10.0 BREWER REFERENCE DOCUMENTATION

Section 10.1 Overall Assembly and External Cables Figure

- Configuration Control Diagram 10.1-1.1
- BREWER System Drawing BS-C1000 10.1-2.1
- BREWER Assembly BA-C230/B 10.1-3.1
  10.1-3.2
- Azimuth Tracker Assembly BA-C91 10.1-4.1
  BA-C91 10.1-4.2
  BA-C113 10.1-4.3
- Azimuth Tracker and Stand 10.1-4.4
- Azimuth Tracker Unit Schematic BA-C91 10.1-4.5
- Azimuth Tracker Board Schematic BS-C99 10.1-4.6
- Azimuth Motor Wiring BA-W20 10.1-4.7
- Azimuth Power Supply Specifications 10.1-4.8
- Power Cable (External) BA-W12 10.1-5.1
- Data Cable (External) BA-W68 10.1-5.2
- Electronics Spares Kit List BA-C222
- BREWER Standard Spares Kit List BA-C112/B

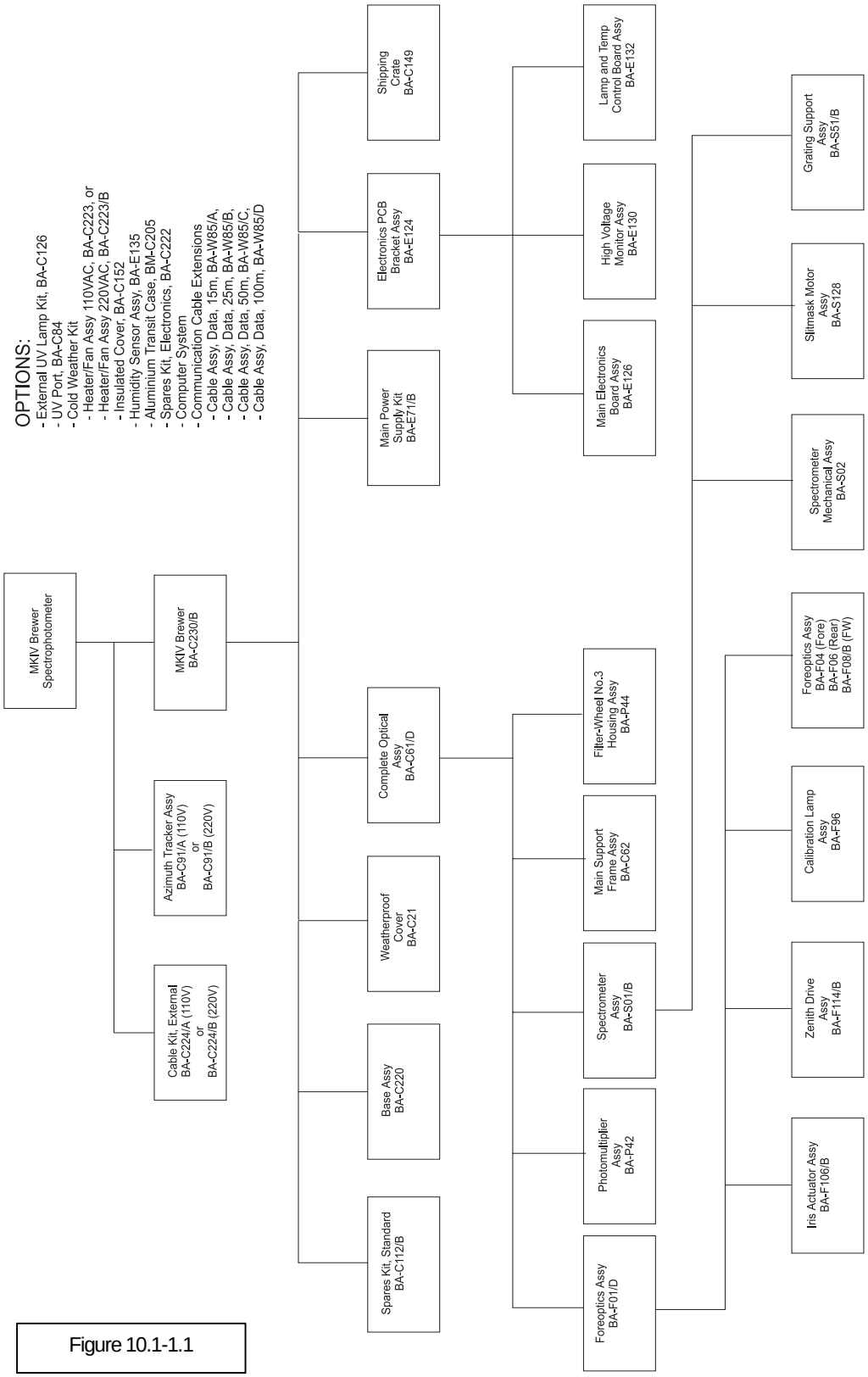


Figure 10.1-1.1

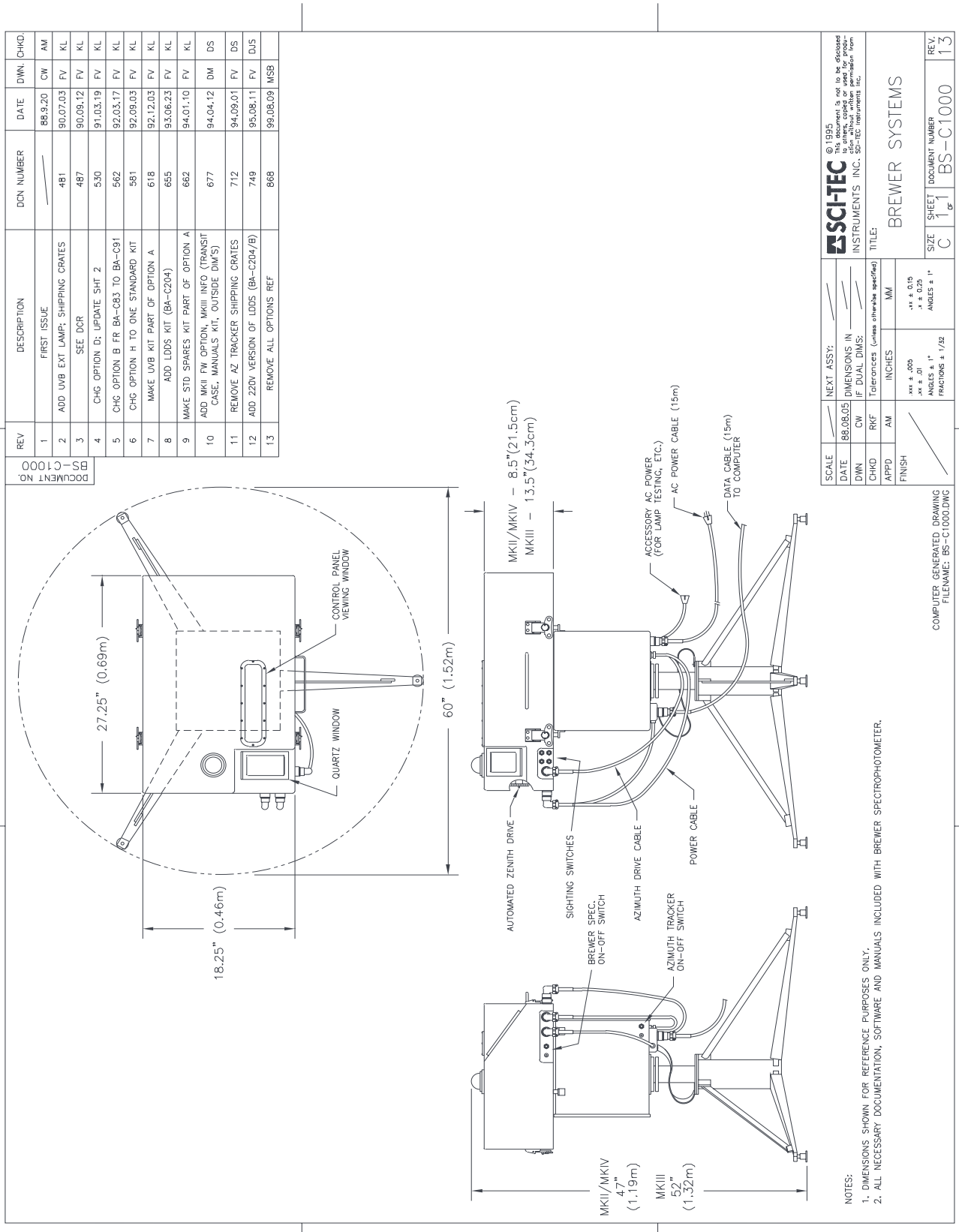


Figure 10.1-2.1

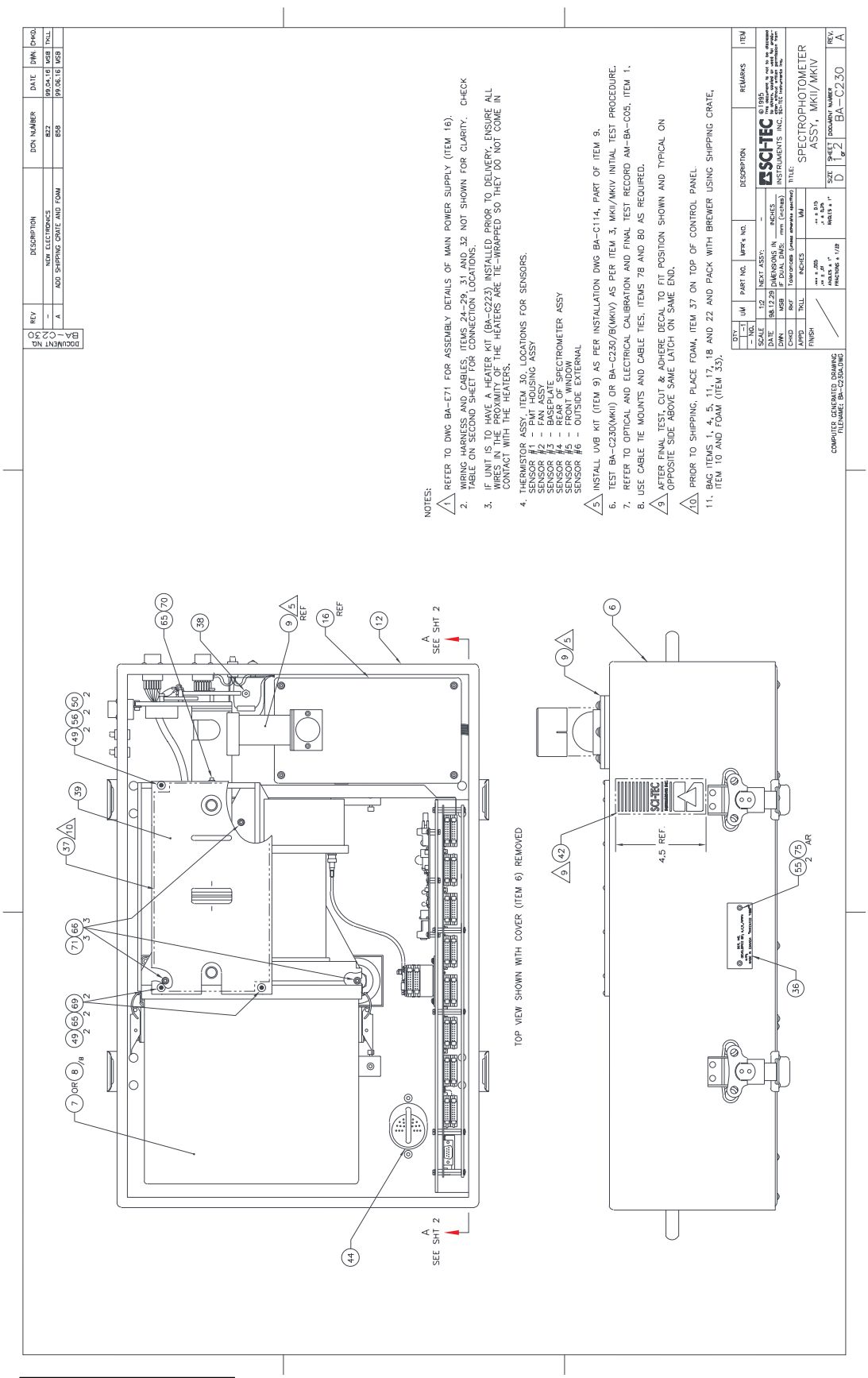


Figure 10.1-3.1

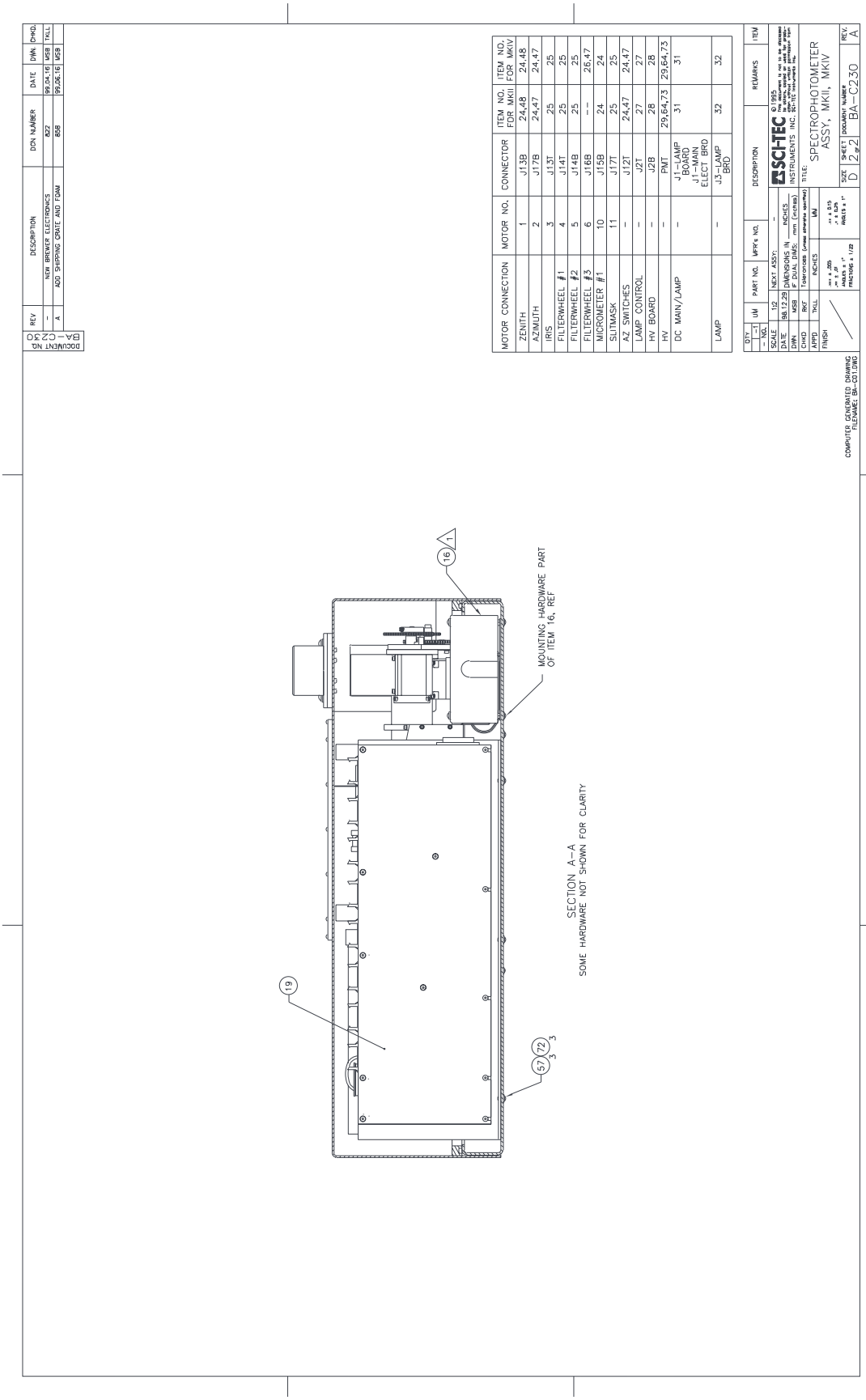


Figure 10.1-3.2

Item no.	BA-C230 Part No.	BREWER MKII Description	Qty.
1	AM-BA-C05	BREWER FINAL TEST RECORD	--
3	IT-BA-C230	BREW MKII,MKIV INITIAL TEST	--
4	OM-BA-C230	SPECT OPER MAN, MKII/MKIV	1.00
5	MM-BA-C230	SPECT MAINT MAN, MKII/MKIV	1.00
6	BA-C21	WEATHERPROOF COVER ASSY	1.00
7	BA-C61/C	COMPL OPTICAL ASSY MKII	--
8	BA-C61/D	COMPL OPTICAL ASSY, MKIV	1.00
9	BA-C84	OPTION C KIT, UVB	1.00
10	BA-C149	MKII/MKIV SHIPPING CRATE	1.00
11	BA-C112/B	SPARES KIT, STD, NEW ELECT	1.00
12	BA-C220	BASE ASSY, MKII,IV, NEW ELECT	1.00
16	BA-E71/B	MAIN POWER SUPPLY KIT, W/O DESIC	1.00
17	BA-E116	BREWER OPERATING S/W	1.00
18	BA-E118	BREWER UTILITIES S/W	1.00
19	BA-E124	ELECTRONIC PCB BRKT ASSY	1.00
22	BA-U07	F/W, MAIN BRD, DOWNLOADABLE	1.00
24	BA-W76/A	CABLE ASSY,MAIN TO MTR, 29	4.00
25	BA-W76/B	CABLE ASSY,MAIN TO MTR, 27	4.00
26	BA-W76/C	CABLE ASSY,MAIN TO MTR, 20	1.00
27	BA-W77/A	CABLE ASSY,MAIN TO LMP, 11	1.00
28	BA-W77/B	CABLE ASSY,MAIN TO HV, 16	1.00
29	BA-W78	CABLE ASSY,HV BRD TO PMT	1.00
30	BA-W79	CABLE ASSY,THERM TEMP PROBE	1.00
31	BA-W82	CABLE ASSY,DC MAIN/LAMP	1.00
32	BA-W83	CABLE ASSY, LAMP	1.00
33	BM-C162	FOAM, HIGH DENSITY, 27X19X4	6.00
36	BM-C105	NAMEPLATE,ALTERED	1.00
37	BM-C202	SHIPPING FOAM,CNTRL PANEL	1.00
38	BM-C218	MODF'D SCREW,EXT TMP SNSR	1.00
39	BM-C82	CONTROL PANEL	1.00
42	12103081	DECAL, SCI-TEC LOGO	1.00
44	12501365-2	DESICCANT HOLDER ASSY	1.00
47	81-90-620	LOCK, CONN SLIDE POST	3.00
48	81-90-630	LOCK, CONN SL RET (15)	1.00
49	83-30-450	BUMPER RUBBR 1/8 HOLE, 3/	4.00
50	83-40-485	NUT 4-40 SL RG HX THIN SS	2.00
55	83-51-752	SCREW 2-56 X 1/4 BUTTON HD	2.00
56	83-51-762	SCREW 4-40 X 5/16 BUTTON H	2.00
57	83-51-804	SCREW,8-32 X 1/2 BUTTON H	3.00
64	83-79-048	SCREW 4-40 X 5/16 HSC SS	2.00
65	83-79-049	SCREW 4-40 X 3/8 HSC SS	3.00
66	83-79-152	SCREW 1/4-28 X 1/2 HSC SS	3.00
69	83-95-604	WASHER #4, INT TOOTH LOCK,SS	2.00
70	83-95-008	WASHER #4 FLAT NYLON	1.00
71	83-95-609	WASHER, 1/4 LOCK INT TH S	3.00
72	83-95-786	WASHER, #8 SCREW 3/8 OD X	3.00
73	83-95-748	WASHER, #4, SPLIT LOCKS	2.00
75	85-10-145	ADHESIVE, SEALANT LOCTITE	0.50
78	85-80-440	CABLE-TIE MOUNT,3/4"SQ	4.00
80	85-80-450	CABLE-TIE 4-1/8X.1 NYL 18	6.00

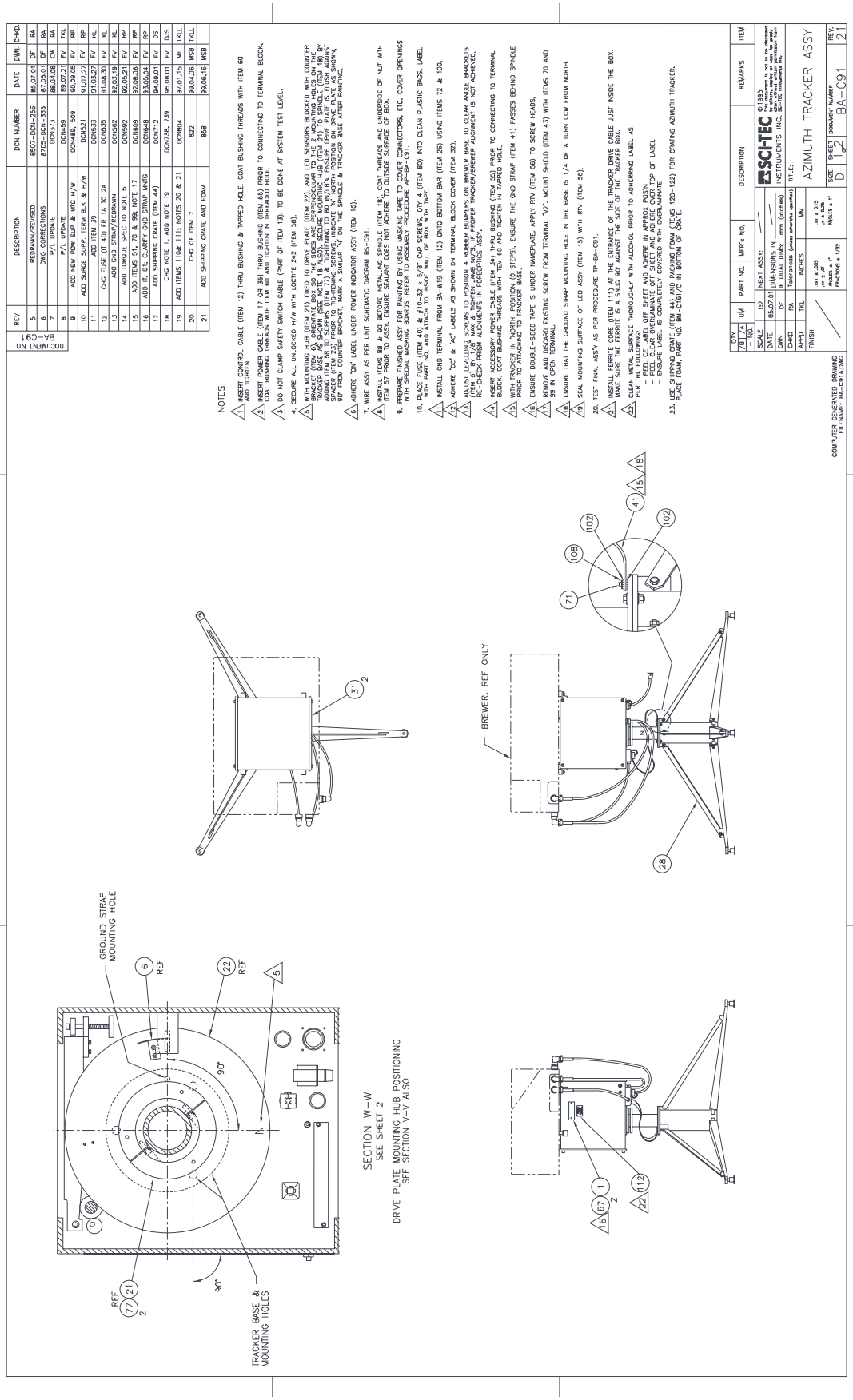


Figure 10.1.4-1

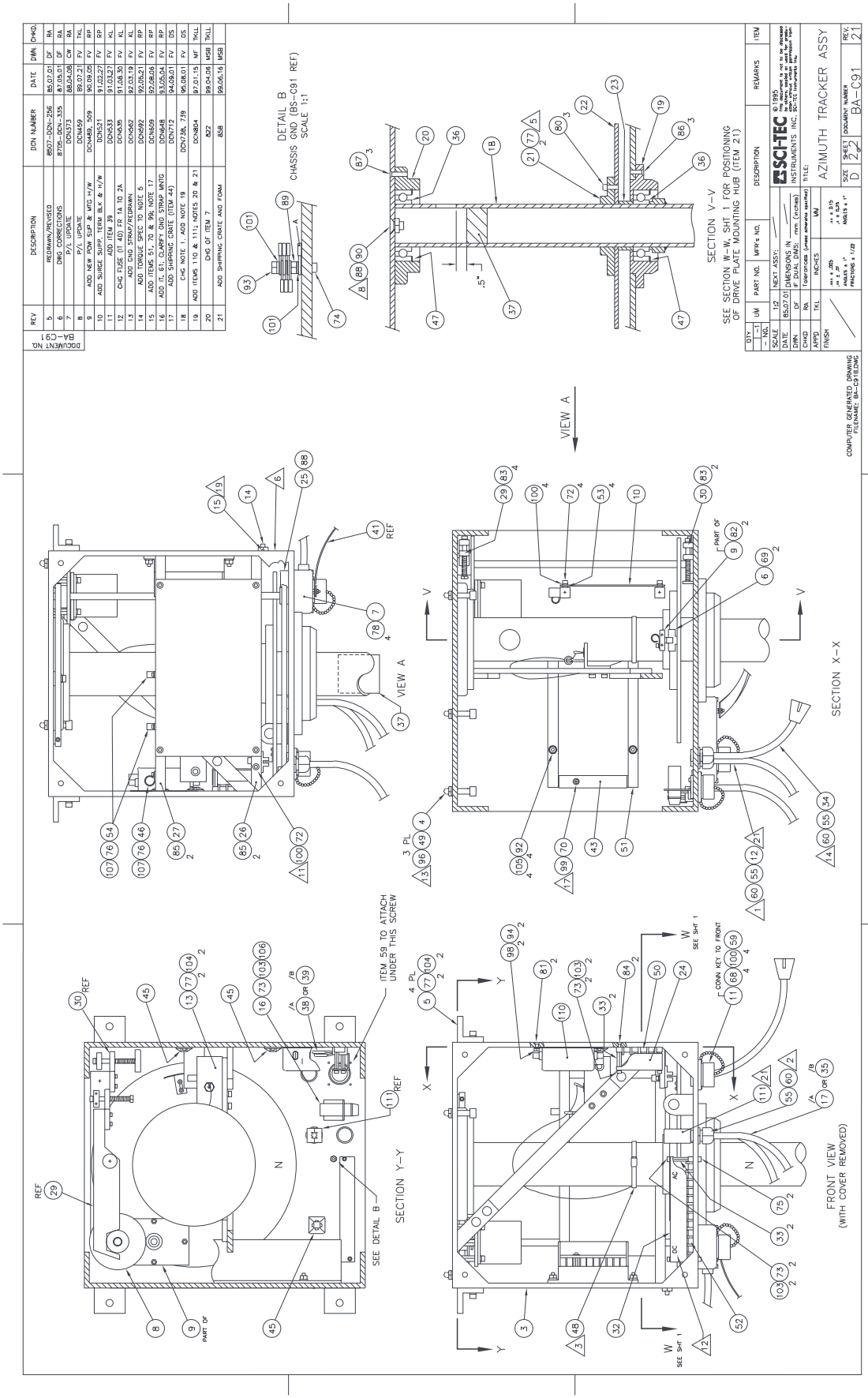


Figure 10.1-4.2

BA-C91 Azimuth Tracker Assembly

Item No.	Part Number	Description	120V Qty	230V Qty
1	BM-C100	Nameplate, Altered, Azimuth Tracker	1.00	1.00
2	BS-C91	Azimuth Tracker Unit Schematic	--	--
3	BM-C92	Azimuth Tracker Box	1.00	1.00
4	BM-C93	Adjusting Screw	3.00	3.00
5	BM-C94	Angle Bracket	4.00	4.00
6	BM-C95	Counter Bracket	1.00	1.00
7	BA-W67	Surge Supp Enc Assy, RS422	1.00	1.00
8	BA-C97	Drive Shaft Assy Az/Cosmos Tracker	1.00	1.00
9	BA-C98	Drive Motor Assy	1.00	1.00
10	BA-C99	Azimuth Tracker Brd Assy	1.00	1.00
11	BA-W18	Power Connector Assy	1.00	1.00
12	BA-W19	Control Cable Assy	1.00	1.00
13	BA-W21	Safety Switch Assy	1.00	1.00
14	BA-W22	Power Switch Assy	1.00	1.00
15	BA-W23	Power Indicator Assy	1.00	1.00
16	BA-W24	Fuse Holder Assy	1.00	1.00
17	BA-W30/A	Power Cable, Azimuth Tracker, 110V	1.00	--
18	D2-1030-002	Azimuth Spindle	1.00	1.00
19	C2-1030-005	Bearing Housing, External	1.00	1.00
20	C2-1030-006	Bearing Housing, Internal	1.00	1.00
21	B2-1030-007/A	Plate Mounting Hub	1.00	1.00
22	C2-1030-008	Drive Plate	1.00	1.00
23	B2-1030-015	Spacer Ring, Short	1.00	1.00
24	BM-C88/B	AC Power Shield, 2.25 Long	1.00	1.00
25	A2-1030-019	Drive Bearing Stop	1.00	1.00
26	B2-1030-028	Bottom Bar, PCB	1.00	1.00
27	B2-1030-029	Top Bar, PCB	1.00	1.00
28	D1-1030-045	Tracker Stand Assy	1.00	1.00
29	C1-1030-080/A	Short Tension Arm Assy, Azimuth Drive	1.00	1.00
30	C1-1030-081/A	Long Tension Arm Assy, Azimuth Drive	1.00	1.00
31	C1-1030-084	Cover Assy	2.00	2.00
32	BM-C88	AC Power Shield, 5.25 Long	1.00	1.00
33	83-09-220	Spacer, Hex, 6-32 x 3/4" Lg	4.00	4.00
34	BA-W58	Accessory Power Cable Assy	1.00	1.00
35	BA-W30/B	Power Cable, Azimuth Tracker, 220V	--	1.00
36	B2-1030-101	Bearing, Altered	2.00	2.00
37	BM-C225	Foam Disc Insert	1.00	1.00
38	BA-C166	AZ Tracker MOV Assy, 110V	1.00	--
39	BA-C166/B	AZ Tracker MOV Assy, 220V	--	1.00
40	91-15-257	Fuse, 2A, 250V, Slow-Blow	1.00	1.00
41	BM-C174	Azimuth Tracker Ground Strap	1.00	1.00
42	BA-C113	Option 'B' Kit Installation	--	--
43	BM-C188	Terminal Shield, Azimuth Tracker P/S	1.00	1.00
44	BA-C150	Azimuth Tracker Shipping Crate	1.00	1.00
45	85-80-440	Mount, Cable-Tie, Adhesive Back	3.00	3.00
46	82-20-383	Clamp, 'P', 1/2" x 1/2" x #10	1.00	1.00
47	88-99-780	Retaining Ring, Internal, Spiral Snap	2.00	2.00
48	76-99-445	Hose Clamp, 2-1/2" OD	1.00	1.00
49	83-10-651	O-Ring, 3/8"ID x 9/16"OD x 3/32"Thk	3.00	3.00
50	82-10-470	Terminal Strip, 4 Contact	1.00	1.00
51	87-50-088	Power Supply, Switching, 5VDC, 10A	1.00	1.00
52	82-10-450	Terminal Strip, 12 Contact	1.00	1.00
53	83-09-413	Spacer, 1/4"OD x 1/8"ID x 1/8"LG, AL	4.00	4.00
54	82-20-356	Clamp, 'P', 1/4" x 1/2" x 13/32"	2.00	2.00
55	83-08-100	Bushing, Strain Relief, Liq-Tite	3.00	3.00
56	85-10-150	Adhesive, Sealant (RTV 3145)	1.00	1.00
57	85-10-148	Adhesive, Sealant Silicone, BLK	2.00	2.00
58	85-10-145	Adhesive, Sealant (Loctite 242)	2.00	2.00

Item No.	Part Number	Description	120V Qty	230V Qty
59	81-15-154	Cap & Chain, For #18 Receptacle	1.00	1.00
60	85-10-147	Adhesive Sealant, Pipe Thread	1.00	1.00
61	82-10-484	Jumper, Terminal Block	5.00	5.00
62	83-25-890	Term, Ring Tongue, #18-22AWG, #6, Insul	16.00	16.00
63	99-31-483	Wire, Hookup, #18AWG, IRR PVC, Red	1.00	1.00
64	99-31-482	Wire, Hookup, #18AWG, IRR PVC, Black	3.40	3.40
65	99-31-484	Wire, Hookup, #18AWG, IRR PVC, Green	2.00	2.00
66	99-31-481	Wire, Hookup, #18AWG, IRR PVC, White	2.25	2.25
67	83-51-752	Screw, 2-56 x 1/4"Lg, Btn Hd, Hex, SS	2.00	2.00
68	83-51-763	Screw, 4-40 x 3/8"Lg, Btn Hd, Hex, SS	4.00	4.00
69	83-51-762	Screw, 4-40 x 5/16"Lg, Btn Hd, Hex, SS	2.00	2.00
70	83-51-765	Screw, 4-40 x 1/2"Lg, Btn Hd, Hex, SS	1.00	1.00
71	83-79-152	Screw, 1/4-28 x 1/2"Lg, Skt Hd, Cap, SS	1.00	1.00
72	83-79-051	Screw, 4-40 x 1/2"Lg, Skt Hd, Cap, SS	5.00	5.00
73	83-79-068	Screw, 6-32 x 3/8"Lg, Skt Hd, Cap, SS	5.00	5.00
74	83-79-075	Screw, 6-32 x 1"Lg, Skt Hd, Cap, SS	1.00	1.00
75	83-79-073	Screw, 6-32 x 3/4"Lg, Skt Hd, Cap, SS	2.00	2.00
76	83-79-082	Screw, 8-32 x 3/8"Lg, Skt Hd, Cap, SS	3.00	3.00
77	83-79-114	Screw, 10-32 x 1/2"Lg, Skt Hd, Cap, SS	12.00	12.00
78	83-79-077	Screw, 6-32 x 1-1/4"Lg, Skt Hd, Cap, SS	4.00	4.00
80	83-79-116	Screw, 10-32 x 5/8"Lg, Skt Hd, Cap, SS	7.00	7.00
81	83-87-194	Screw, 8-32x1/2"Lg. Flt Hd, Hex, SS	2.00	2.00
82	83-87-165	Screw, 4-40 x 1/2"Lg, Flt Hd, Hex, SS	2.00	2.00
83	83-87-181	Screw, 6-32 x 5/8"Lg, Flt Hd, Hex, SS	4.00	4.00
84	83-87-182	Screw, 6-32 x 3/4"Lg, Flt Hd, Hex, SS	2.00	2.00
85	83-87-209	Screw, 10-32 x 1/2"Lg, Flt Hd, Hex, SS	4.00	4.00
86	83-87-211	Screw, 10-32 x 5/8"Lg, Flt Hd, Hex, SS	3.00	3.00
87	83-87-214	Screw, 10-32 x 1"Lg, Flt Hd, Hex, SS	3.00	3.00
88	83-87-233	Screw, 1/4-28 x 5/8"Lg, Flt Hd, Hex, SS	2.00	2.00
89	83-40-261	Nut, 6-32 x 5/16, Hex, Steel Plated	1.00	1.00
90	83-40-326	Nut, 1/4-28 x 7/16, Hex, Steel Plated	1.00	1.00
92	83-40-278	Nut, 8-32 x 1/4 x 3/32 Thk, Hex, SS	4.00	4.00
93	83-40-486	Nut, 6-32, Self Locking, Hex, SS	1.00	1.00
94	83-40-283	Nut, 8-32 Std. Hex Pattern, SS	2.00	2.00
96	BM-C121	Jamb Nut, Altered	3.00	3.00
98	83-95-606	Washer, #8, Internal Tooth Lock, SS	2.00	2.00
99	83-95-626	Washer, #4, External Tooth Lock, SS	1.00	1.00
100	83-95-604	Washer, #4, Internal Tooth Lock, SS	9.00	9.00
101	83-95-605	Washer, #6, Internal Tooth Lock, SS	2.00	2.00
102	83-95-631	Washer, 1/4, External Tooth Lock	2.00	2.00
103	83-95-749	Washer, #6, Split Lock, SS	5.00	5.00
104	83-95-752	Washer, #10, Split Lock, SS	10.00	10.00
105	83-95-750	Washer, #8, Split Lock, SS	4.00	4.00
106	83-95-013	Washer, #6, Flat, SS	1.00	1.00
107	83-95-019	Washer, #8, Flat, SS	3.00	3.00
108	83-95-028	Washer, 1/4, Flat, SS	1.00	1.00
109	83-25-996	Terminal, Female Disc, Red	4.00	4.00
110	76-05-005	Filter, Interference, Power Line EMI	1.00	1.00
111	88-99-224	Ferrrite, Split, EMI Suppression	1.00	1.00
112	BM-C212	Label, CE Approval, EMC Directives	1.00	1.00
113	AP-BA-C91	Azimuth Tracker Paint Masking Procedure	-	-
114	TP-BA-C91	Az Tracker Assy Adjustment/Test Procedure	-	-
120	BM-C161/A	Foam, High Den 17-1/4X14X2	2.00	2.00
121	BM-C161/B	Foam, HD 17-1/4X16-1/4X2	3.00	3.00
122	BM-C161/C	Foam, SuperBlu 18X16-1/4X1	1.00	1.00

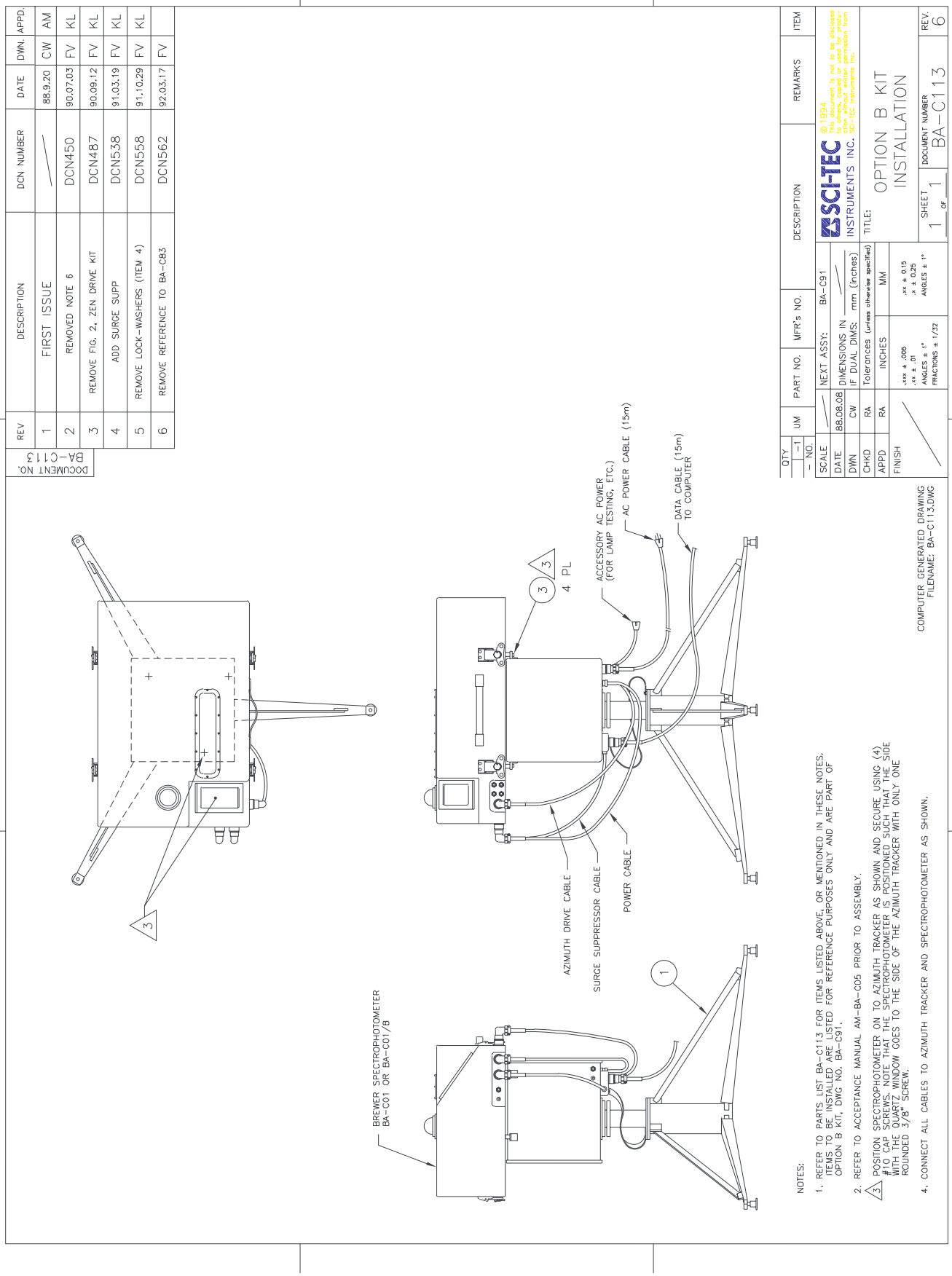


Figure 10.1-4.3

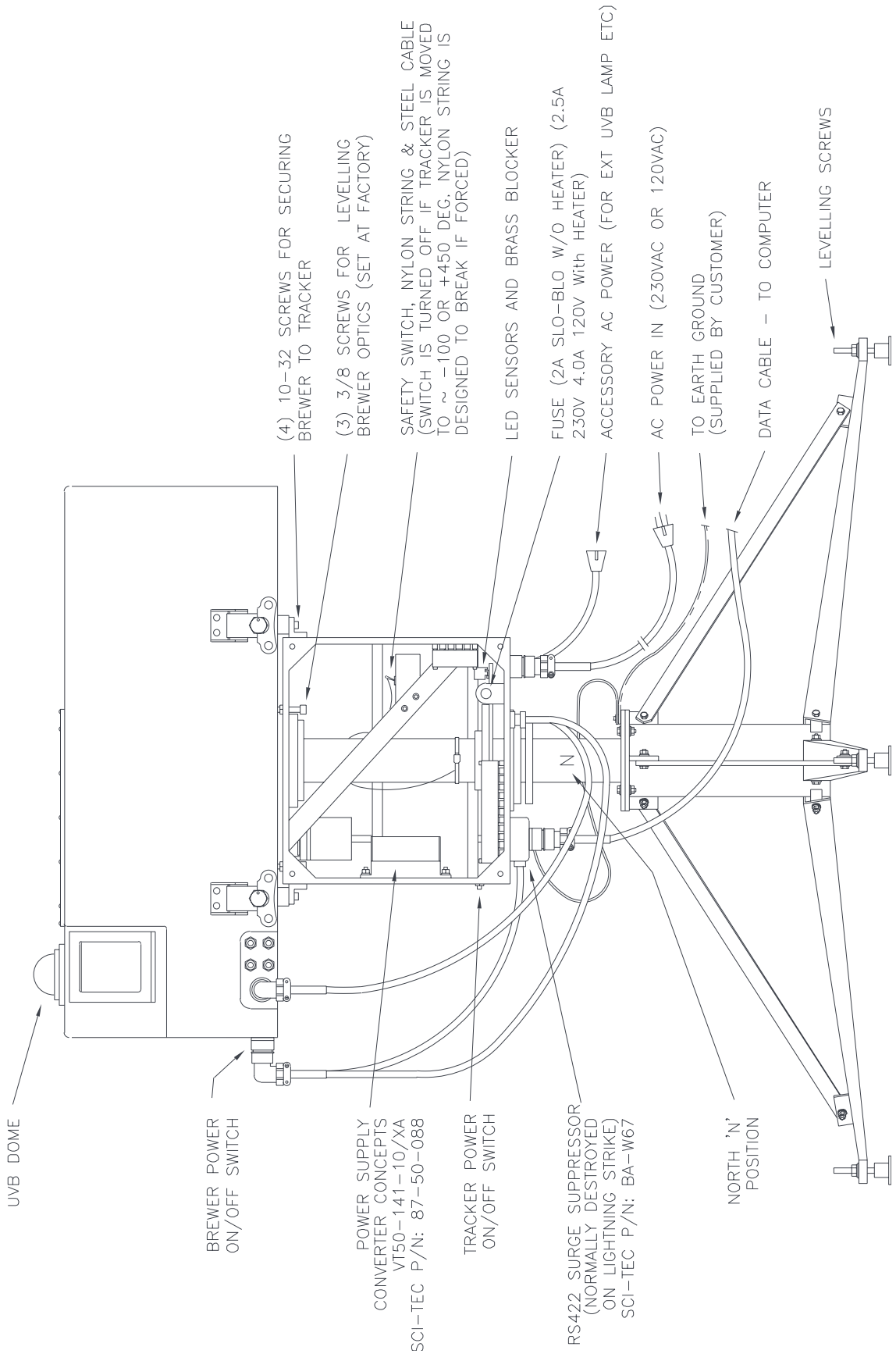


Figure 10.1-4.4

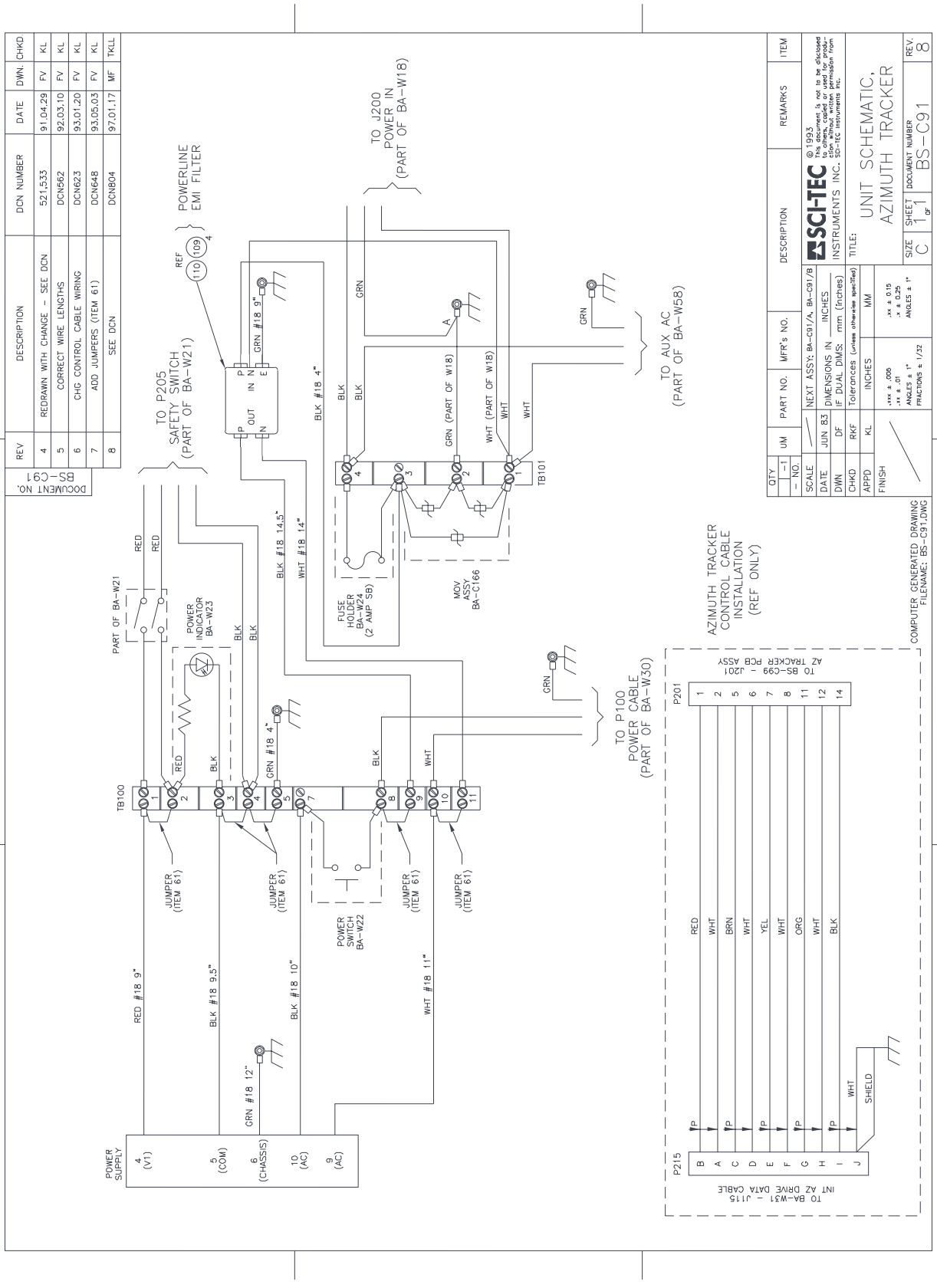


Figure 10.1-4.5

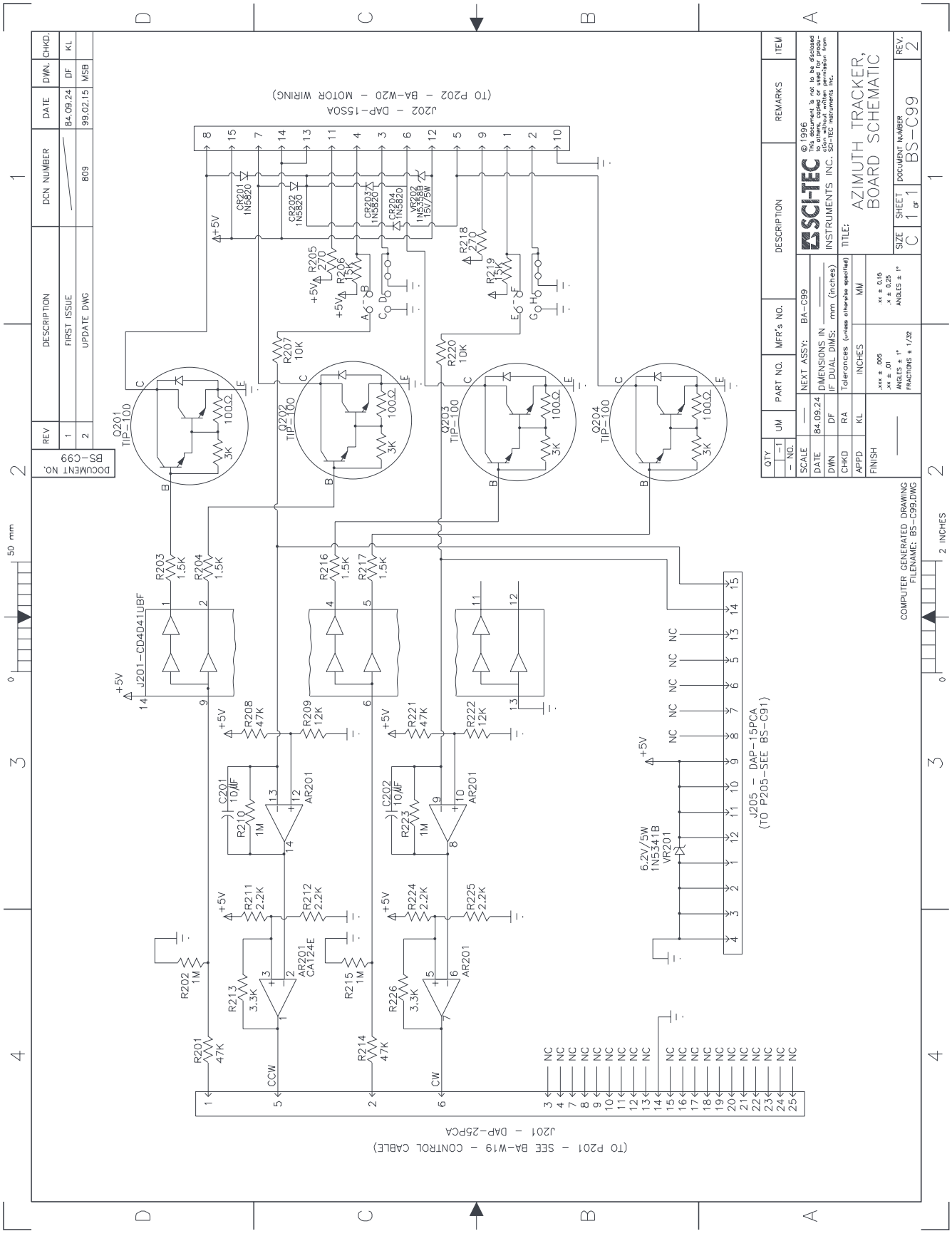


Figure 10.1-4.6

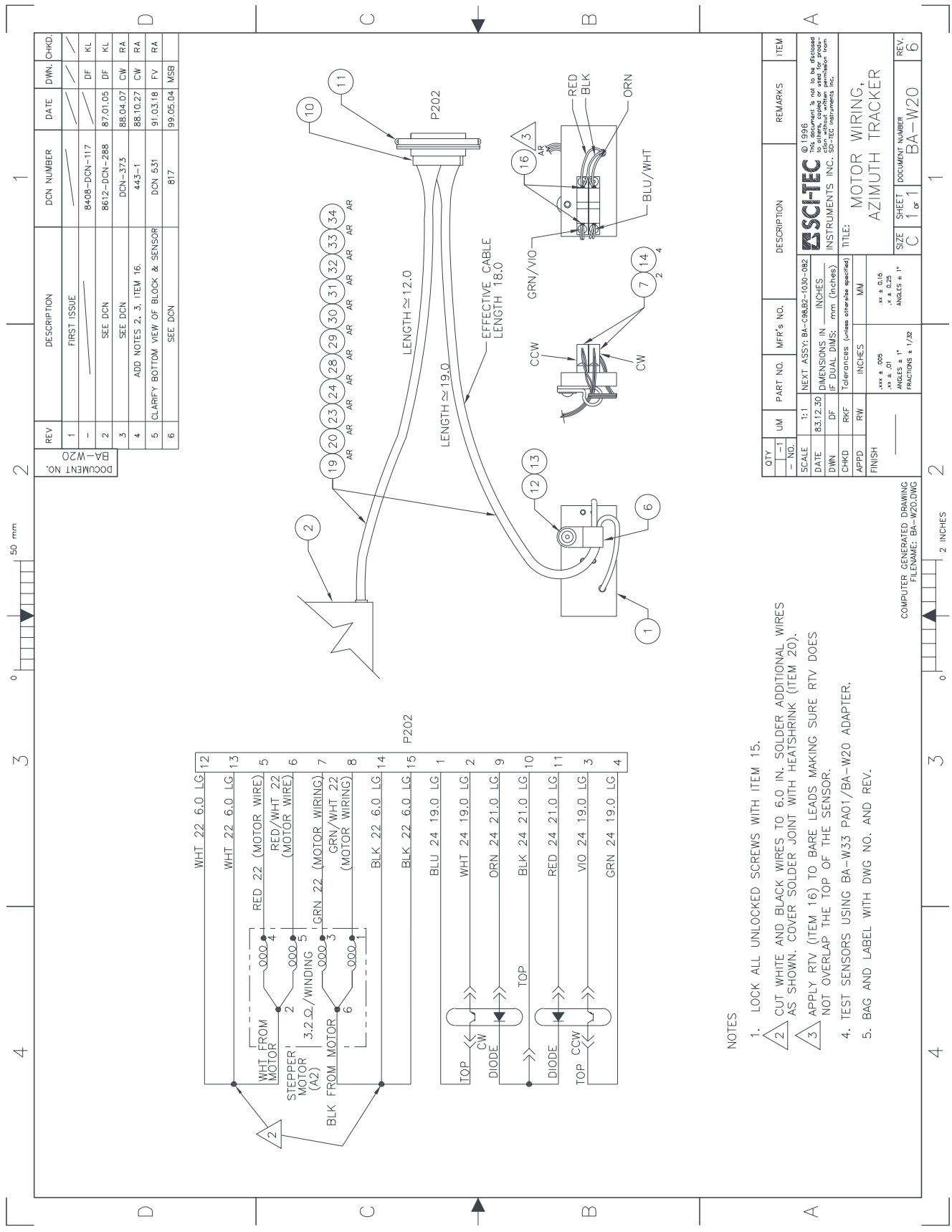


Figure 10.1-4.7

I D E A S T H A T P O W E R T E C H N O L O G Y

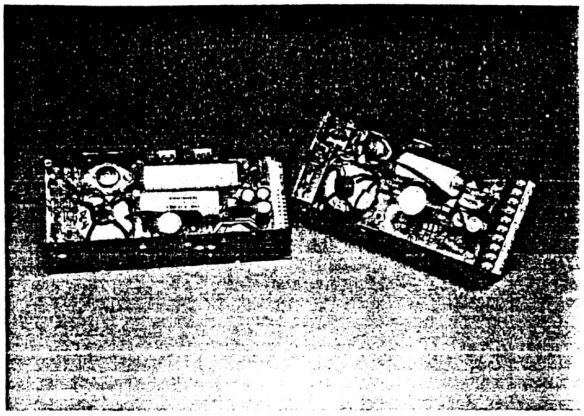
VT 50/VX 50
TECHNICAL DATA

CONVERTER CONCEPTS INC

SCI-TEC # 87-50-088
(VT50-141-10/XA)

FEATURES

- 50 Watt Switching Power Supply
- Single, Dual and Triple Output
- AC/DC or DC/DC Models Available
- Best Low DC Input-High Power Output Ratio
- Overvoltage Limit Protection
- UL Recognized



SPECIFICATIONS

Efficiency AC Input:
Single Output: 75% Typical 70% Min.
Multiple Output: 70% Typical 65% Min.
Efficiency DC Input:
Single Output: 75% Typical 55% Min.
Multiple Output: 70% Typical 50% Min.
Turn-On Overshoot: None
Turn-On Surge Current: Limited by active soft-start to 5A 1st cycle
Turn-On Time: 100 msec.
Hold-Up Time: 90 VAC Input (low line) 12 msec.
115 VAC Input (nominal line) 20 msec.
250 VAC Input 180 msec.
Ripple: 20 mV pk-pk Max.
Switching Noise: 2 MHz @ 20 kHz Rep. Rate; 100 mV pk-pk or 1%
Transient Response: 0.5V excursion for 50% to 100% or 100% to 50% load change with return to regulation in 2 msec. Load change 1 A/μ sec.
Operating Temp: −20°C to +80°C Base Plate Full Load. −20°C to +55°C Free Air Full Load. Derate linearly to 50% output at 80°C
Temperature Coefficient: 0.02%/°C
Storage Temp: −55°C to +85°C
Isolation:

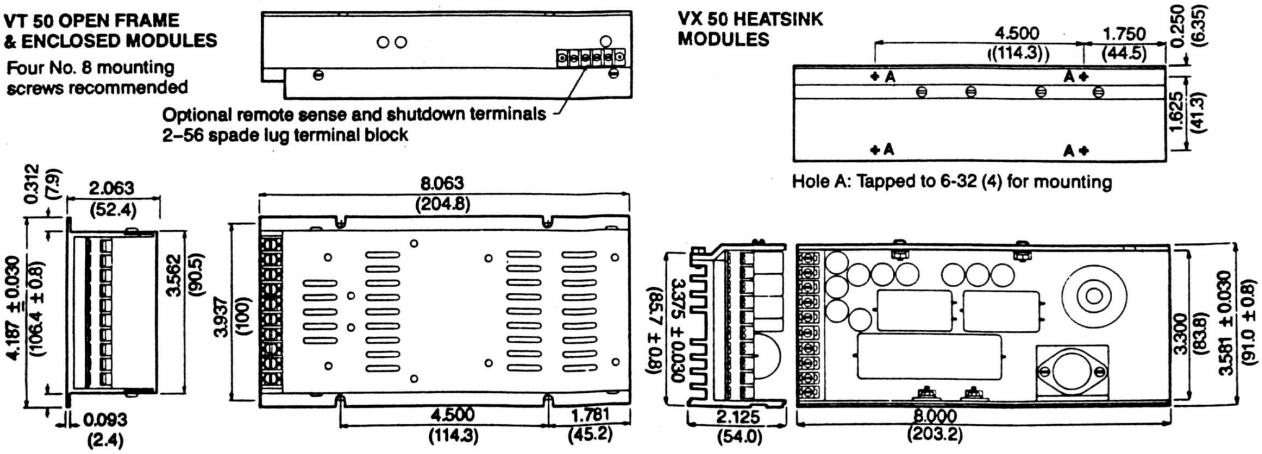
	Input	
Hipot	**AC**	**DC**
Input to Output	1.5kVAC	250 VDC
Input to Case	1.5kVAC	250 VDC
Output to Case	250 VDC	250 VDC

Shock & Vibration: Designed to withstand normal commercial shock and vibration conditions.
Short Circuit Protection: Current limited for overload and short circuit protection.
Multiple Output Regulation Specifications:
Regulation: Line, All Outputs: .3%
Regulation: Load, Output No. 1: 20% Load—Full Load 1%
Regulation: Load, All Other Outputs: 50 ma—Full Load 1.5%

	% of Full Load Current				
Output #1 load current	20	35	50	75	100
Each Auxiliary load current	50	75	100	100	100

Size: VT 50 2.063" x 4.187" x 8.063" (52.4 x 106.4 x 204.8 mm)
Size: VX 50 2.125" x 3.581" x 8.000" (54.0 x 91.0 x 203.2 mm)
Weight: 2.0 lbs. (0.91 kg)

MECHANICAL DIMENSIONS



Dimensions shown in inches. Dimensions in parentheses ( ) indicate millimeters. Tolerance ± 0.010 (0.3 mm) unless otherwise noted.

Figure 10.1-4.8

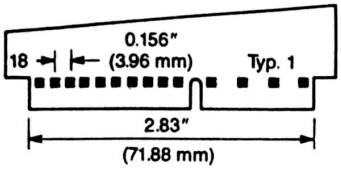
VT 50/VX 50

CONVERTER CONCEPTS INC
Industrial Parkway • Pardeeville, WI 53954
(608) 429-2144 • TWX: 910-280-2630
Toll-Free 800/253-5227

SCI-TEC #87-50-088 (VT50-141-10/XA)

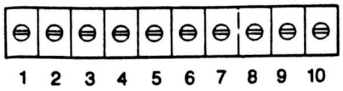
TERMINATION OPTIONS

SQUARE PINS (OPTIONAL)



18. V3 Output
17. V4 Output
16. V4 Output
15. V2 Output
14. V2 Output
13. V1 Output
12. V1 Output
11. Ground
10. Ground
9. Chassis
8. Keyslot
7. −V Input
6. NC
5. +V Input
4. NC
3. AC Input
2. NC
1. AC Input

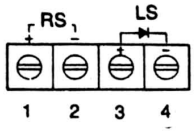
4-40 TERMINAL BLOCK (STANDARD)



TYPICAL

1. V3 Output
2. V4 Output
3. V2 Output
4. V1 Output
5. Return
6. Chassis
7. −DC Input
8. +DC Input
9. AC Input
10. AC Input

REMOTE SENSE AND LOGIC SHUTDOWN



1. RS +
2. RS −
3. LS +
4. LS −

Caution:
Shutdown Current 20mA max.

INPUT AND OUTPUT RANGES

INPUT VOLTAGE RANGE (SERIES SPECIFIC)

Input Option	Input Voltage Range AC	DC	Frequency in Hz	Input Fuse (User Provided)
1	90-250	100-350	44-440	1.0A Slow Blow Fuse
2		10-40		10.0A Slow Blow Fuse
3		20-60		5.0A Slow Blow Fuse

OUTPUT RANGE (SERIES SPECIFIC)

Model No.	Output	Volts	Amps	Adjustment
14	V1	+5	0-10	±10%
16	V1	+12	0-5	±10%
17	V1	+15	0-4	±10%
18	V1	+28	0-2	±10%
22	V1 V3	+5 −5	1.8-9 .05-1	±10% ±5% Fixed

Model No.	Output	Volts	Amps	Adjustment
24	V1 V2	+5 +12	1.6-8 .05-1	±10% ±5% Fixed
26	V1 V3	+12 −12	.6-3 .05-1	±10% ±5% Fixed
27	V1 V3	+15 −15	.4-2 .05-1	±10% ±5% Fixed
32	V1 V2 V3	+5 +12 −5	1.2-6 .05-1 .05-1	±10% ±5% Fixed ±5% Fixed
34	V1 V2 V3	+5 +12 −12	1-5 .05-1 .05-1	±10% ±5% Fixed ±5% Fixed
37	V1 V2 V3	+5 +15 −15	1-5 .05-.8 .05-.8	±10% ±5% Fixed ±5% Fixed

SELECTING A UNIT: VT 50/VX 50

Series	Total Power	—	No. of Outputs	Output Range	Input	—	Package	Termination	/	Group 1 Options	Group 2 Options
X	X	—	X	X	X	—	X	X	/	X	X
VT Standard VX Heat Sink (open frame only)	50		1 2 3	2 4 6 7 8 See series specific output range	1 2 3 See series specific input range		0 Open Frame 1 Enclosed 2 P.C. Board	0 Terminal Block 1 Square Pin 2 Wire Holes Only		A B C D E F G H I J K See group 1 chart	A B C D E F G See group 2 chart

GROUP 1 OPTIONS	Remote Sense	Logic Shut-down	Overvoltage Shutdown Protection	Power Fail Detect
A	•			
B		•		
C			•	
D				•
E	•	•		
F	•		•	
G	•			•
H		•	•	
I		•		•
J	•	•	•	
K	•	•		•
X	No Options			

GROUP 2 OPTIONS	Regulated	Reverse Polarity Protection	Thermal Shut-down
A	•		
B		•	
C			•
D	•	•	
E	•		•
F		•	•
G	•	•	•
X	No Options		

For all U.L. recognized products, the application criteria is available at customer request. This material will give additional guidelines for installation and operation as per Underwriters Laboratory.

	BA-C113	Azumuth Tracker Installation Kit	
Item No.	Part No.	Description	Qty
1	BA-C91	Azimuth Tracker Assy	1.00
3	83-79-116	Screw, 10-32 x 5/8"Lg, Skt Hd, Cap, SS	4.00

	BA-C224	External Cable Kit Assy		
Item No.	Part No.	Description	120 V Qty	230 V Qty
1	BA-W12	Power Cable Assy	1.00	1.00
2	BA-W68	Data Cable Assy, RS422	1.00	1.00
3	94-38-020	XFormer, AC WL PLG, 220V/9V	--	1.00
4	BA-W85/A	Cable Assy, Data, 15M	1.00	1.00
8	20-10-060	Conn Adapter, F25P-F25P	1.00	1.00
9	20-10-075	Intrface Conn, RS232-RS422	1.00	1.00
10	20-10-083	Cable, Serial, 10FT, 25M-9F	1.00	1.00

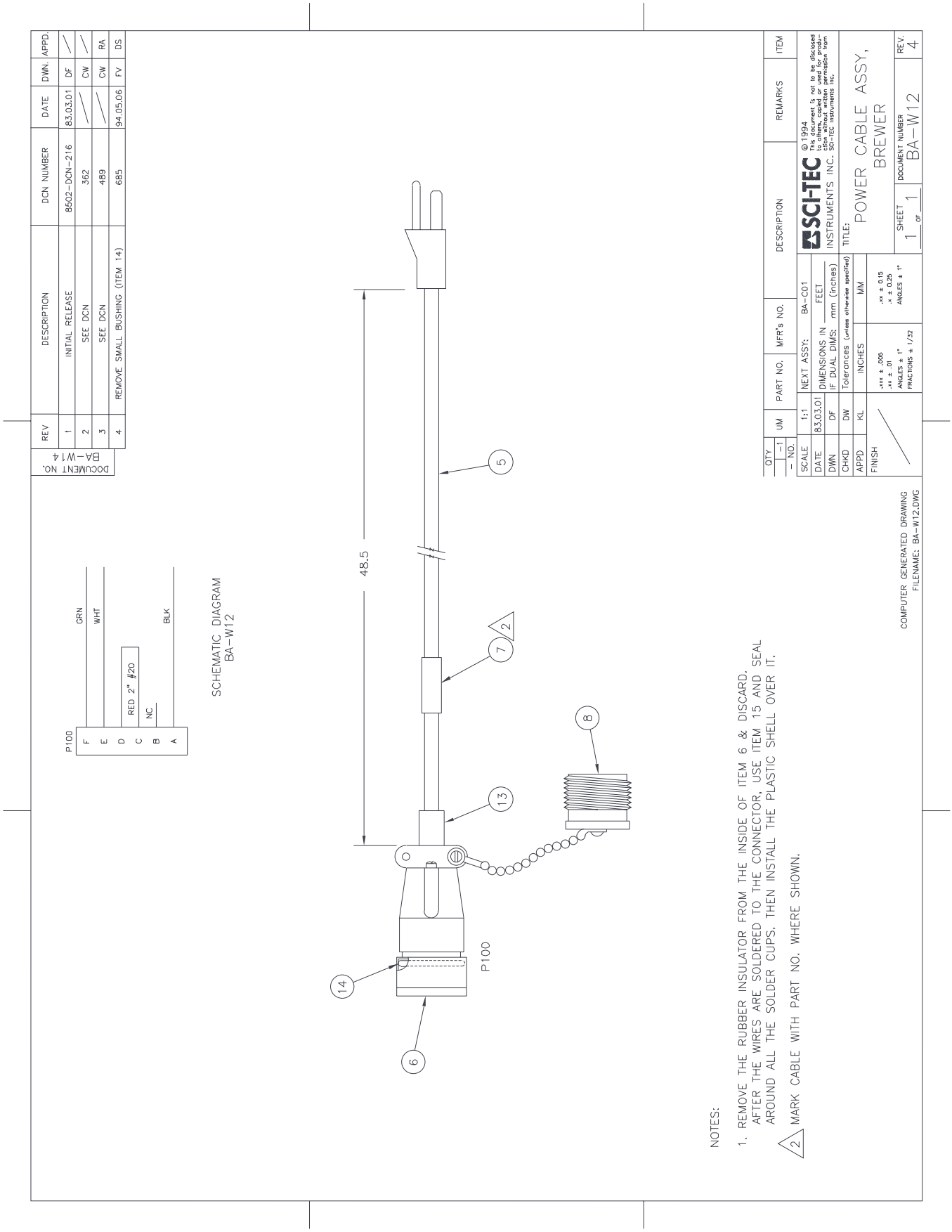


Figure 10.1-5.1

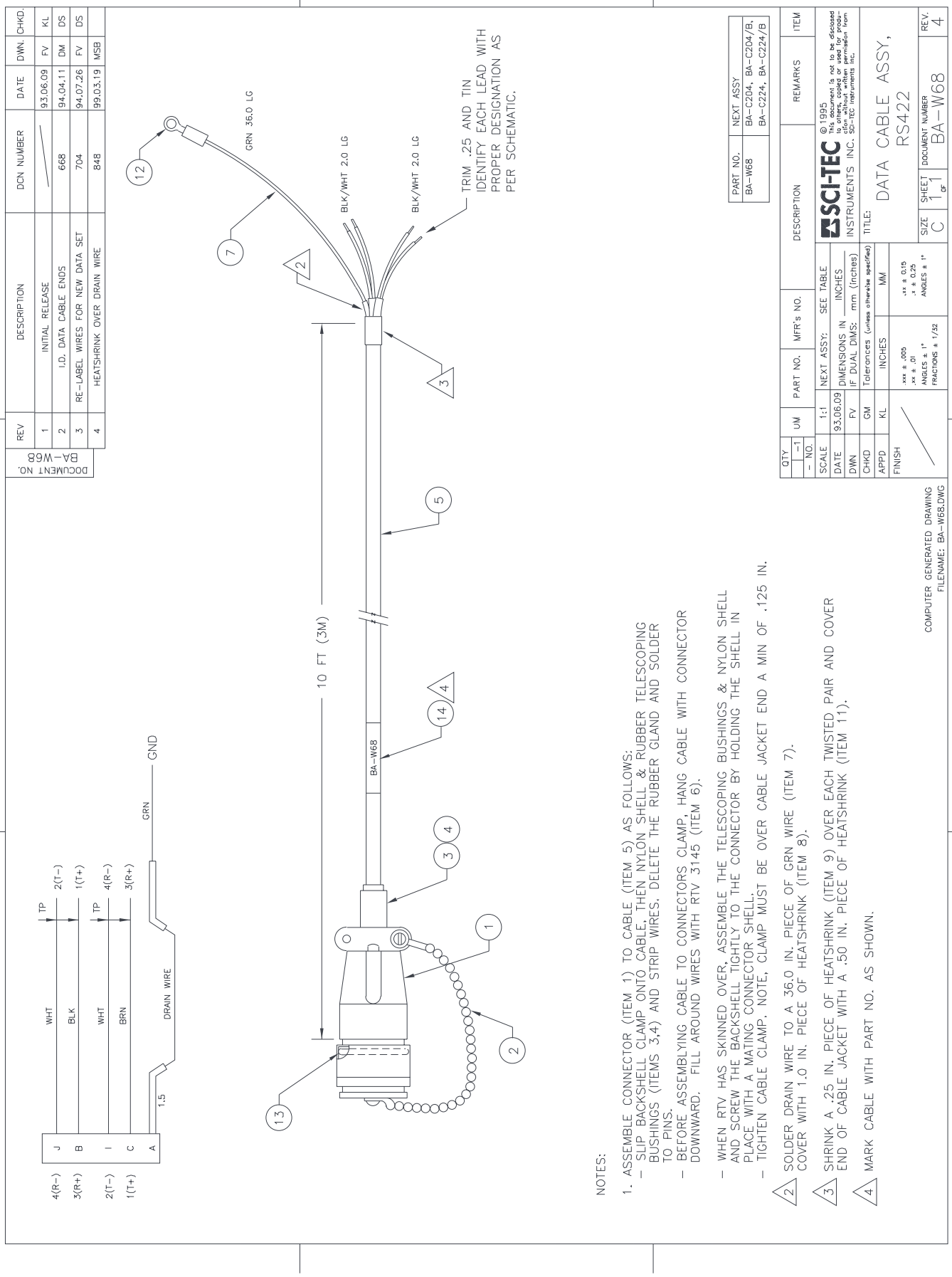


Figure 10.1-5.2

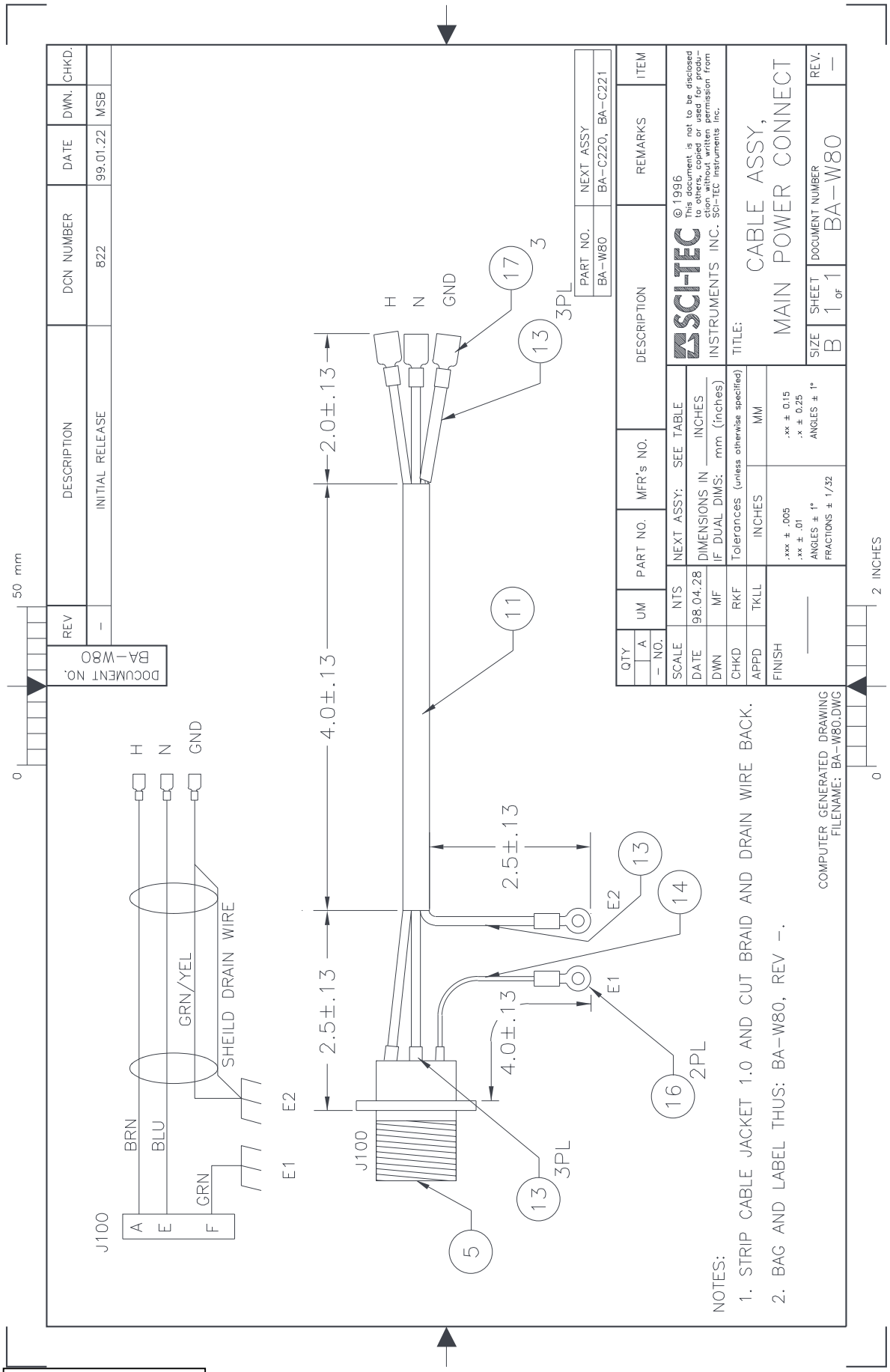
Item No.	BA-C222 Part No.	Brewer Electronics Spares Kit Description	Qty
2	BA-C99	Azimuth Tracker Board Assy	1.00
3	BA-E103/B	Power Supply Assy, 12V	1.00
4	BA-E124	Electronic PCB Brkt Assy	1.00
5	BA-P23	High Speed Amp Board Assy	1.00
6	BA-W76/A	CABLE ASSY, MAIN TO MOTOR, 29.0	1.00
7	BA-W76/B	CABLE ASSY, MAIN TO MOTOR, 27.0	1.00
8	BA-W76/C	CABLE ASSY, MAIN TO MOTOR, 20.0	1.00
9	BA-W77/B	CABLE ASSY, MAIN TO HV, 16.0	1.00
10	BA-W78	CABLE ASSY, HV BRD TO PMT	1.00
11	70-10-020	Silica Gel Indicating	2.00
12	93-70-401	Standard Lamp	3.00
13	93-70-406	Lamp, HG Germicidal	3.00
14	87-50-088	Power Supply, Switching, 5VDC, 10A	1.00
15	70-10-015	Desiccant Bag	6.00
16	75-01-020	Battery, Lithium, 3V, 1AH	1.00

Item No.	BA-C112/B Part No.	BREWER Standard Spares Kit Description	Qty
1	12501365-2	Desiccant Holder Assy	1.00
2	70-10-014	Desiccant Cartridge	--
3	70-10-013	Desiccant Humidity Indicator	2.00
4	70-10-015	Desiccant, 4 Unit, Type II, TYVEK Bag	3.00
5	93-70-401	Lamp, Tungsten, Halogen, 20W, 12V	2.00
6	93-70-406	Lamp, HG Germicidal (GTL3)	2.00
7	91-15-217	Fuse, 5A, 250V, Fast-Blow	2.00
8	91-15-257	Fuse, 2A, 125V, Slow-Blow	--
9	91-15-220	Fuse, 1A, 250V, FB, 5X20MM	2.00
10	91-15-834	Fuse, 2A, 250V, SB 5X20MM	2.00
11	91-15-223	Fuse, 2A, 250V, FB, 5X20MM	2.00
12	91-15-280	Fuse, 4A, 125V, SB, 5X20MM	2.00
13	92-90-002	Tool, Hex Key, .035"	1.00
14	92-90-020	Allen Wrench Kit, Ball Point	1.00
15	83-79-116	Screw, #10-32 x 5/8"Lg, Skt Hd Cap, SS	4.00
16	92-22-050	Insertion/Extraction Tool, 'D' Connector	1.00

BREWER REFERENCE DOCUMENTATION

Section 10.2 Power Supply and Harness — Figure

- Main Power Connect Cable Assembly BA-W80 — 10.2-1
- Primary AC power Interconnect Harness Assembly BA-W81 — 10.2-2
- Power Supply Assembly BA-E103/B — 10.2-2.1
- Power Supply data sheet — 10.2-2.2
  10.2-2.3


REV | DESCRIPTION | DCN NUMBER | DATE | DWN. | CHKD.
– | INITIAL RELEASE | 822 | 99.01.22 | MSB |
DOCUMENT NO. BA–W80
PART NO. | NEXT ASSY
BA–W80 | BA–C220, BA–C221
QTY | UM | PART NO. | MFR's NO. | DESCRIPTION | REMARKS | ITEM
– NO. | A
SCALE NTS
DATE 98.04.28
DWN MF
CHKD RKF
APPD TKLL
NEXT ASSY: SEE TABLE
DIMENSIONS IN INCHES
IF DUAL DIMS: mm (inches)
Tolerances (unless otherwise specified)
INCHES .xxx ± .005 .xx ± .01 ANGLES ± 1° FRACTIONS ± 1/32
MM .xx ± 0.15 .x ± 0.25 ANGLES ± 1°
FINISH
SCI-TEC INSTRUMENTS INC.
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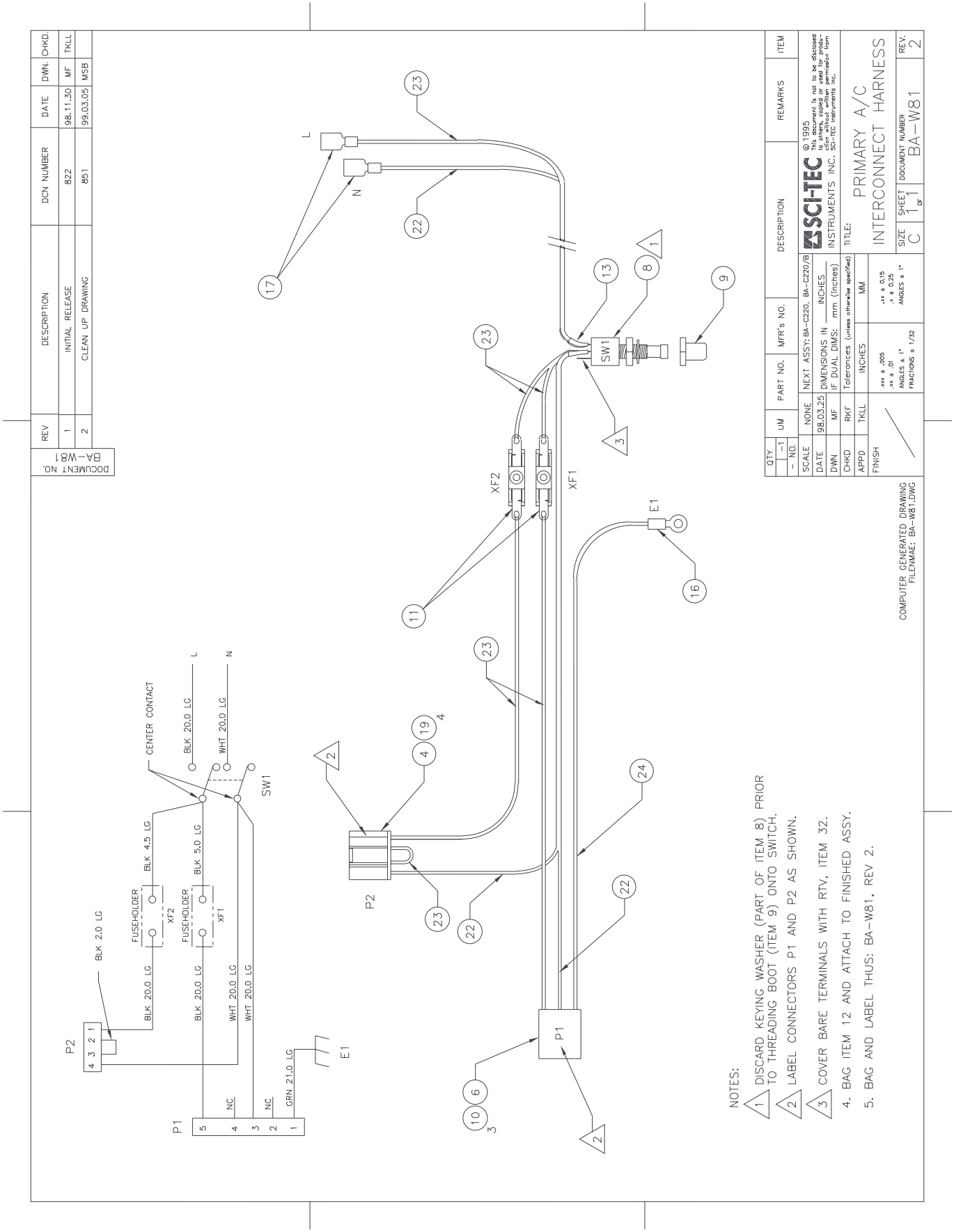
TITLE: CABLE ASSY, MAIN POWER CONNECT
SIZE B | SHEET 1 OF 1 | DOCUMENT NUMBER BA–W80 | REV. –
COMPUTER GENERATED DRAWING FILENAME: BA–W80.DWG
0 50 mm
0 2 INCHES
H N GND
17 3
13 3PL
2.0±.13
4.0±.13
2.5±.13
11
13
14
E2
E1
4.0±.13
2.5±.13
13 3PL
5
16 2PL
J100
A E F
BRN BLU GRN
GRN/YEL
SHEILD DRAIN WIRE
NOTES:
1. STRIP CABLE JACKET 1.0 AND CUT BRAID AND DRAIN WIRE BACK.
2. BAG AND LABEL THUS: BA–W80, REV –.

Figure 10.2-1


DOCUMENT NO. BA-W81
REV | DESCRIPTION | DCN NUMBER | DATE | DWN. | CHKD.
1 | INITIAL RELEASE | 822 | 98.11.30 | MF | TKLL
2 | CLEAN UP DRAWING | 851 | 99.03.05 | MSB |
QTY - NO. | U/M | PART NO. | MFR's NO. | DESCRIPTION | REMARKS | ITEM
SCALE NONE | NEXT ASSY: BA-C220, BA-C220/B
DATE 98.03.25 | DIMENSIONS IN INCHES IF DUAL DIMS: mm (inches)
DWN MF | CHKD RKF | APPD TKLL | FINISH | Tolerances (unless otherwise specified): INCHES MM .xxx ± .005 .xx ± .01 ANGLES ± 1° FRACTIONS ± 1/32 .xx ± 0.15 .x ± 0.25 ANGLES ± 1°
SCI-TEC INSTRUMENTS INC.
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TITLE: PRIMARY A/C INTERCONNECT HARNESS
SIZE C | SHEET 1 OF 1 | DOCUMENT NUMBER BA-W81 | REV. 2
COMPUTER GENERATED DRAWING FILENAME: BA-W81.DWG
NOTES:
1. DISCARD KEYING WASHER (PART OF ITEM 8) PRIOR TO THREADING BOOT (ITEM 9) ONTO SWITCH.
2. LABEL CONNECTORS P1 AND P2 AS SHOWN.
3. COVER BARE TERMINALS WITH RTV, ITEM 32.
4. BAG ITEM 12 AND ATTACH TO FINISHED ASSY.
5. BAG AND LABEL THUS: BA-W81, REV 2.
P1
P2
SW1
XF1
XF2
E1
L
N
CENTER CONTACT
BLK 20.0 LG
WHT 20.0 LG
BLK 4.5 LG
BLK 5.0 LG
BLK 2.0 LG
FUSEHOLDER
NC
GRN 21.0 LG

Figure 10.2-2

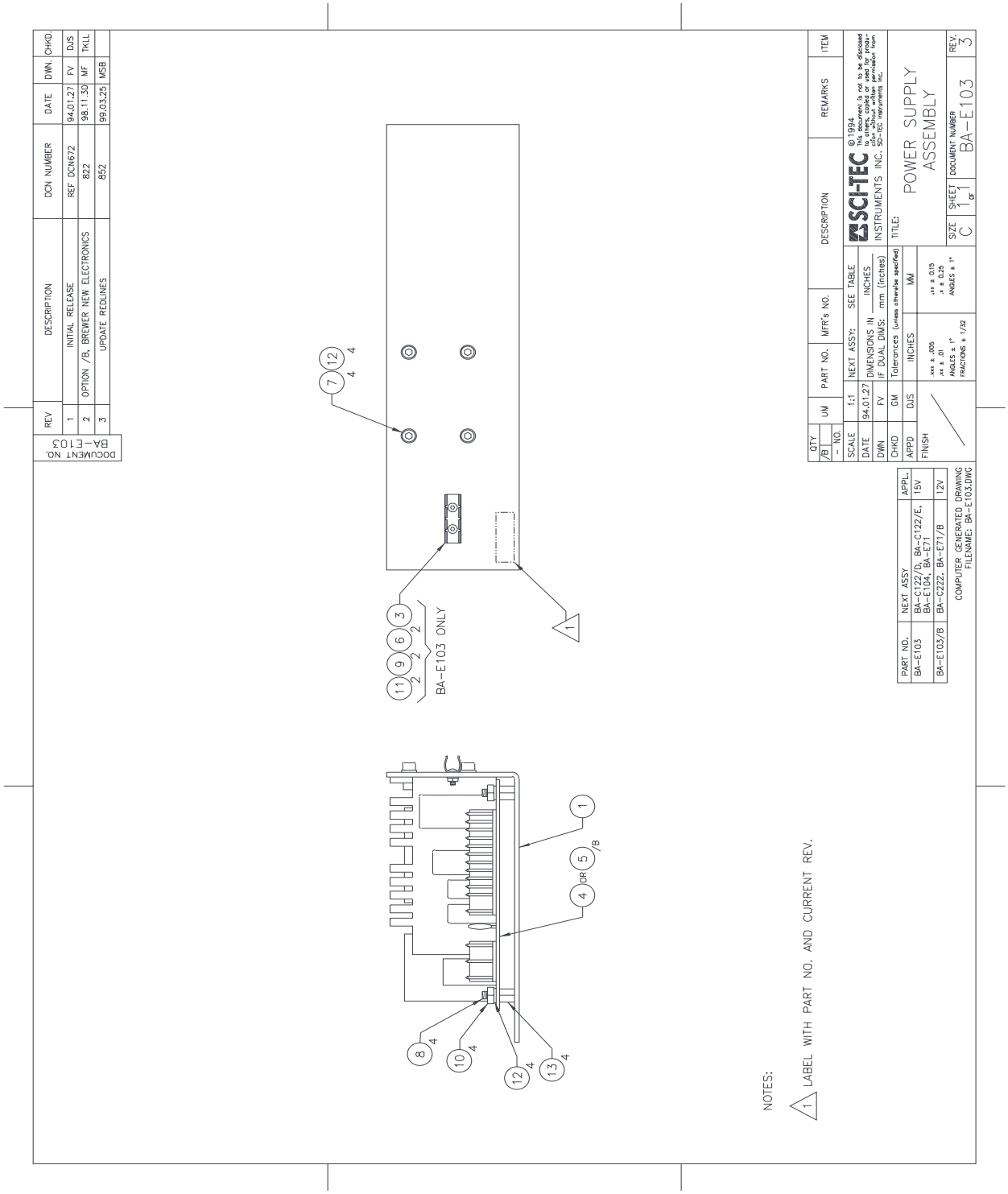

Figure 10.2-2.1

Item No.	BA-E103/B Part No.	Power Supply Assembly Description	Qty
1	BM-E102	Mounting Bracket, Main Power Supply	1.00
3	89-90-220	Mounting Clip, Axial Lead Resistor	--
4	87-50-098	Power Supply, 80W, O/P,Switch,+-15V	--
5	87-50-099	Power Supply, 80W, O/P,Switch,+-12V	1.00
6	83-51-752	Screw, #2-56 x 1/4"Lg, Btn Hd Hex, SS	--
7	83-79-068	Screw, #6-32 x 3/8"Lg, Skt Hd Hex	4.00
8	83-85-724	Screw, #6-32 x 5/8"Lg, Flt Hd, 100Deg, SS	4.00
9	83-40-219	Nut, #2-56 x 3/16", Hex, SS	--
10	83-40-261	Nut, #6-32 x 5/16", Hex, SS	4.00
11	83-95-603	Washer, #2, Internal Tooth Lock, SS	--
12	83-95-605	Washer, #6, Internal Tooth Lock, SS	8.00
13	83-09-210	Spacer, Threaded, #6-32 x 1/4"Lg, Hex	4.00

Item No.	BA-E71/B Part No.	Main Power Supply Kit Assembly Description	Qty
1	BA-E103	Power Supply Assy, 15V	--
2	BA-E103/B	Power Supply Assy, 12V	1.00
4	BM-E79	Cover, Main Power Supply	1.00
6	83-09-050	Spacer, Threaded, #6-32 x 2-1/4"Lg, Hex	4.00
8	77-22-074	Rivet, Dome Hd, 5/32 Dia x 1/4"Lg, Alum	--
10	83-95-785	Washer, #6, Sealing, 3/8 OD	4.00
11	83-95-605	Washer, #6, Internal Tooth Lock, SS	4.00
13	83-30-110	Grommet, Edging, Flexible, Nylon	4.10
15	85-10-143	Adhesive (Loctite Prism 401)	0.10
16	83-51-780	Screw, #6-32 x 1/4"Lg, Btn Hd Hex, SS	4.00
17	83-51-784	Screw, #6-32 x 1/2"Lg, Btn Hd Hex, SS	4.00
19	70-10-014	Dessicant Cartridge	--
20	89-90-250	Clip, Steel, Nickel Plated, 1.437-1.687 Dia	--

NFS80 SERIES
80 Watt Universal Input Switching Power Supplies

- Balanced-current auxiliary outputs
- Universal input voltage
- Overvoltage protection
- Short circuit protection with auto-recovery
- 80 watts continuous, 110 watts peak output power
- Two year warranty
- Recommended for new designs

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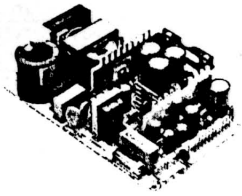
NEW!



The NFS80 series consist of universal input, four output switching power supplies useful in motor or line driver applications. The equally rated or "balanced" outputs will each deliver up to 3A continuous and 6A peak output current. Furthermore, these supplies will deliver 80 total continuous watts with natural convection cooling, or 110 watts with forced air cooling. For starting loads such as disk drives, they will deliver 110 peak watts.

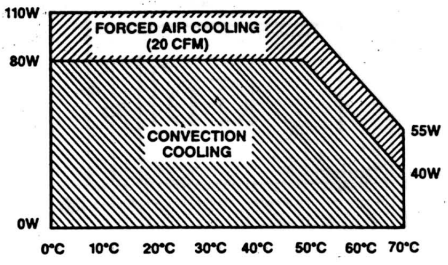
Universal input allows the supply to operate from any line voltage throughout the world without a switch or jumper setting. The NFS80 series is approved by UL, CSA and VDE, and its built-in line filter reduces conducted noise below FCC and VDE limit B.

Model Number	Output Voltage(1)	Minimum	Output Currents Maximum(2)	Maximum(3)	Peak(4)	Ripple P-P(5)	Total Regulation(6)
NFS80-7602	+5V (A)	1A	8A	1.2A	20A	50mV	±2%
	+24V (B)	0A	2A	2.5A	3A	240 mV	+10%-5%
	+12V (C)	0A	2.5A	3A	6A	120mV	±3%
	12V (D)	0A	2.5A	3A	6A	120mV	±3%
NFS80-7606	+5V (A)	1A	8A	12A	20A	50mV	±2%
	+24V (B)	0A	2A	2.5A	3A	240mV	+10%-5%
	+15V (C)	0A	2.5A	3A	6A	150mV	±3%
	15V (D)	0A	2.5A	3A	6A	150mV	±3%

Notes:
(1) The floating fourth output (D) can be referenced as either positive or negative.
(2) Natural convection cooling.
(3) Forced air cooling, 20 CFM @ 1 atmosphere.
(4) Peak output current lasting less than 60 seconds with duty cycle ≤ 10%. During peak loading, outputs may exceed total regulation limits.
(5) 50 MHz bandwidth, peak-to-peak, measured differentially.
(6) Total regulation is defined as the static output regulation at 25°C, including initial tolerance, line voltage within stated limits, load currents within stated limits, and output voltages adjusted to their factory settings. Also, for stated regulation on the +24V output, I(A)/I(B) ≤ 5.

Operating Temperature Limits and Output Power Range

For optimum reliability, no part of the heatsink should exceed 110°C, and no semiconductor case temperature should exceed 115°C. CAUTION: make primary circuit thermal measurements approximately one second after disconnecting line power to minimize shock hazard and damage to thermal measurement equipment.



COMPUTER PRODUCTS A

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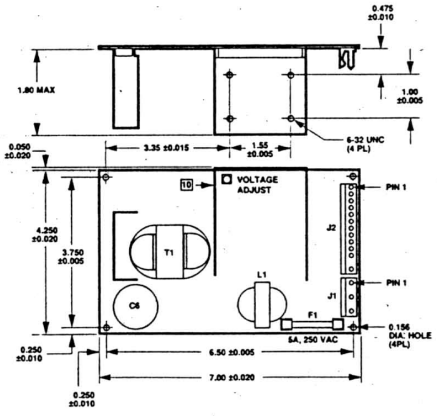
Figure 10.2-2.2

SPECIFICATIONS

Parameter	Condition	Limits
Input Voltage		85VAC to 264VAC
Input Frequency Range		47Hz to 440Hz
Input Surge Current	Cold start 115VAC 230VAC	17A max 34A max
Conducted RFI		FCC limit B, VDE limit B
Safety Ground Leakage Current	110VAC, 60Hz 233VAC, 50Hz	0.2 mA maximum 0.4 mA maximum
Line Regulation	Low line to high line, full load	±0.1% max
Overshoot/Undershoot	Turn-on	None
Transient Response	+5V output, 2.5A to 5A load change	150mV transient, setting to 1% in 1mS
Temperature Coefficient	All outputs	0.02%/C
Overvoltage Protection Threshold	+5V output	6.25V ±0.75V
Output Voltage Adjustability	+5V output	±3%
Total Output Power	50°C ambient temperature Continuous, convection cooling forced air cooling Peak	 80 watts 110 watts 110 watts
Holdup Time	 220VAC input 180VAC input 115VAC input 90VAC input	80W / 110W 140mS / 100mS 80mS / 50mS 35mS / 17mS 12mS / 8mS
Efficiency	115VAC input, 80W	70% typical
Operating Frequency	0W, 90 to 264VAC 110W, 90 to 264VAC	100 to 250 kHz 20 to 70 kHz
Altitude	Operating Non-operating	10,000 feet max 40,000 feet max
Temperature	Operating Non-operating	0°C to 50°C −40°C to +85°C
Relative Humidity	Non-condensing	5% to 95%
Vibration	Three orthogonal axes, random vibration, 10 minute test for each axis	2.4G rms (appx) 5Hz to 500Hz
MTBF	MIL-HDBK 217E, 25°C	125,000 hr
Weight		1.3 lb (0.6 Kg)

PIN CHART — CONNECTOR

J1			
Pin 1	AC Ground	AC Ground	Molex 09-50-3051 with second and fourth pins removed
Pin 2	AC Neutral	AC Neutral	
Pin 3	AC Hot	AC Hot	
J2			
Pin 1	+5.1V	+5.1V	Molex 09-50-3131 Mating connector: Molex 2139 series housing with 2878 series crimp terminal.
Pin 2	+5.1V	+5.1V	
Pin 3	+5.1V	+5.1V	
Pin 4	Return	Return	
Pin 5	Return	Return	
Pin 6	Return	Return	
Pin 7	Return	Return	
Pin 8	+12V	+15V	
Pin 9	+12V	+15V	
Pin 10	−12V Ret	−15V Ret	
Pin 11	−12V	−15V	
Pin 12	Removed for key		
Pin 13	+24V	+24V	



(7) Pins 10 and 11 are a floating output, which can be referenced as either positive or negative. Pin 10 is positive with respect to pin 11. Either pin 10 or 11 must be connected to Return (pins 4-7) for proper operation.
(8) All dimensions are in inches and (mm).
(9) Either metallic or non-metallic standoffs can be used in all four mounting holes without affecting VDE safety approval. The diameter of metal standoffs, if used, must not exceed 0.212".
(10) This heat sink is grounded, and allows system grounding when mechanically connected to the system chassis. Alternatively, the ground pad encircling the mounting hole near J1 allows system grounding through a metal standoff to the system chassis.
(11) It is always advisable to attach the power supply heat sink to another thermal dissipator (such as a chassis, a finned heat sink, etc.). The resulting temperature decrease of heat sink-mounted components will improve power supply lifetime.
(12) The supply must be mechanically supported using the PCB mounting holes, and may be additionally supported by the heat sink mounting holes.

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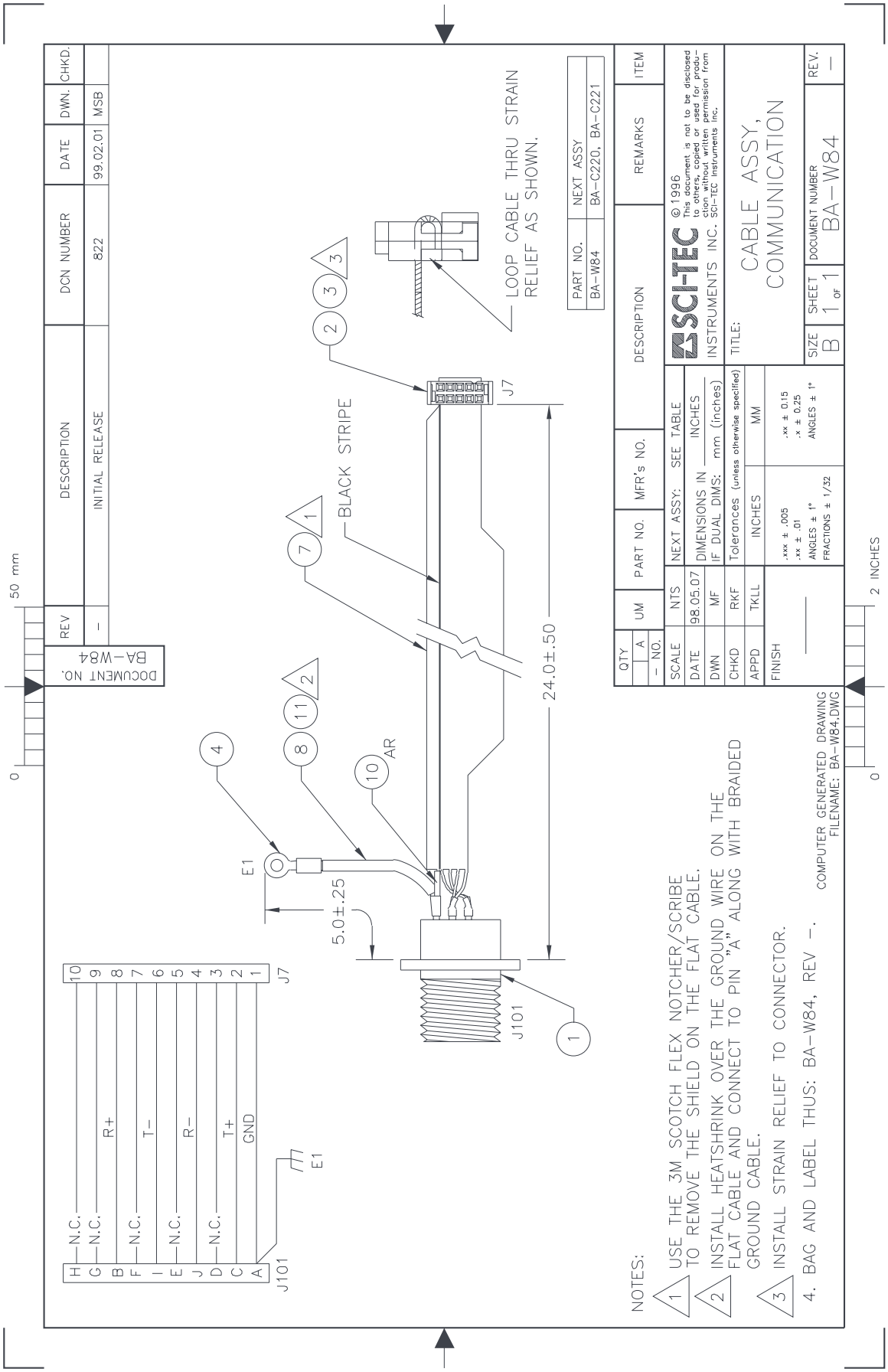
Figure 10.2-2.3

BREWER REFERENCE DOCUMENTATION

Section 10.3 Internal Cabling Figure

- Communication Cable Assembly BA-W84 10.3-1
- Internal Azimuth Drive Cable Assembly BA-W31 10.3-2
- DC to main & lamp Cable Interconnect Harness BA-W82 10.3-3
- Control Switch Cable assembly BA-W55 10.3-4
- Lamp Cable assembly BA-W83 10.3-5
- Motor Connectors Cable assembly BA-W76 10.3.6
- Main Lamp and HV Cable assembly BA-W77 10.3.7
- Hv board to PMT Cable assembly BA-W78 10.3.8

Item No.	BA-C220 Part No.	Base Assembly Description	Qty
3	BM-C215	Baseplate, Electronics, Weatherproof	1.00
4	BM-C13	Tapped Spacer	3.00
5	BM-C216	Plate, Fuse Holder	1.00
6	BM-C15	Rubr Bumpr Attachmnt Scrw	4.00
7	BM-C16	Shock Mnt V-Screw	3.00
8	BM-C17	Rubber Bumper, Mod	4.00
9	BM-C18	Locking Plate	4.00
10	BA-W84	Cable Assy, Communication	1.00
11	BA-W80	Cable Assy, Main Pwr Conn	1.00
12	BA-W31/B	Internl Az Dr Data Cable	1.00
13	BA-W55/B	Control Switch Cable Assy	1.00
14	BA-W81	Prim A/C Intrconnect Harn	1.00
16	BM-C08	Weatherproof Gasket	3.00
17	BA-W56	Power Indicator Assy, Brew	1.00
18	BM-C173	Connector Gasket	3.00
20	85-10-174	Adhesive, Sealant (Loctite 262)	1.00
22	76-05-005	Filter, Interf Pwrline 3A	1.00
23	91-15-223	Fuse, 2A, 250V, FB, 5MMx20MM	1.00
26	82-30-415	Mount Anti-Vib 14lb	--
27	82-30-416	Mount Anti-Vib 12lb	3.00
28	81-15-154	Cap + Chain for #18 Rec	3.00
29	83-79-070	Screw, 6-32 x 1/2 HSC, SS	4.00
31	83-79-047	Screw, 4-40 x 1/4 HSC SS	2.00
32	83-56-141	Screw, Set 6-32 x 1/8 Cup	2.00
33	83-51-765	Screw, 4-40 x 1/2 Button HD	12.00
34	83-51-782	Screw, 6-32 x 3/8 Button H	4.00
35	83-51-834	Screw, 10-32 x 1/2 Button H	12.00
36	83-51-130	Screw, 6-32 x 3/4, Pan, Sealing	1.00
37	83-51-804	Screw, 8-32 x 1/2 Button HD	2.00
38	83-40-487	Nut 8-32 SL RG HX Thin SS	2.00
39	83-40-485	Nut 4-40 SL RG HX Thin SS	12.00
40	83-40-489	Nut 10-32 SL RG HX Thin SS	12.00
41	83-95-605	Washer #6 Int Tooth LK SS	2.00
42	83-95-786	Washer, #8 Screw 3/8 OD X	2.00
43	83-95-785	Washer, #6, Screw 3/8 OD X	4.00
44	83-95-787	Washer, #10 Screw 7/16 OD	12.00
45	83-40-261	Nut, 6-32 x 5/16 HX SS ST	1.00
46	83-95-748	Washer, #4 Split Lock SS	2.00
49	82-20-383	Clamp 'P' 1/2 x 1/2 #10	1.00
50	83-40-486	Nut 6-32 SL RG HX Thin SS	1.00
51	50-10-090	Whstrp, 1/4 Thkx1" W.CL Cell	0.17
55	85-10-150	Adhesive, Sealant RTV	1.00


DOCUMENT NO. BA-W84
REV
DESCRIPTION
DCN NUMBER
DATE
DWN.
CHKD.
INITIAL RELEASE
822
99.02.01
MSB
LOOP CABLE THRU STRAIN RELIEF AS SHOWN.
PART NO. | NEXT ASSY
BA-W84 | BA-C220, BA-C221
BLACK STRIPE
24.0±.50
5.0±.25
E1
J7
J101
AR
QTY
UM
PART NO.
MFR's NO.
DESCRIPTION
REMARKS
ITEM
SCALE NTS
DATE 98.05.07
DWN MF
CHKD RKF
APPD TKLL
FINISH
NEXT ASSY: SEE TABLE
DIMENSIONS IN INCHES
IF DUAL DIMS: mm (inches)
Tolerances (unless otherwise specified)
INCHES
MM
.xxx ± .005
.xx ± .01
ANGLES ± 1°
FRACTIONS ± 1/32
.xx ± 0.15
.x ± 0.25
ANGLES ± 1°
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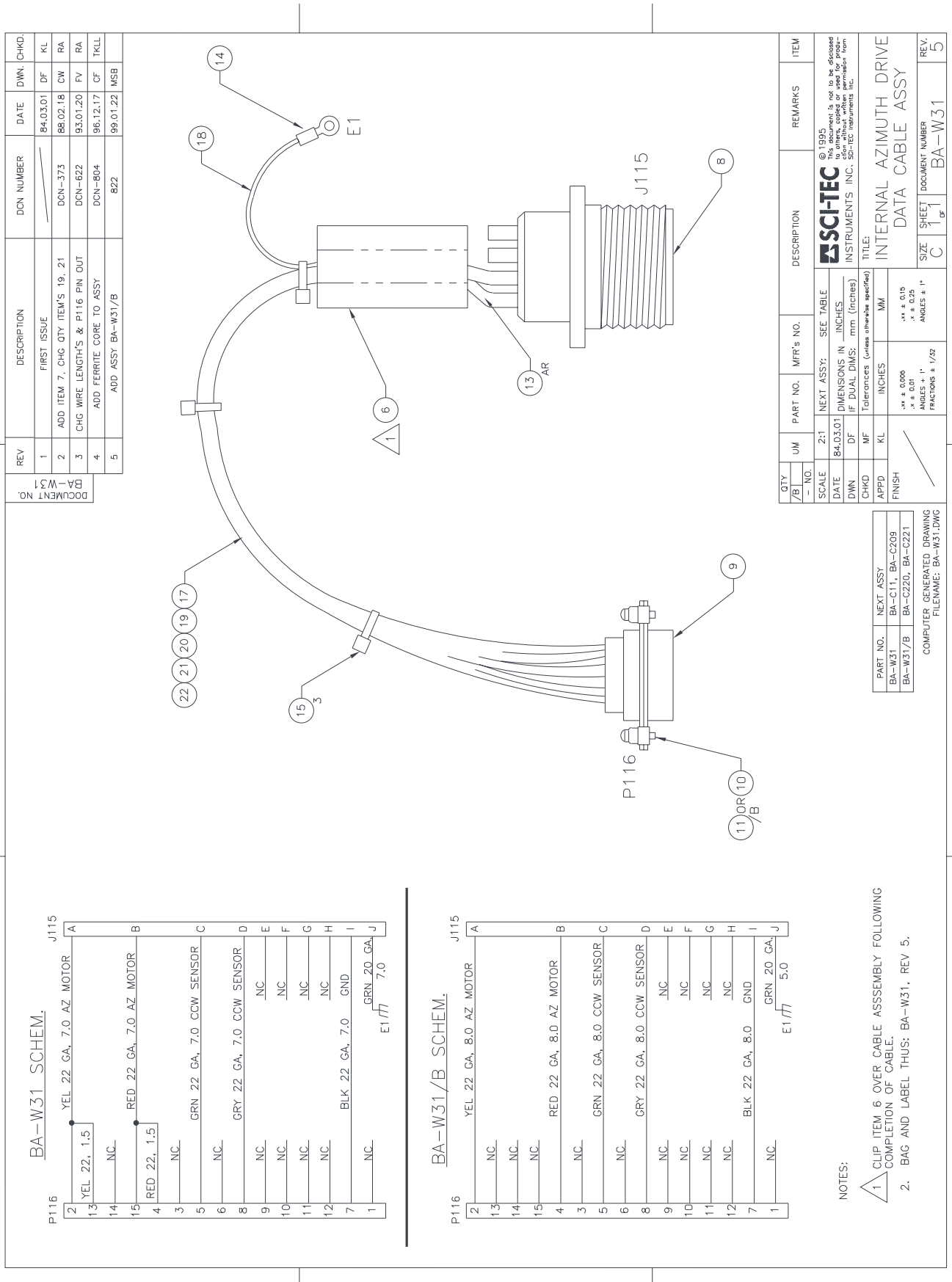
SCI-TEC INSTRUMENTS INC.
TITLE:
CABLE ASSY, COMMUNICATION
SIZE B
SHEET 1 OF 1
DOCUMENT NUMBER BA-W84
REV. —
H N.C.
G N.C.
B R+
F N.C.
I T-
E N.C.
J R-
D N.C.
C T+
A GND
NOTES:
1. USE THE 3M SCOTCH FLEX NOTCHER/SCRIBE TO REMOVE THE SHIELD ON THE FLAT CABLE.
2. INSTALL HEATSHRINK OVER THE GROUND WIRE ON THE FLAT CABLE AND CONNECT TO PIN "A" ALONG WITH BRAIDED GROUND CABLE.
3. INSTALL STRAIN RELIEF TO CONNECTOR.
4. BAG AND LABEL THUS: BA-W84, REV -.
COMPUTER GENERATED DRAWING
FILENAME: BA-W84.DWG
0 50 mm
0 2 INCHES

Figure 10.3-1


DOCUMENT NO. BA-W31
REV 1 DESCRIPTION FIRST ISSUE DCN NUMBER — DATE 84.03.01 DWN. DF CHKD. KL
REV 2 DESCRIPTION ADD ITEM 7. CHG QTY ITEM'S 19, 21 DCN NUMBER DCN-373 DATE 88.02.18 DWN. CW CHKD. RA
REV 3 DESCRIPTION CHG WIRE LENGTH'S & P116 PIN OUT DCN NUMBER DCN-622 DATE 93.01.20 DWN. FV CHKD. RA
REV 4 DESCRIPTION ADD FERRITE CORE TO ASSY DCN NUMBER DCN-804 DATE 96.12.17 DWN. CF CHKD. TKLL
REV 5 DESCRIPTION ADD ASSY BA-W31/B DCN NUMBER 822 DATE 99.01.22 DWN. MSB
E1
J115
P116
18
14
8
6
13 AR
22 21 20 19 17
15 3
9
11 OR 10 /B
QTY /B | - NO.
U/M
PART NO.
MFR'S NO.
DESCRIPTION
REMARKS
ITEM
SCALE 2:1
DATE 84.03.01
DWN DF
CHKD MF
APPD KL
FINISH
NEXT ASSY: SEE TABLE
DIMENSIONS IN INCHES
IF DUAL DIMS: mm (inches)
Tolerances (unless otherwise specified)
INCHES
.XX ± 0.005
.X ± 0.01
ANGLES ± 1°
FRACTIONS ± 1/32
MM
.XX ± 0.13
.X ± 0.25
ANGLES ± 1°
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INSTRUMENTS INC.
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TITLE:
INTERNAL AZIMUTH DRIVE DATA CABLE ASSY
SIZE C
SHEET 1 OF 1
DOCUMENT NUMBER BA-W31
REV. 5
PART NO. | NEXT ASSY
BA-W31 | BA-C11, BA-C209
BA-W31/B | BA-C220, BA-C221
COMPUTER GENERATED DRAWING
FILENAME: BA-W31.DWG
BA-W31 SCHEM.
J115
P116
YEL 22 GA, 7.0 AZ MOTOR
YEL 22, 1.5
RED 22 GA, 7.0 AZ MOTOR
RED 22, 1.5
GRN 22 GA, 7.0 CCW SENSOR
GRY 22 GA, 7.0 CCW SENSOR
NC
BLK 22 GA, 7.0 GND
GRN 20 GA, 7.0
E1
BA-W31/B SCHEM.
YEL 22 GA, 8.0 AZ MOTOR
RED 22 GA, 8.0 AZ MOTOR
GRN 22 GA, 8.0 CCW SENSOR
GRY 22 GA, 8.0 CCW SENSOR
BLK 22 GA, 8.0 GND
GRN 20 GA, 5.0
NOTES:
1. CLIP ITEM 6 OVER CABLE ASSSEMBLY FOLLOWING COMPLETION OF CABLE.
2. BAG AND LABEL THUS: BA-W31, REV 5.

Figure 10.3-2

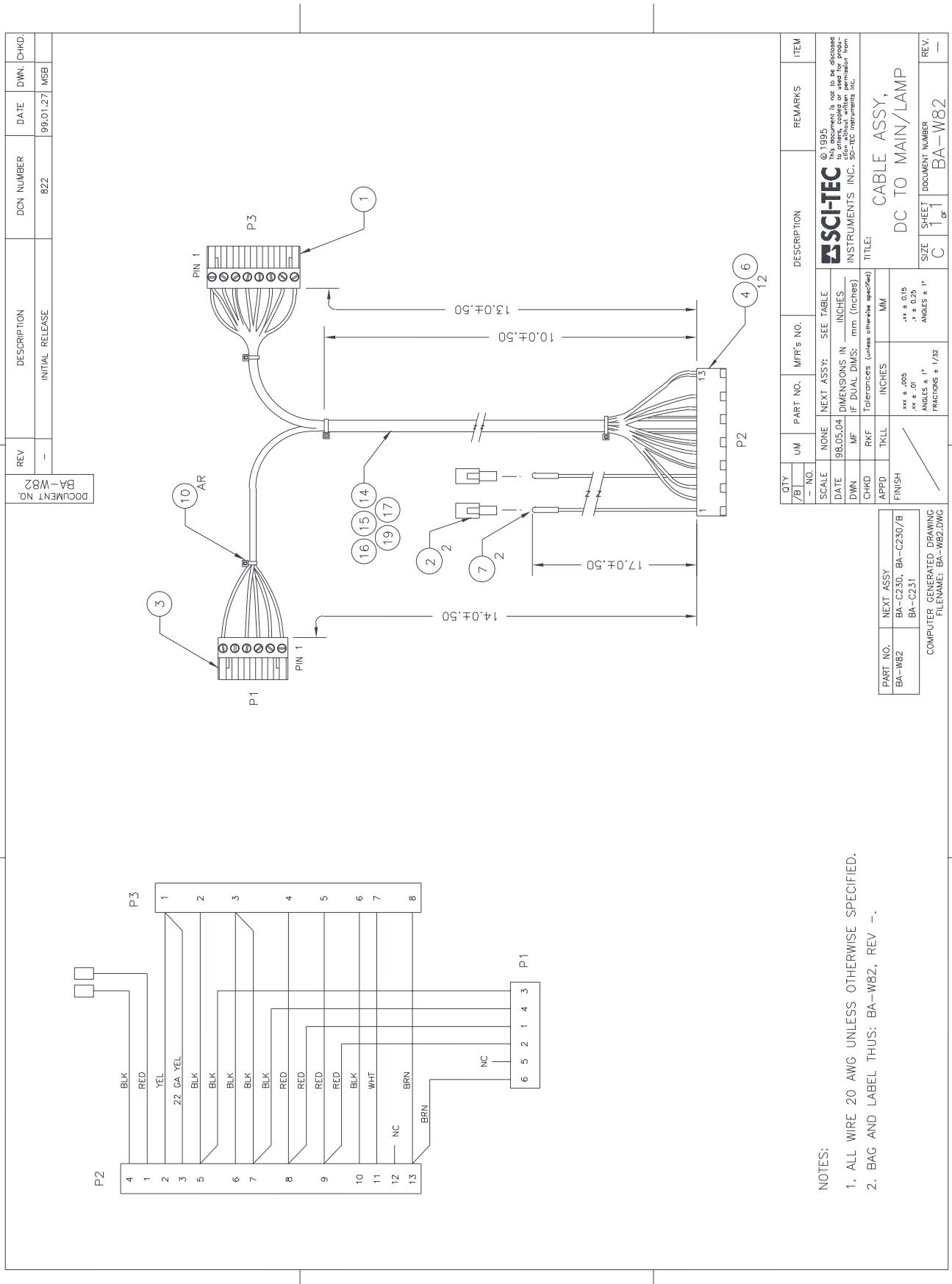
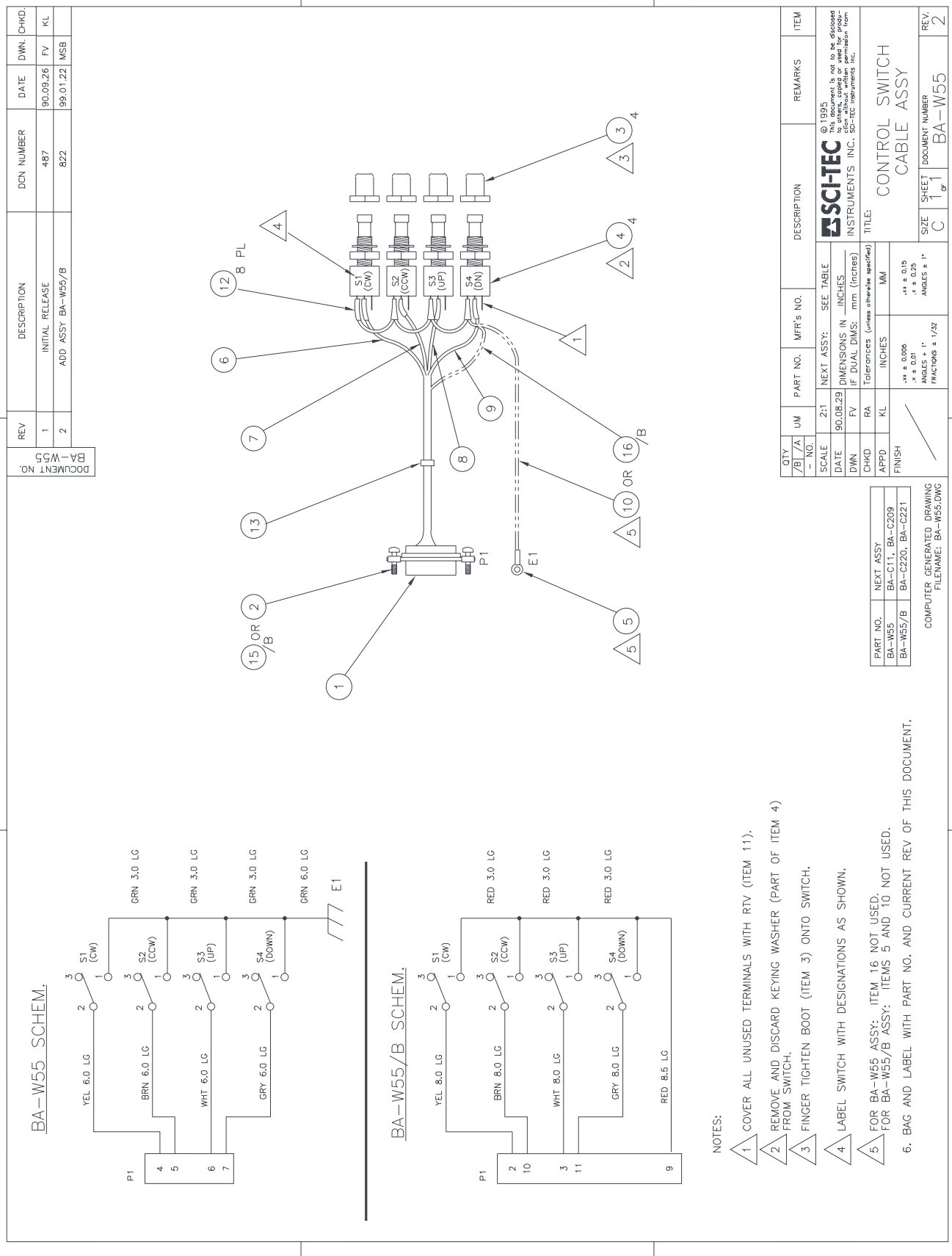

DOCUMENT NO. BA-W82
REV - DESCRIPTION INITIAL RELEASE DCN NUMBER 822 DATE 99.01.27 DWN. MSB CHKD.
P3
PIN 1
P1
PIN 1
P2
13.0±.50
10.0±.50
17.0±.50
14.0±.50
AR
NOTES:
1. ALL WIRE 20 AWG UNLESS OTHERWISE SPECIFIED.
2. BAG AND LABEL THUS: BA-W82, REV -.
BLK RED YEL 22 GA YEL BLK BLK BLK BLK RED RED RED RED BLK WHT NC BRN BRN NC
SCI-TEC INSTRUMENTS INC.
© 1995
CABLE ASSY, DC TO MAIN/LAMP
DOCUMENT NUMBER BA-W82
SIZE C
SHEET 1 OF 1
REV. -
PART NO. BA-W82
NEXT ASSY BA-C230, BA-C230/8 BA-C231
COMPUTER GENERATED DRAWING FILENAME: BA-W82.DWG

Figure 10.3-3


DOCUMENT NO.
BA-W55
REV | DESCRIPTION | DCN NUMBER | DATE | DWN. | CHKD.
1 | INITIAL RELEASE | 487 | 90.09.26 | FV | KL
2 | ADD ASSY BA-W55/B | 822 | 99.01.22 | MSB |
QTY /B /A - NO. | U/M | PART NO. | MFR's NO. | DESCRIPTION | REMARKS | ITEM
SCALE 2:1 | NEXT ASSY: SEE TABLE
DATE 90.08.29 | DIMENSIONS IN INCHES
DWN FV | IF DUAL DIMS: mm (inches)
CHKD RA | Tolerances (unless otherwise specified)
APPD KL | INCHES | MM
FINISH | .xx ± 0.005 .x ± 0.01 ANGLES ± 1° FRACTIONS ± 1/32 | .xx ± 0.13 .x ± 0.25 ANGLES ± 1°
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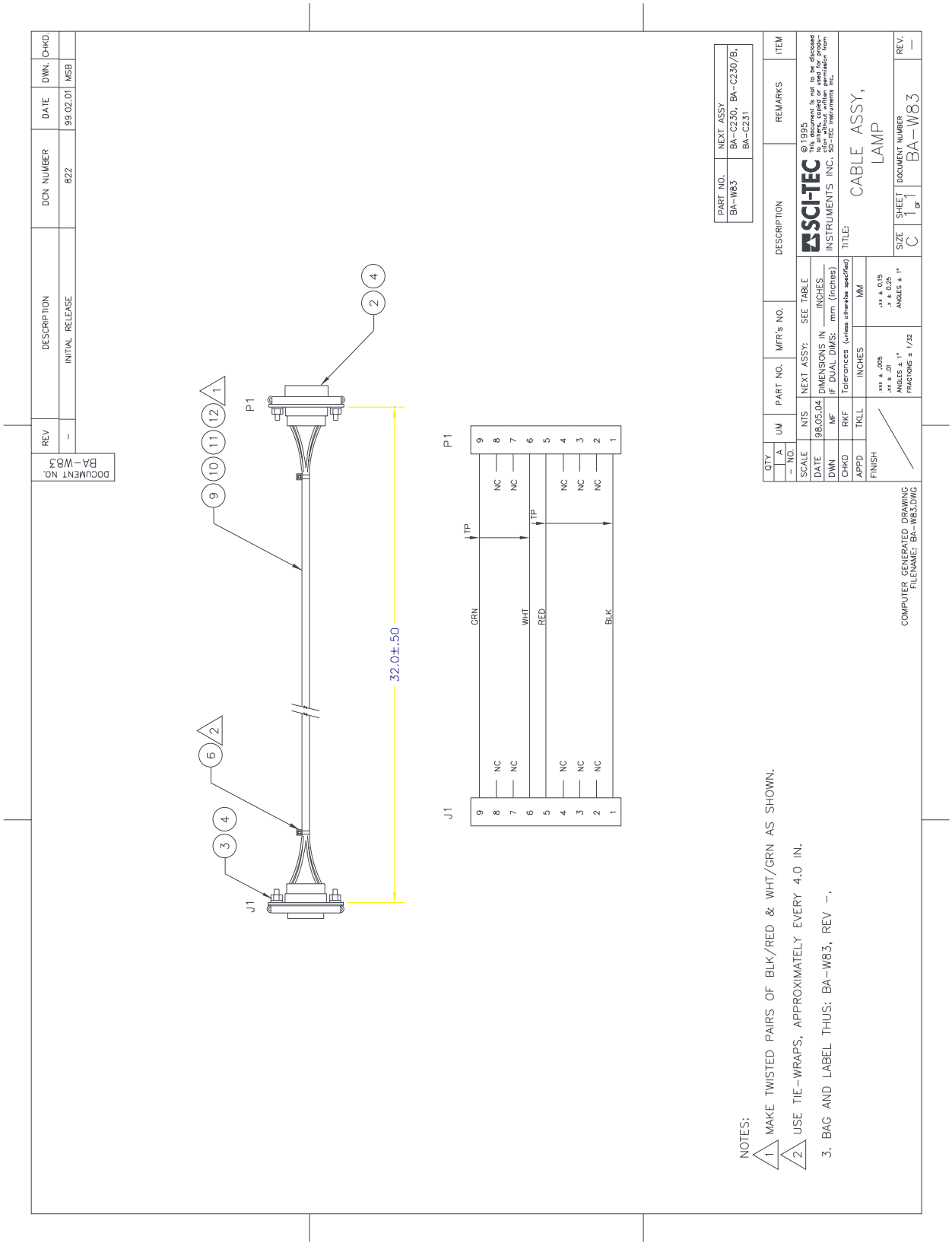
TITLE: CONTROL SWITCH CABLE ASSY
SIZE C | SHEET 1 OF 1 | DOCUMENT NUMBER BA-W55 | REV. 2
PART NO. | NEXT ASSY
BA-W55 | BA-C11, BA-C209
BA-W55/B | BA-C220, BA-C221
COMPUTER GENERATED DRAWING FILENAME: BA-W55.DWG
S1 (CW)
S2 (CCW)
S3 (UP)
S4 (DN)
8 PL
P1
E1
OR
BA-W55 SCHEM.
YEL 6.0 LG
BRN 6.0 LG
WHT 6.0 LG
GRY 6.0 LG
GRN 3.0 LG
GRN 6.0 LG
BA-W55/B SCHEM.
YEL 8.0 LG
BRN 8.0 LG
WHT 8.0 LG
GRY 8.0 LG
RED 8.5 LG
RED 3.0 LG
NOTES:
1. COVER ALL UNUSED TERMINALS WITH RTV (ITEM 11).
2. REMOVE AND DISCARD KEYING WASHER (PART OF ITEM 4) FROM SWITCH.
3. FINGER TIGHTEN BOOT (ITEM 3) ONTO SWITCH.
4. LABEL SWITCH WITH DESIGNATIONS AS SHOWN.
5. FOR BA-W55 ASSY: ITEM 16 NOT USED.
FOR BA-W55/B ASSY: ITEMS 5 AND 10 NOT USED.
6. BAG AND LABEL WITH PART NO. AND CURRENT REV OF THIS DOCUMENT.

Figure 10.3-4


DOCUMENT NO.
BA-W83
REV
DESCRIPTION
DCN NUMBER
DATE
DWN.
CHKD.
–
INITIAL RELEASE
822
99.02.01
MSB
PART NO.
BA-W83
NEXT ASSY
BA-C230, BA-C230/B, BA-C231
P1
J1
32.0±.50
GRN
WHT
RED
BLK
TP
NC
NOTES:
1. MAKE TWISTED PAIRS OF BLK/RED & WHT/GRN AS SHOWN.
2. USE TIE-WRAPS, APPROXIMATELY EVERY 4.0 IN.
3. BAG AND LABEL THUS: BA-W83, REV –.
QTY
UM
PART NO.
MFR's NO.
DESCRIPTION
REMARKS
ITEM
SCALE
NTS
NEXT ASSY: SEE TABLE
DATE
98.05.04
DIMENSIONS IN INCHES
DWN
MF
IF DUAL DIMS: mm (inches)
CHKD
RKF
Tolerances (unless otherwise specified)
APPD
TKLL
INCHES
MM
FINISH
xxx ± .005
xx ± .01
ANGLES ± 1°
FRACTIONS ± 1/32
xx ± 0.15
x ± 0.25
ANGLES ± 1°
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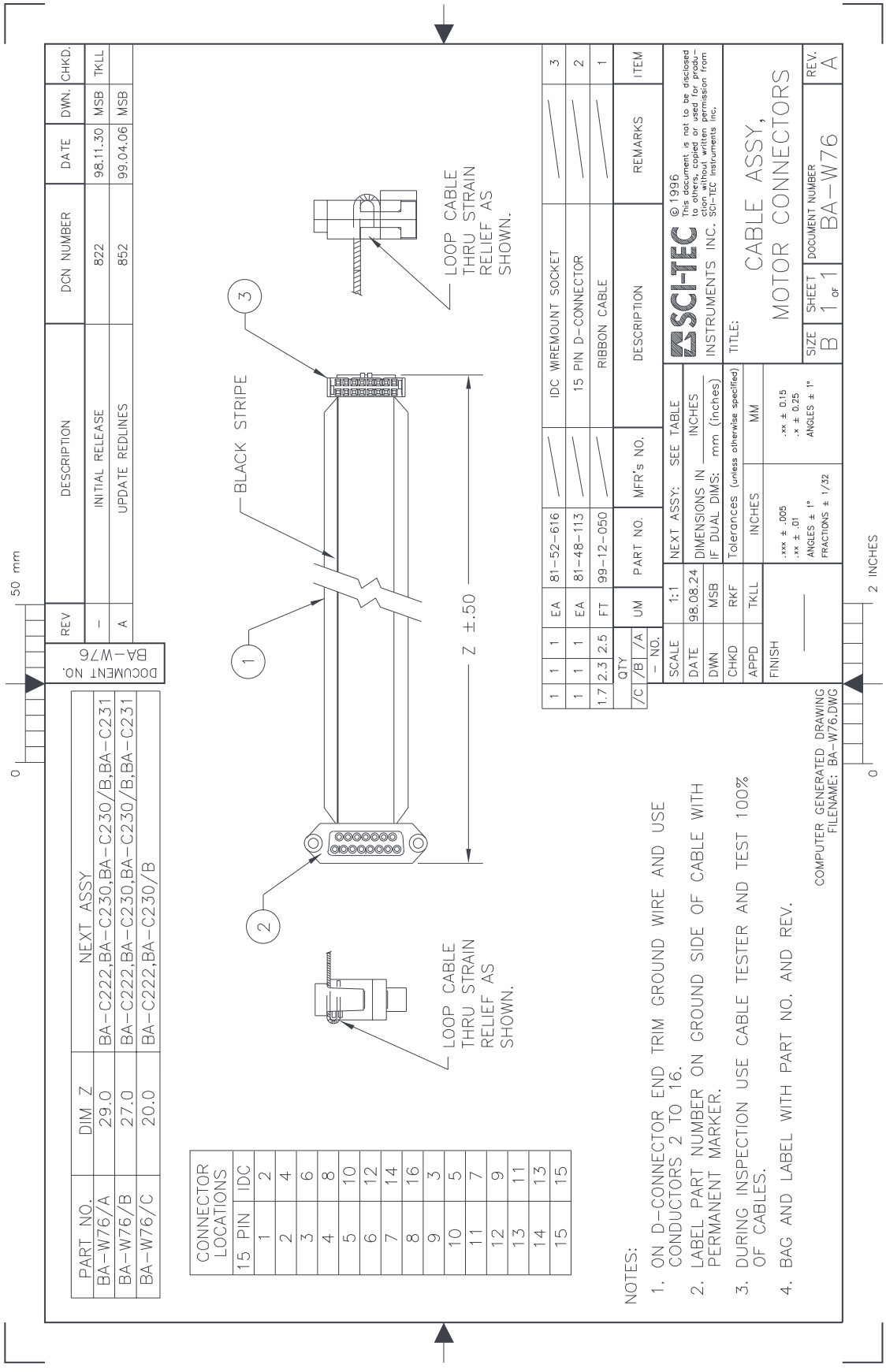
INSTRUMENTS INC.
TITLE:
CABLE ASSY, LAMP
SIZE
C
SHEET
1 OF 1
DOCUMENT NUMBER
BA-W83
REV.
–
COMPUTER GENERATED DRAWING
FILENAME: BA-W83.DWG

Figure 10.3-5


DOCUMENT NO. BA-W76
REV | DESCRIPTION | DCN NUMBER | DATE | DWN. | CHKD.
- | INITIAL RELEASE | 822 | 98.11.30 | MSB | TKLL
A | UPDATE REDLINES | 852 | 99.04.06 | MSB |
PART NO. | DIM Z | NEXT ASSY
BA-W76/A | 29.0 | BA-C222,BA-C230,BA-C230/B,BA-C231
BA-W76/B | 27.0 | BA-C222,BA-C230,BA-C230/B,BA-C231
BA-W76/C | 20.0 | BA-C222,BA-C230/B
CONNECTOR LOCATIONS
15 PIN | IDC
1 | 2
2 | 4
3 | 6
4 | 8
5 | 10
6 | 12
7 | 14
8 | 16
9 | 3
10 | 5
11 | 7
12 | 9
13 | 11
14 | 13
15 | 15
BLACK STRIPE
LOOP CABLE THRU STRAIN RELIEF AS SHOWN.
LOOP CABLE THRU STRAIN RELIEF AS SHOWN.
Z ±.50
1 1 1 EA 81-52-616 IDC WIREMOUNT SOCKET 3
1 1 1 EA 81-48-113 15 PIN D-CONNECTOR 2
1.7 2.3 2.5 FT 99-12-050 RIBBON CABLE 1
QTY /C /B /A | UM | PART NO. | MFR's NO. | DESCRIPTION | REMARKS | ITEM
- NO.
SCALE 1:1 NEXT ASSY: SEE TABLE
DATE 98.08.24 DIMENSIONS IN INCHES
DWN MSB IF DUAL DIMS: mm (inches)
CHKD RKF Tolerances (unless otherwise specified)
APPD TKLL INCHES MM
FINISH .xxx ± .005 .xx ± .01 ANGLES ± 1° FRACTIONS ± 1/32 .xx ± 0.15 .x ± 0.25 ANGLES ± 1°
NOTES:
1. ON D-CONNECTOR END TRIM GROUND WIRE AND USE CONDUCTORS 2 TO 16.
2. LABEL PART NUMBER ON GROUND SIDE OF CABLE WITH PERMANENT MARKER.
3. DURING INSPECTION USE CABLE TESTER AND TEST 100% OF CABLES.
4. BAG AND LABEL WITH PART NO. AND REV.
COMPUTER GENERATED DRAWING
FILENAME: BA-W76.DWG
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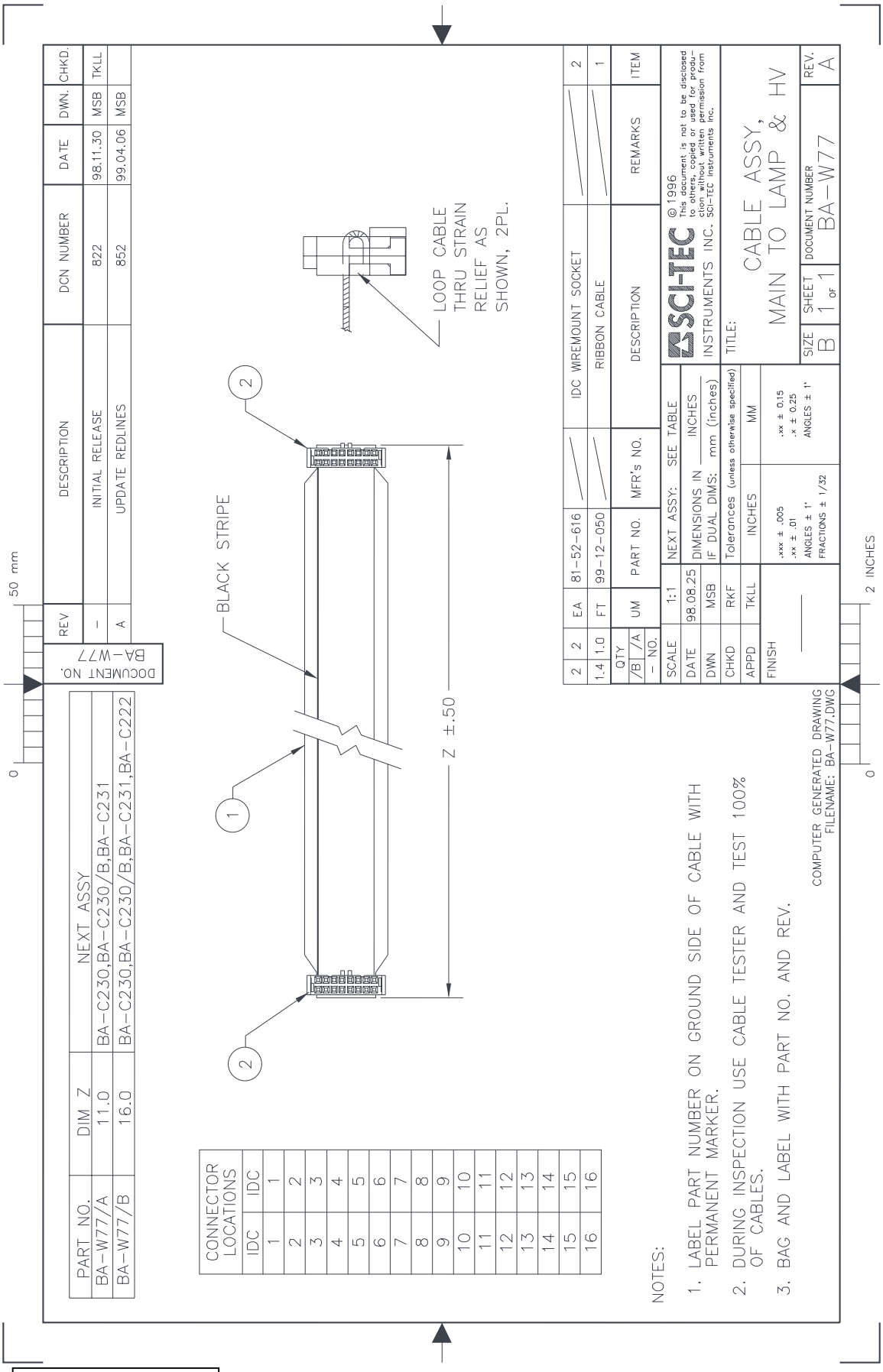
SCI-TEC INSTRUMENTS INC.
TITLE: CABLE ASSY, MOTOR CONNECTORS
SIZE B SHEET 1 OF 1 DOCUMENT NUMBER BA-W76 REV. A
0 50 mm
0 2 INCHES

Figure 10.3-6


50 mm
0
2 INCHES
0
DOCUMENT NO.
BA-W77
REV
DESCRIPTION
DCN NUMBER
DATE
DWN.
CHKD.
-
INITIAL RELEASE
822
98.11.30
MSB
TKLL
A
UPDATE REDLINES
852
99.04.06
MSB
PART NO.
DIM Z
NEXT ASSY
BA-W77/A
11.0
BA-C230,BA-C230/B,BA-C231
BA-W77/B
16.0
BA-C230,BA-C230/B,BA-C231,BA-C222
CONNECTOR LOCATIONS
IDC
IDC
1
1
2
2
3
3
4
4
5
5
6
6
7
7
8
8
9
9
10
10
11
11
12
12
13
13
14
14
15
15
16
16
BLACK STRIPE
LOOP CABLE THRU STRAIN RELIEF AS SHOWN, 2PL.
Z ±.50
2
2
EA
81-52-616
IDC WIREMOUNT SOCKET
2
1.4
1.0
FT
99-12-050
RIBBON CABLE
1
QTY /B /A - NO.
UM
PART NO.
MFR's NO.
DESCRIPTION
REMARKS
ITEM
SCALE
1:1
NEXT ASSY: SEE TABLE
DATE
98.08.25
DIMENSIONS IN INCHES
IF DUAL DIMS: mm (inches)
DWN
MSB
CHKD
RKF
Tolerances (unless otherwise specified)
APPD
TKLL
INCHES
MM
FINISH
.xxx ± .005
.xx ± .01
ANGLES ± 1°
FRACTIONS ± 1/32
.xx ± 0.15
.x ± 0.25
ANGLES ± 1°
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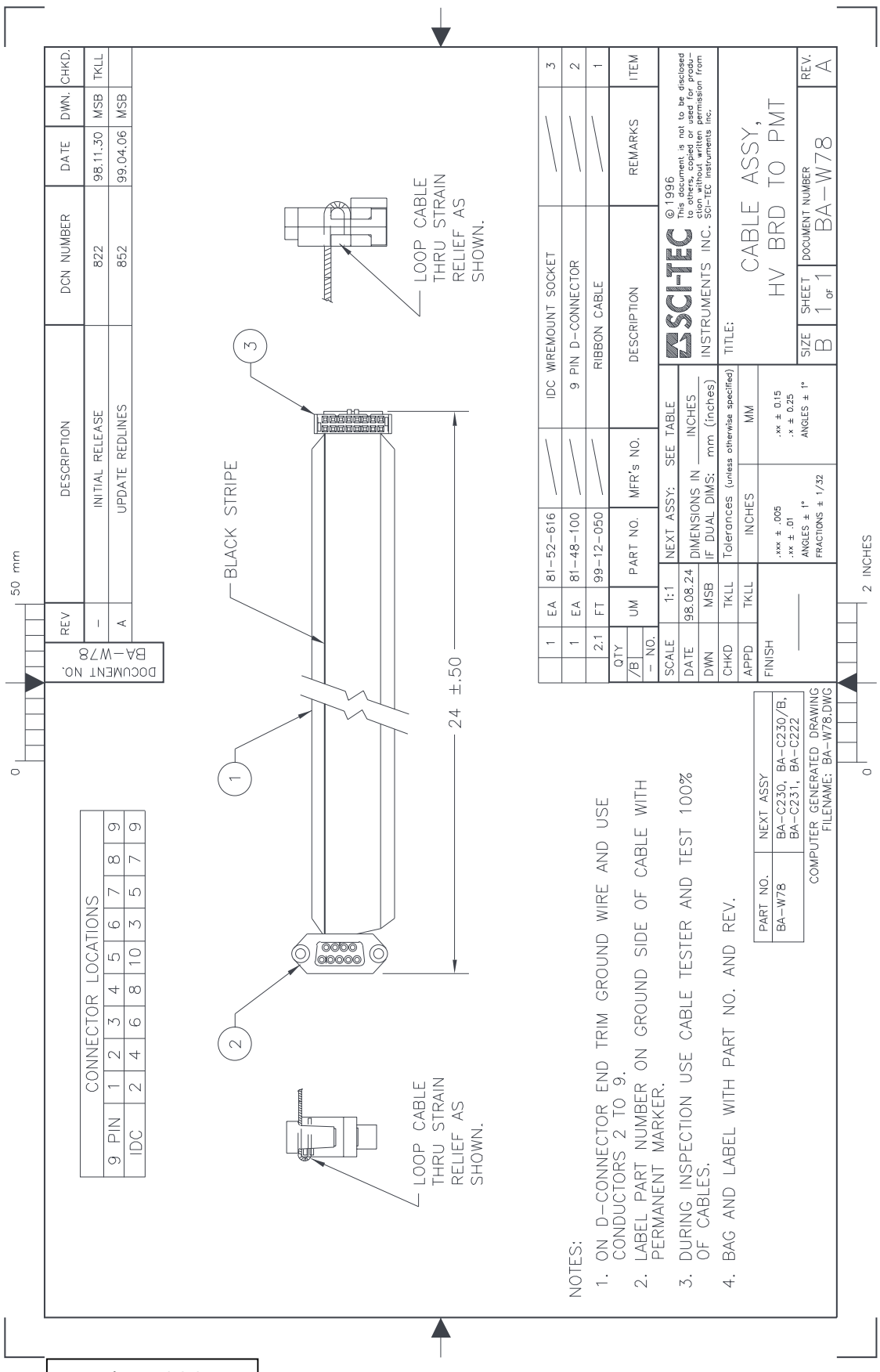
INSTRUMENTS INC.
TITLE:
CABLE ASSY, MAIN TO LAMP & HV
SIZE
B
SHEET
1 OF 1
DOCUMENT NUMBER
BA-W77
REV.
A
NOTES:
1. LABEL PART NUMBER ON GROUND SIDE OF CABLE WITH PERMANENT MARKER.
2. DURING INSPECTION USE CABLE TESTER AND TEST 100% OF CABLES.
3. BAG AND LABEL WITH PART NO. AND REV.
COMPUTER GENERATED DRAWING
FILENAME: BA-W77.DWG

Figure 10.3-7


DOCUMENT NO. BA-W78
REV | DESCRIPTION | DCN NUMBER | DATE | DWN. | CHKD.
– | INITIAL RELEASE | 822 | 98.11.30 | MSB | TKLL
A | UPDATE REDLINES | 852 | 99.04.06 | MSB |
CONNECTOR LOCATIONS
9 PIN 1 2 3 4 5 6 7 8 9
IDC 2 4 6 8 10 3 5 7 9
BLACK STRIPE
24 ±.50
LOOP CABLE THRU STRAIN RELIEF AS SHOWN.
LOOP CABLE THRU STRAIN RELIEF AS SHOWN.
1 EA 81-52-616 IDC WIREMOUNT SOCKET 3
1 EA 81-48-100 9 PIN D-CONNECTOR 2
2.1 FT 99-12-050 RIBBON CABLE 1
QTY /B – NO. | UM | PART NO. | MFR's NO. | DESCRIPTION | REMARKS | ITEM
SCALE 1:1 | NEXT ASSY: SEE TABLE
DATE 98.08.24 | DIMENSIONS IN ___ INCHES
DWN MSB | IF DUAL DIMS: mm (inches)
CHKD TKLL | Tolerances (unless otherwise specified) | INCHES | MM
APPD TKLL | .xxx ± .005 .xx ± .01 ANGLES ± 1° FRACTIONS ± 1/32 | .xx ± 0.15 .x ± 0.25 ANGLES ± 1°
FINISH
SCI-TEC INSTRUMENTS INC.
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TITLE: CABLE ASSY, HV BRD TO PMT
SIZE B | SHEET 1 OF 1 | DOCUMENT NUMBER BA-W78 | REV. A
PART NO. | NEXT ASSY
BA-W78 | BA-C230, BA-C230/B, BA-C231, BA-C222
COMPUTER GENERATED DRAWING FILENAME: BA-W78.DWG
NOTES:
1. ON D-CONNECTOR END TRIM GROUND WIRE AND USE CONDUCTORS 2 TO 9.
2. LABEL PART NUMBER ON GROUND SIDE OF CABLE WITH PERMANENT MARKER.
3. DURING INSPECTION USE CABLE TESTER AND TEST 100% OF CABLES.
4. BAG AND LABEL WITH PART NO. AND REV.
0 50 mm
0 2 INCHES

Figure 10.3-8

BREWER REFERENCE DOCUMENTATION

Section 10.4 Electronics Schematics Figure

- Main Electronics Board Schematics BS-E123 10.4-1
- Lamp Control Electronics board Schematic BS-E129 10.4-2
- High Voltage Control Schematic BS-E131 10.4-3
- High Voltage supply Data Sheet 10.4-4
- Humidity Sensor Data Sheet 10.4-5
- Humidity Sensor Board Schematic (option) BS-E131 10.4.6
- Heater Control Board Schematic (option) 12505290 10.4-7

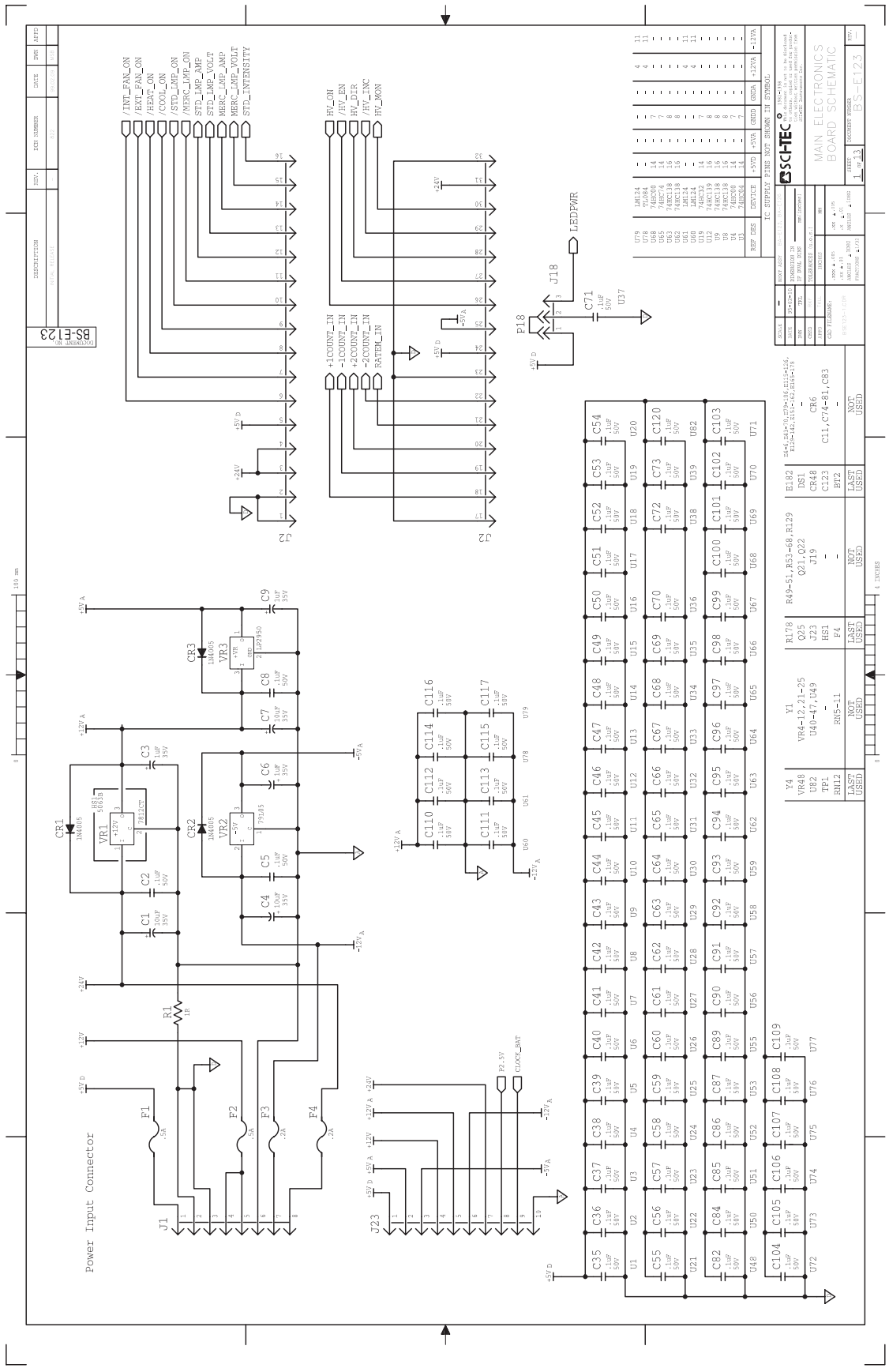
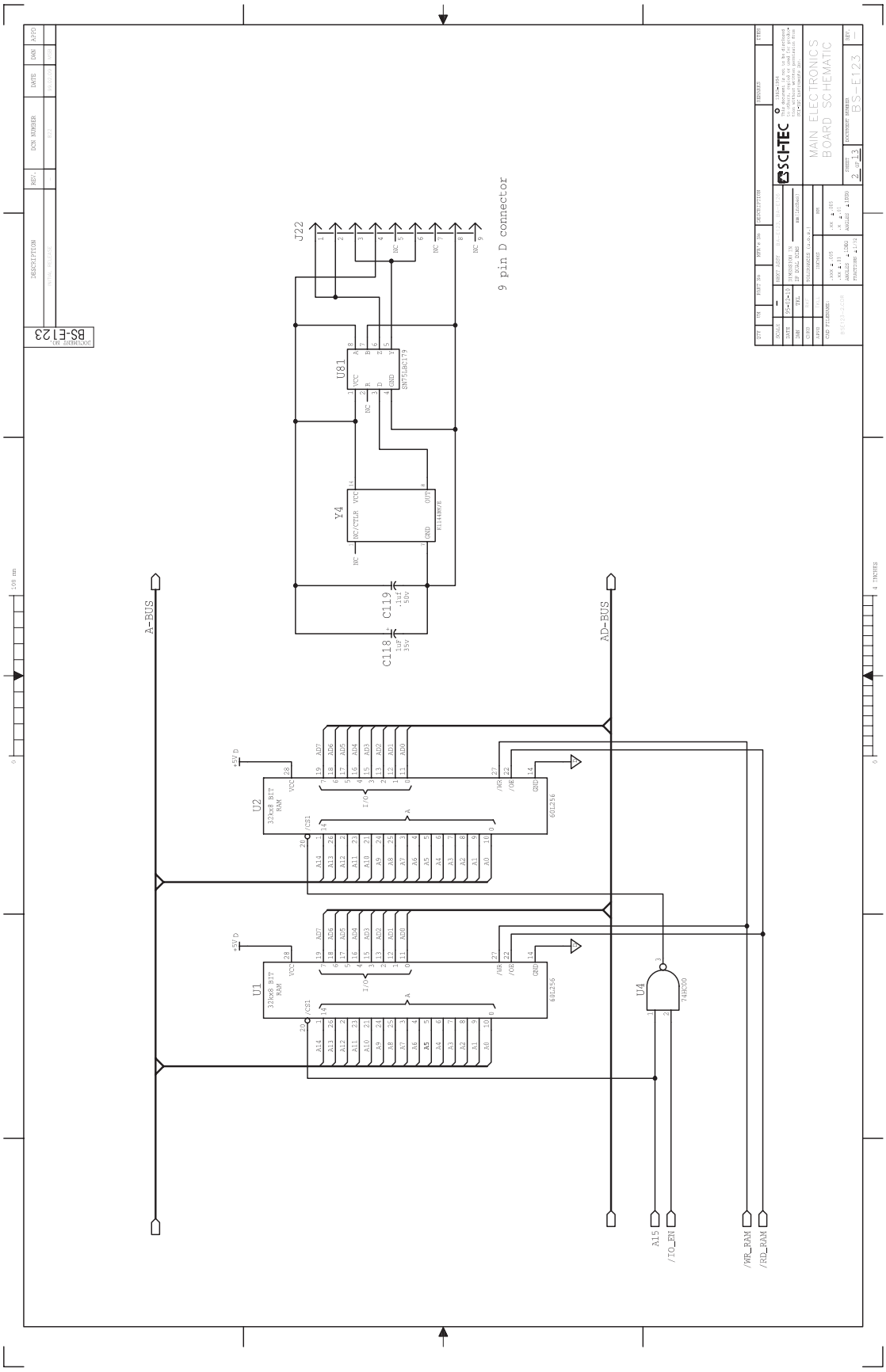
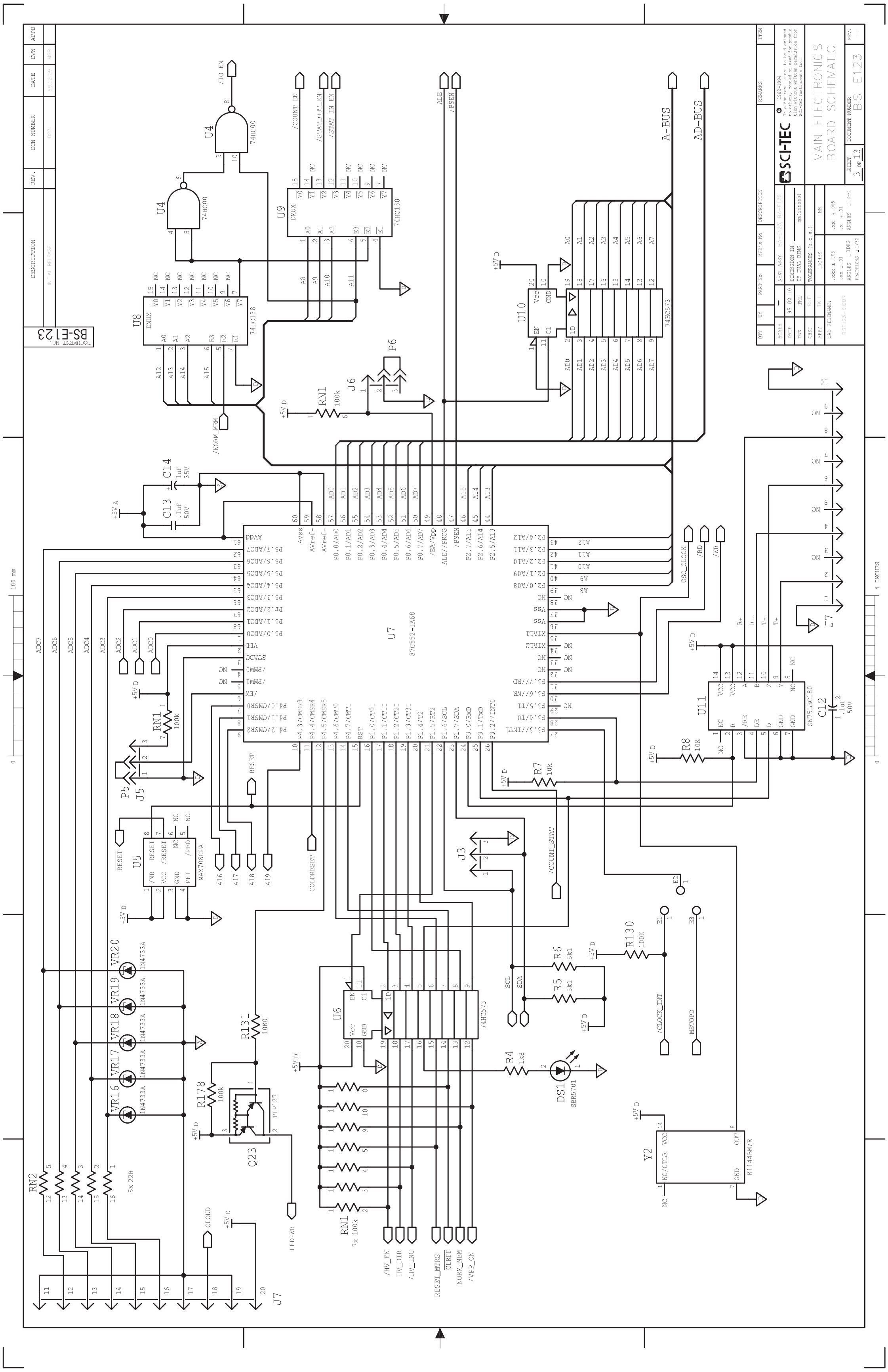
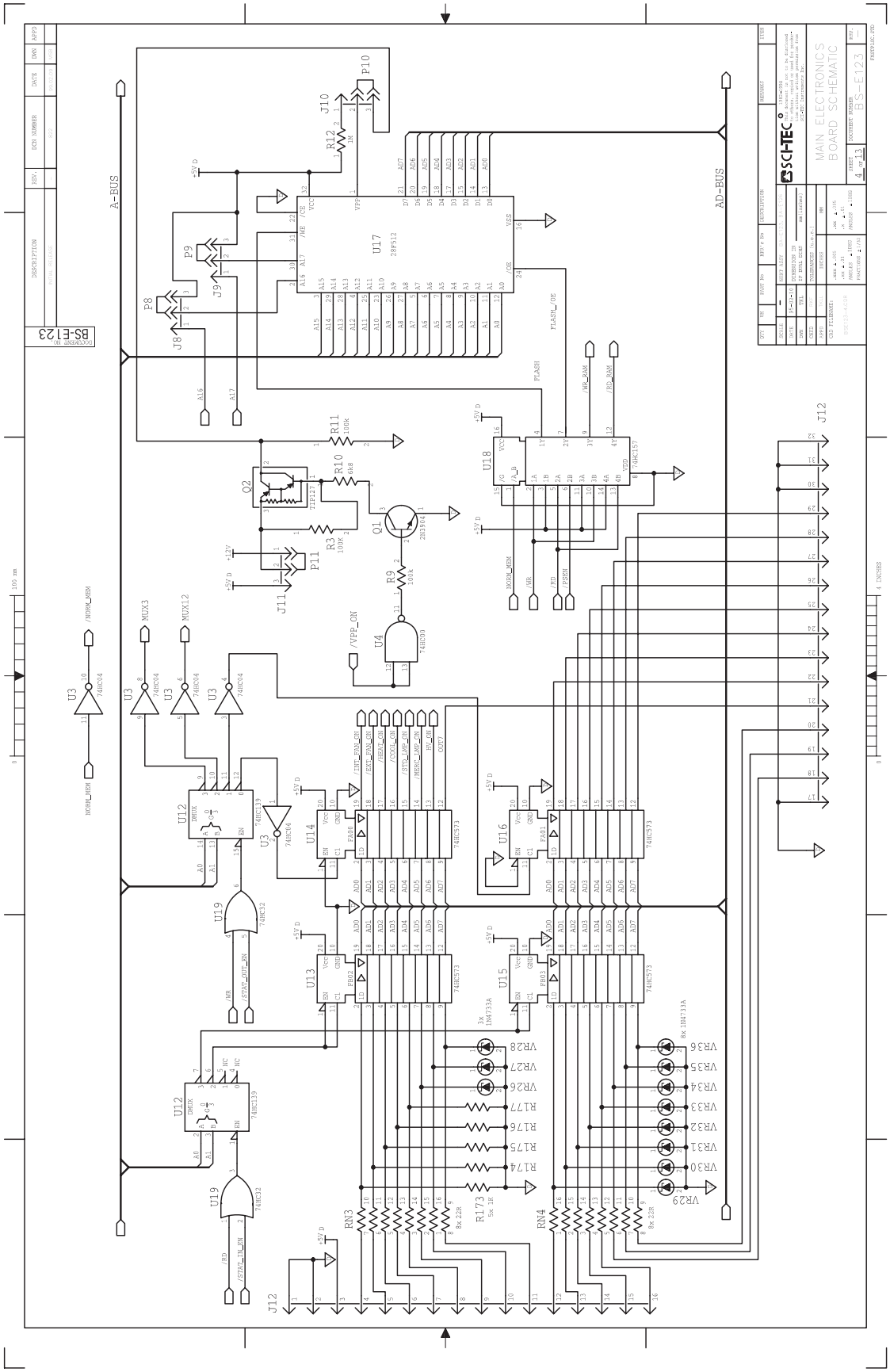
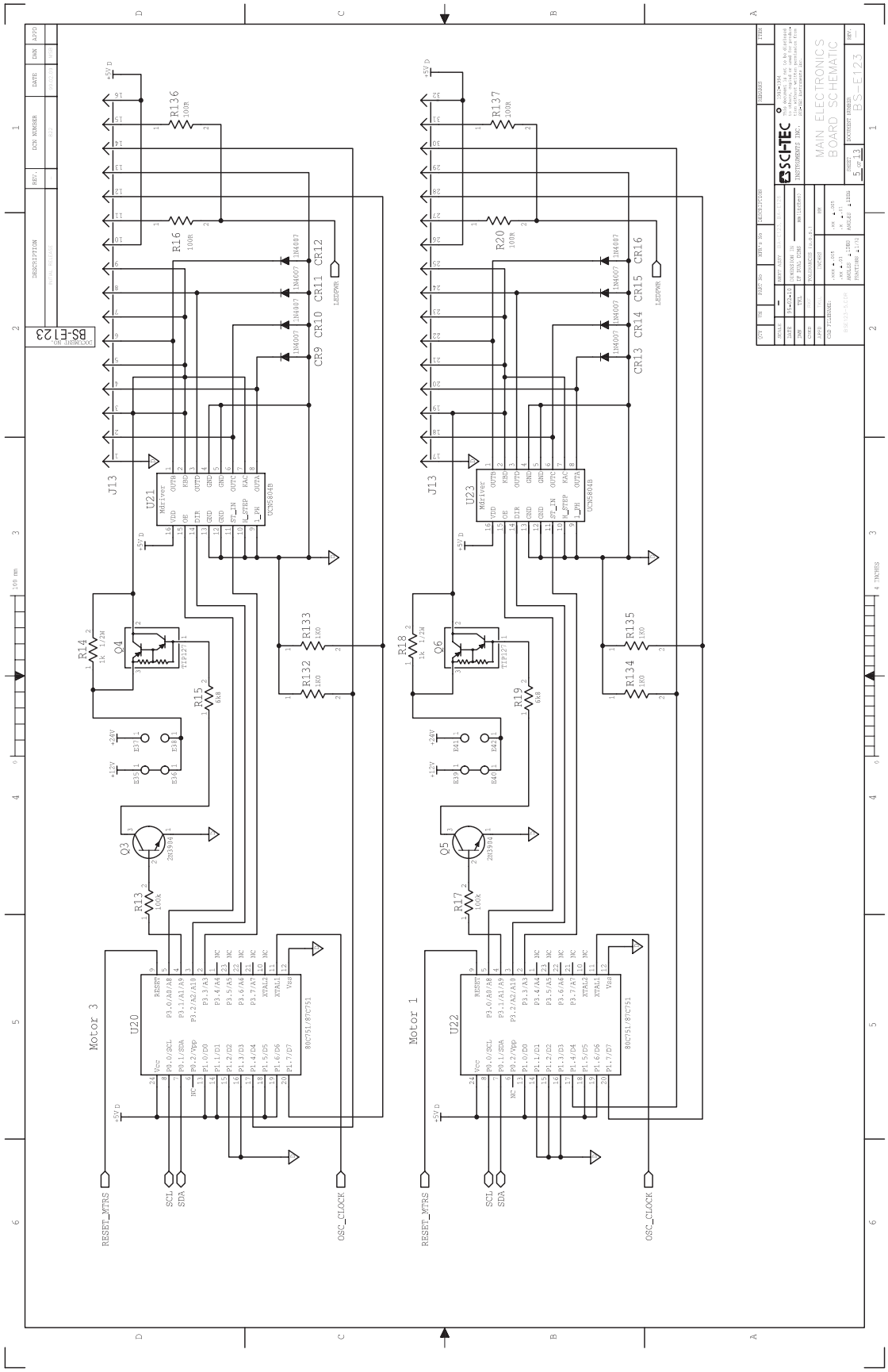

MAIN ELECTRONICS
BOARD SCHEMATIC
BS-E123
Power Input Connector
J1
J2
J3
J23
J18
P18
LEDPWR
/INT_FAN_ON
/EXT_FAN_ON
/HEAT_ON
/COOL_ON
/STD_LMP_ON
/MERC_LMP_ON
STD_LMP_AMP
STD_LMP_VOLT
MERC_LMP_AMP
MERC_LMP_VOLT
STD_INTENSITY
HV_ON
/HV_EN
HV_DIR
/HV_INC
HV_MON
+1COUNT_IN
-1COUNT_IN
+2COUNT_IN
-2COUNT_IN
RATEM_IN
F1
F2
F3
F4
VR1
VR2
VR3
CR1
CR2
CR3
R1
C1
C2
C3
C4
C5
C6
C7
C8
C9
C71
CLOCK_BAT

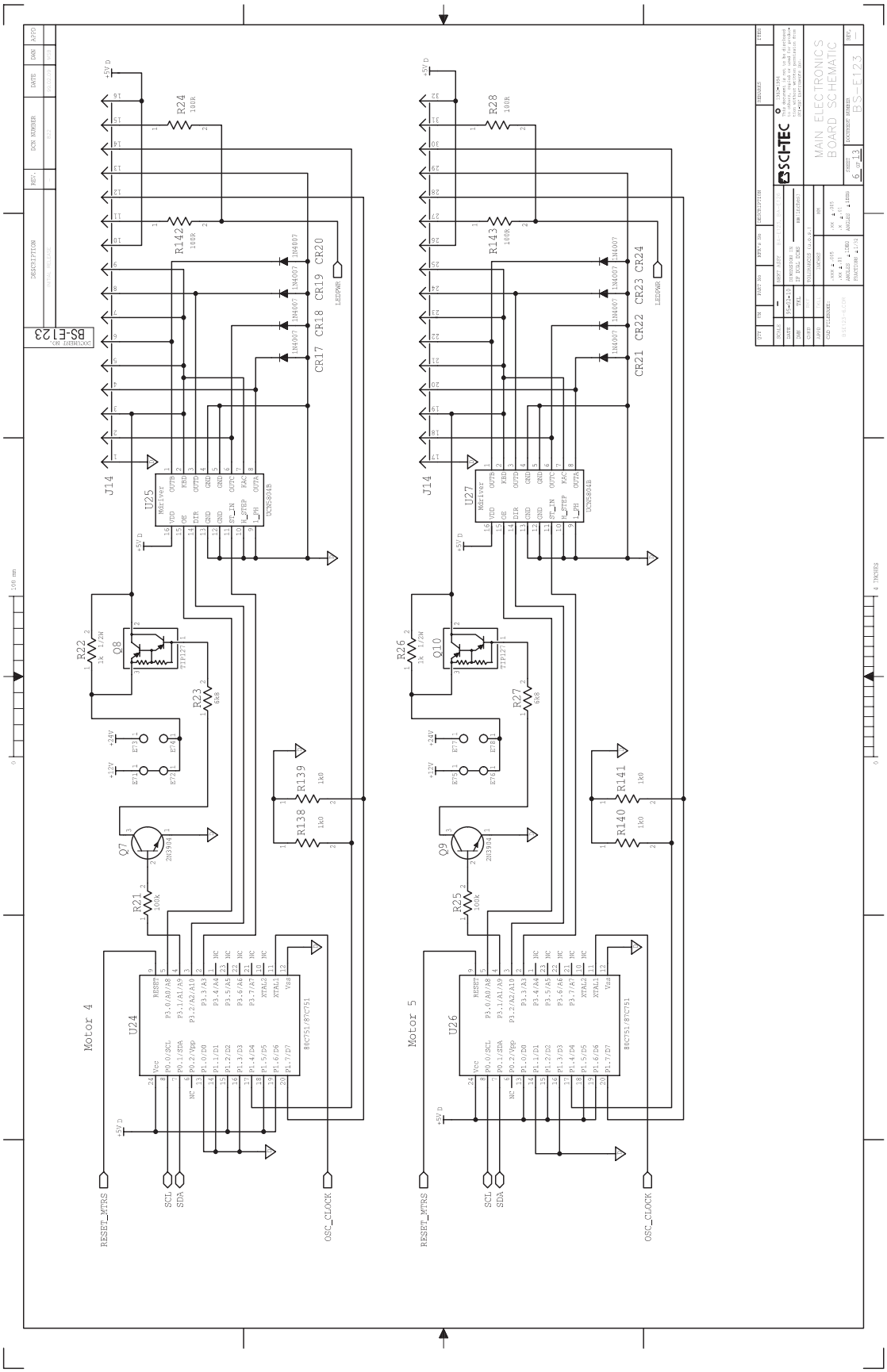
Figure 10.4-1


MAIN ELECTRONICS
BOARD SCHEMATIC
SCI-TEC
BS-E123
9 pin D connector
J22
U81
SN75LBC179
Y4
U2
32kx8 BIT
RAM
U1
32kx8 BIT
RAM
U4
74HC00
C119
.1uF
50V
C118
1uF
35V
A-BUS
AD-BUS
A15
/IO_EN
/WR_RAM
/RD_RAM


MAIN ELECTRONICS BOARD SCHEMATIC
BS-E123
SCI-TEC
A-BUS
AD-BUS
U7
87C552-1A68
U11
SN75LBC180
U6
74HC573
U10
74HC573
U8
74HC138
U9
74HC138
U4
74HC00
U5
MAX708CPA
Y2
K1144BM/E
Q23
TIP127
DS1
SBR5701


MAIN ELECTRONICS
BOARD SCHEMATIC
BS-E123
A-BUS
AD-BUS
U17
28F512
U18
74HC157
U12
74HC139
U19
74HC32
U3
74HC04
U14
U16
U13
U15
74HC573
Q1
2N3904
Q2
TIP127
U4
74HC09
R12
1K
R11
100k
R10
680
R3
100K
R9
100k
P10
P9
P8
J10
J9
J8
J11
J12
RN3
8x 22R
RN4
8x 22R
R173
5x 1K
VR29
VR30
VR31
VR32
VR33
VR34
VR35
VR36
VR28
VR27
VR26
R174
R175
R176
R177
3x 1N4733A
8x 1N4733A
FLASH
FLASH_VPE
/VPE_ON
/WR_RAM
/RD_RAM
/MDRA_MEM
MUX3
MUX12


MAIN ELECTRONICS
BOARD SCHEMATIC
BS-E123
SCI-TEC
Motor 3
Motor 1
U20
U21
U22
U23
J13
R136
R137
R16
R20
R14
R18
R15
R19
R13
R17
R132
R133
R134
R135
Q3
Q4
Q5
Q6
CR9 CR10 CR11 CR12
CR13 CR14 CR15 CR16
RESET_MTRS
SCL
SDA
OSC_CLOCK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BOARD SCHEMATIC
BS-E123
SCHEMATIC
Motor 4
Motor 5
RESET_MTRS
SCL
SDA
OSC_CLOCK
U24
U25
U26
U27
J14
Q7
Q8
Q9
Q10
R21
R22
R23
R24
R25
R26
R27
R28
R138
R139
R140
R141
R142
R1443
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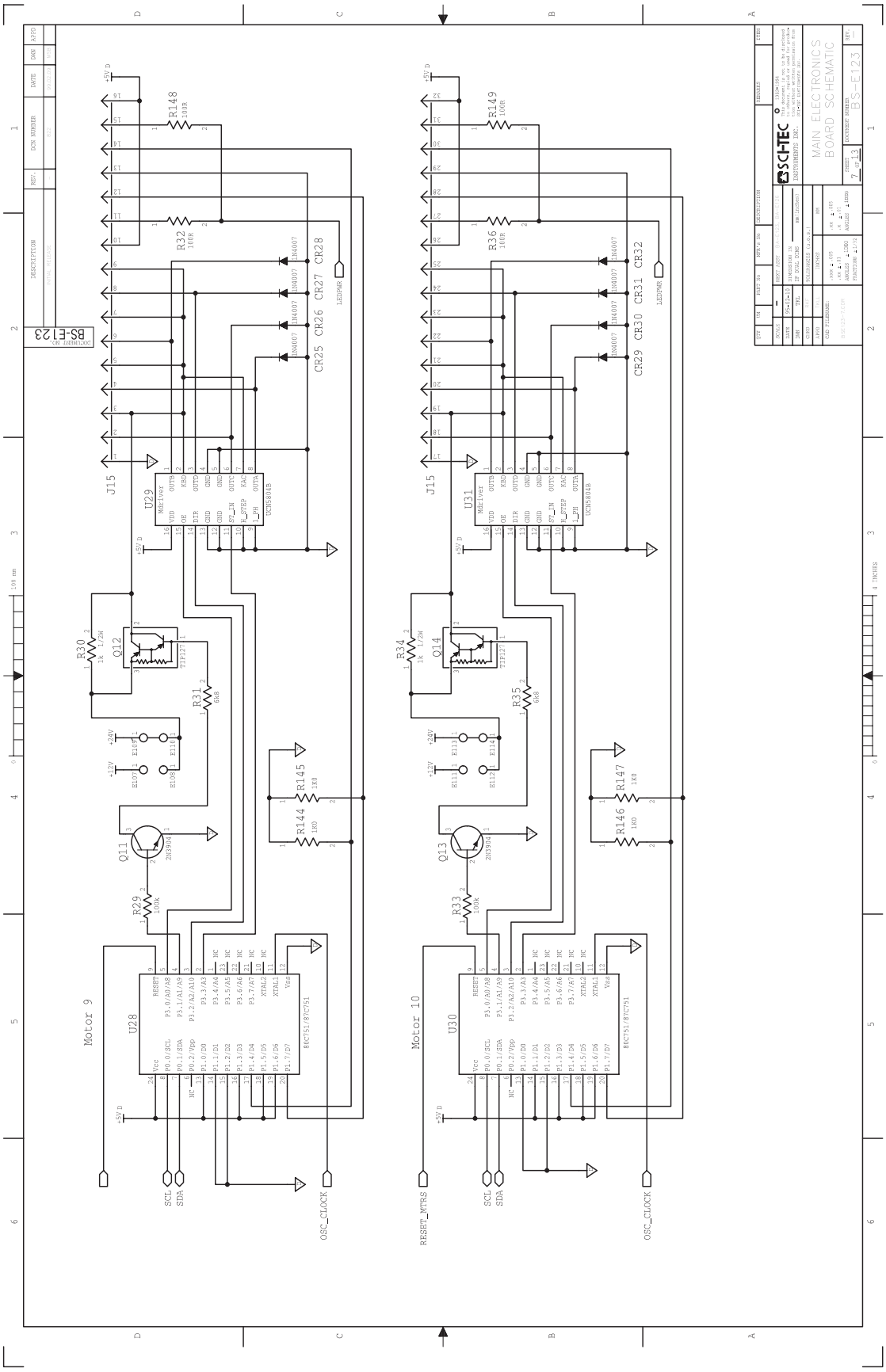
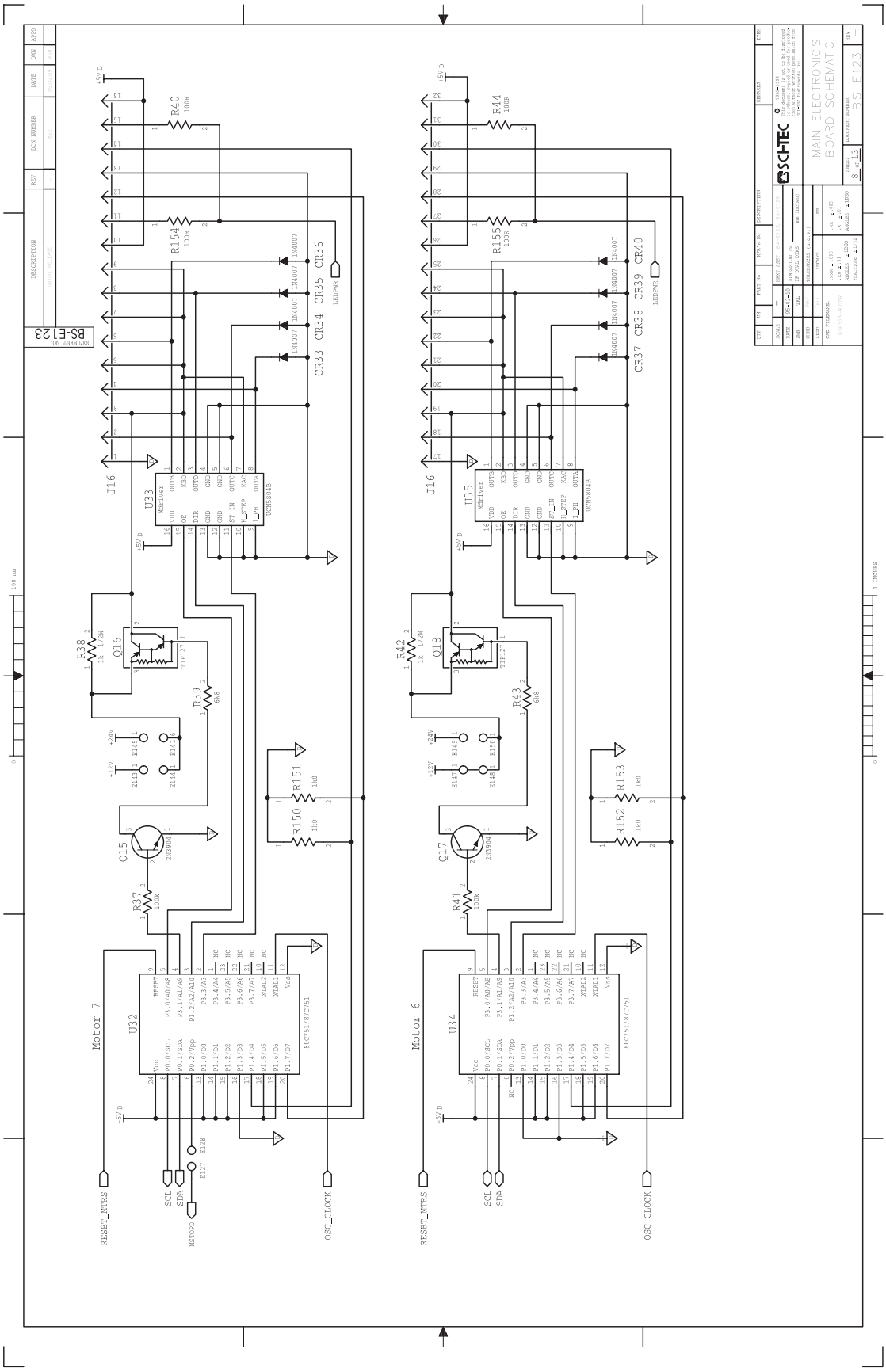
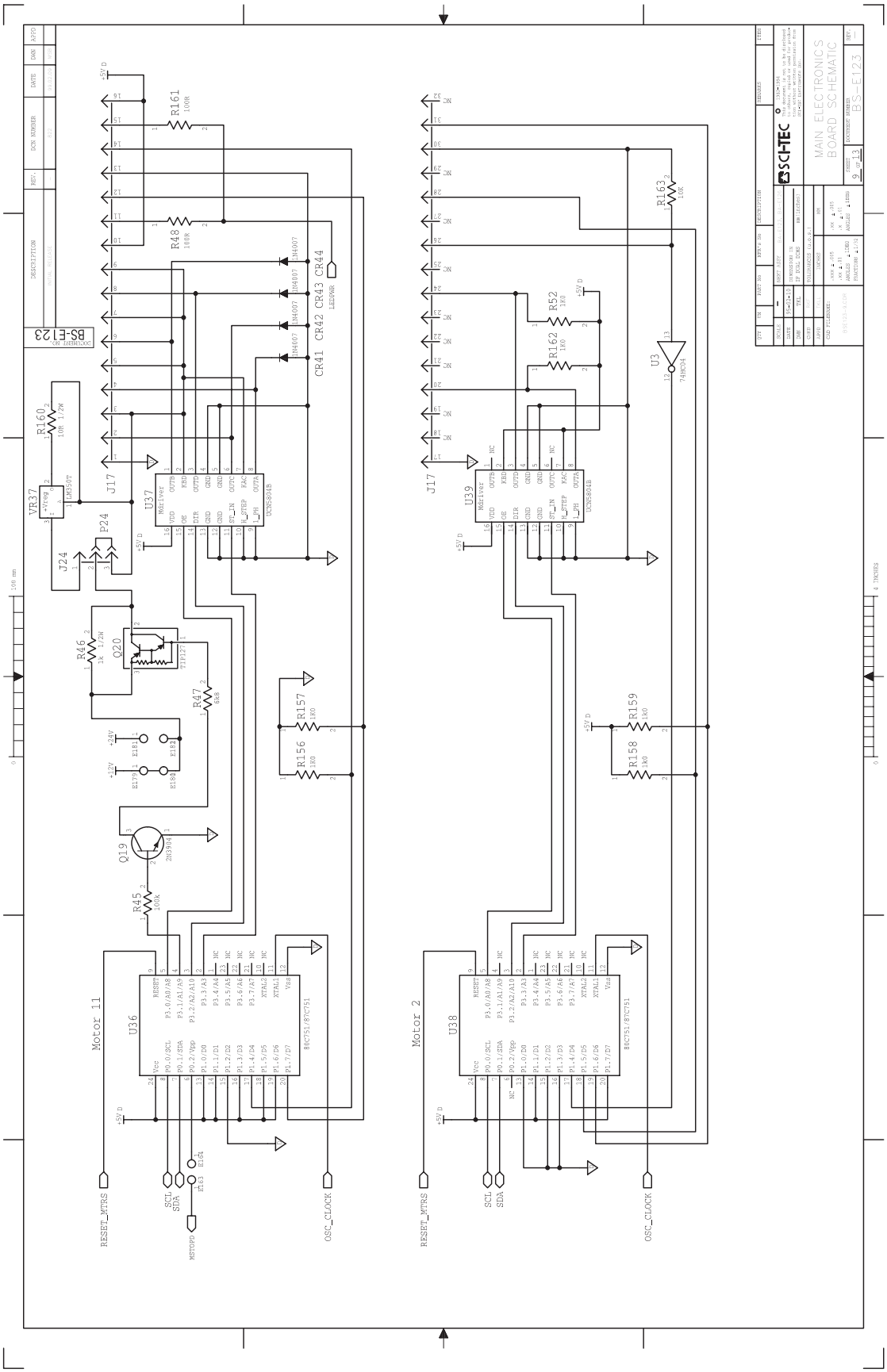
CR18
CR19
CR20
CR21
CR22
CR23
CR24
1N4007
LED5MM
+5V D
+12V
+24V


MAIN ELECTRONICS
BOARD SCHEMATIC
BS-E123
Motor 9
Motor 10
U28
U30
U29
U31
J15
Q11
Q12
Q13
Q14
R148
R149
R32
R36
R30
R34
R31
R35
R29
R33
R145
R144
R147
R146
CR25
CR26
CR27
CR28
CR29
CR30
CR31
CR32
SCL
SDA
OSC_CLOCK
RESET_MTRS
LEDPWR


MAIN ELECTRONICS
BOARD SCHEMATIC
SCI-TEC
BS-E123
Motor 7
Motor 6
U32
U34
U33
U35
J16
Q15
Q16
Q17
Q18
R37
R38
R39
R40
R41
R42
R43
R44
R150
R151
R152
R153
R154
R155
CR33 CR34 CR35 CR36
CR37 CR38 CR39 CR40
RESET_MTRS
SCL
SDA
MSTOPD
OSC_CLOCK
LEDPWR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BOARD SCHEMATIC
BS-E123
SCHTEC
DOCUMENT NO.
BS-E123
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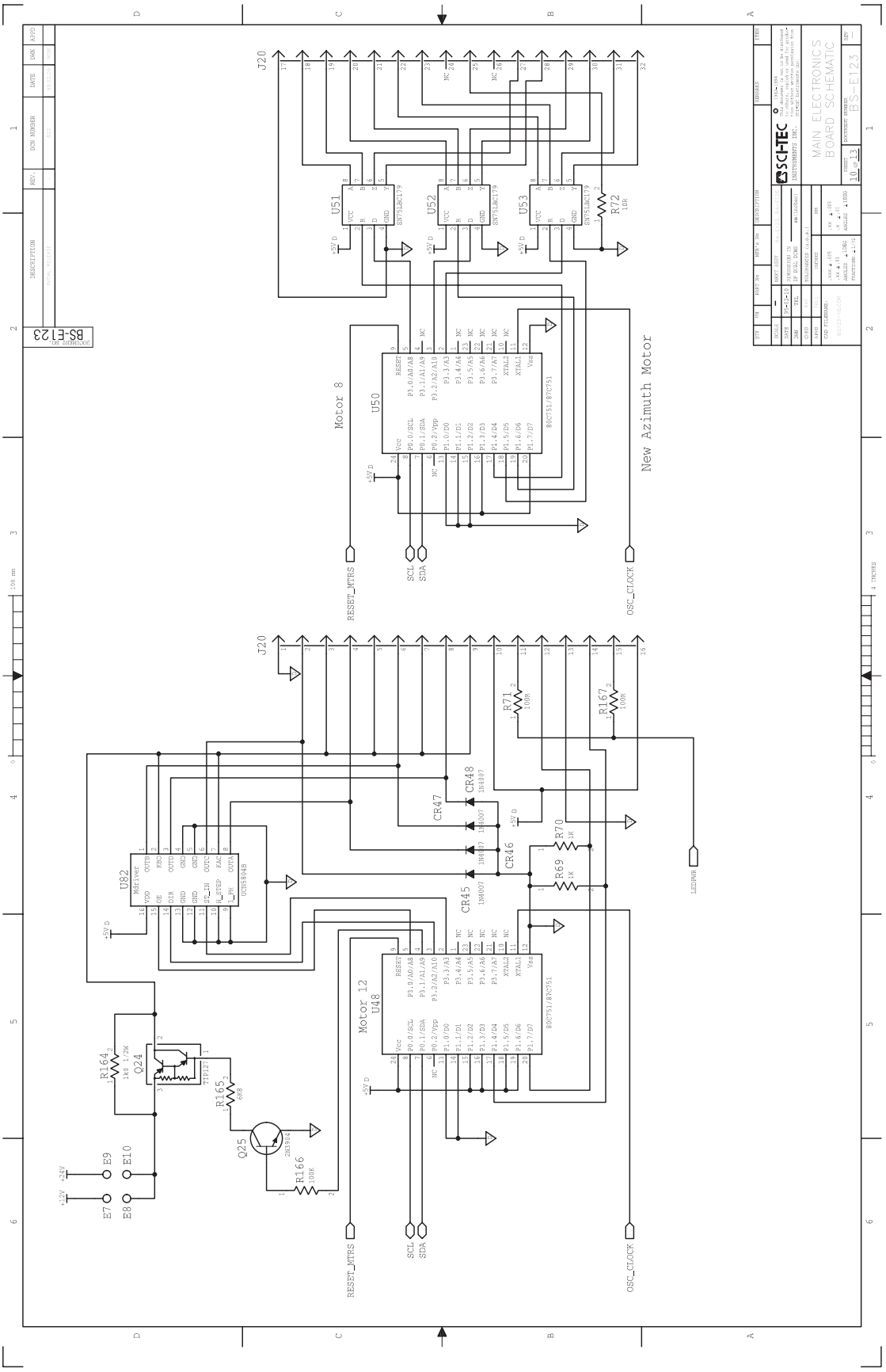
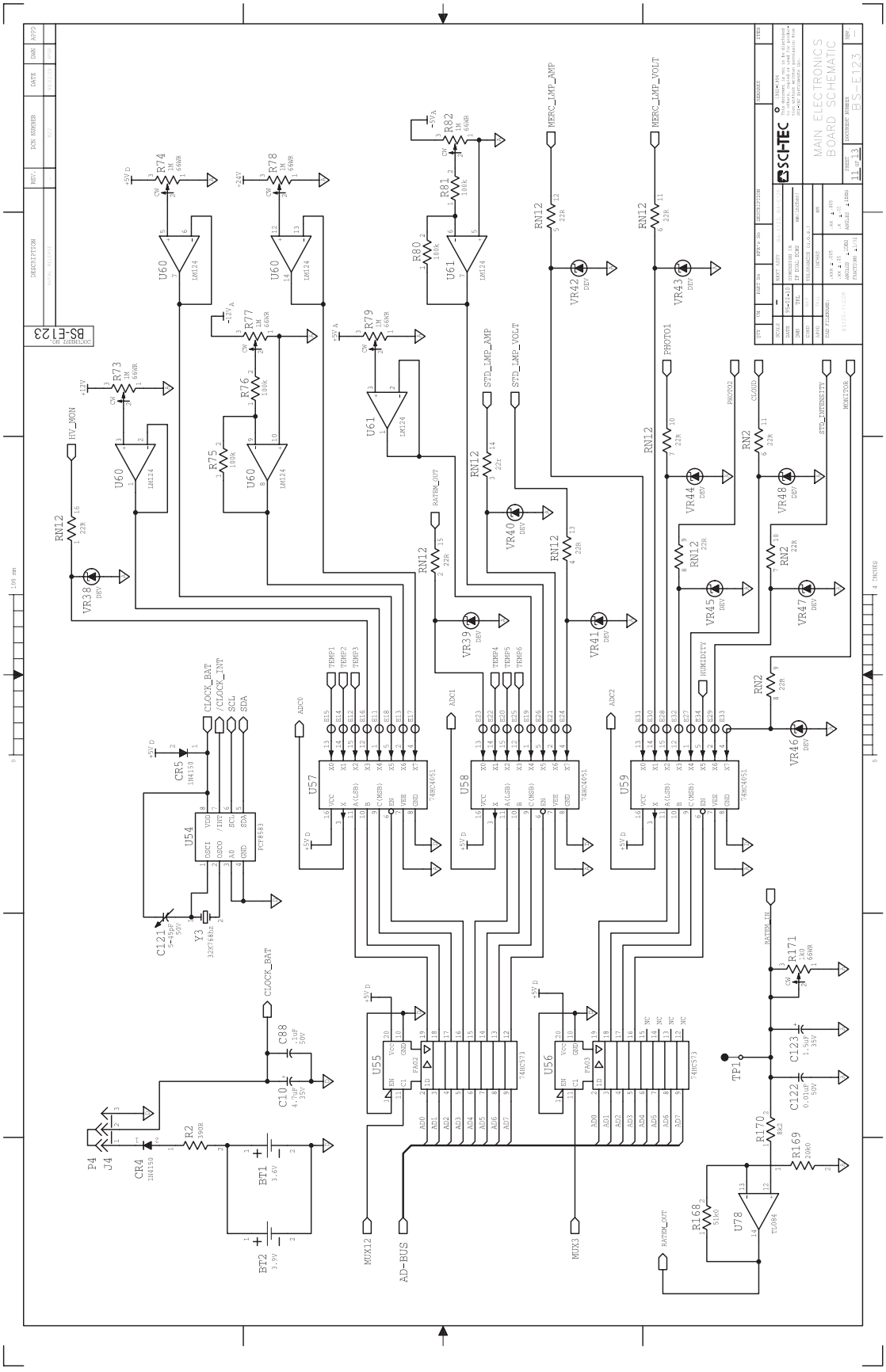
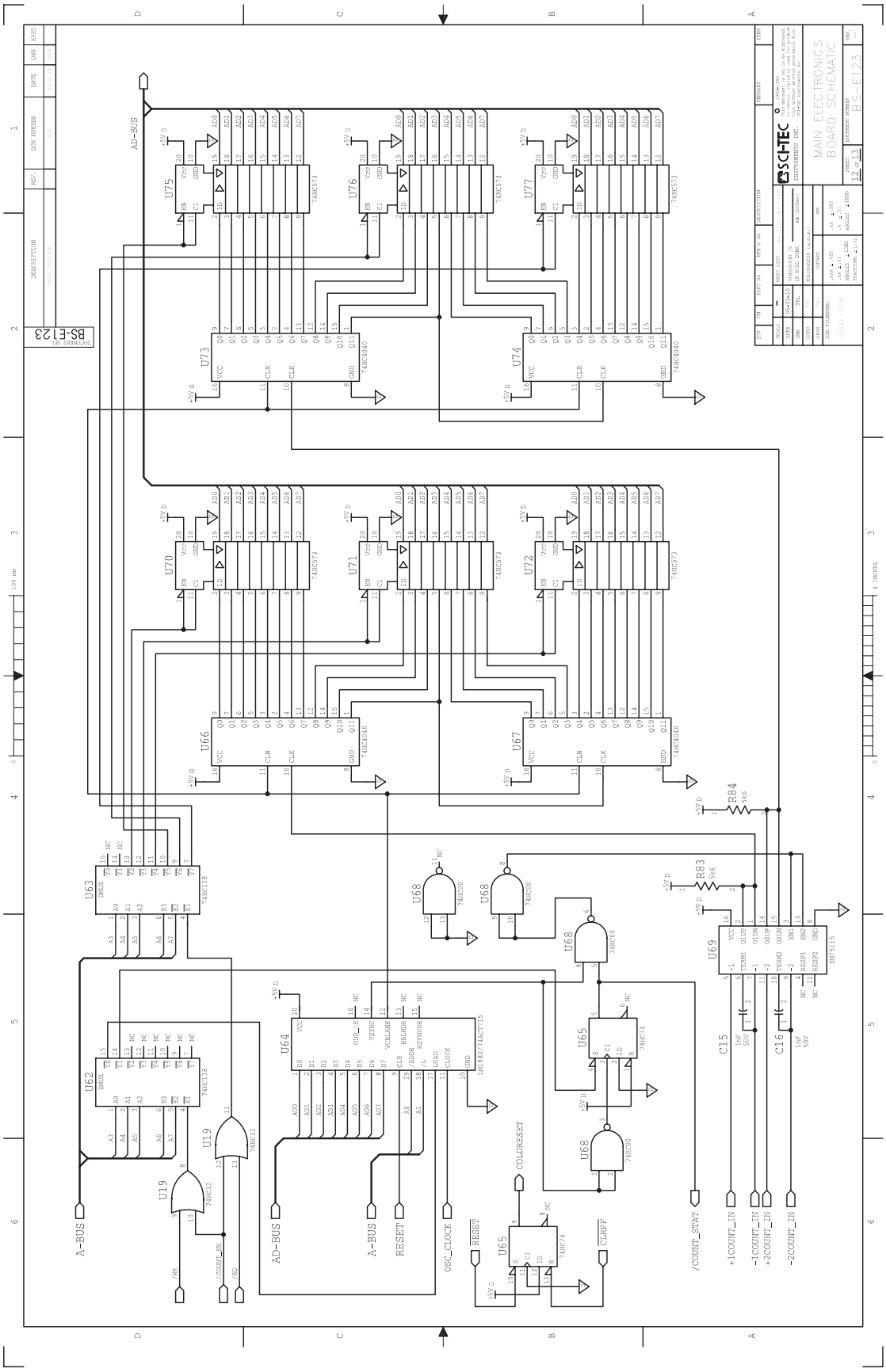
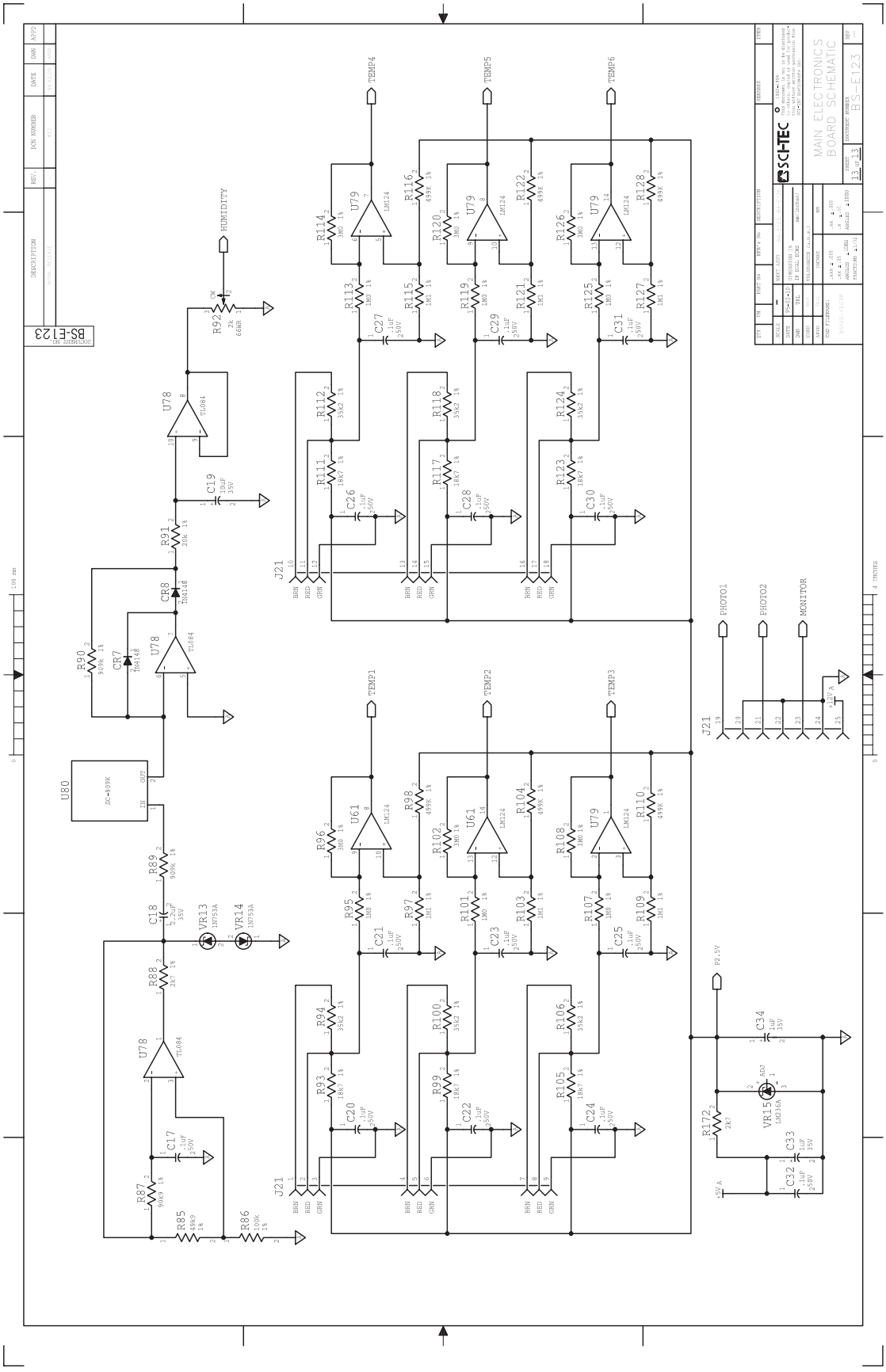
Motor 2
U36
U38
U37
U39
U3
J17
J24
P24
VR37
R160
R161
R48
R46
Q20
R47
Q19
R45
R157
R156
R52
R162
R163
R159
R158
CR41
CR42
CR43
CR44
RESET_MTRS
SCL
SDA
OSC_CLOCK
MSTOPD


MAIN ELECTRONICS
BOARD SCHEMATIC
BS-E123
Motor 8
Motor 12
New Azimuth Motor
RESET_MTRS
SCL
SDA
OSC_CLOCK
LEDPWR
U50
U48
U51
U52
U53
U82
J20
R71
R72
R167
R70
R69
R164
R165
R166
Q24
Q25
CR45
CR46
CR47
CR48
E7
E8
E9
E10


MAIN ELECTRONICS
BOARD SCHEMATIC
BS-E123
ESCHTEC
HV_MON
STD_LMP_AMP
STD_LMP_VOLT
MERC_LMP_AMP
MERC_LMP_VOLT
PHOTO1
PHOTO2
CLOUD
STD_INTENSITY
HUMIDITY
MONITOR
RATEM_OUT
RATEM_IN
CLOCK_BAT
/CLOCK_INT
SCL
SDA
MUX12
MUX3
AD-BUS
TP1
P4
J4
BT1
BT2
U54
U55
U56
U57
U58
U59
U60
U61
U78


MAIN ELECTRONICS
BOARD SCHEMATIC
SCI-TEC
BS-E123
AD-BUS
A-BUS
RESET
OSC_CLOCK
COLDRESET
/COUNT_STAT
+1COUNT_IN
-1COUNT_IN
+2COUNT_IN
-2COUNT_IN
U62
U63
U64
U65
U66
U67
U68
U69
U70
U71
U72
U73
U74
U75
U76
U77
U19
R83
R84
C15
C16


MAIN ELECTRONICS
BOARD SCHEMATIC
BS-E123
SCI-TEC
TEMP1
TEMP2
TEMP3
TEMP4
TEMP5
TEMP6
HUMIDITY
PHOTO1
PHOTO2
MONITOR
J21
U78
U79
U61
U80
TL084
LM124
CR7
CR8
VR13
VR14
VR15

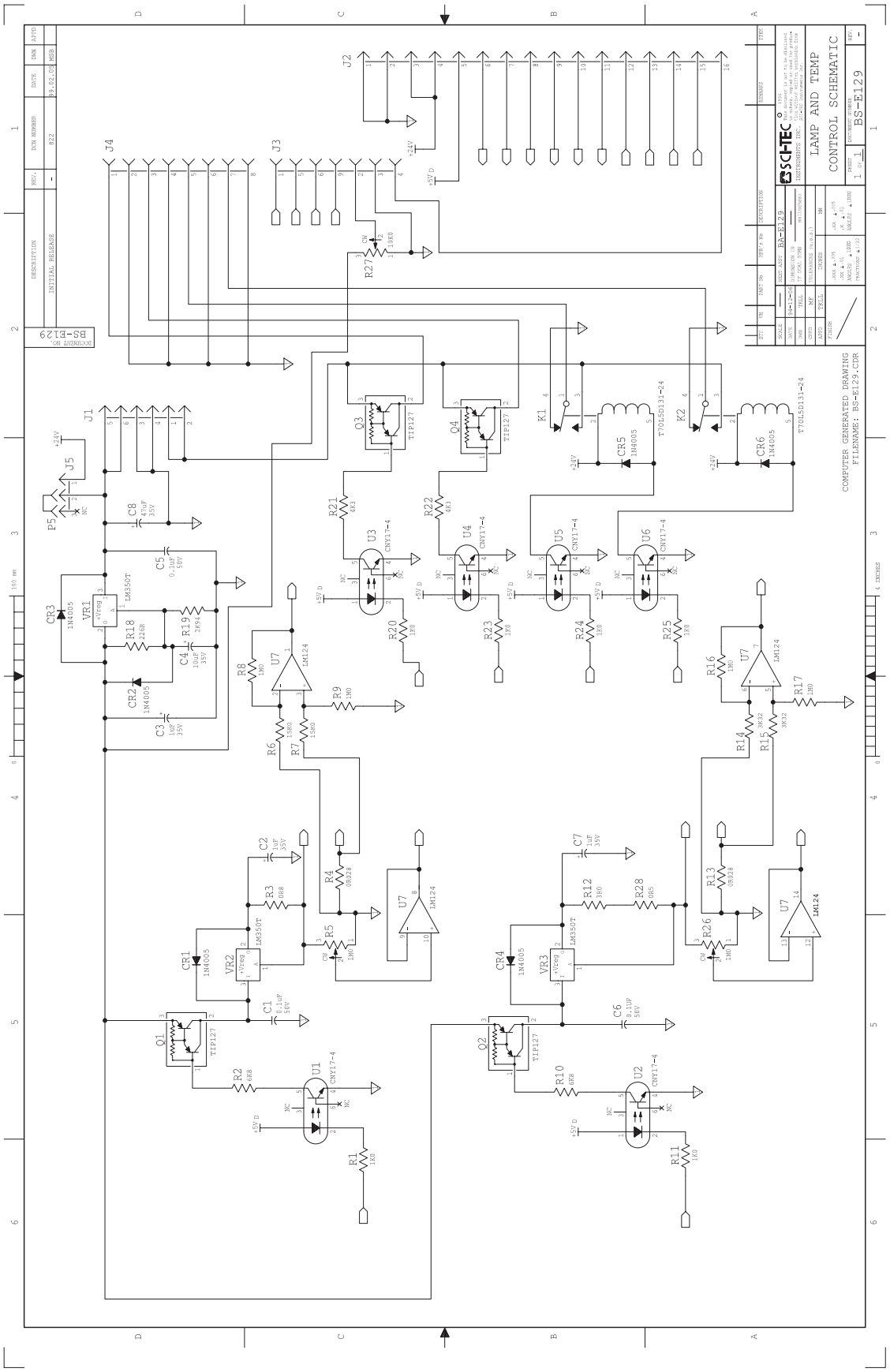

LAMP AND TEMP
CONTROL SCHEMATIC
BS-E129
SCHEMATIC
COMPUTER GENERATED DRAWING
FILENAME: BS-E129.CDR
J1
J2
J3
J4
J5
P5
K1
K2
Q1
Q2
Q3
Q4
U1
U2
U3
U4
U5
U6
U7
VR1
VR2
VR3
CR1
CR2
CR3
CR4
CR5
CR6
R1
R2
R3
R4
R5
R6
R7
R8
R9
R10
R11
R12
R13
R14
R15
R16
R17
R18
R19
R20
R21
R22
R23
R24
R25
R26
R27
C1
C2
C3
C4
C5
C6
C7
C8
LM124
LM350T
CNY17-4
TIP127
1N4005
T70150131-24

Figure 10.4-2

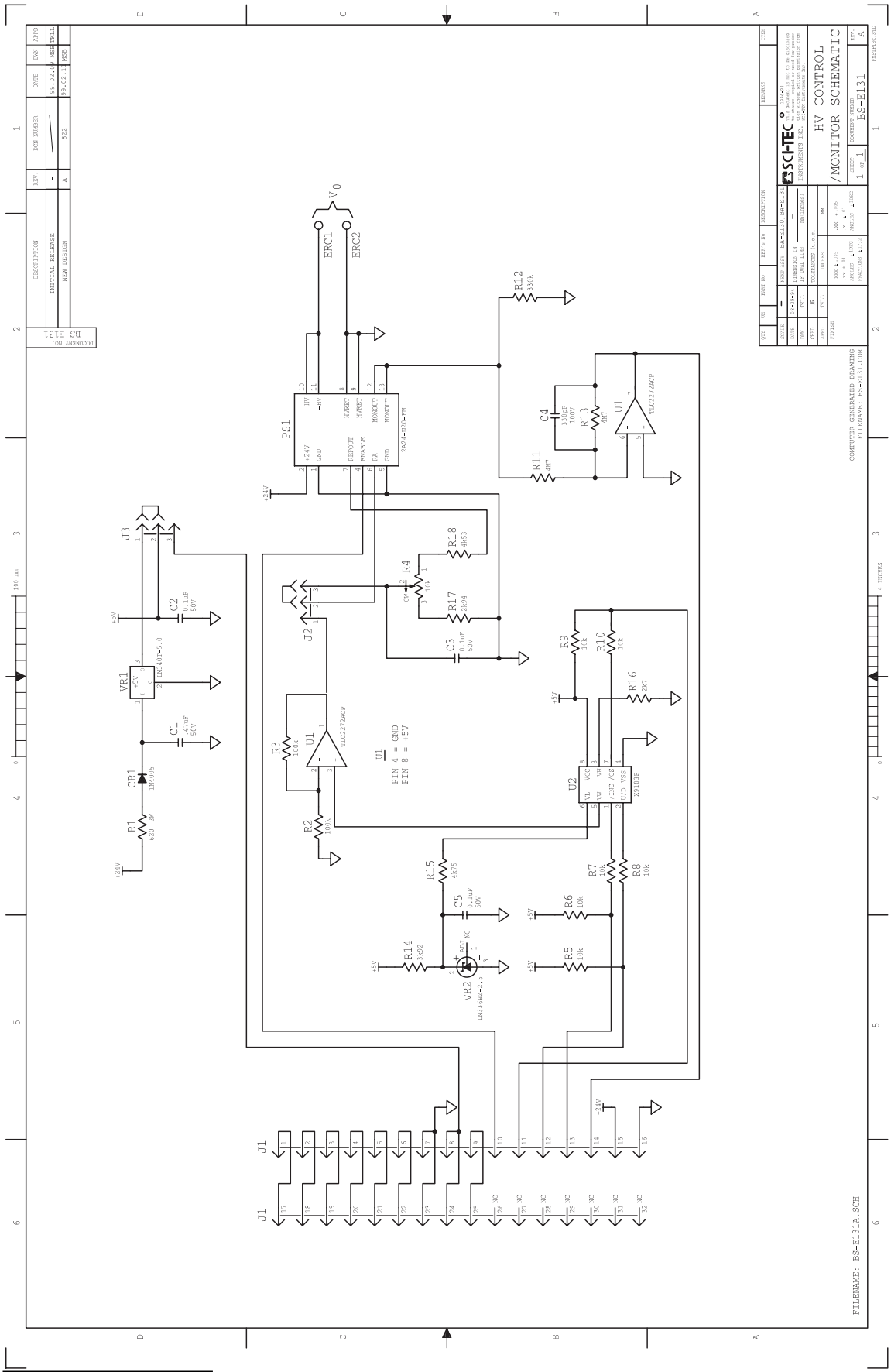
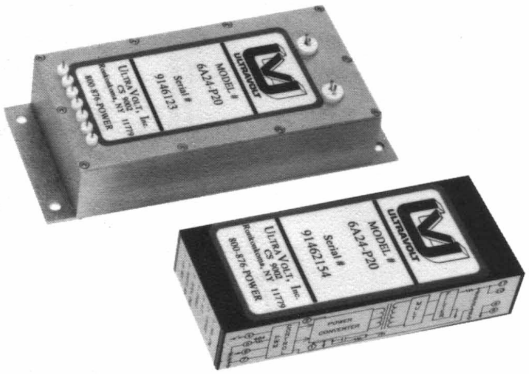

HV CONTROL
/MONITOR SCHEMATIC
BS-E131
SCHTEC
PS1
U1
U2
VR1
VR2
CR1
J1
J2
J3
ERC1
ERC2
R1
R2
R3
R4
R5
R6
R7
R8
R9
R10
R11
R12
R13
R14
R15
R16
R17
R18
C1
C2
C3
C4
C5
+24V
+5V
FILENAME: BS-E131A.SCH

Figure 10.4-3

"F" SERIES

HIGH VOLTAGE POWER SUPPLY ACCESSORY

- ☐ Output Ripple Filter
- ☐ Output Test Point
- ☐ Optional Flying Lead
- ☐ Mates with "A" Series Power Supplies



GENERAL INFORMATION:

The "F" Series of Ripple Stripper$_{TM}$ Output Filters provide significant ripple reduction, While adding only 4000 pF of output capacitance and increasing output impedance by < 650 ohms, output ripple is reduced > 100 time's! Also included is an Output Test Point and an Output Current Moinitor feature. A High Voltage Shielded output cable is available as an optional feature.

HIGH VOLTAGE OUTPUT FILTER:

Strips the output ripple on Mu-Metal Shielded "A" Series High Voltage Power Supplies down to :

2A12	2Kv	4WATT	< 0.001%Vp-p
2A24	2Kv	20WATT	< 0.002%Vp-p
4A12	4Kv	4WATT	< 0.0005%Vp-p
4A24	4Kv	20WATT	< 0.0015%Vp-p
6A12	6Kv	4WATT	< 0.0015%Vp-p
6A24	6Kv	20WATT	< 0.0015%Vp-p

HIGH VOLTAGE OUTPUT:

Square .025" pins are used for high voltage output and high voltage return. These pins can be used for PCB mounting or direct wiring. An optional High Voltage Output Flying Lead is available.

HIGH VOLTAGE TEST POINT:

A 100 megohm divider provides a 100:1 test point output on a 2 pin header. This test point has an output impedance of 1.11 megohm and is calibrated for use with a 10 megohm input impedance meter. Overall accuracy is ± 2.5% with a temperature coefficient of ± 200 ppm per ^{O}C.

For applications requiring a different scale factor, such as a DAC compatible design, an external impedance may be added in parallel with the output.

OUTPUT CURRENT MONITOR:

The "F" Series have a feature where the output current of the high voltage multiplier can be monitored by reading the voltage appearing between Output Monitor pin 3 and Signal Ground pin 5. Detailed information is described on applications note "AP-13".

SHIELDING:

All models are available with optional wrap-around Mu-Metal Shielding. This shielding attenuates magnetic and electrostatic emissions, while shielding ripple reduction circuitry from outside noise.

MECHANICAL:

The "F" Series accessories are designed to be added to the basic "A" module at the factory prior to encapsulation. The combined package is 6.35 In^3. As always, a Chassis Mount metal package is also available.

ENVIRONMENT:

The "F" Series meets all environmental specifications for temperature, shock & vibration as the "A" series.

ULTRAVOLT

C S 9002
RONKONKOMA, NY 11779

800-876-POWER
FAX 516-363-2423

"Making High Voltage Easier"

Figure 10.4-4

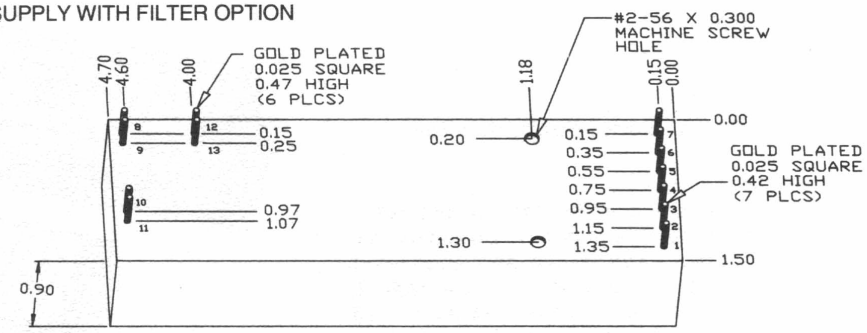
"F" SERIES

HIGH VOLTAGE POWER SUPPLY ACCESSORY

PLASTIC CASE: POWER SUPPLY WITH FILTER OPTION

CONSTRUCTION:
Epoxy Filled DAP Box
Certified to MIL-M-14F
SDG-F

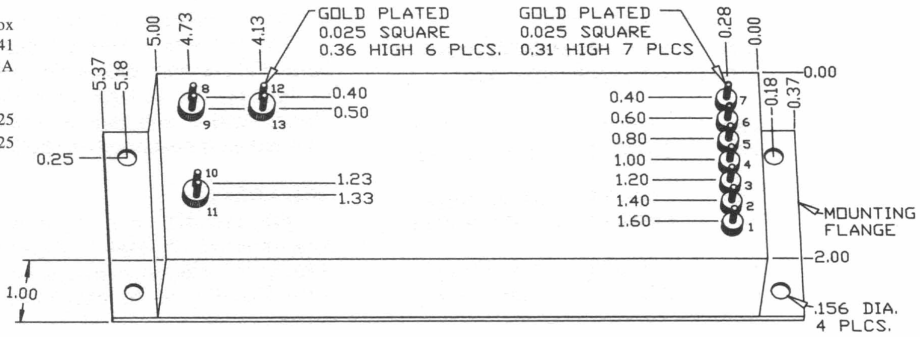
TOLERANCE:
Overall ± 0.050
Pin to Pin ± 0.025



METAL CASE: POWER SUPPLY WITH FILTER OPTION

CONSTRUCTION:
Epoxy Filled Aluminum Box
Chem Film per MIL-C-5541
Class 1A

TOLERANCE:
Overall ± 0.025
Pin to Pin ± 0.025



Connections

1 - Input PWR Return
2 - Positive PWR Input
3 - Output Current Monitor
4 - Enable
5 - Signal Return
6 - Remote Adjust
7 - Reference
8 & 9 - H.V. Return
10 & 11 - H.V. Output
12 & 13 - Output Test Point
All grounds joined internally. Power supply mounting points isolated from internal grounds by >100KΩ /.01uF 50V (Max)

Ordering Information

Case:	Plastic Case - Diallyl Phthalate	Std
	Aluminum Case	- C
Shield:	Mu Metal shield	- M

Example: 2A12-P4-F-C

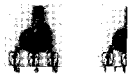
- C — Option (Case)
- F — Ripple Stripper™ Filter

"Making High Voltage Easier"

CS 9002, Ronkonkoma, NY 11779

Humidity Sensors
Relative Humidity

HIH Series



FEATURES
- Linear voltage output vs %RH
- Laser trimmed interchangeability
- Low power design
- High accuracy
- Fast response time
- Stable, low drift performance
- Chemically resistant

TYPICAL APPLICATIONS
- Refrigeration
- Drying
- Meteorology
- Battery-powered systems
- OEM assemblies

GENERAL INFORMATION

The HIH-3605 monolithic IC (Integrated Circuit) humidity sensor is designed specifically for high volume OEM (Original Equipment Manufacturer) users. Direct input to a controller or other device is made possible by this sensor's linear voltage output. With a typical current draw of only 200 µA, the HIH-3605 is ideally suited for low drain, battery powered systems.

The HIH-3605 delivers instrumentation quality RH sensing performance in a low cost, solderable SIP (Single In-line Package). Available in two lead spacing configurations, the RH sensor is a laser trimmed thermoset polymer capacitive sensing element with on-chip integrated signal conditioning.

ORDER GUIDE

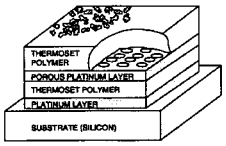
Catalog Listing	Description
HIH-3605-A	Integrated circuit humidity sensor, 0.100 in. lead pitch SIP
HIH-3605-A-CP	Integrated circuit humidity sensor, 0.100 in. lead pitch SIP with calibration and data printout
HIH-3605-B	Integrated circuit humidity sensor, 0.050 in. lead pitch SIP
HIH-3605-B-CP	Integrated circuit humidity sensor, 0.050 in. lead pitch SIP with calibration and data printout.

NIST CALIBRATION

HIH-3605 sensors may be ordered with a NIST calibration and sensor specific data printout. Append "–CP" to the model number to order.

RH SENSOR CONSTRUCTION

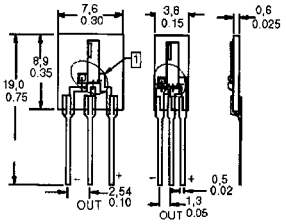
Sensor construction consists of a planar capacitor with a second polymer layer to protect against dirt, dust, oils and other hazards.



CAUTION
PRODUCT DAMAGE
The inherent design of this component causes it to be sensitive to electrostatic discharge (ESD). To prevent ESD-induced damage and/or degradation, take normal ESD precautions when handling this product.

MOUNTING DIMENSIONS (for reference only)

HIH-3605-A HIH-3605-B



1 Protective Sealant

Humidity Sensors
Relative Humidity

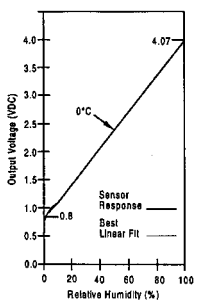
HIH Series

PERFORMANCE SPECIFICATIONS

Parameter	Conditions
RH Accuracy[1]	±2% RH, 0-100% RH non-condensing, 25°C, V_{supply} = 5 VDC
RH Interchangeability	±5% RH, 0-60% RH; ±8% @ 90% RH typical
RH Linearity	±0.5% RH typical
RH Hysteresis	±1.2% of RH span maximum
RH Repeatability	±0.5% RH
RH Response Time, 1/e	15 sec in slowly moving air at 25°C
RH Stability	±1% RH typical at 50% RH in 5 years
Power Requirements	
Voltage Supply	4 to 5.8 VDC, sensor calibrated at 5 VDC
Current Supply	200 µA at 5 VDC, 2 mA typical at 9 VDC
Voltage Output	$V_{out} = V_{supply}$ (0.0062 (Sensor RH) +0.16), typical @ 25°C
	(Data printout provides a similar, but sensor specific, equation at 25°C.)
V_{supply} = 5 VDC	0.8 to 3.9 VDC output @ 25°C typical
Drive Limits	Push/pull symmetric; 50 µA typical, 20 µA minimum, 100 µA maximum
	Turn-on ≤0.1 second
Temp. Compensation	True RH = (Sensor RH)/(1.093-.0012T), T in °F
	True RH = (Sensor RH)/(1.0546-0.00216T), T in °C
Effect @ 0% RH	±0.007% RH/°C (negligible)
Effect @ 100% RH	–0.22% RH/°C (<1% RH effect typical in occupied space systems above 15°C (59°F))
Humidity Range	
Operating	0 to 100% RH, non-condensing[2]
Storage	0 to 90% RH, non-condensing
Temperature Range	
Operating	–40° to 85°C (–40° to 185°F)
Storage	–51° to 125°C (–60° to 257°F)
Package[2]	Three pin solderable ceramic SIP
Handling	Static sensitive diode protected to 15 kV maximum

Notes:
1. Extended exposure to ≥90% RH causes a reversible shift of 3% RH.
2. This sensor is light sensitive. For best results, shield the sensor from bright light.

OUTPUT VOLTAGE VS RELATIVE HUMIDITY (at 0°C)



OUTPUT VOLTAGE VS RELATIVE HUMIDITY (at 0°C, 25°C, and 85°C)

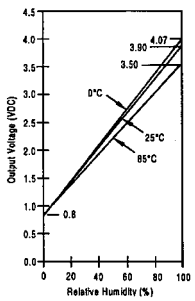
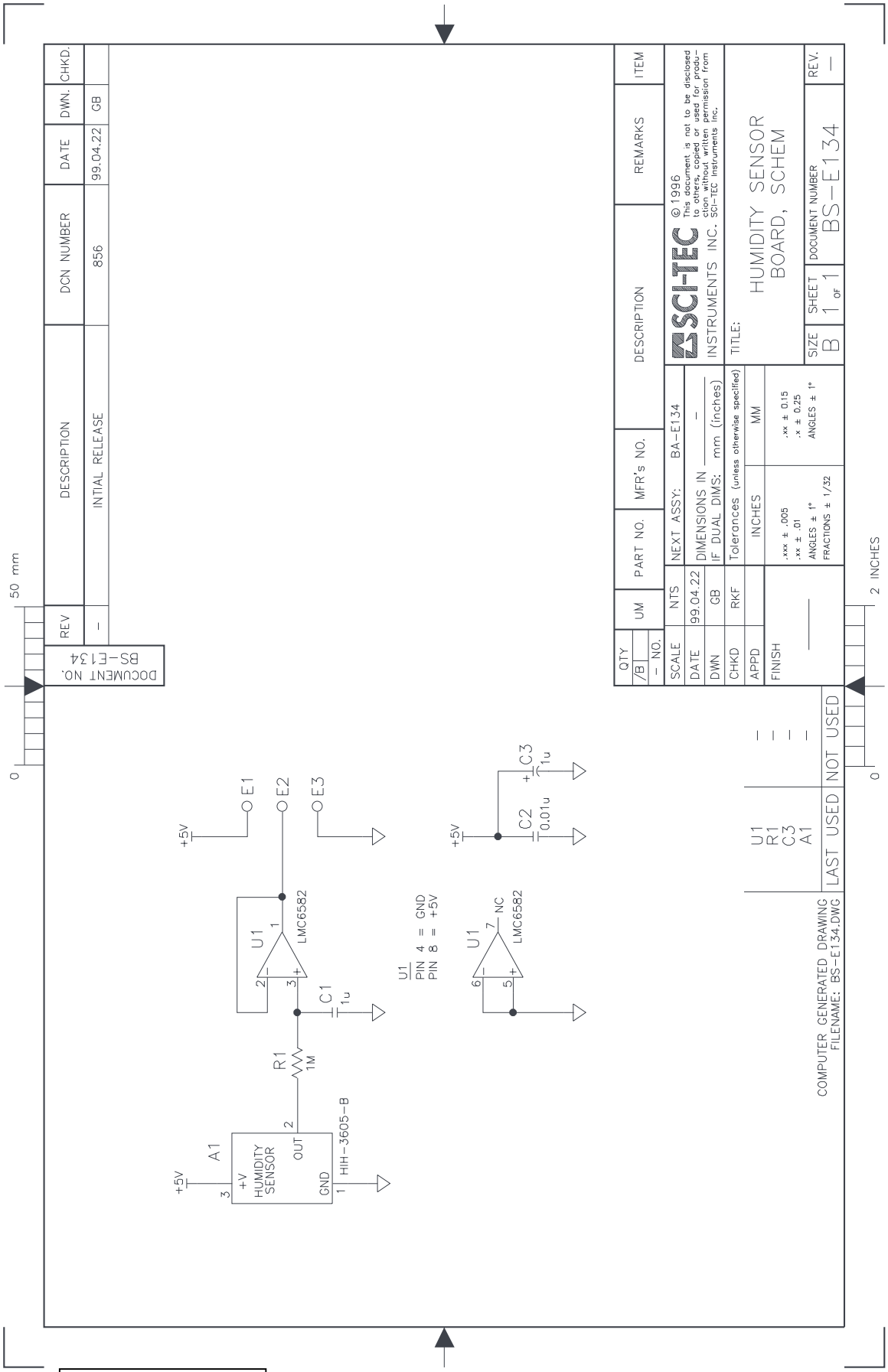


Figure 10.4-5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DCN NUMBER
DATE
DWN.
CHKD.
-
INTIAL RELEASE
856
99.04.22
GB
QTY
/B
- NO.
UM
PART NO.
MFR's NO.
DESCRIPTION
REMARKS
ITEM
SCALE NTS
NEXT ASSY: BA-E134
DATE 99.04.22
DIMENSIONS IN mm (inches)
IF DUAL DIMS:
DWN GB
CHKD RKF
APPD
FINISH
Tolerances (unless otherwise specified)
INCHES
MM
.xxx ± .005
.xx ± .01
ANGLES ± 1°
FRACTIONS ± 1/32
.xx ± 0.15
.x ± 0.25
ANGLES ± 1°
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SCI-TEC
INSTRUMENTS INC.
TITLE:
HUMIDITY SENSOR
BOARD, SCHEM
SIZE B
SHEET 1 OF 1
DOCUMENT NUMBER
BS-E134
REV. -
50 mm
0
2 INCHES
0
U1
R1
C3
A1
LAST USED
NOT USED
COMPUTER GENERATED DRAWING
FILENAME: BS-E134.DWG
+5V
A1
HUMIDITY SENSOR
+V
OUT
GND
HIH-3605-B
R1
1M
C1
1u
U1
LMC6582
E1
E2
E3
U1
PIN 4 = GND
PIN 8 = +5V
C2
0.01u
C3
1u
NC

Figure 10.4-6

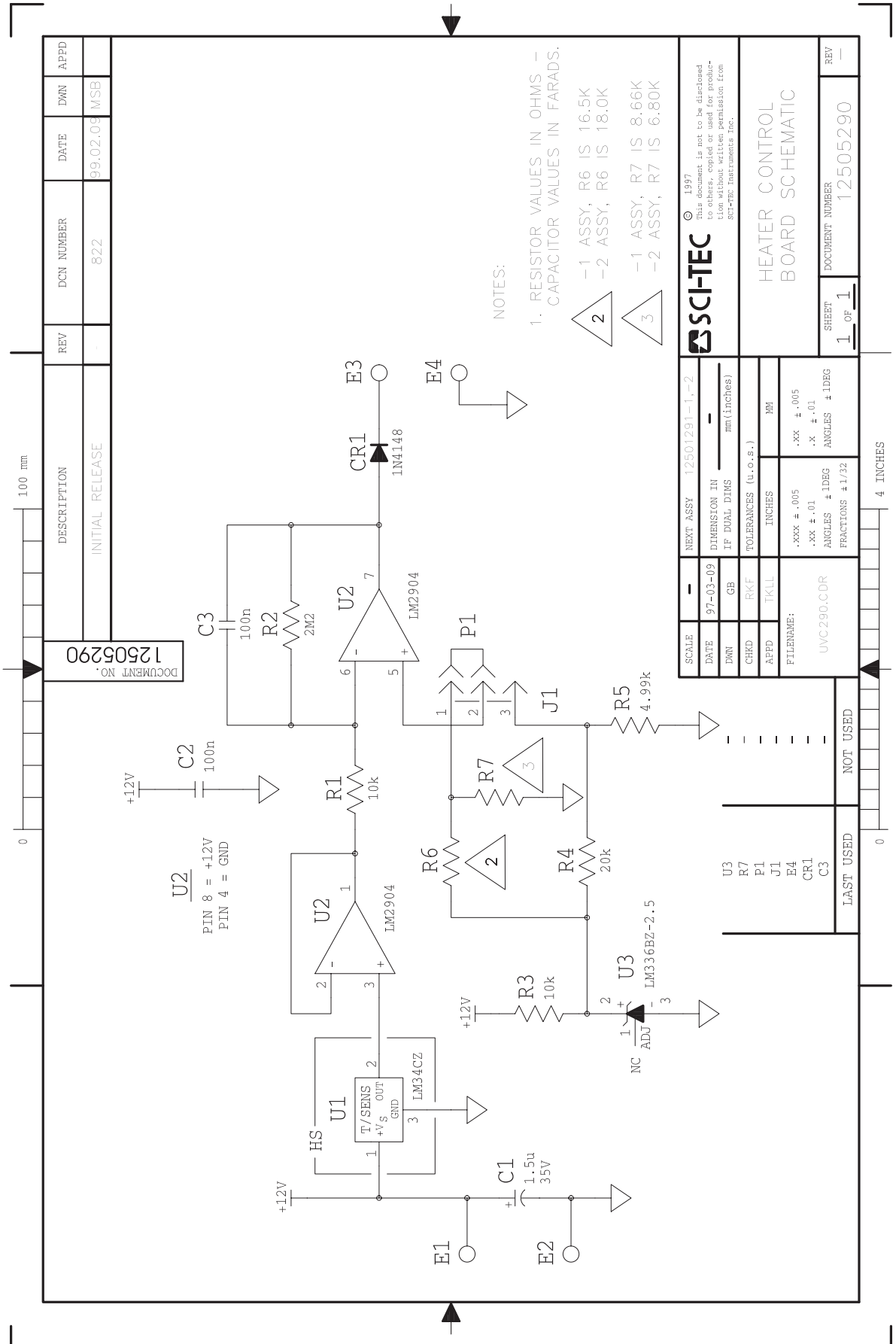

HEATER CONTROL
BOARD SCHEMATIC
SCI-TEC
DOCUMENT NUMBER 12505290
SHEET 1 OF 1
REV -
DESCRIPTION
INITIAL RELEASE
DCN NUMBER
822
DATE
99.02.09
DWN
MSB
APPD
DOCUMENT NO. 12505290
NOTES:
1. RESISTOR VALUES IN OHMS - CAPACITOR VALUES IN FARADS.
-1 ASSY, R6 IS 16.5K
-2 ASSY, R6 IS 18.0K
-1 ASSY, R7 IS 8.66K
-2 ASSY, R7 IS 6.80K
U2
LM2904
U1
LM34CZ
U3
LM336BZ-2.5
C1 1.5u 35V
C2 100n
C3 100n
R1 10k
R2 2M2
R3 10k
R4 20k
R5 4.99k
R6
R7
P1
J1
CR1 1N4148
E1
E2
E3
E4
HS
+12V
U2 PIN 8 = +12V
PIN 4 = GND
NOT USED
LAST USED
U3
R7
P1
J1
E4
CR1
C3
100 mm
4 INCHES

Figure 10.4-7

BREWER REFERENCE DOCUMENTATION

Section 10.6 Optics — Figure

10.6.1 Instrument Optics Overall Diagram 10.6-1.1

-Optical Assembly BA-C61/C 10.6-1.2

10.6.2 Foreoptics

- Assembly BA-F01 /C 10.6-2.1
- Lamp BA-F96 10.6-2.2
- IRIS Actuator BA-F106 /B 10.6-2.3
- Zenith Drive BA-F114 /B 10.6-2.4

10.6.3 Spectrometer

- Assembly BA-S01 10.6-3.1
- Spectrometer Mechanical Assembly BA-S02 10.6-3.2
- Slitmask Motor Assembly BA-S128 10.6-3.3
- Grating Support Assembly BA-S51 10.6-3.4

10.6.4 Photomultiplier

- Assembly BA-P42 10.6-4.1
- Tube Assembly BA-P02 10.6-4.2
- High Speed Amp Assembly BA-P23 10.6-4.3
- High Speed Amp Board Schematic BS-P23 10.6-4.4
- Filter Wheel #3 housing assembly BA-P44 10.6-4.5

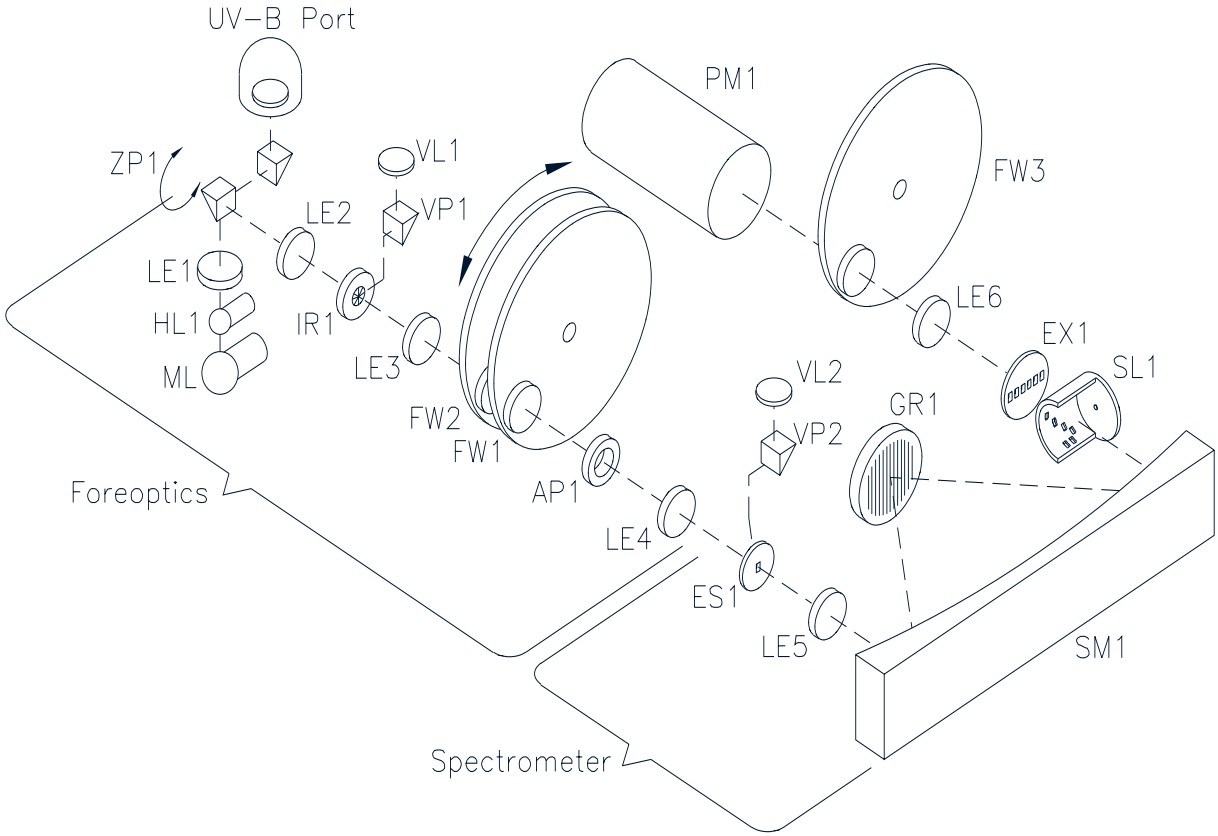


Figure 10.6-1.1

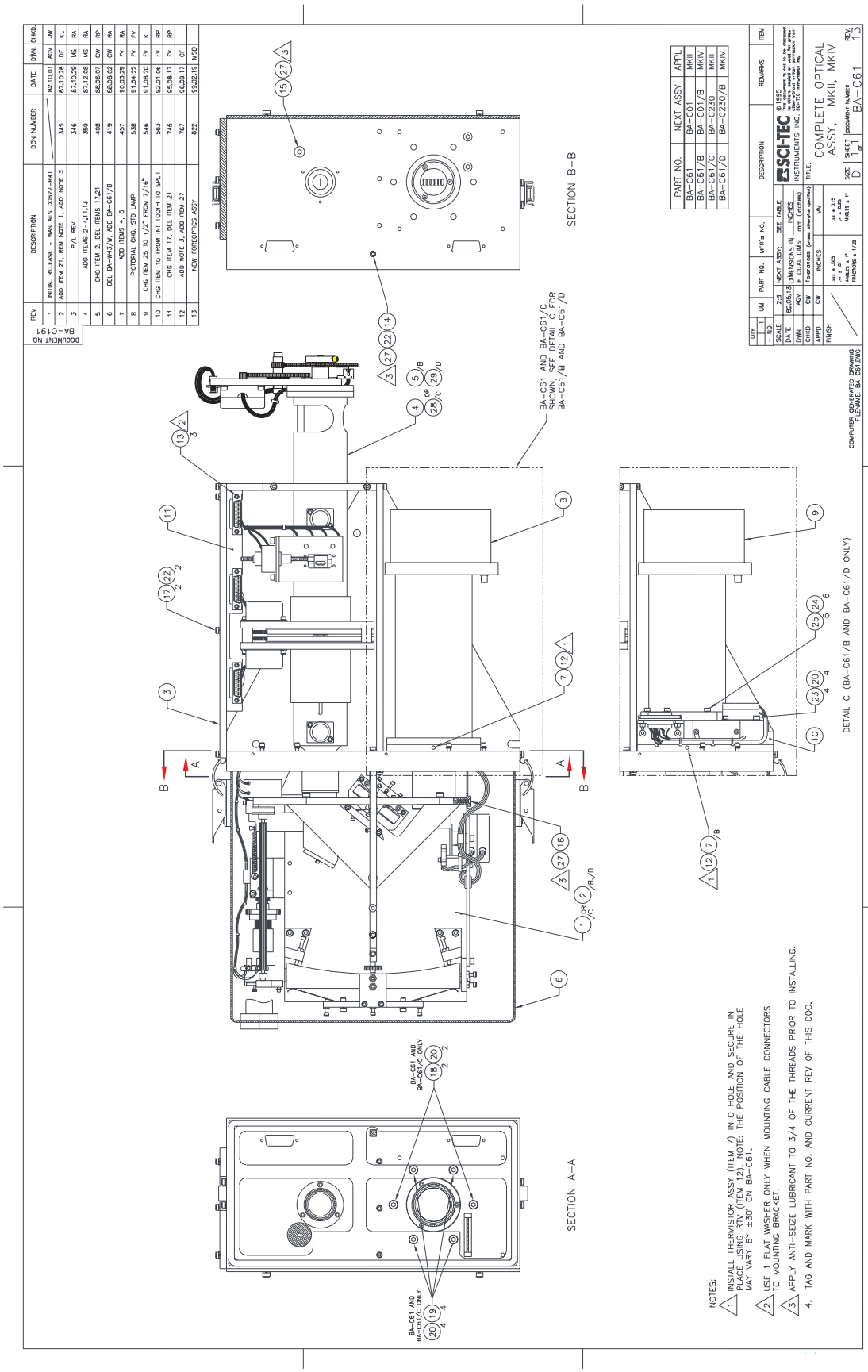


Figure 10.6-1.2

Item No.	BA-C61/D Part No.	BREWER Complete Optical Assy Description	Qty
1	BA-S01	Spectrometer Assy, MKII	--
2	BA-S01/B	Spectrometer Assy, MKIV	1.00
3	BA-C62	Main Support Frame Assy	1.00
4	BA-F01	Foreoptics Assy, MKII	--
5	BA-F01/B	Foreoptics Assy, MKIV	--
6	BA-C71	Light Cover Assy	1.00
7	BA-W52	Thermistor Assy	--
8	BA-P01	Photomultiplier Housing Assy, MKII	--
9	BA-P42	Photomultiplier Housing Assy, MKIV	1.00
10	BA-P44	Filterwheel #3 Housing Assy	1.00
11	BM-C70	Options Connector Bracket	1.00
12	85-10-150	Adhesive, Sealant, RTV	--
13	81-90-620	Connector Slide Lock Post	3.00
14	83-79-072	Screw, 6-32 x 5/8"Lg, Skt Hd Cap, SS	1.00
15	83-87-211	Screw, Mach 10-32 x 5/8 FH H	1.00
16	83-87-194	Screw, 8-32 x 1/2 Fl Hd Hs, SS	1.00
17	83-79-070	Scrw 6-32 x 1/2 HSC SS	2.00
18	83-79-114	Screw, 10-32 x 1/2"Lg, Skt Hd Cap, SS	--
19	83-79-119	Screw, 10-32 x 1"Lg, Skt Hd Cap, SS	--
20	83-95-607	Washer, #10, Internal Tooth Lock, SS	4.00
22	83-95-749	Washer, #6, Split Lock, SS	3.00
23	83-79-122	Screw, 10-32 x 1-1/2"Lg, Skt Hd Cap, SS	4.00
24	83-95-750	Washer, #8, Split Lock, SS	6.00
25	83-79-084	Screw, 8-32 x 1/2"Lg, Skt Hd Cap, Hex, SS	6.00
27	85-10-905	Anti-seize Lubricant	2.00
28	BA-F01/C	Foreoptics Assy New MKII	--
29	BA-F01/D	Foreoptics Assy New MKIII, MKIV	1.00

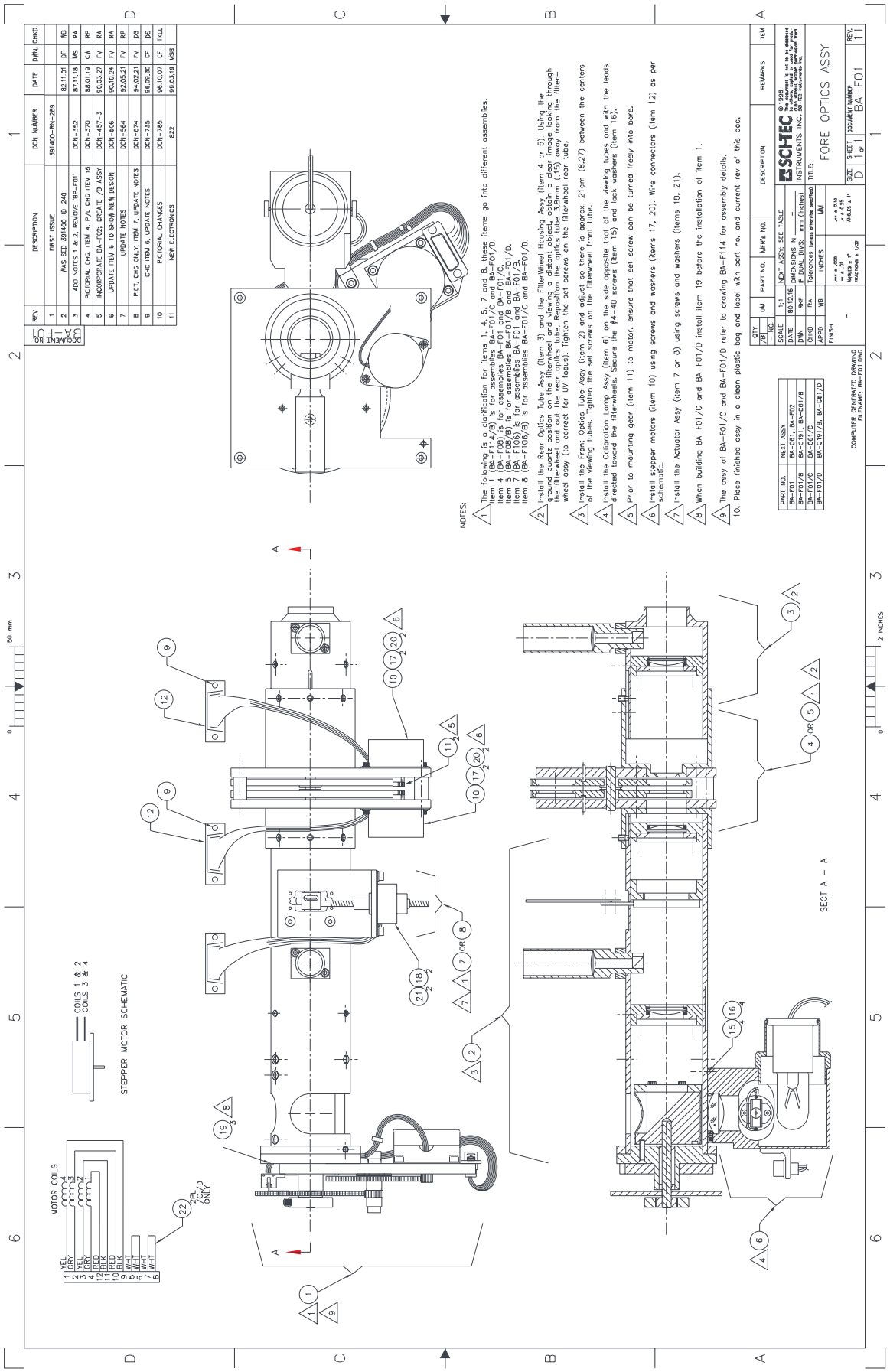
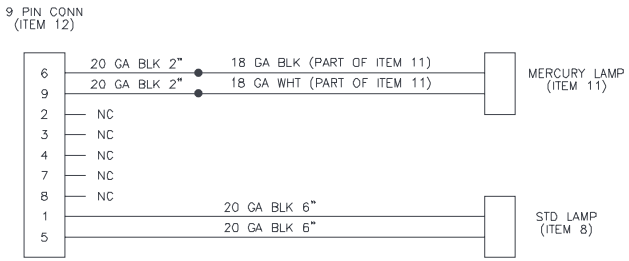
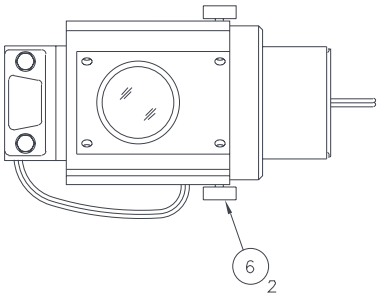
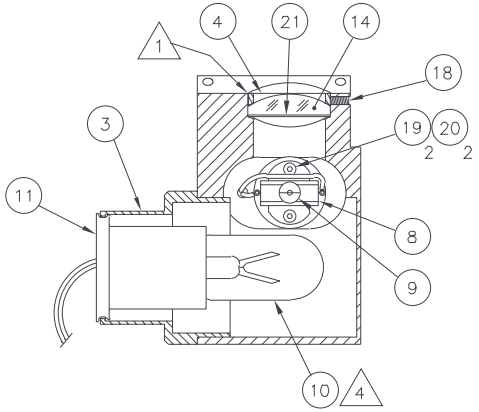


Figure 10.6-2.1



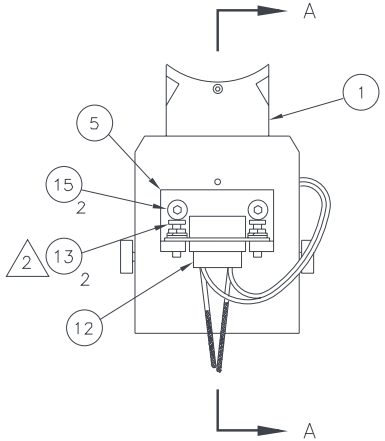
DOCUMENT NO. BA-F96	REV	DESCRIPTION	DCN NUMBER	DATE	DWN.	CHKD.
	1	INITIAL RELEASE		90.11.06	FV	KL
	2	CHG NOTE 2	597	92.06.09	FV	KL
	3	CHG ITEM 10, UPDATE P/L	785	97.03.26	CF	TKLL

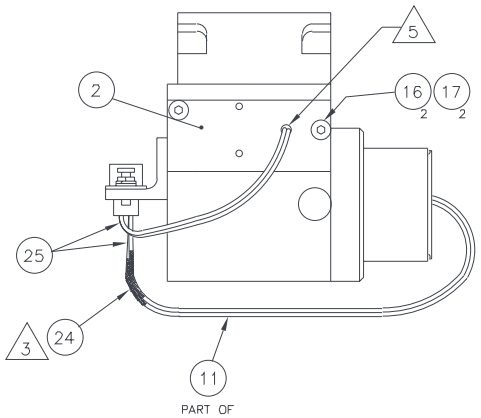




PARTIAL SECTION A–A

SOME HARDWARE NOT
SHOWN FOR CLARITY





PART OF

NOTES:

1. ENSURE LENS RETAINER (ITEM 4) IS INSTALLED WITH CHAMFERED EDGE TOWARDS LENS AND TOP SIDE FLUSH WITH BOTTOM OF CURVED SURFACE OF ITEM 1. THIS CAN BE ACCOMPLISHED BY USING JIG BA-F81 PA01 BY PLACING THE TUBE ON ON TOP OF THE CURVED SURFACE ON ITEM 1 AND ADJUSTING THE SET SCREW (ITEM 18).
2. INSTALL POSTS (ITEM 13) WITH ONE FLATWASHER AND ONE LOCKWASHER AS SHOWN. DISCARD OTHER HARDWARE.
3. SPLICE 2-2" PIECES OF WIRE (ITEM 25) TO ENDS OF WIRES OF LAMP HOLDER (ITEM 11) AND COVER WITH HEATSHRINK (ITEM 24) PRIOR TO INSTALLING IN CONN.
4. ENSURE MERCURY LAMP IS ROTATED SO THAT IT'S FILAMENTS ARE PERPENDICULAR TO THE STANDARD LAMP (ITEM 9).
5. AFTER ASSY, SECURE WIRES IN HOLE USING RTV (ITEM 23). APPLY RTV FROM OUTSIDE OF THE HOUSING.
6. ENSURE LENS AND LAMPS (ITEMS 9,10 & 21) ARE FREE OF FINGERPRINTS AFTER ASSY. (CLEAN WITH ALCOHOL AND Q-TIP)

COMPUTER GENERATED DRAWING
FILENAME: BA-F96.DWG

QTY –1 – NO.	UM	PART NO.	MFR's NO.	DESCRIPTION	REMARKS	ITEM

SCALE	1:1	NEXT ASSY: BA-F01	
DATE	90.10.11	DIMENSIONS IN ———	
DWN	FV	IF DUAL DIMS: mm (inches)	
CHKD	RA	Tolerances (unless otherwise specified)	
APPD	KL	INCHES: .xxx ± .005, .xx ± .01, ANGLES ± 1°, FRACTIONS ± 1/32	MM: .xx ± 0.15, .x ± 0.25, ANGLES ± 1°
FINISH			

SCI-TEC INSTRUMENTS INC.

TITLE: CALIBRATION LAMP ASSY

SIZE	SHEET	DOCUMENT NUMBER	REV.
C	1 OF 1	BA-F96	3

BA-F01/D FORE OPTICS ASSY

Item No.	Part No.	Description	Qty
1	BA-F114/B	Zenith Drive Assy	1.00
2	BA-F04	Front Optics Tube Assy	1.00
3	BA-F06	Rear Optics Tube Assy	1.00
4	BA-F08	Filterwheel Housing Assy	--
5	BA-F08/B	Filterwheel Housing Assy	1.00
6	BA-F96	Calibration Lamp Assy	1.00
7	BA-F106	Iris Actuator Assy	--
8	BA-F106/B	Iris Actuator Assy	1.00
9	81-90-630	Lock, Conn Sl Ret	2.00
10	50-10-030	Motor Stepper PPS-0-380 1	2.00
11	88-85-653	Gear, 24T, 48P, 1/8F, 1/8B, NY	2.00
12	81-46-124	Conn 'D' 15 Cir M Crimp B	2.00
15	83-79-048	Screw, Mach 4-40 x 5/16 HX	4.00
16	83-95-748	Washer, #4, Split Lock, SS	4.00
17	83-79-047	Screw 4-40 x 1/4 HSC SS	4.00
18	83-51-786	Screw 6-32 x 5/8 Button HD	2.00
19	83-56-143	Screw, Set 6-32 x 1/4 Cup	3.00
20	83-95-604	Washer, #4, Internal Tooth Lock, SS	4.00
21	83-95-605	Washer, #6, Internal Tooth Lock, SS	2.00
22	99-31-441	Wire Hookup, 20AWG IRR PV	0.20

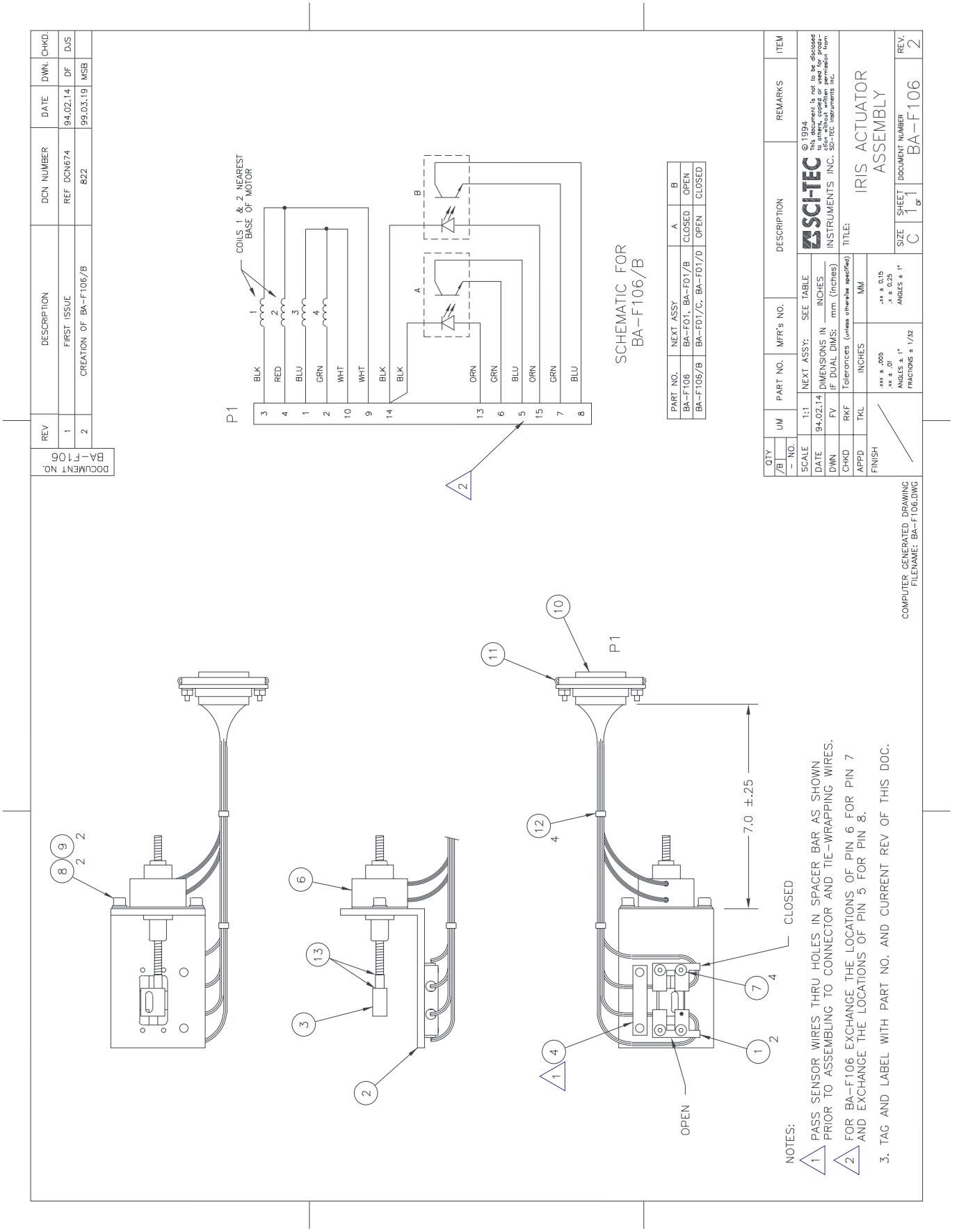


Figure 10.6-2.3

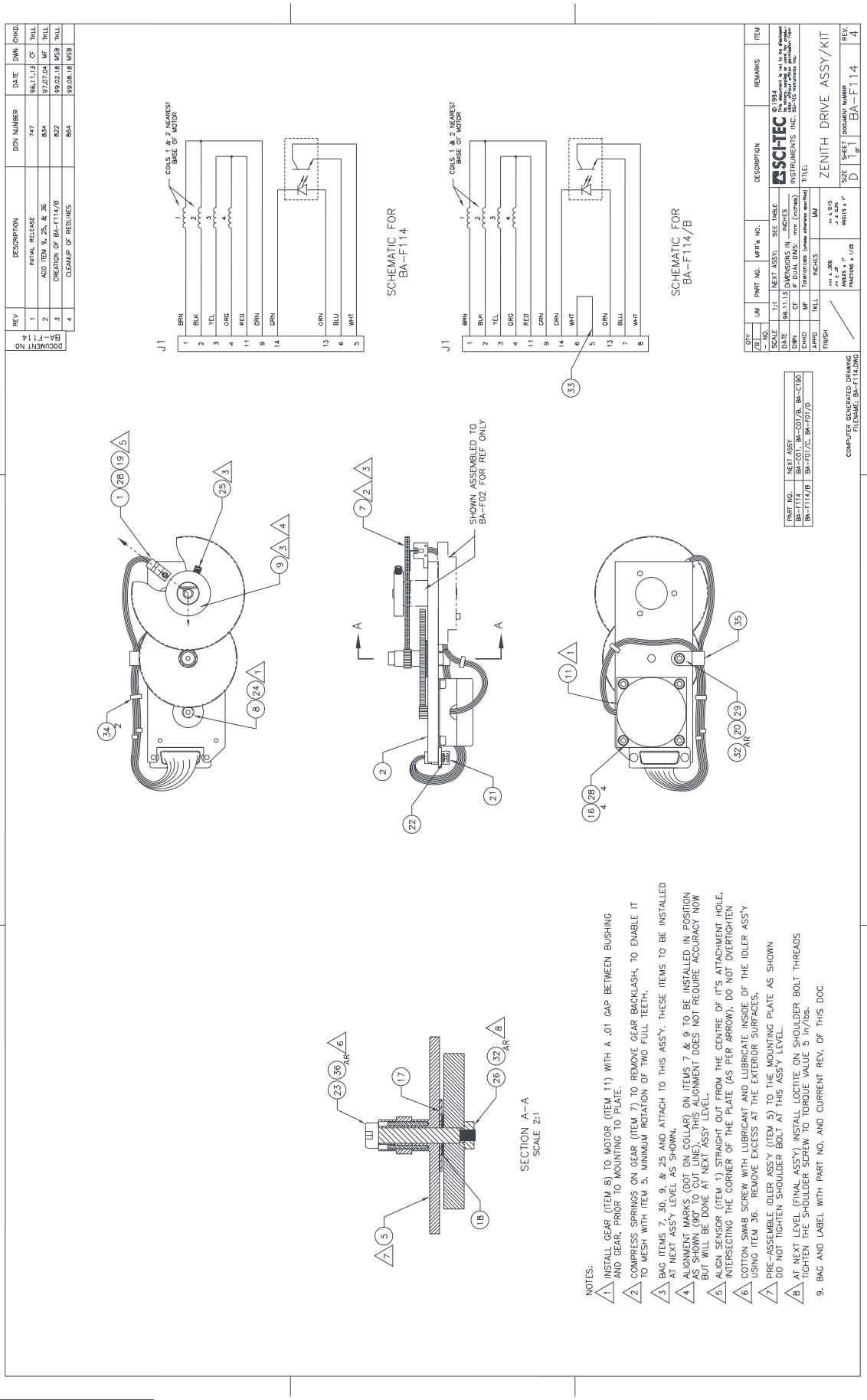


Figure 10.6-2.4

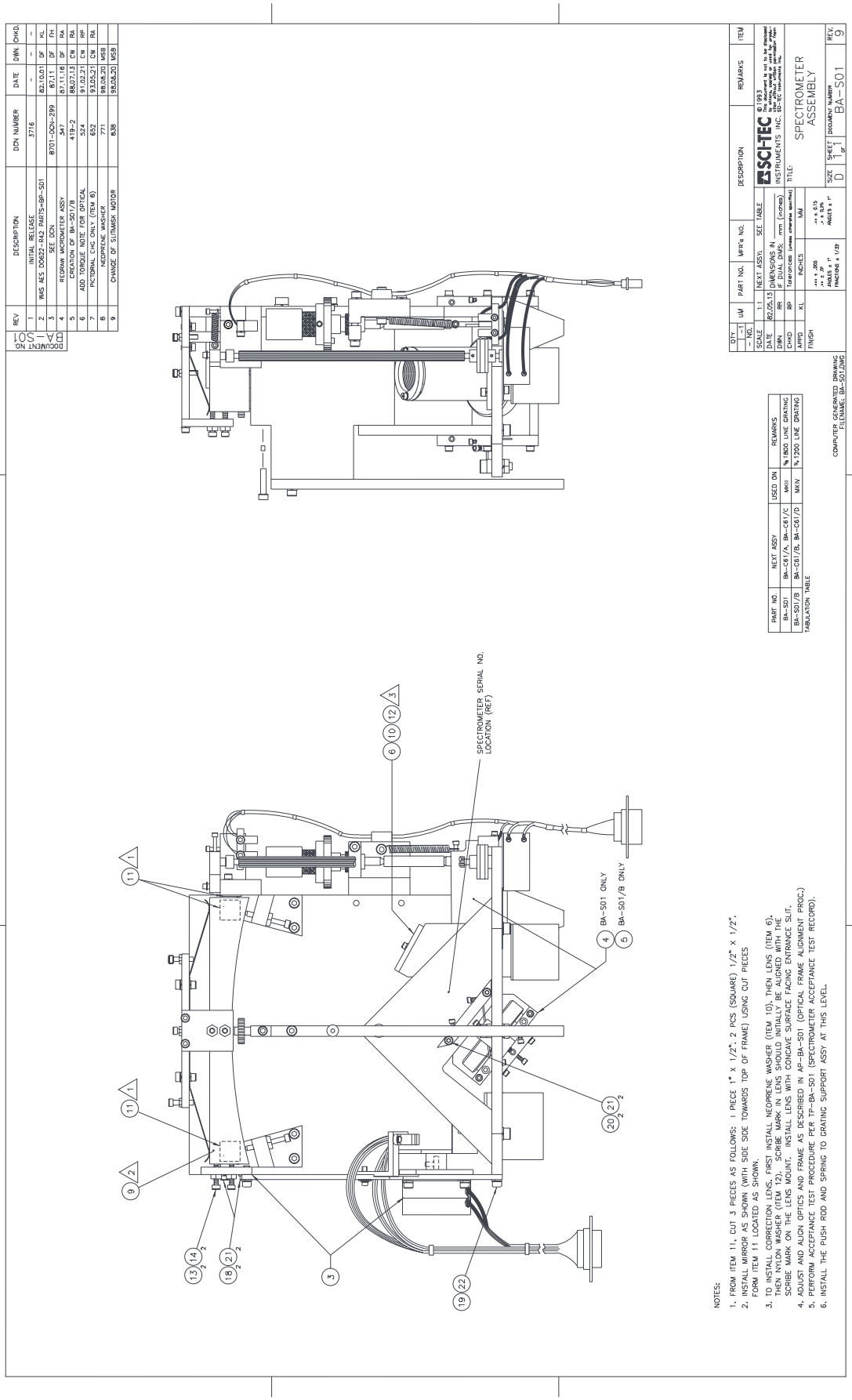


Figure 10.6-3.1

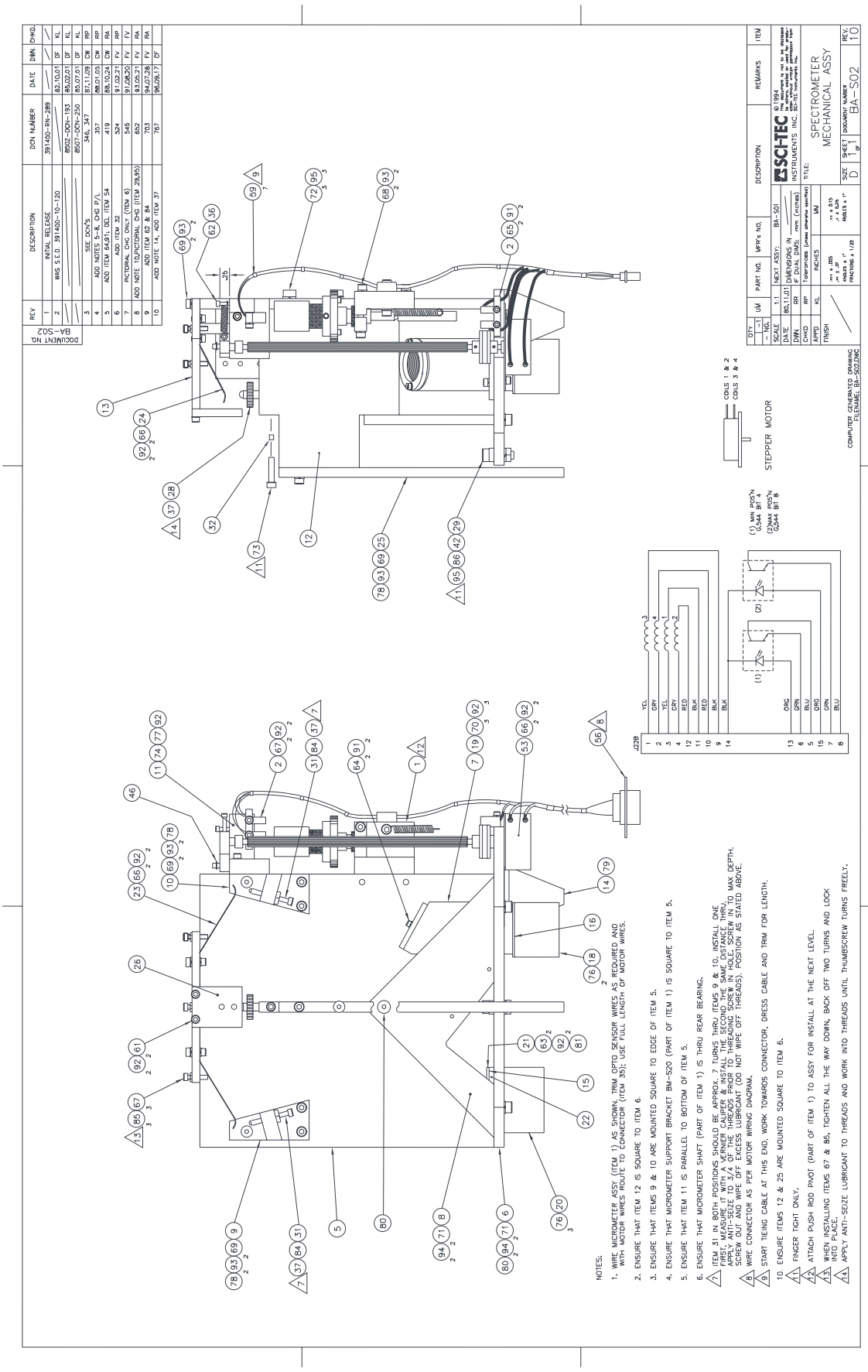


Figure 10.6-3.2

BA-S01/B SPECTROMETER ASSEMBLY

Item No.	Part No.	Description	Qty
1	BA-S02	Spectrometer Mechanical Assy	1.00
3	BA-S128	Shutter Motor Assy	1.00
4	BA-S51	Grating Support Assy, 1800 Line	--
5	BA-S51/B	Grating Support Assy, 1200 Line	1.00
6	BM-S42	Correction Lens	1.00
7	TP-BA-S01	Acceptance Test Record, Spect Assy	--
8	LP-BA-S01	Optical Frame Alignment Proc, Spect	--
9	BM-S47	Spherical Mirror	1.00
10	BM-S121	Washer, Correction Lens	1.00
11	98-10-010	Sheet, Closed Cell Neoprene, 1/16", Adh	1.50
12	83-95-830	Washer, Flat,1"OD x 3/16"ID x .015"Thk	1.00
13	83-78-022	Screw, #4-40 x 1/2"Lg,Skt Hd Cap,Nylon	4.00
14	83-40-237	Nut, #4-40, Hex, Nylon	4.00
18	83-79-049	Screw, #4-40 x 3/8"Lg, Skt Hd Cap, SS	2.00
19	83-79-068	Screw, #6-32 x 3/8"Lg, Skt Hd Cap, SS	1.00
20	83-79-051	Screw, #4-40 x 1/2"Lg, Skt Hd Cap, SS	4.00
21	83-95-748	Washer, #4, Split-Lock, SS	6.00
22	83-95-605	Washer, #6, Internal Tooth, SS	1.00

BA-S02 SPECTROMETER MECHANICAL ASSEMBLY

Item No.	Part No.	Description	Qty
1	BA-S21	Micrometer Assy	1.00
2	BA-W33/B	Opto Electronic Encoder Assy	2.00
5	BM-S24	Main Baseplate	1.00
6	BM-S25	Front Entrance & Exit Plate	1.00
7	BM-S26	Entrance Slit & Lens Holder	1.00
8	BM-S27	Triangular Top Plate	1.00
9	BM-S28/A	Mirror Mount	1.00
10	BM-S28/B	Mirror Mount	1.00
11	BM-S29	Micrometer Sensor Mount	1.00
12	BM-S30	Central Vertical Plate	1.00
13	BM-S31	Spring Holder Plate	1.00
14	BM-S32	Frame Support Cone	1.00
15	BM-S46	Exit Slit Plate	1.00
16	BM-S45	Entrance Slit PLate	1.00
18	BM-S33	Entrance Slit Light Trap	1.00
19	BM-S34	Entrance Lens Retainer	1.00
20	BM-S35	Exit Slit Light Trap	1.00
21	BM-S36	Exit Slit Mount #1	1.00
22	BM-S37	Exit Slit Mount #2	1.00
23	BM-S38	Leaf Spring #1	1.00
24	BM-S39	Leaf Spring #2	1.00
25	BM-S40	Support Bar #3	1.00
26	BM-S41	Retainer Plate, Mirror	1.00
28	BM-S43	Knurled Thumb Screw	1.00
29	BM-S44	Drilled Screw	1.00

BA-S02 SPECTROMETER MECHANICAL ASSEMBLY

Item No.	Part No.	Description	Qty
31	BM-S69	Special Screw	2.00
32	BM-S95	Nylon Slug	1.00
36	85-10-145	Adhesive Sealant (Loctite 242)	1.00
37	85-10-905	Aniti-seize Lubricant	2.00
42	88-99-125	Shaft Spacer, 3/16"Dia, 1/8"Lg	1.00
46	88-99-580	Retaining Ring, External, 1/8" Shaft	1.00
53	50-10-030	Stepper Motor, PPS-0-380	1.00
56	81-46-124	Connector, "D", 15 Pin, Male	1.00
59	85-80-450	Cable-Tie, 4-1/8 x .10, Nylon	7.00
61	83-79-049	Screw, #4-40 x 3/8"Lg, Skt Hd Cap, SS	2.00
62	83-79-031	Screw, #2-56 x 1/2"Lg, Skt Hd Cap, SS	1.00
63	83-51-763	Screw, #4-40 x 3/8"Lg, Btn Hd Hex, SS	2.00
64	83-79-027	Screw, #2-56 x 1/4"Lg, Skt Hd Cap, SS	2.00
65	83-79-029	Screw, #2-56 x 3/8"Lg, Skt Hd Cap, SS	2.00
66	83-79-047	Screw, #4-40 x 1/4"Lg, Skt Hd Cap, SS	6.00
67	83-79-051	Screw, #4-40 x 1/2"Lg, Skt Hd Cap, SS	5.00
68	83-79-068	Screw, #6-32 x 3/8"Lg, Skt Hd Cap, SS	2.00
69	83-79-070	Screw, #6-32 x 1/2"Lg, Skt Hd Cap, SS	7.00
70	83-79-048	Screw, Mach #4-40 x 5/16"Lg, Hex	3.00
71	83-79-084	Screw, #8-32 x 1/2"Lg, Skt Hd Cap, SS	4.00
72	83-79-116	Screw, #10-32 x 5/8"Lg, Skt Hd Cap, SS	3.00
73	83-79-072	Screw, #6-32 x 5/8"Lg, Skt Hd Cap, SS	1.00
74	83-79-053	Screw, #4-40 x 5/8"Lg, Skt Hd Cap, SS	1.00
76	83-87-161	Screw, #4-40 x 1/4"Lg, Flt Hd Hex, SS	5.00
77	83-87-167	Screw, #4-40 x 5/8"Lg, Flt Hd Hex, SS	1.00
78	83-87-179	Screw, #6-32 x 1/2"Lg, Flt Hd Hex, SS	3.00
79	83-87-211	Screw, #10-32 x 5/8"Lg, Flt Hd Hex, SS	1.00
80	83-87-194	Screw, #8-32 x 1/2"Lg, Flt Hd Hex, SS	2.00
81	83-87-163	Screw, #4-40 x 3/8"Lg, Flt Hd Hex, SS	1.00
84	83-40-241	Nut, #4-40 x 1/4"Hex x 3/32"Thk, SS	2.00
85	83-40-239	Nut, #4-40 x 1/4"Hex x 3/16"Thk, SS	3.00
86	83-40-301	Nut, #10-32 x 5/16"Hex x 7/16"Thk, SS	1.00
89	85-10-905	Anti-seize Lubricant	--
91	83-95-747	Washer, #2, Split-Lock, SS	4.00
92	83-95-748	Washer, #4, Split-Lock, SS	16.00
93	83-95-749	Washer, #6, Split-Lock, SS	9.00
94	83-95-750	Washer, #8, Split-Lock, SS	4.00
95	83-95-752	Washer, #10, Split-Lock, SS	4.00

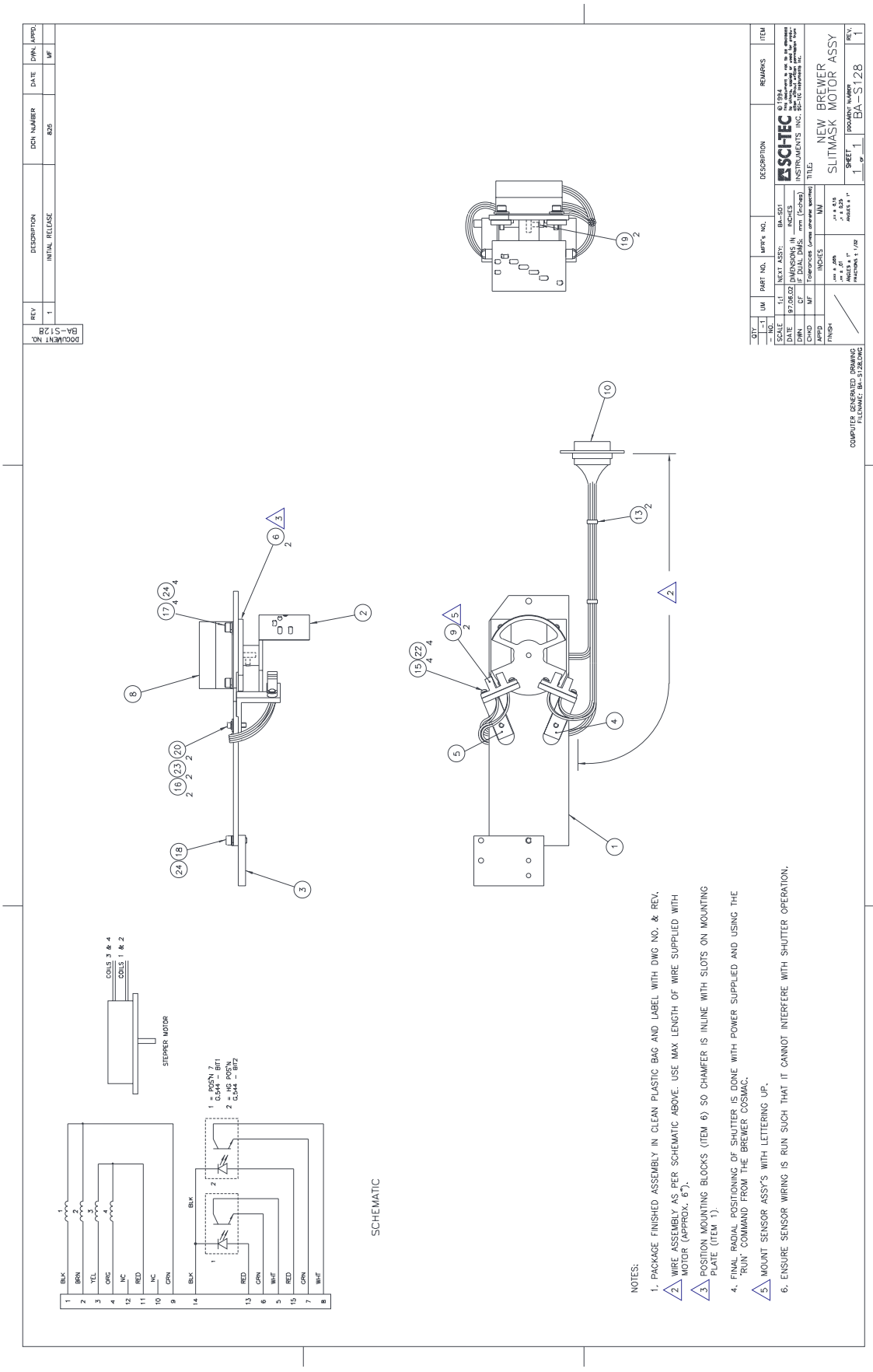


Figure 10.6-3.3

BA-S128 SLITMASK MOTOR ASSEMBLY

Item No.	Part No.	Description	Qty
1	BM-S126	Slitmask Motor Mounting Plate	1.00
2	BM-S125	Exit Slitmask	1.00
3	BM-S12	Support Plate, Slitmask Motor	1.00
4	BM-S123	Slitmask Sensor Holder, Left	1.00
5	BM-S124	Slitmask Sensor Holder, Right	1.00
6	BM-S127	Slitmask Motor Mounting Block	2.00
8	50-10-033	Motor, Stepper, 12V, 48 Step	1.00
9	89-70-024	Optical Sensor, SW,Slotted	2.00
10	81-46-124	Connector, 'D', 15 Pin, Male	1.00
13	85-80-450	Cable-Tie, 4-1/8 x .10, Nylon	2.00
15	83-51-752	Screw, #2-56 x 1/4"Lg, Button Head	4.00
16	83-79-049	Screw, #4-40 x 3/8"Lg, Skt Hd Cap, SS	2.00
17	83-79-067	Screw, #6-32 x 5/16"Lg, Skt Hd Cap, SS	4.00
18	83-79-068	Screw, #6-32 x 3/8"Lg, Skt Hd Cap, SS	1.00
19	83-56-016	Set Screw, #4-40 x 3/16"Lg, Cup Point, SS	2.00
20	83-95-011	Washer, #4, Flat, SS	2.00
22	83-95-747	Washer, #2, Split Lock, SS	4.00
23	83-95-748	Washer, #4 Split Lock, SS	2.00
24	83-95-749	Washer, #6, Split Lock, SS	5.00

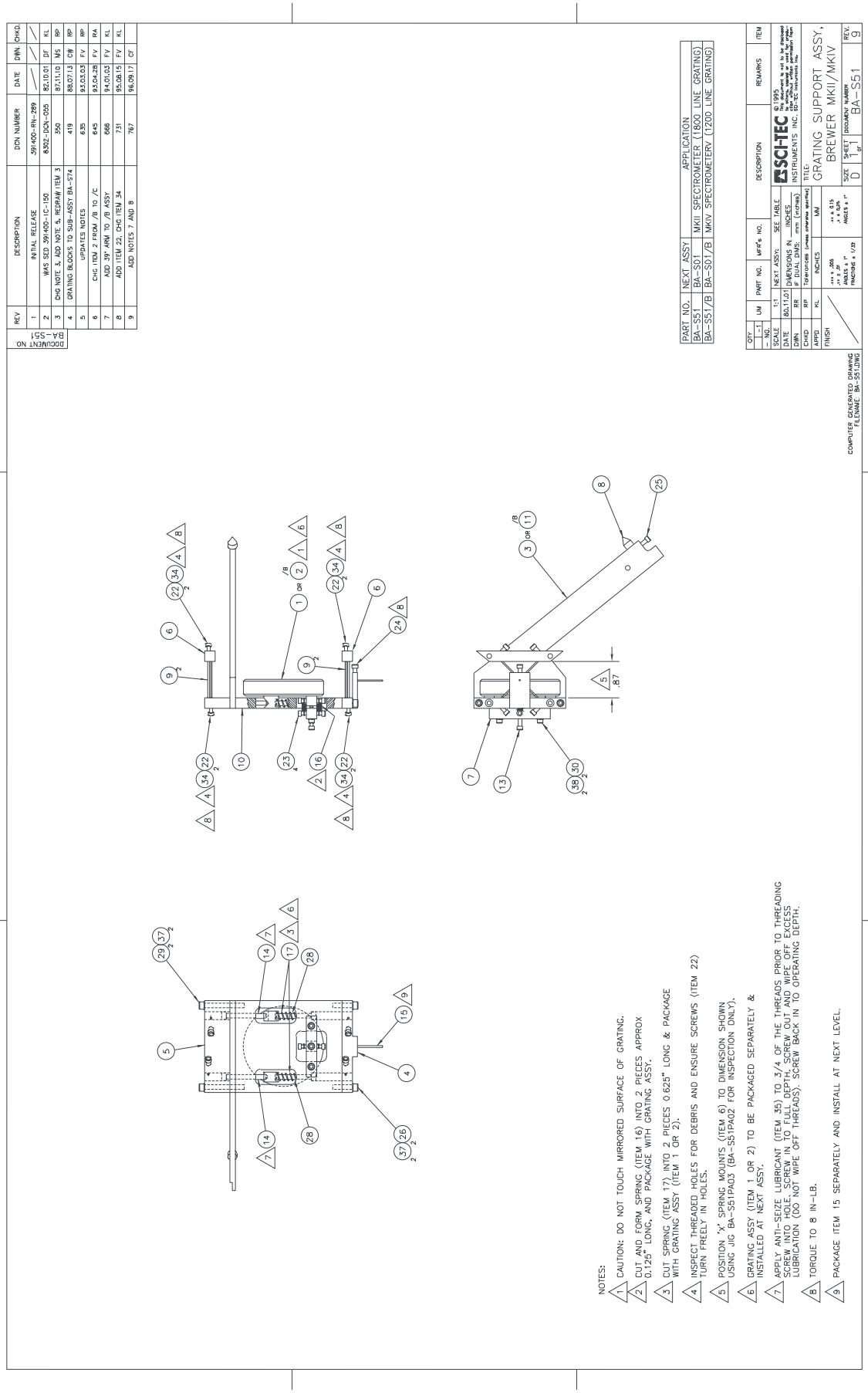


Figure 10.6-3.4

BA-S51/B GRATING SUPPORT ASSEMBLY

Item No.	Part No.	Description	Qty
1	BA-S74/A	Grating/Mount Assy, 1800 Line (Holographic)	--
2	BA-S74/C	Grating/Mount Assy, 1200 Line (Holographic)	1.00
3	BM-S52	Grating Arm, 35 Degrees	--
4	BM-S54	Spring Mount Block #1	1.00
5	BM-S55	Spring Mount Block #2	1.00
6	BM-S56	`X' Spring Mount	2.00
7	BM-S57	Grating Control Spring Mount	1.00
8	BM-S58	Push Rod Cone	1.00
9	BM-S66	Wire Spring, Horizontal	4.00
10	BM-S53	Grating Support Plate	1.00
11	BM-S116	Grating Arm, 39 Degrees	1.00
13	BM-S68	Special Screw	1.00
14	BM-S69	Special Screw	2.00
15	BM-S67	Wire Spring, Vertical	1.00
16	78-10-234	Spring, Ext, 3/32"OD x 3/8" x .010" SS Wire	1.00
17	78-10-504	Spring, Comp, 3/16"OD x 2-1/2" x .022" SS Wire	1.00
22	83-79-028	Screw, #2-56 x 5/16"Lg, Skt Hd Cap, SS	8.00
23	83-79-026	Screw, #2-56 x 3/16"Lg, Skt Hd Cap, SS	4.00
24	83-79-027	Screw, #2-56 x 1/4"Lg, Skt Hd Cap, SS	1.00
25	83-79-029	Screw, #2-56 x 3/8"Lg, Skt Hd Cap, SS	1.00
26	83-79-051	Screw, #4-40 x 1/2"Lg, Skt Hd Cap, SS	2.00
28	83-79-054	Screw, #4-40 x 3/4"Lg, Skt Hd Cap, SS	2.00
29	83-79-056	Screw, #4-40 x 1"Lg, Skt Hd Cap, SS	2.00
30	83-79-031	Screw, #2-56 x 1/2"Lg, Skt Hd Cap, SS	2.00
34	85-10-145	ADHESIVE, SEALANT (LOCTITE 242)	0.10
35	85-10-905	ANTI-SEIZE LUBRICANT	2.00
37	83-95-748	Washer, #4, Split Lock, SS	4.00
38	83-95-603	Washer, #2, Internal Tooth Lock, SS	2.00

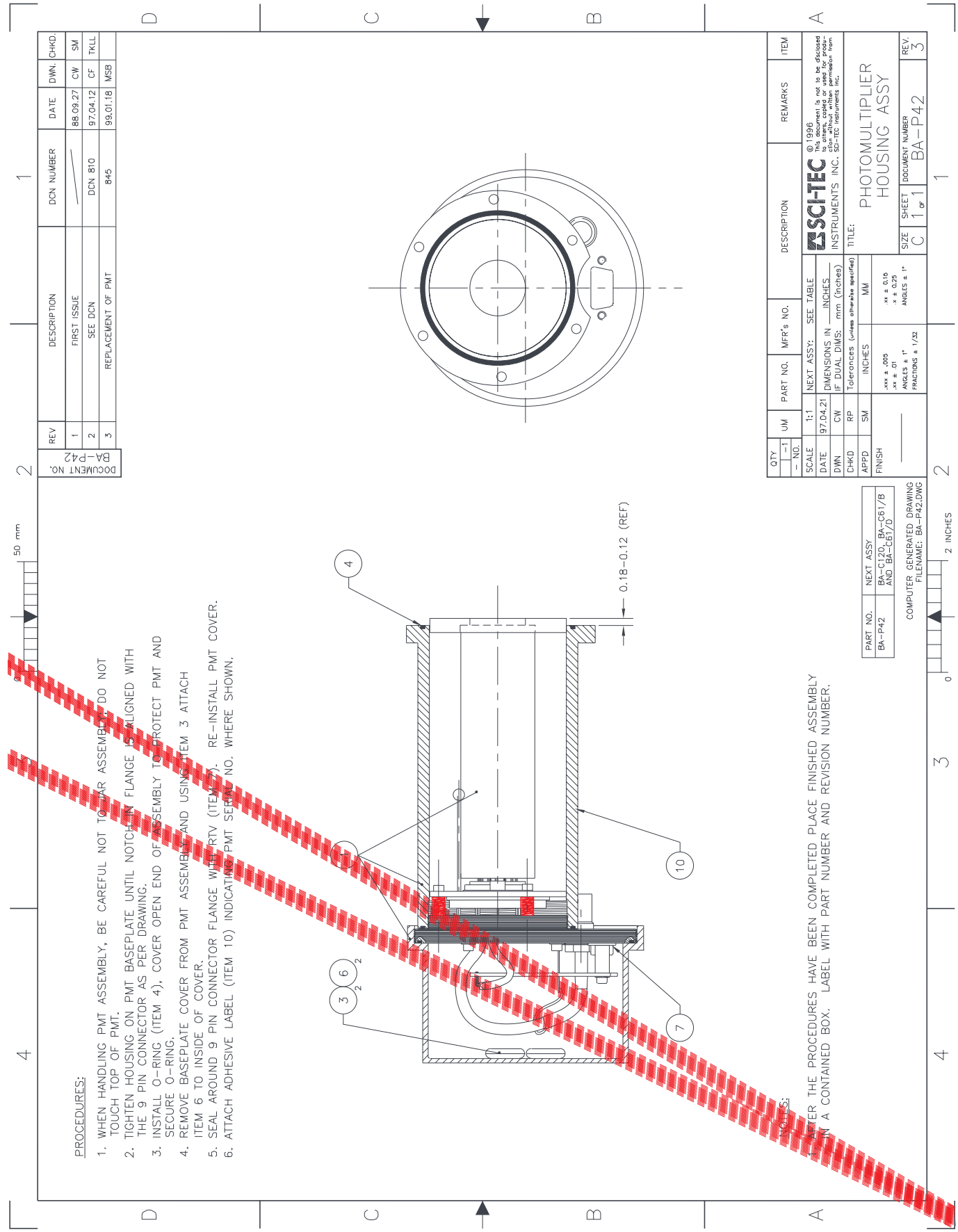


Figure 10.6-4.1

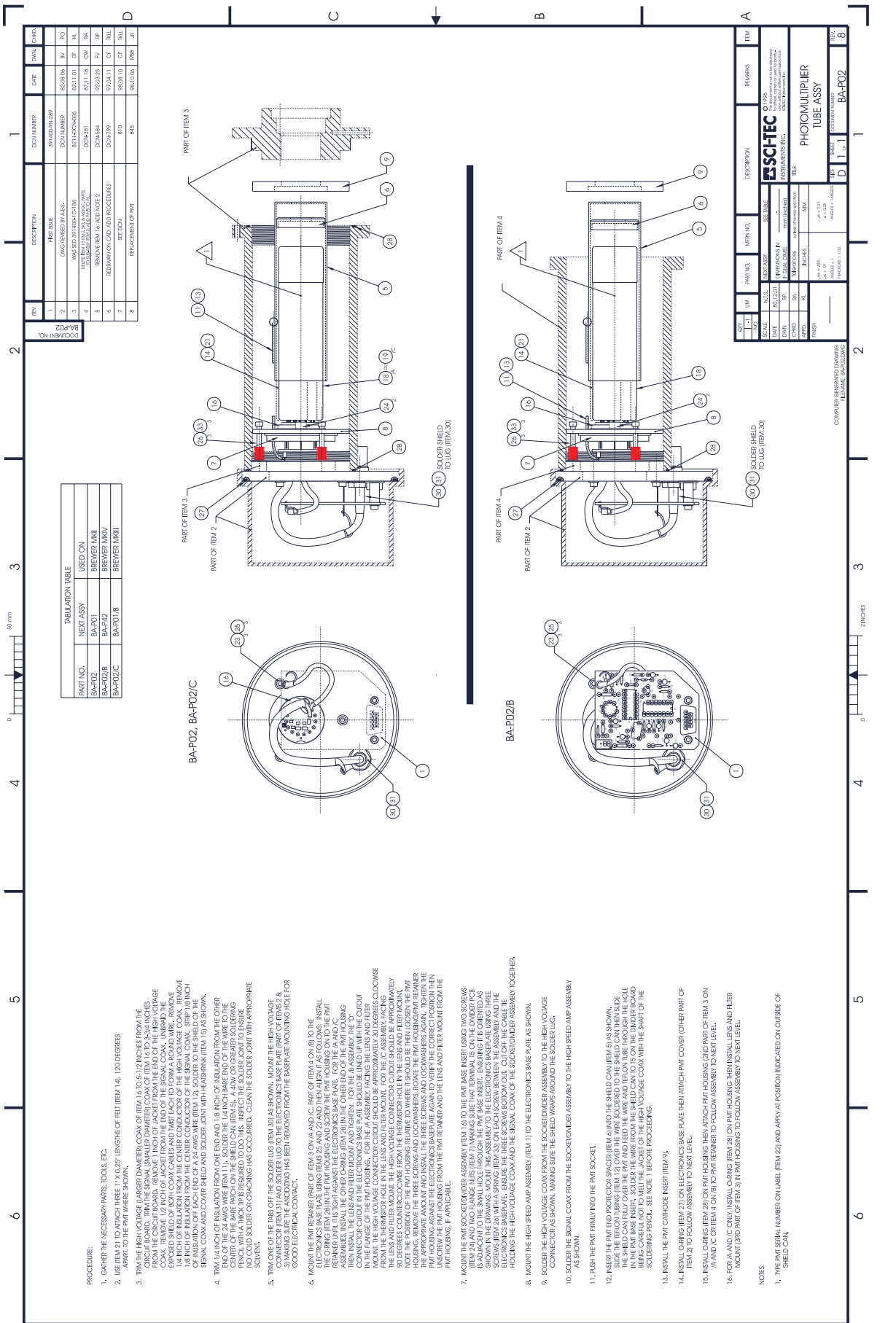


Figure 10.6-4.2

	BA-P42	PHOTOMULTIPLIER HOUSING ASSY	
Item No.	Part No.	Description	Qty
1	BA-P02/B	Photomultiplier Tube Assy	1.00
3	85-80-385	Adhes Transfer Tape 0.75"	3.00
4	83-10-638	O-ring, #038, 2 5/8 x 2 3/4 x 1/16 N.B.R.	1.00
6	70-10-012	Dessicant 2164 Minipax T 1.56gm - 900/gal	2.00
7	85-10-790	Sealant, Contr Volatility	0.10
10	85-41-115	Label, Adhesive, 3/8"x1 1/4"	1.00

	BA-P02/B	PHOTOMULTIPLIER HOUSING ASSY	
Item No.	Part No.	Description	Qty
1	BA-P23	Component Assy, High Speed Amp	1.00
2	BM-P52	Baseplate Cover Assy, PMT	1.00
3	BM-P53	Housing Cap Assy, PMT	-
4	BM-P53/B	Housing Cap Assy, PMT	1.00
5	BM-P54	Magnetic Shield, Can	1.00
6	BM-P55	Spacer, PMT End Protector	1.00
7	BM-P56	Nut, PMT Socket Flange	2.00
8	BM-P57	Insert, PMT Base	1.00
9	BM-P58	Insert, PMT Cathode	1.00
11	99-31-365	Wire Sfrd IRR PVC 24Ga YL	0.24
12	99-31-362	Wire Hookup 24 AWG IRR PV	0.125
13	99-20-291	Slev Tefn 15 Ga 0.059 ID.	0.20
14	98-45-100	Felt, Any Colour, Approx .05" Thk	0.75
15	99-20-049	Sleeving Heat Shrnk 0.187	0.06
16	95-40-082	Photomultply Skt/Vlt Dvdr	1.00
18	89-70-088	PMT 30mm UV CB>11 DC<300	1.00
19	89-70-089	PMT 30mm UV CB>11 DC<100	--
21	85-80-385	Tape, Adhesive, Transfer, 3/4" Wide	1.00
22	85-41-115	Label, Adhesive, 3/8"x1 1/4"	1.00
23	83-95-604	Washer, #4, Internal Tooth Lock, SS	3.00
24	83-79-082	Screw, 8-32 x 3/8" Hsc, SS	2.00
25	83-79-051	Screw, 4-40 x 1/2" Hsc, SS	3.00
26	83-78-023	Screw, Mach 4-40 x 3/4	3.00
27	83-10-644	O-Ring #044 - 3 3/4 x 3 7	1.00
28	83-10-638	O-Ring #038 - 2 5/8 x 2 3	1.00
30	81-90-370	Lug Connector, BNC	1.00
31	81-15-242	Bulkhead Jack, BNC	1.00
33	78-10-527	Sprng Comp,.88x.24dx.018w	3.00

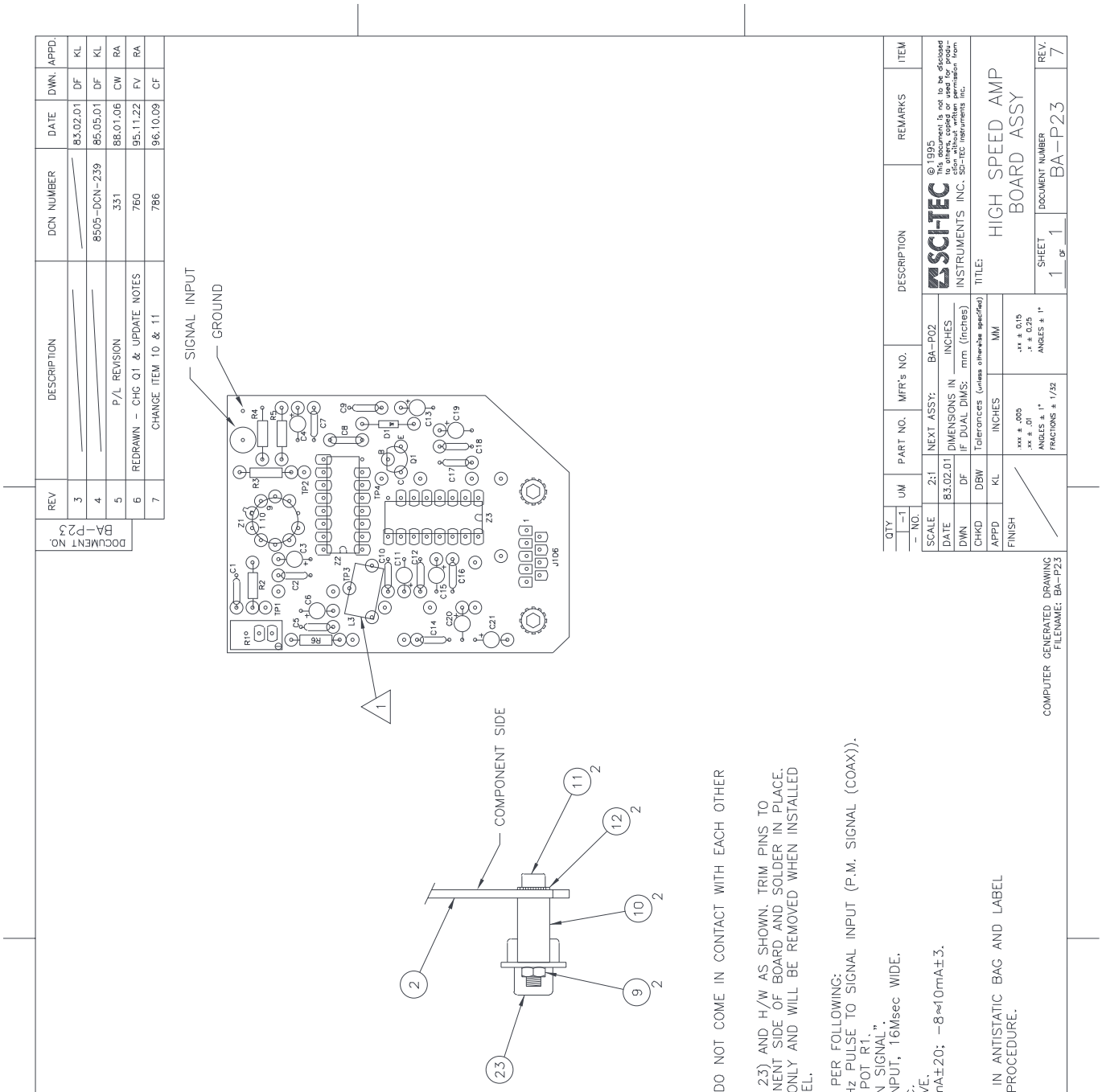


Figure 10.6-4.3

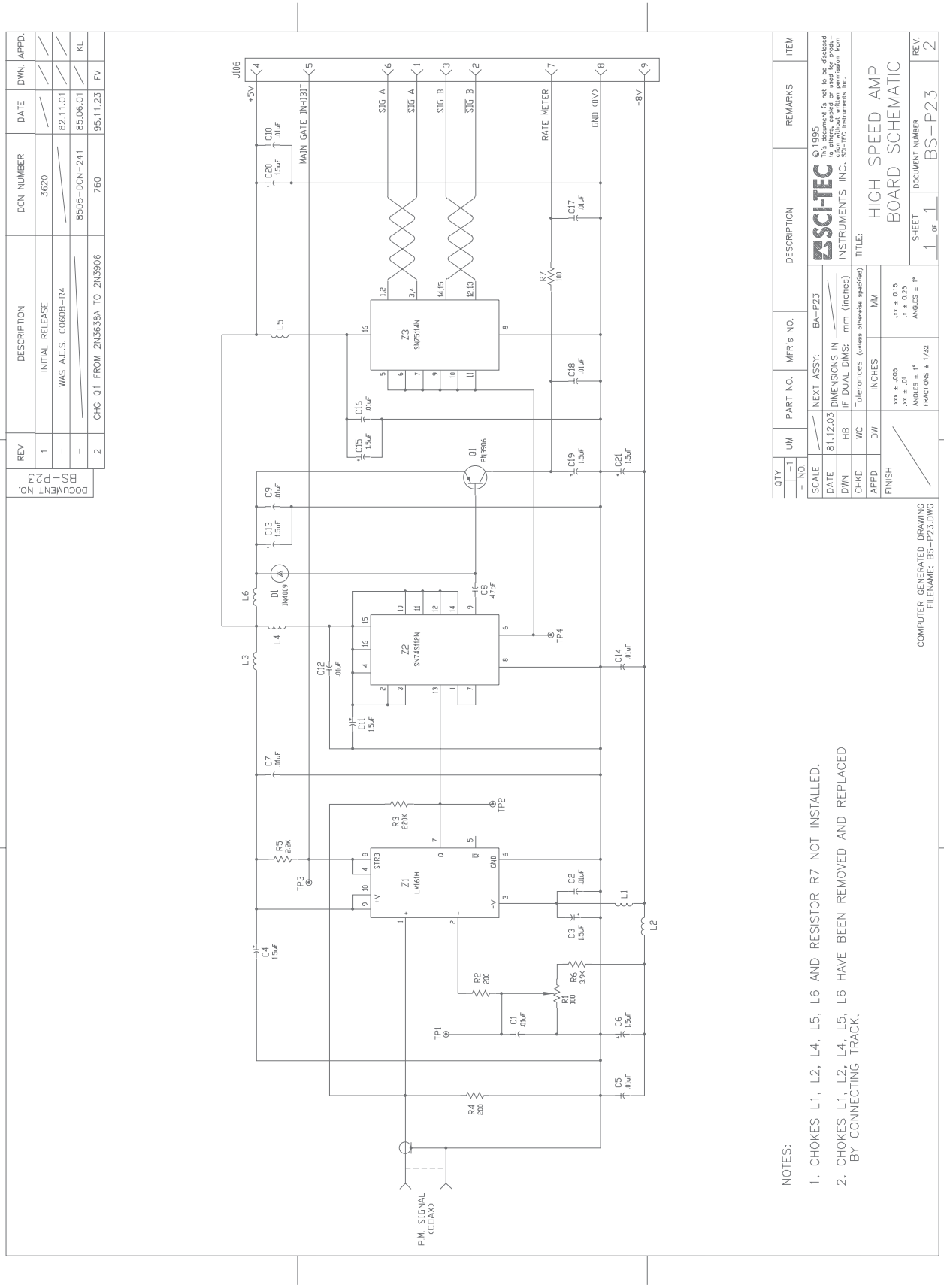


Figure 10.6-4.4

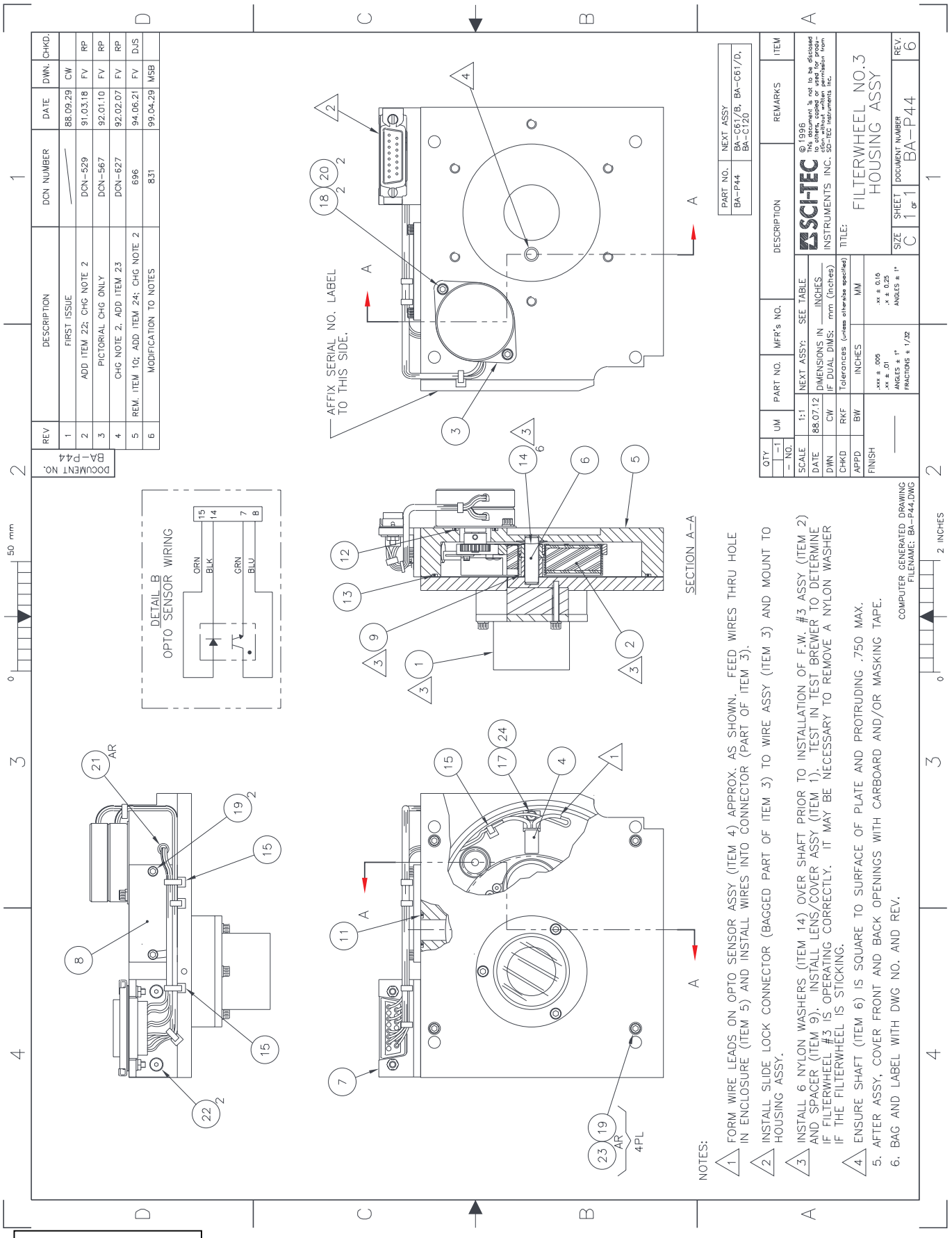


Figure 10.6-4.5

	BA-P44	Filter Wheel #3 Housing Assy	
Item No.	Part No.	Description	Qty
1	BA-P43	Lens/Cover Assy	1.00
2	BA-P38	Filterwheel #3 Assy	1.00
3	BA-P40	Motor Assy	1.00
4	BA-P41	Opto Sensor Assy	1.00
5	BM-P35	Filterwheel Enclosure	1.00
6	BM-P28	Shaft	1.00
7	BM-F73	Connector Bracket	1.00
8	BM-P31	Inspection Plate	1.00
9	BM-P26	Spacer	1.00
11	83-10-613	O-ring, #013, 7/16 x 9/16 x 1/16 NBR	1.00
12	83-10-616	O-ring, #016, 5/8 x 3/4 x 1/16 NBR	1.00
13	83-10-644	O-ring, #044, 3-3/4 x 3-7/8 x 1/16 NBR	1.00
14	83-95-030	Washer, 1/4, Flat Nylon 1/2	6.00
15	85-80-450	Cable Tie, 4-1/8 x .10, Nylon, 18lb	3.00
17	83-51-752	Screw, 2-56 x 1/4, Btn Hd Hex, SS	1.00
18	83-79-047	Screw, 4-40 x 1/4, Hex Skt Cap, SS	2.00
19	83-79-049	Screw, 4-40 x 3/8, Hex Skt Cap, SS	6.00
20	83-95-748	Washer, #4 Split Lock, SS	2.00
21	85-10-148	Adhesive, Sealant, Silicone, Black	1.00
22	83-87-163	Screw, 4-40 x 3/8, Fh Hex, SS	2.00
23	85-10-145	Adhesive, Sealant (Loctite 242)	0.01
24	83-95-603	Washer, #2, Int-Tooth, Lock, SS	1.00

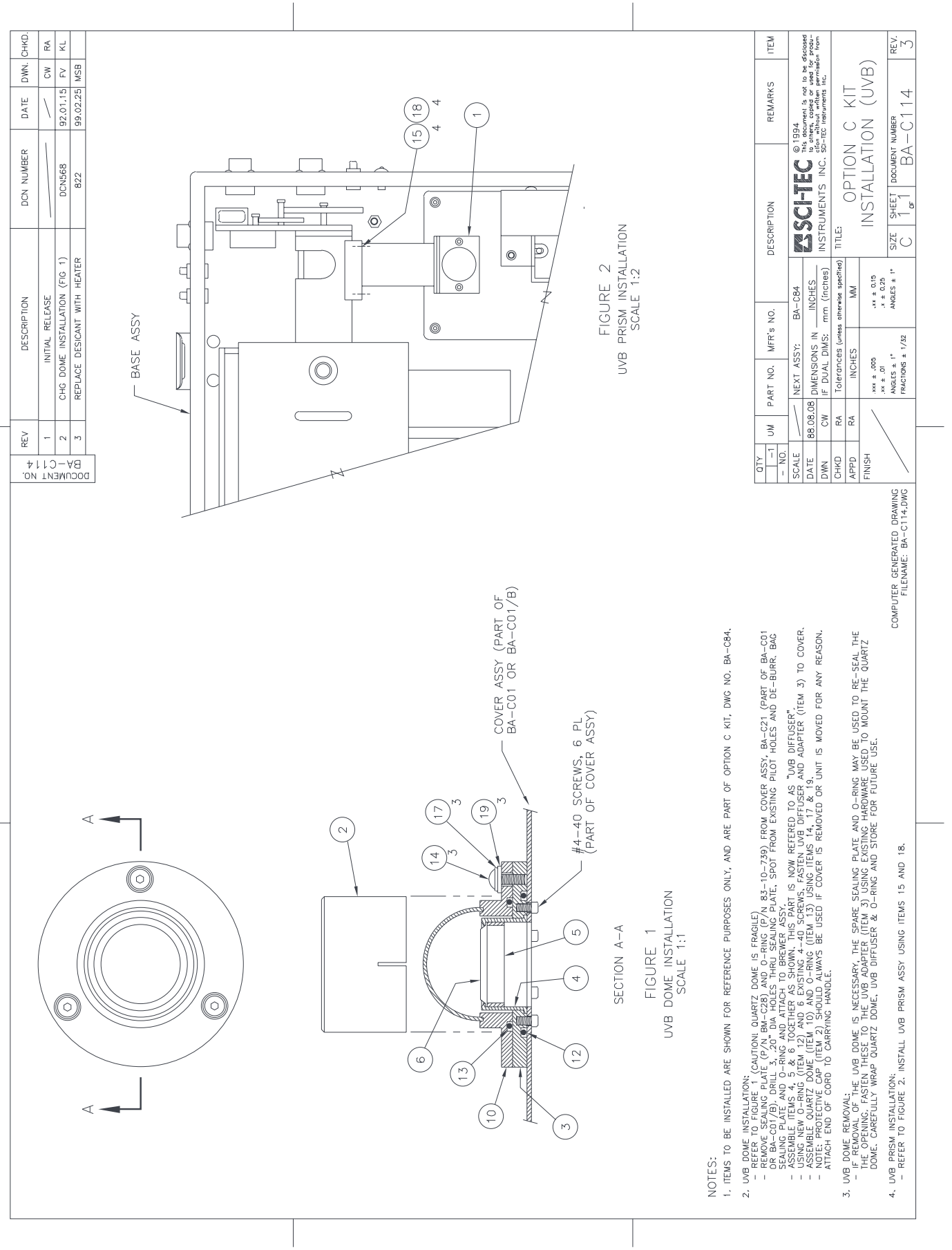
BREWER REFERENCE DOCUMENTATION

Section 10.7 Brewer Options

	Figure
10.7.1 UVB Port Option	
- UVB Installation Kit BA-C114	10.7-1
10.7.2 Heater Option	
- Assembly BA-C223	10.7-2.1
	10.7-2.2
10.7.3 Moisture Sensor	
- Assembly BA-E135	10.7-3

Section 10.8 Desiccant holder

Assembly BA-C223	10.8


DOCUMENT NO. BA-C114
REV | DESCRIPTION | DCN NUMBER | DATE | DWN. | CHKD.
1 | INITIAL RELEASE | / | / | CW | RA
2 | CHG DOME INSTALLATION (FIG 1) | DCN568 | 92.01.15 | FV | KL
3 | REPLACE DESICANT WITH HEATER | 822 | 99.02.25 | MSB
BASE ASSY
FIGURE 2
UVB PRISM INSTALLATION
SCALE 1:2
COVER ASSY (PART OF BA-C01 OR BA-C01/B)
#4-40 SCREWS, 6 PL (PART OF COVER ASSY)
SECTION A-A
FIGURE 1
UVB DOME INSTALLATION
SCALE 1:1
NOTES:
1. ITEMS TO BE INSTALLED ARE SHOWN FOR REFERENCE PURPOSES ONLY, AND ARE PART OF OPTION C KIT, DWG NO. BA-C84.
2. UVB DOME INSTALLATION:
- REFER TO FIGURE 1 (CAUTION! QUARTZ DOME IS FRAGILE)
- REMOVE SEALING PLATE (P/N BM-C28) AND O-RING (P/N 83-10-739) FROM COVER ASSY, BA-C21 (PART OF BA-C01 OR BA-C01/B). DRILL 3, .20" DIA HOLES THRU SEALING PLATE, SPOT FROM EXISTING PILOT HOLES AND DE-BURR. BAG SEALING PLATE AND O-RING AND ATTACH TO BREWER ASSY.
- ASSEMBLE ITEMS 4, 5 & 6 TOGETHER AS SHOWN. THIS PART IS NOW REFFERED TO AS "UVB DIFFUSER".
- USING NEW O-RING (ITEM 12) AND 6 EXISTING 4-40 SCREWS, FASTEN UVB DIFFUSER AND ADAPTER (ITEM 3) TO COVER.
- ASSEMBLE QUARTZ DOME (ITEM 10) AND O-RING (ITEM 13) USING ITEMS 14, 17 & 19.
- NOTE: PROTECTIVE CAP (ITEM 2) SHOULD ALWAYS BE USED IF COVER IS REMOVED OR UNIT IS MOVED FOR ANY REASON. ATTACH END OF CORD TO CARRYING HANDLE.
3. UVB DOME REMOVAL:
- IF REMOVAL OF THE UVB DOME IS NECESSARY, THE SPARE SEALING PLATE AND O-RING MAY BE USED TO RE-SEAL THE THE OPENING. FASTEN THESE TO THE UVB ADAPTER (ITEM 3) USING EXISTING HARDWARE USED TO MOUNT THE QUARTZ DOME. CAREFULLY WRAP QUARTZ DOME, UVB DIFFUSER & O-RING AND STORE FOR FUTURE USE.
4. UVB PRISM INSTALLATION:
- REFER TO FIGURE 2. INSTALL UVB PRISM ASSY USING ITEMS 15 AND 18.
COMPUTER GENERATED DRAWING
FILENAME: BA-C114.DWG
QTY - NO. | UM | PART NO. | MFR'S NO. | DESCRIPTION | REMARKS | ITEM
-1 | NEXT ASSY: BA-C84
SCALE / | DATE 88.08.08 | DWN CW | CHKD RA | APPD RA
DIMENSIONS IN INCHES
IF DUAL DIMS: mm (inches)
Tolerances (unless otherwise specified)
FINISH / | INCHES | MM
.xxx ± .005 | .xx ± .01 | ANGLES ± 1° | FRACTIONS ± 1/32
.xx ± 0.13 | .x ± 0.25 | ANGLES ± 1°
SCI-TEC INSTRUMENTS INC.
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TITLE: OPTION C KIT INSTALLATION (UVB)
SIZE C | SHEET 1 of 1 | DOCUMENT NUMBER BA-C114 | REV. 3

Figure 10.7-1

	BA-C84	UV Port Assy	
Item No.	Part No.	Description	Qty
1	BA-F81	UVB Prism Assy	1.00
2	BM-C175	UVB Dome Cap	1.00
3	BM-C37	UVB Adaptor	1.00
4	BM-C38	UVB Dome Light Diffuser Holder	1.00
5	BM-C39	UVB Retaining Ring	1.00
6	BM-C40	UVB Diffuser	1.00
10	10-15-101	Quartz Hemisphere, 50mm MTD	1.00
12	83-10-739	O-Ring, 2-1/4"ID x 2-1/2"OD x 1/8, #228	1.00
13	83-10-737	O-Ring, 2"ID x 2-1/4"OD x 1/8, #226	1.00
14	83-51-834	Screw, 10-32 x 1/2"Lg, Btn Hd Hex, SS	3.00
15	83-79-052	Screw, 4-40 x 9/16"Lg, Skt Hd Cap, SS	4.00
17	83-95-787	Washer, #10, Sealing	3.00
18	83-95-748	Washer, #4, Split Lock, SS	4.00
19	83-95-023	Washer, #10, Flat, SS	3.00

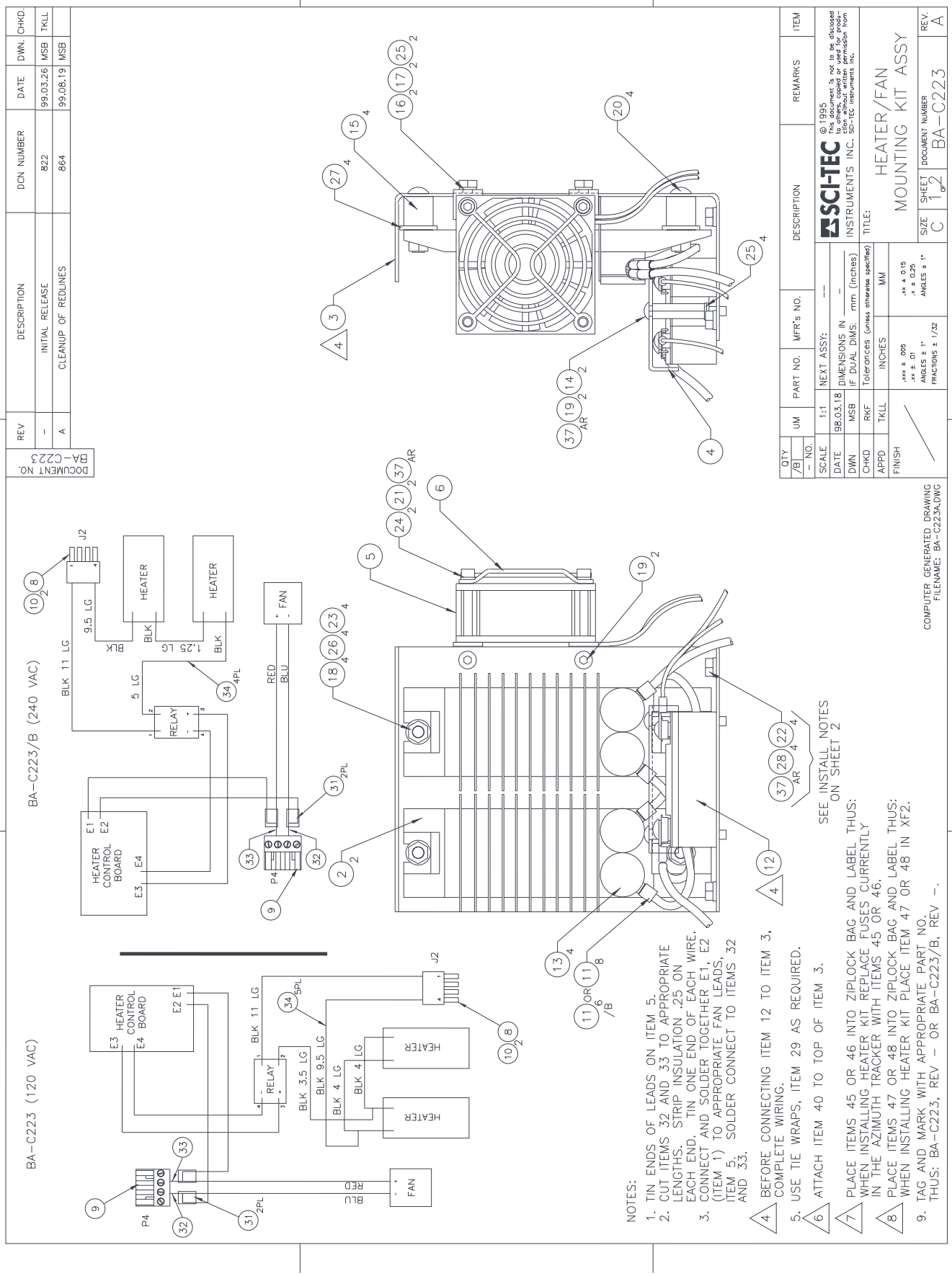


Figure 10.7-2.1

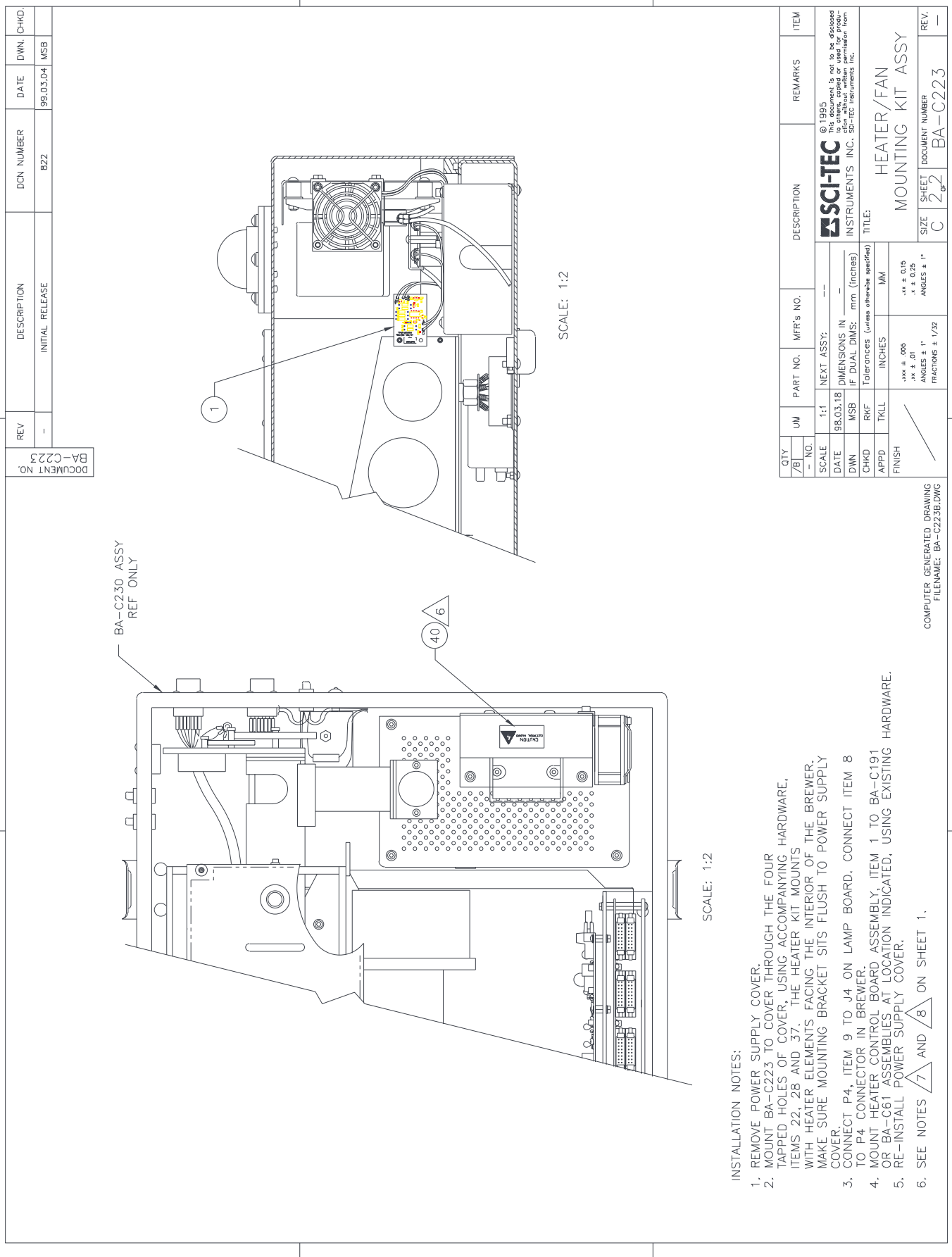
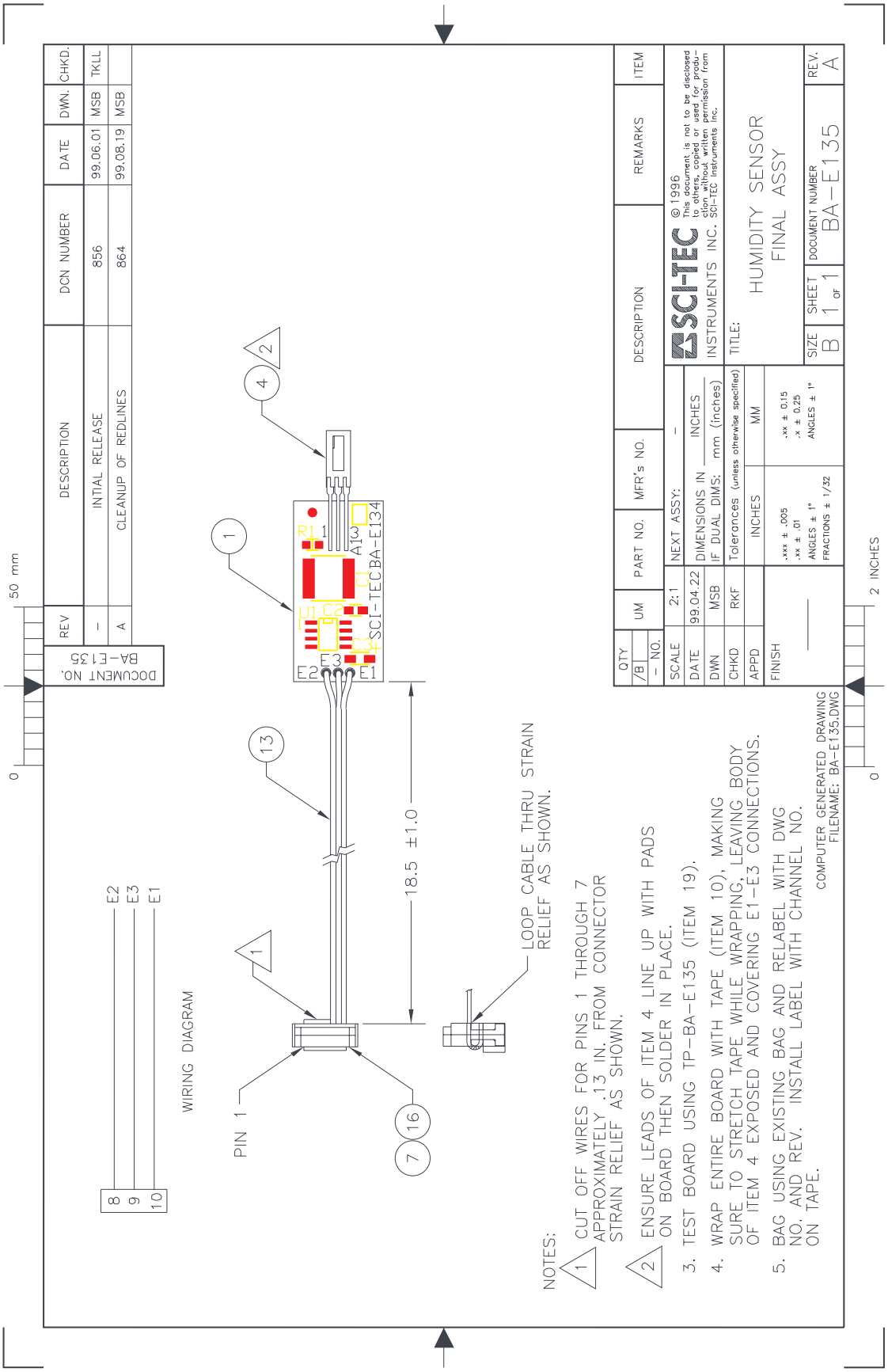


Figure 10.7-2.2

Item No.	BA-C223 Part No.	HEATER/FAN ASSY Description	120V Qty	230V Qty
1	12501291-2	HEATER CONTROL BOARD ASSY	1.00	1.00
2	BM-E133	FINNED STRIP HEATER, MODIFIED	2.00	2.00
3	BM-C214	HEATER/FAN MTG BRACKET	1.00	1.00
4	BM-C232	HEATER SHIELD PLATE	1.00	1.00
5	93-10-010	FAN,AXIAL,12V,23.5CFM	1.00	1.00
6	93-10-011	FINGER GUARD,CHROME PLTD	1.00	1.00
8	81-40-192	CONNECTOR, 4 CCT, PLUG, .093	1.00	1.00
9	81-52-642	HEADER,4 SOCKET PLUG	1.00	1.00
10	83-25-024	TERMINAL, CONNECTOR,.093,18-22GA,FEM	2.00	2.00
11	83-25-882	TERM,RNG,NON IN,22-18,#10	8.00	6.00
12	87-70-065	RELAY,ANLG INPT PWR CNTRL	1.00	1.00
13	89-30-040	TERMINAL COVERS,CERAMIC	4.00	4.00
14	83-09-891	SPACER,HEX,M/F,8-32X7/8LG	2.00	2.00
15	83-09-473	SPCR,1/2"ODX1/2"L,AL,ALOD	4.00	4.00
16	83-20-110	BRCKT,CRNR,2HL,6-32,1/16T	2.00	2.00
17	83-40-283	NUT, 8-32 X HEX STD PAT SS	2.00	2.00
18	83-40-298	NUT, 10-32 X 3/8 HX SS ST	4.00	4.00
19	83-51-800	SCRW 8-32 X 1/4 BUTTON HD	4.00	4.00
20	83-51-839	SCREW,10-32 X 1 BUTTON HD	4.00	4.00
21	83-79-077	SCREW,MACH 6-32 X 1 1/4 HSC, SS	2.00	2.00
22	83-40-278	NUT, HEX, 8-32 X 1/4 X 3-32, SS	4.00	4.00
23	83-95-023	WASHER, #10 FLAT SS 7/16	4.00	4.00
24	83-95-749	WASHER #6 SPLIT LOCK SS	2.00	2.00
25	83-95-750	WASHER #8 SPLIT LOCK SS	6.00	6.00
26	83-95-752	WASHER, #10 SPLIT LOCK SS	4.00	4.00
27	83-95-860	WASHER,MICA,HEATER MNT'G	4.00	4.00
28	83-95-606	WASHER #8 INT TOOTH LK SS	4.00	4.00
29	85-80-450	TIE CABLE 4-1/8X.1 NYL 18	6.00	6.00
31	99-20-035	SLEEVING HEATSHRINK .125	0.13	0.13
32	99-31-482	WIRE STRD IRR PVC 18GA BLK	0.85	0.85
33	99-31-483	WIRE STRD IRR PVC 18GA RED	0.85	0.85
34	99-45-064	WIRE 18GA SEW-2 7-STR BLK	3.00	2.27
37	85-10-145	ADHESIVE, SEALANT LOCTITE	0.10	0.10
40	BM-C189	WARNING LABEL, ELEC HAZARD	1.00	1.00
45	91-15-252	FUSE, 2.5A, 250V, SLOW BLOW	--	3.00
46	91-15-262	FUSE, 4A, 250V, SLOW BLOW	3.00	--
47	91-15-280	FUSE, 4A, 125V, SB, 5X20MM	1.00	--
48	91-15-834	FUSE, 2A, 250V, SB 5X20MM IEC	--	1.00


DOCUMENT NO. BA-E135
REV
DESCRIPTION
DCN NUMBER
DATE
DWN.
CHKD.
INTIAL RELEASE
856
99.06.01
MSB
TKLL
CLEANUP OF REDLINES
864
99.08.19
MSB
A
50 mm
0
2 INCHES
0
QTY
/B
- NO.
UM
PART NO.
MFR's NO.
DESCRIPTION
REMARKS
ITEM
SCALE 2:1
NEXT ASSY: -
DATE 99.04.22
DIMENSIONS IN INCHES
DWN MSB
IF DUAL DIMS: mm (inches)
CHKD RKF
Tolerances (unless otherwise specified)
APPD
INCHES
MM
FINISH
.xxx ± .005
.xx ± .01
ANGLES ± 1°
FRACTIONS ± 1/32
.xx ± 0.15
.x ± 0.25
ANGLES ± 1°
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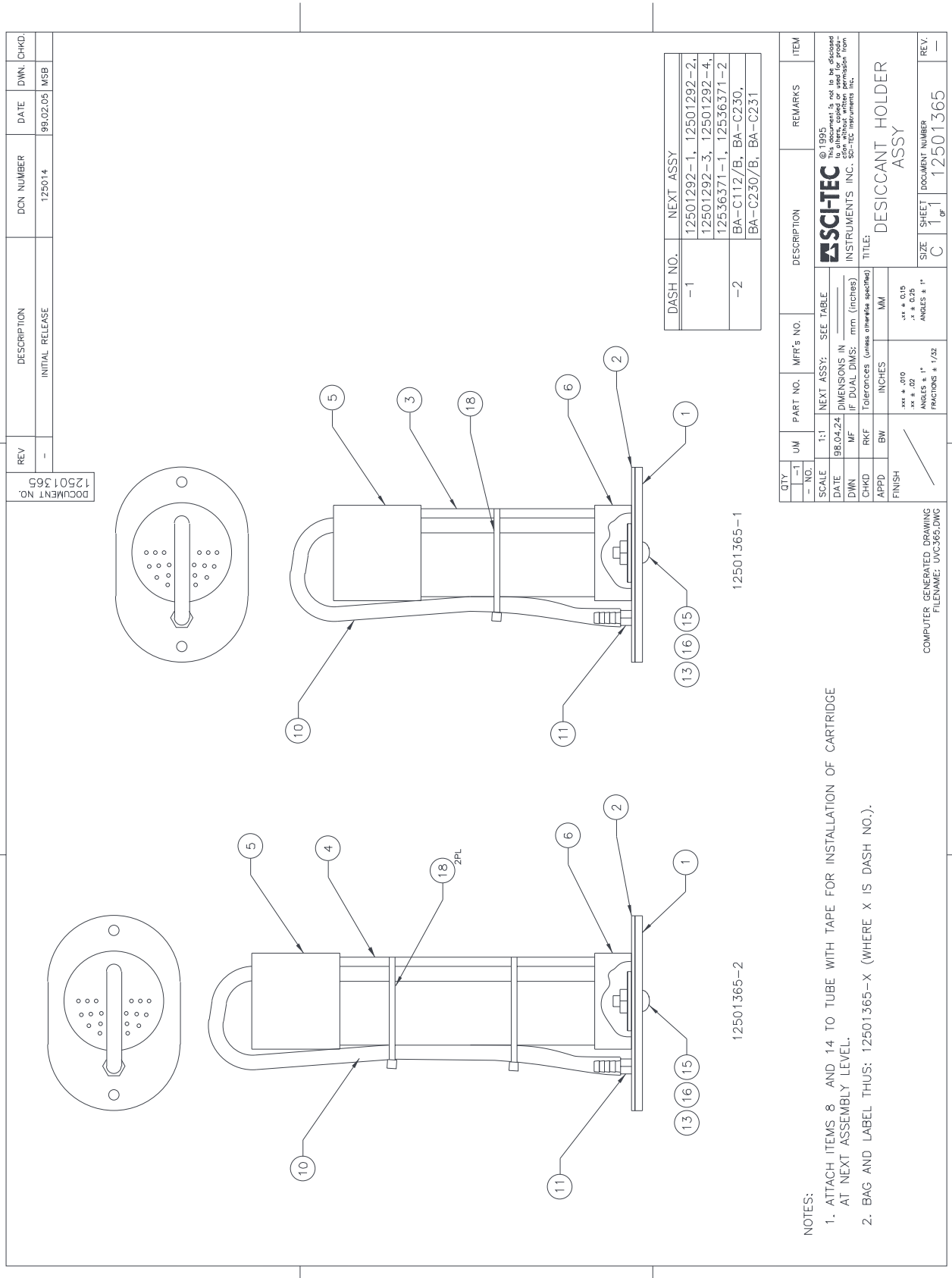
INSTRUMENTS INC.
TITLE:
HUMIDITY SENSOR
FINAL ASSY
SIZE B
SHEET 1 OF 1
DOCUMENT NUMBER BA-E135
REV. A
WIRING DIAGRAM
E2
E3
E1
8
9
10
PIN 1
1
13
16
7
4
2
18.5 ±1.0
LOOP CABLE THRU STRAIN RELIEF AS SHOWN.
R1
C1
U1
C2
C3
SCI-TEC BA-E134
E2
E3
E1
NOTES:
1. CUT OFF WIRES FOR PINS 1 THROUGH 7 APPROXIMATELY .13 IN. FROM CONNECTOR STRAIN RELIEF AS SHOWN.
2. ENSURE LEADS OF ITEM 4 LINE UP WITH PADS ON BOARD THEN SOLDER IN PLACE.
3. TEST BOARD USING TP-BA-E135 (ITEM 19).
4. WRAP ENTIRE BOARD WITH TAPE (ITEM 10), MAKING SURE TO STRETCH TAPE WHILE WRAPPING, LEAVING BODY OF ITEM 4 EXPOSED AND COVERING E1-E3 CONNECTIONS.
5. BAG USING EXISTING BAG AND RELABEL WITH DWG NO. AND REV. INSTALL LABEL WITH CHANNEL NO. ON TAPE.
COMPUTER GENERATED DRAWING
FILENAME: BA-E135.DWG

Figure 10.7.3


DOCUMENT NO. 12501365
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DASH NO. | NEXT ASSY
-1 | 12501292-1, 12501292-2, 12501292-3, 12501292-4, 12536371-1, 12536371-2
-2 | BA-C112/B, BA-C230, BA-C230/B, BA-C231
12501365-1
12501365-2
NOTES:
1. ATTACH ITEMS 8 AND 14 TO TUBE WITH TAPE FOR INSTALLATION OF CARTRIDGE AT NEXT ASSEMBLY LEVEL.
2. BAG AND LABEL THUS: 12501365-X (WHERE X IS DASH NO.).
SCI-TEC INSTRUMENTS INC.
DESICCANT HOLDER ASSY
SIZE C
SHEET 1 OF 1
DOCUMENT NUMBER 12501365
REV: -
COMPUTER GENERATED DRAWING FILENAME: UVC365.DWG

Figure 10.8