD BE MAINTAINED AROUND THE SYSTEM.
2-LOCATE THE HIGHEST CURRENT BDS4/5 AMPLIFIER NEXT TO THE PSR4/5 POWER SUPPLY AND REMAINING BDS4/5 AMPLIFIERS IN DESCENDING ORDER.

		C	B	COPY CODE

CAD DWG.

ISS.	ECN NO.	DATE	APP'D.	ISS.	ECN NO.	DATE	APP'D.
				2	84949 TDG	1-20-93	CJF

Kollmorgen Industrial Drives
RADFORD, VIRGINIA

MOUNTING HOLE PATTERN
BDS4A, BDS5A, PSR4/5A

DWN. BY:	DATE	CHK. BY:	DATE	APP'D. BY:	DATE	SCALE	DWG. NO.	ISSUE
TDG	1-6-93			CJF	1-8-93	1:4	A-93703 SHT 1 OF 2	2

THIRD ANGLE PROJECTION

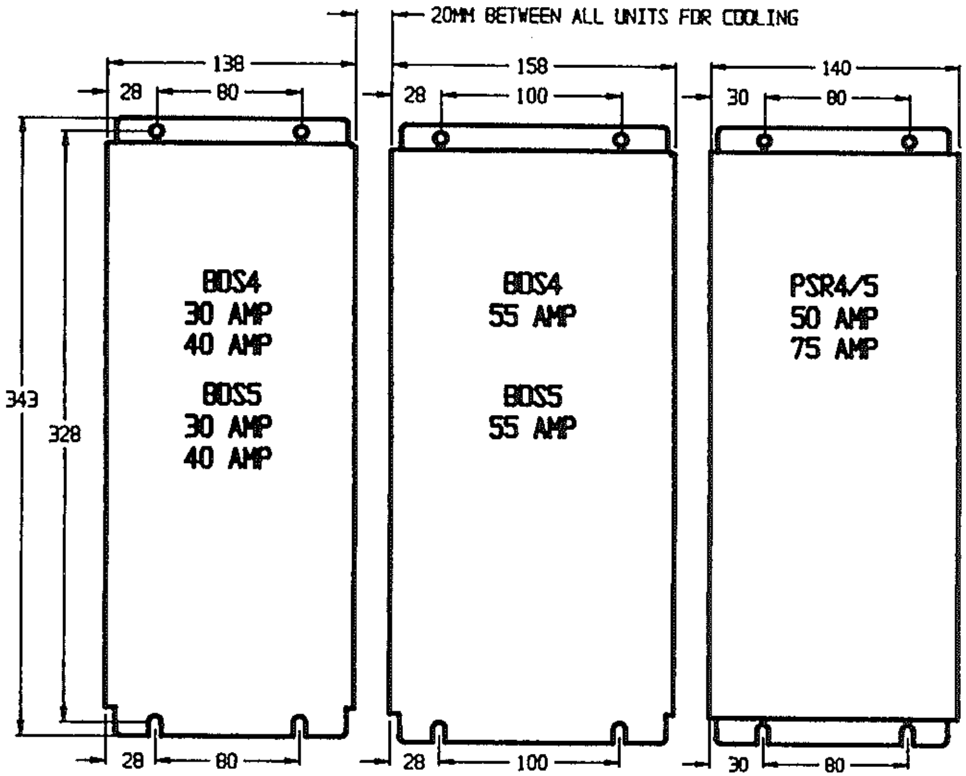
METRIC

UNLESS OTHERWISE SPECIFIED ANG. DIM. ±1 DEGREE

METRIC	[INCHES]
X DEC. PLACES ±.4	XX DEC. PLACES ±.015 IN.
XX DEC. PLACES ±.13	XXX DEC. PLACES ±.005 IN.

DO NOT SCALE DWG. USE DIMENSIONS ONLY. ALL DIMENSIONS ARE MILLIMETERS. UNLESS OTHERWISE SPECIFIED.

DWG. NO. SHT 2 OF 2 A-93703 ISSUE 2



SEE NOTES ON SHEET 1.

COPY CODE

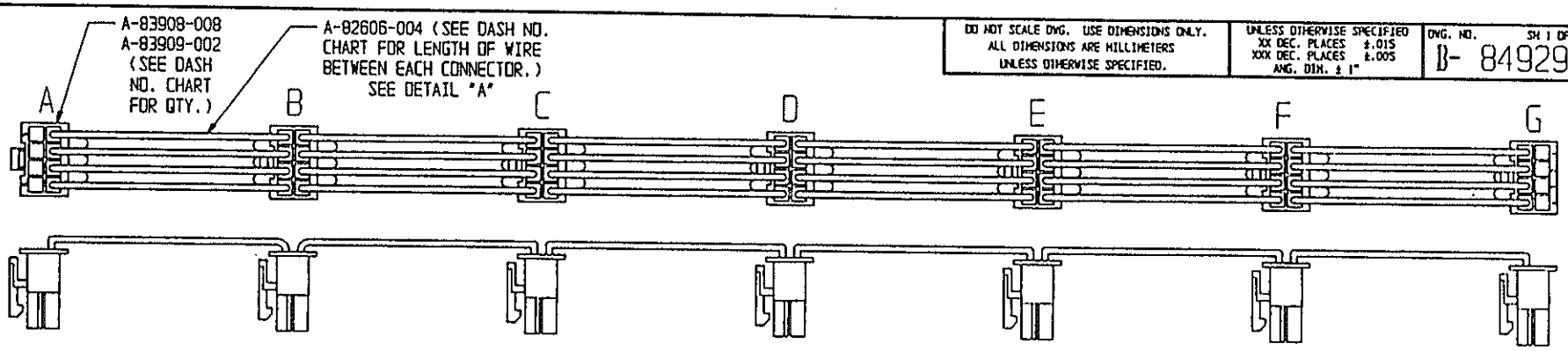
ISS.	ECN NO.	DATE	APP'D.	ISS.	ECN NO.	DATE	APP'D.

CAD DWG.

Kollmorgen Industrial Drives
RADFORD, VIRGINIA

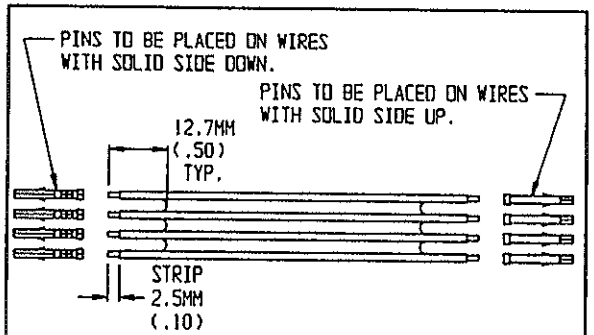
MOUNTING HOLE PATTERN
BDS4A, BDS5A, PSR4/5A

DWN. BY:	DATE	CHK. BY:	DATE	APP'D. BY:	DATE	SCALE	DWG. NO. SHT 2 OF 2	ISSUE
TDG	1-6-93					1/4	A-93703	2



DO NOT SCALE DWG. USE DIMENSIONS ONLY. ALL DIMENSIONS ARE MILLIMETERS UNLESS OTHERWISE SPECIFIED.	UNLESS OTHERWISE SPECIFIED XX DEC. PLACES ±.01 XXX DEC. PLACES ±.005 ANG. DIM. ± 1°	DWG. NO. B- 84929 SH 1 OF 2	ISSUE 11

CONFIG.	CABLE LENGTH	CONFIG.	CABLE LENGTH	CONFIG.	CABLE LENGTH
-1-1-	111.75 (4.40)	-3-1-	151.75 (5.98)	-6-2-	211.75 (8.34)
-1-2-	111.75 (4.40)	-3-2-	151.75 (5.98)	-6-3-	211.75 (8.34)
-1-3-	111.75 (4.40)	-3-3-	151.75 (5.98)	-6-5-	211.75 (8.34)
-1-5-	111.75 (4.40)	-3-5-	151.75 (5.98)	-6-6-	211.75 (8.34)
-1-6-	111.75 (4.40)	-3-6-	151.75 (5.98)	-6-H-	311.75 (12.27)
-1-L-	131.75 (5.19)	-3-L-	171.75 (6.76)	-L-1-	111.75 (4.40)
-1-H-	211.75 (8.34)	-3-H-	271.75 (10.70)	-L-2-	111.75 (4.40)
-2-1-	131.75 (5.19)	-5-1-	191.75 (7.55)	-L-3-	111.75 (4.40)
-2-2-	131.75 (5.19)	-5-2-	191.75 (7.55)	-H-1	111.75 (4.40)
-2-3-	131.75 (5.19)	-5-3-	191.75 (7.55)	-H-2-	111.75 (4.40)
-2-5-	131.75 (5.19)	-5-5-	191.75 (7.55)	-H-3-	111.75 (4.40)
-2-6-	131.75 (5.19)	-5-6-	191.75 (7.55)	-H-5-	111.75 (4.40)
-2-L-	151.75 (5.98)	-5-H-	291.75 (11.49)	-H-6-	111.75 (4.40)
-2-H-	231.75 (9.12)	-6-1-	211.75 (8.34)		



THE STRIP BACK AND THE NOTCH SHOWN ABOVE IS USED FOR BOTH ENDS OF EACH A-82606-004 USED

DETAIL "A"

POSITION CODE CHART		
DESCRIPTION		CODE
NO MODULE IN THIS POSITION		0
BDS4	3 & 6 AMP	1
BDS5	3 AMP	
BDS4	10 AMP	2
BDS5	6 AMP	
BDS4	20 AMP	3
BDS5	10 & 20 AMP	
BDS4 & 5	30 & 40 AMP	5
BDS4 & 5	55 AMP	6
PSR4/5	12 & 20 AMP	L
PSR4/5	50 & 75 AMP	H

NOTES:
SEE DWG. A-84050 FOR SPACING BETWEEN UNITS.

		B	C	COPY CODE

CAD DWG

MATERIAL: FINISH:

ISS	ECN NO.	DATE	APP'D.	ISS	ECN NO.	DATE	APP'D.
7	84473 EWR	9/92	CJF	2	83952 VA	4/91	CJF
8	84799 EWR	10-92	CJF	3	84137 LS	8/91	CJF
9	84903 EWR	12-92	CJF	4	84363 EWR	3/92	CJF
10	85255 TDG	5-93	CJF	5	84473 EWR	5/92	FOD
11	85313 TDG	6-93		6	84546 EWR	6/92	CJF

DWN. BY:	DATE
VA	5/90
CHK. BY: FOD	2/91
APP'D. BY: SCM	2-28 91
JOB NO.	
CROSS REF. NO.	

Kollmorgen Industrial Drives
RADFORD, VIRGINIA

BDS4 AND BDS5 LOGIC CABLE ASSEMBLY

PLOT SCALE:	DWG. NO.	SH 1 OF 2	ISSUE
1:1	B- 84929		11

DO NOT SCALE DWG. USE DIMENSIONS ONLY. ALL DIMENSIONS ARE MILLIMETERS UNLESS OTHERWISE SPECIFIED.	UNLESS OTHERWISE SPECIFIED XX DEC. PLACES ±.015 XXX DEC. PLACES ±.005 ANG. DIM. ± 1°	DWG. NO. B- 84929 SH 2 OF 2	ISSUE 11

DASH NUMBER CHART

EXAMPLE: B-84929-H 1 1 1 0 0 0 (A B C D E F G)

DWG. NUMBER — SEE POSITION CODE CHART

MILLIMETERS (INCHES)

	DASH NO.	CONN QTY.	PIN QTY.	WIRE LENGTH FROM (CUT WIRE TO LENGTH SHOWN BELOW) A TO B	B TO C	C TO D	D TO E	E TO F	F TO G
[4]	12L0000	3	16	111.75 (4.40)	151.75 (5.98)	- - -	- - -	- - -	- - -
[4]	111L000	4	24	111.75 (4.40)	111.75 (4.40)	131.75 (5.19)	- - -	- - -	- - -
[4]	1L00000	2	8	131.75 (5.19)	- - -	- - -	- - -	- - -	- - -
[8][4]	23H3200	5	32	131.75 (5.19)	271.75 (10.70)	111.75 (4.40)	151.75 (5.98)	- - -	- - -
[8][4]	1111H32	7	48	111.75 (4.40)	111.75 (4.40)	111.75 (4.40)	211.75 (8.34)	111.75 (4.40)	151.75 (5.98)
[8][5]	** 111123H	7	48	111.75 (4.40)	111.75 (4.40)	111.75 (4.40)	111.75 (4.40)	131.75 (5.19)	271.75 (10.70)
[6]	1111L00	5	32	111.75 (4.40)	111.75 (4.40)	111.75 (4.40)	131.75 (5.19)	- - -	- - -
[7]	H555000	4	24	111.75 (4.40)	191.75 (7.55)	191.75 (7.55)	- - -	- - -	- - -
[8][7]	55H6000	4	24	191.75 (7.55)	291.75 (11.49)	111.75 (4.40)	- - -	- - -	- - -
[8][7]	5H00000	2	8	291.75 (11.49)	- - -	- - -	- - -	- - -	- - -
[8]	555H000	4	24	191.75 (7.55)	191.75 (7.55)	291.75 (11.49)	- - -	- - -	- - -
[8]	H655000	4	24	111.75 (4.40)	211.75 (8.34)	191.75 (7.55)	- - -	- - -	- - -

	DASH NO.	CONN QTY.	PIN QTY.	WIRE LENGTH FROM (CUT WIRE TO LENGTH SHOWN BELOW) A TO B	B TO C	C TO D	D TO E	E TO F	F TO G
[9]	H111100	5	32	111.75 (4.40)	111.75 (4.40)	111.75 (4.40)	111.75 (4.40)	- - -	- - -
[10]	11L0000	3	16	111.75 (4.40)	131.75 (5.19)	- - -	- - -	- - -	- - -
[11]	2H00000	2	8	231.75 (9.12)	- - -	- - -	- - -	- - -	- - -
[11]	3H00000	2	8	271.75 (10.70)	- - -	- - -	- - -	- - -	- - -
[11]	6H00000	2	8	311.75 (12.27)	- - -	- - -	- - -	- - -	- - -

[5] ** THIS CABLE ASSEMBLY MUST BE USED ONLY WITH BDS4 AMPLIFIERS!!

B C COPY CODE

CAD DWG

MATERIAL: FINISH:

ISS	ECN NO.	DATE	APP'D.	ISS	ECN NO.	DATE	APP'D.

DWN. BY: VA DATE: 5/90

DES. BY: FDD 2/91

APP'D. BY: SCM 2-28 91

JOB NO.

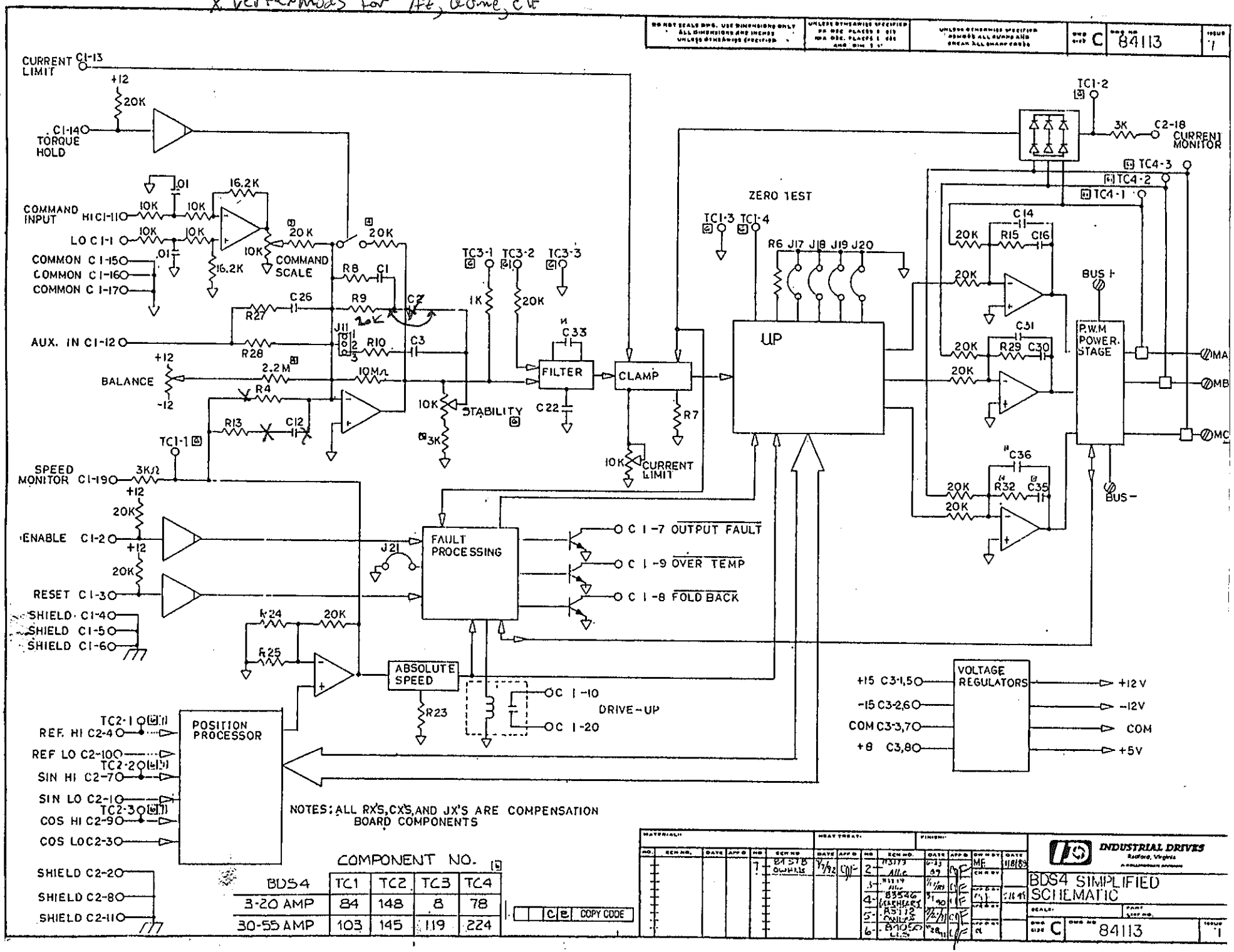
CROSS REF. NO.

Kollmorgen Industrial Drives
RADFORD, VIRGINIA

BDS4 AND BDS5 LOGIC CABLE ASSEMBLY

PLOT SCALE: 1:1 DWG. NO. B- 84929 SH 2 OF 2 ISSUE 11

X verter mods for Az, dome, elt



NOTES: ALL RX'S, CX'S, AND JX'S ARE COMPENSATION BOARD COMPONENTS

COMPONENT NO.

BDS4	TC1	TC2	TC3	TC4
3-20 AMP	84	148	8	78
30-55 AMP	103	145	119	224

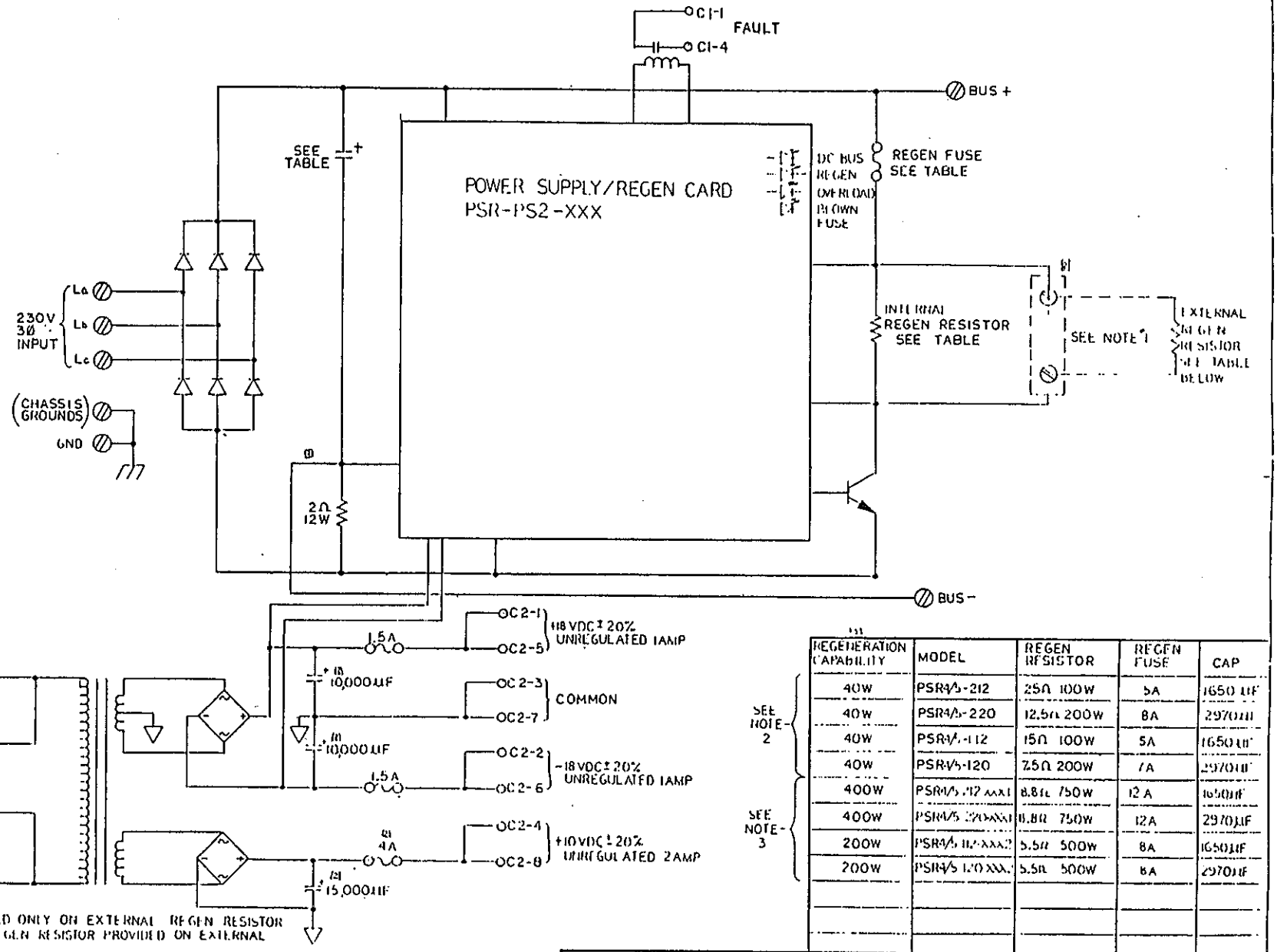
INDUSTRIAL DRIVES
Radford, Virginia

BDS4 SIMPLIFIED SCHEMATIC

C 84113 1

C-84113 Sheet 1 of 1

F-55



REGENERATION CAPABILITY	MODEL	REGEN RESISTOR	REGEN FUSE	CAP
SEE NOTE 2	40W	PSR4/5-212	25Ω 100W	5A	1650 μF
	40W	PSR4/5-220	12.5Ω 200W	8A	2970 μF
	40W	PSR4/5-112	15Ω 100W	5A	1650 μF
	40W	PSR4/5-120	7.5Ω 200W	7A	2970 μF
SEE NOTE 3	400W	PSR4/5-312-XXXX	8.8Ω 750W	12A	1650 μF
	400W	PSR4/5-320-XXXX	8.8Ω 750W	12A	2970 μF
	200W	PSR4/5-112-XXXX	5.5Ω 500W	8A	1650 μF
	200W	PSR4/5-120-XXXX	5.5Ω 500W	8A	2970 μF

NOTES

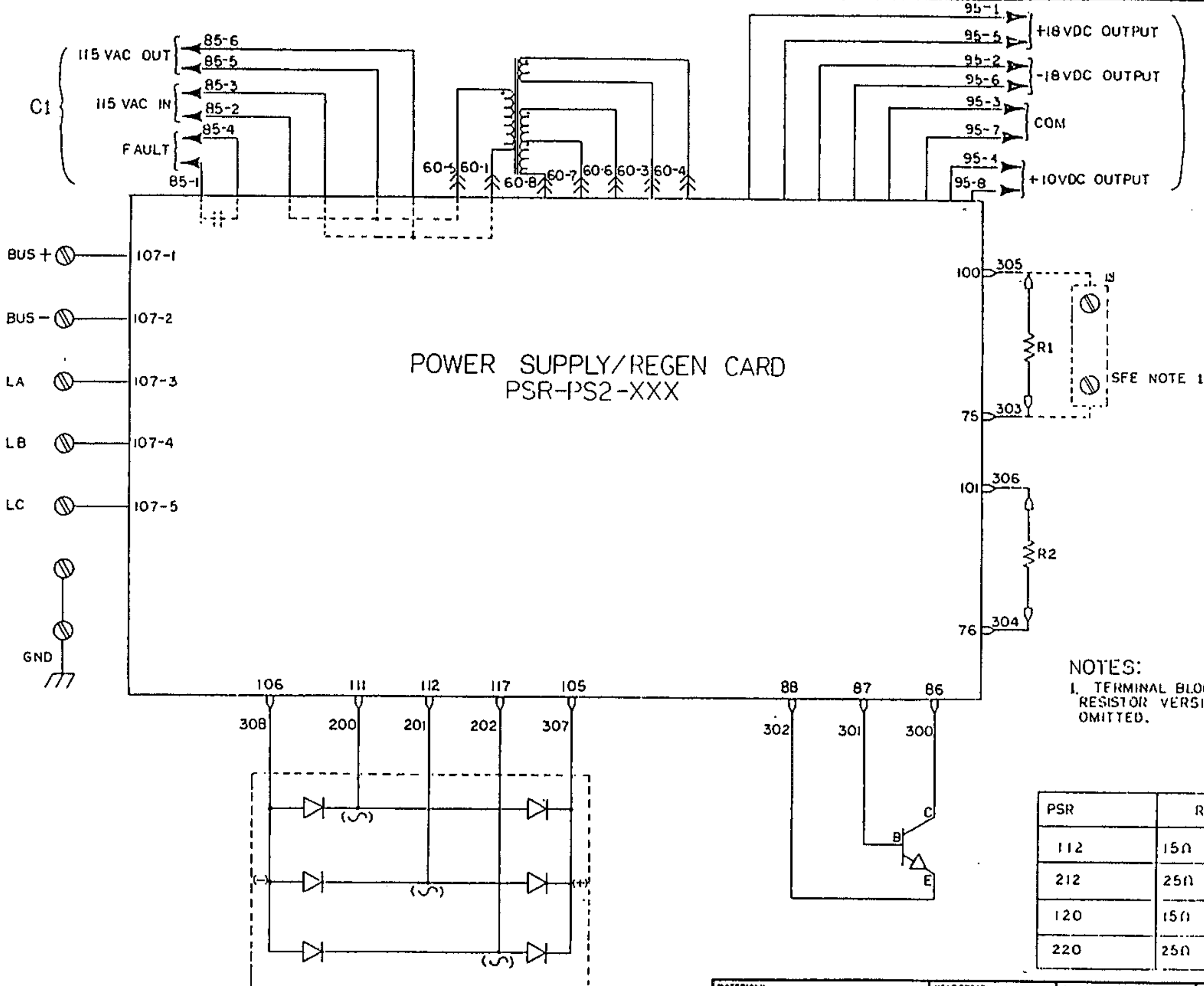
1) TERMINAL BLOCK PROVIDED ONLY ON EXTERNAL REGEN RESISTOR MODELS. NO INTERNAL REGEN RESISTOR PROVIDED ON EXTERNAL RESISTOR MODELS.
2) THESE VALUES FOR INTERNAL REGEN ONLY.
3) THESE VALUES FOR EXTERNAL REGEN ONLY.

INDUSTRIAL DRIVES

PSR-4/5 SIMPLIFIED SCHEMATIC

C 84723 3

COPY CODE



NOTES:

1. TERMINAL BLOCK ONLY ON EXTERNAL REGEN RESISTOR VERSION. THEN R1 AND R2 ARE OMITTED.

PSR	R1	R2
112	15Ω 100W	---
212	25Ω 100W	--
120	15Ω 100W	15Ω 100W
220	25Ω 100W	25Ω 100W

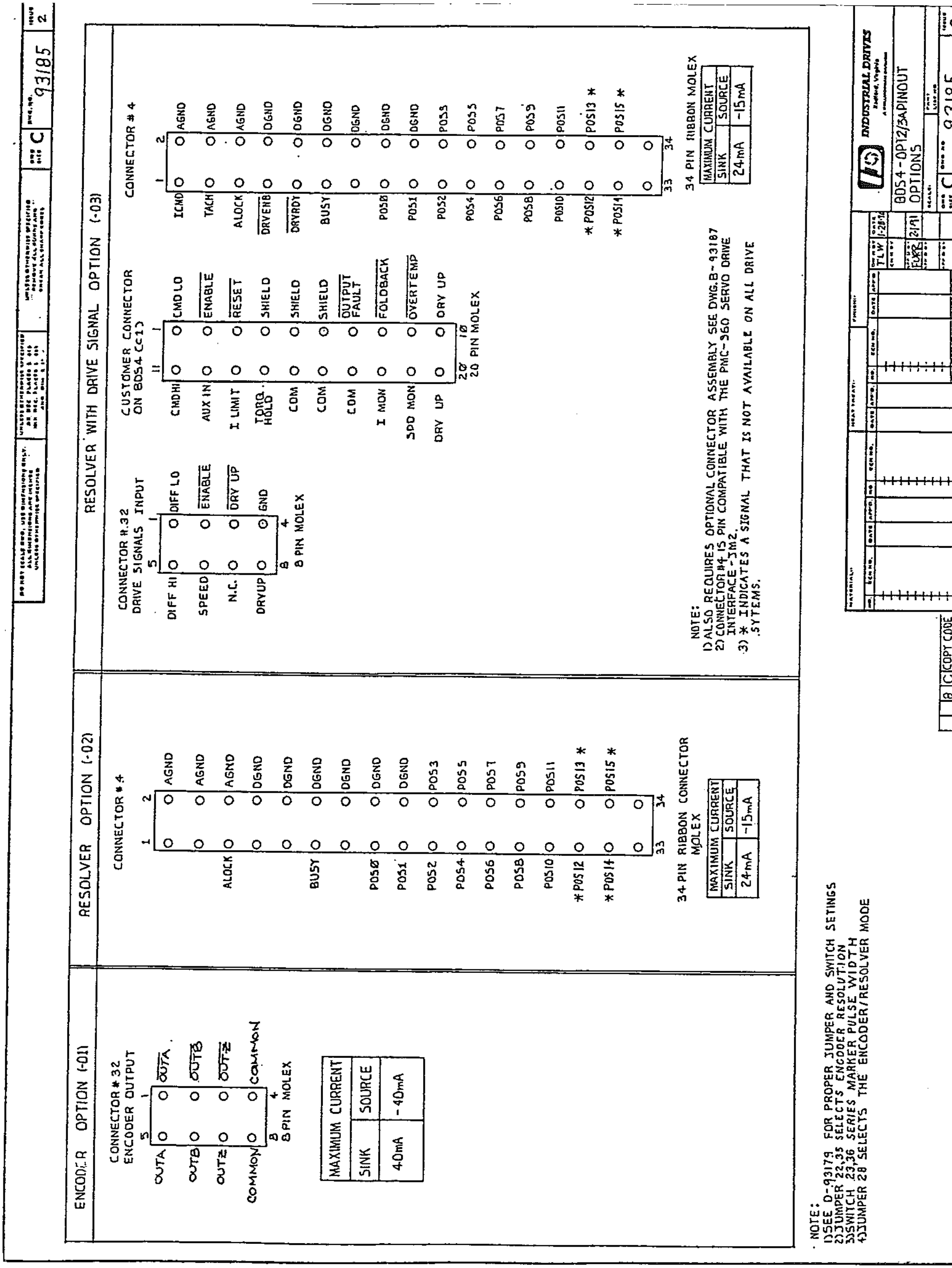
INDUSTRIAL DRIVES

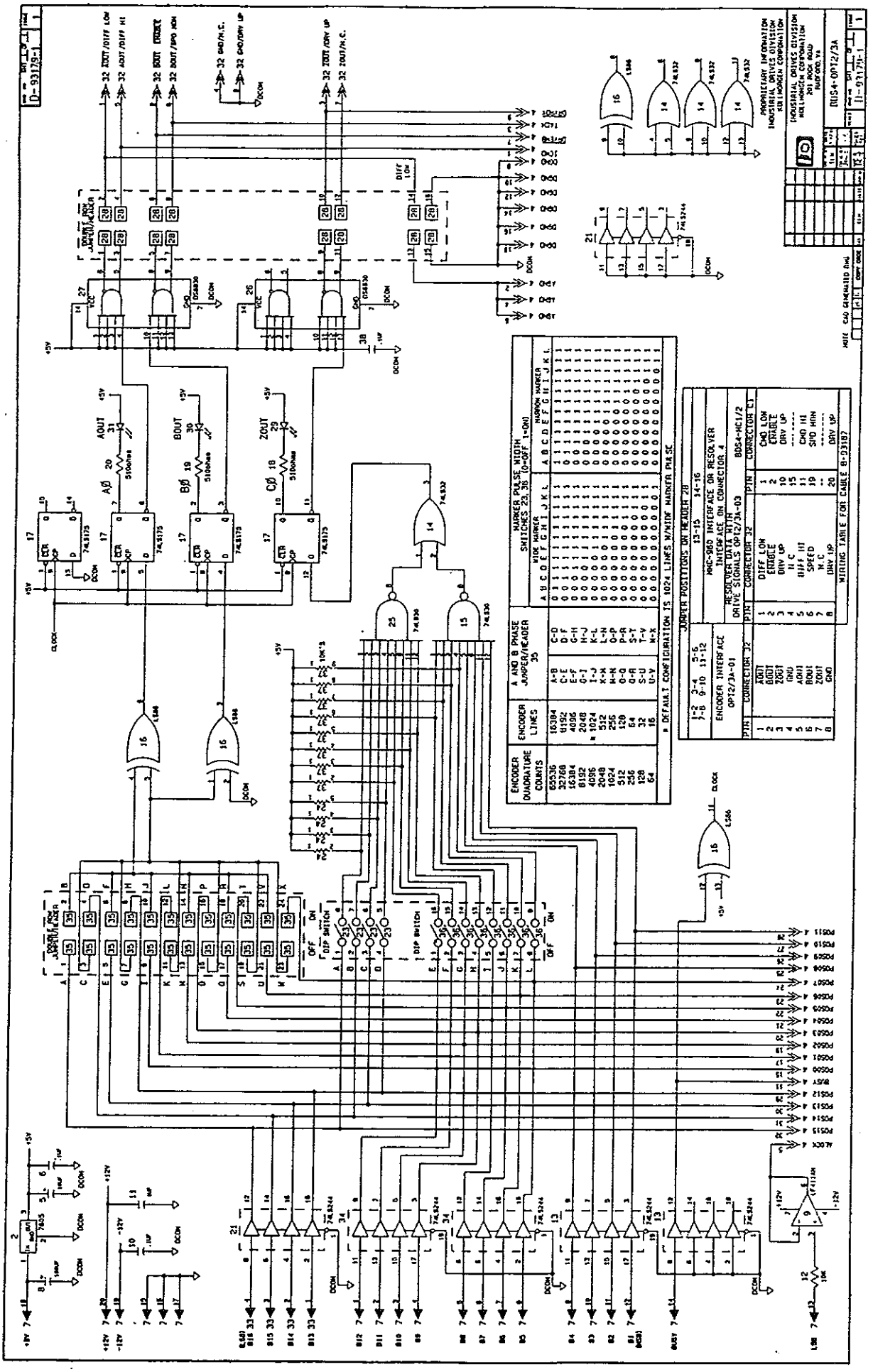
PSR-14

INTERNAL SCHEMATIC

C 84724 3

COPY CODE B


ENCODER OPTION (-01)
CONNECTOR # 32
ENCODER OUTPUT
OUTA
OUTB
OUTZ
COMMON
8 PIN MOLEX
MAXIMUM CURRENT
SINK 40mA
SOURCE -40mA
RESOLVER OPTION (-02)
CONNECTOR # 4
AGND
DGND
ALOCK
BUSY
POSØ POS1 POS2 POS3 POS4 POS5 POS6 POS7 POS8 POS9 POS10 POS11
*POS12 POS13 * *POS14 POS15 *
34-PIN RIBBON CONNECTOR MOLEX
MAXIMUM CURRENT
SINK 24mA
SOURCE -15mA
NOTE:
1)SEE D-93179 FOR PROPER JUMPER AND SWITCH SETINGS
2)JUMPER 22,35 SELECTS ENCODER RESOLUTION
3)SWITCH 23,36 SERIES MARKER PULSE WIDTH
4)JUMPER 28 SELECTS THE ENCODER/RESOLVER MODE
RESOLVER WITH DRIVE SIGNAL OPTION (-03)
CONNECTOR # 32
DRIVE SIGNALS INPUT
DIFF HI
DIFF LO
SPEED
ENABLE
N.C.
DRV UP
DRVUP
GND
8 PIN MOLEX
CUSTOMER CONNECTOR ON BDS4 (C1)
CMDHI
CMD LO
AUX IN
ENABLE
I LIMIT
RESET
TORQ. HOLD
SHIELD
COM
OUTPUT FAULT
I MON
FOLDBACK
SPD MON
OVERTEMP
DRV UP
20 PIN MOLEX
CONNECTOR # 4
ICMD
TACH
ALOCK
DRVENB
DRVRDY
BUSY
34 PIN RIBBON MOLEX
MAXIMUM CURRENT
SINK 24mA
SOURCE -15mA
NOTE:
1) ALSO REQUIRES OPTIONAL CONNECTOR ASSEMBLY SEE DWG.B-93187
2) CONNECTOR #4 IS PIN COMPATIBLE WITH THE PMC-960 SERVO DRIVE INTERFACE-JM2.
3) * INDICATES A SIGNAL THAT IS NOT AVAILABLE ON ALL DRIVE SYTEMS.
INDUSTRIAL DRIVES
BDS4-OPT12/3APINOUT OPTIONS
C 93185
2



GLOSSARY

Acceleration

The change in velocity as a function of time. Acceleration usually refers to increasing velocity and deceleration describes decreasing velocity.

Ambient Temperature

The temperature of the cooling medium, usually air, immediately surrounding the motor or another device.

Amplifier

Electronics which convert low level command signals to high power voltages and currents to operate a servo motor.

Brushless Servo Drive

A servo drive used to control a permanent magnet synchronous AC motor. May also be referred to as an AC Servo Drive.

Drive

This is the electronics portion of the system that controls power to the motor.

Drive, Analog

Usually referring to any type of motor drive in which the input is an analog signal.

Drive, Servo

A motor drive which utilizes internal feedback loops for accurate control of motor current and/or velocity.

Efficiency

The ratio of output power to input power.

Encoder, Absolute

A digital position transducer in which the output is representative of the absolute position of the input shaft within one (or more) revolutions. Output is usually a parallel digital word.

Encoder, Incremental

A position encoding device in which the output represents incremental changes in position.

Encoder, Marker

A once-per-revolution signal provided by some incremental encoders to specify a reference point within that revolution. Also known as Zero Reference signal or index pulse.

Encoder Resolution

A measure of the smallest positional change which can be detected by the encoder.

Feedback

A signal which is transferred from the output back to the input for use in a closed loop system.

Following Error

The position error during motion resulting from use of a position control loop with proportional gain only.

Friction

A resistance to motion caused by surfaces rubbing together. Friction can be constant with varying speed (coulomb friction) or proportional to speed (viscous friction) or present at rest (static friction).

Full Load Current

The armature current of a motor operated at its full load torque and speed with rated voltage applied.

Full Load Speed

The speed of a motor operated with rated voltage and full load torque.

Gain

The ratio of system output signal to system input signal. The control loop parameter that determines system performance characteristics.

HP: Horsepower

One horsepower is equal to 746 watts. Since Power = Torque × Speed, horsepower is a measure of a motor's torque and speed capability (e.g. a 1 HP motor will produce 35 lb-in. at 1800 rpm).

I/O: Input/Output

The reception and transmission of information between control devices. In modern control systems, I/O has two distinct forms: switches, relays, etc., which are in either an on or off state, or analog signals that are continuous in nature such as speed, temperature, flow, etc.

Inertia

The property of an object to resist changes in velocity unless acted upon by an outside force. Higher inertia objects require larger torques to accelerate and decelerate. Inertia is dependent upon the mass and shape of the object.

Inertial Match

An inertial match between motor and load is obtained by selecting the coupling ratio such that the load moment of inertia referred to the motor shaft is equal to the motor moment of inertia.

Inrush Current

The current surge generated when a piece of equipment such as a servo amplifier is connected to an AC line. This surge is typically due to the impulse charging of a large capacitor located in the equipment.

Instability

Undesirable motion of an actuator that is different from the command motion. Instability can take the form of irregular speed or hunting of the final rest position.

Limits

Motion control systems may have sensors called limits that alert the control electronics that the physical end of travel is being approached and that motion should stop.

Logic Ground

An electrical potential to which all control signals in a particular system are referenced.

Loop, Feedback Control

A control method that compares the input from a measurement device, such as an encoder or tachometer, to a desired parameter, such as a position or velocity and causes action to correct any detected error. Several types of loops can be used in combination (i.e. velocity and position together) for high performance requirements.

Master Slave Motion Control

A type of coordinated motion control where the master axis position is used to generate one or more slave axis position commands.

Motor, AC

A device that converts electrical alternating current into mechanical energy. Requires no commutation devices such as brushes. Normally operated off commercial AC power. Can be single or multiple phase.

Oscillation

An effect that varies periodically between two values.

PLC

Programmable Logic Controller. Also known as a programmable controller, these devices are used for machine control and sequencing.

Power

The rate at which work is done. In motion control, Power = Torque × Speed.

Pulse Rate

The frequency of the step pulses applied to a step-per motor driver. The pulse rate divided by the resolution of the motor/drive combination (in steps per revolution) yields the rotational speed in revolutions per second.

Ramping

The acceleration and deceleration of a motor. May also refer to the change in frequency of the applied step pulse train.

Rated Torque

The torque producing capacity of a motor at a given speed. This is the maximum continuous torque the

motor can deliver to a load and is usually specified with a torque/speed curve.

Regeneration

The action during motor braking, in which the motor acts as a generator and takes kinetic energy from the load, converts it to electrical energy, and returns it to the amplifier.

Repeatability

The degree to which the positioning accuracy for a given move performed repetitively can be duplicated.

Resolution

The smallest positioning increment that can be achieved. Frequently defined as the number of steps or feedback units required for a motor's shaft to rotate one complete revolution.

Resolver

A position transducer utilizing magnetic coupling to measure absolute shaft position over one revolution.

RMS Current

Root mean square current. In an intermittent duty cycle application, the RMS current is equal to the value of steady state current which would produce the equivalent resistive heating over a long period of time.

Rotor

The rotating part of a magnetic structure. In a motor, the rotor is connected to the motor shaft.

Servo Amplifier/Servo Drive

An electronic device which produces the winding current for a servo motor. The amplifier converts a low level control signal into high voltage and current levels top produce torque in the motor.

Servo System

An automatic feedback control system for mechanical motion in which the controlled or output quantity is position, velocity, or acceleration. Servo systems are closed loop systems.

Shunt Resistor

A device located in a servo amplifier for controlling regenerative energy generated when braking a motor. This device dissipates of "dumps" the kinetic energy as heat.

Single Point Ground

The common connection point for signal grounds in a control wiring environment.

Slew

In motion control the portion of a move made at a constant non-zero velocity.

Speed Regulation

For a speed control system, speed regulation is the variation in actual speed expressed as a percentage of set speed.

Stiffness

Ratio of an applied force torque to change in position for a mechanical system.

Stator

The non-rotating part of a magnetic structure. In a motor the stator usually contains the mounting surface, bearings, and non-rotating windings or permanent magnets.

Tachometer

An electromagnetic feedback transducer which produces an analog voltage signal proportional to rotational velocity. Tachometers can be either brush or brushless.

Torque

The rotary equivalent to force. Equal to the product of the force perpendicular to the radius of motion and distance from the center of rotation to the point where the force is applied.

Velocity

The change in position as a function of time. Velocity has both a magnitude and direction.

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