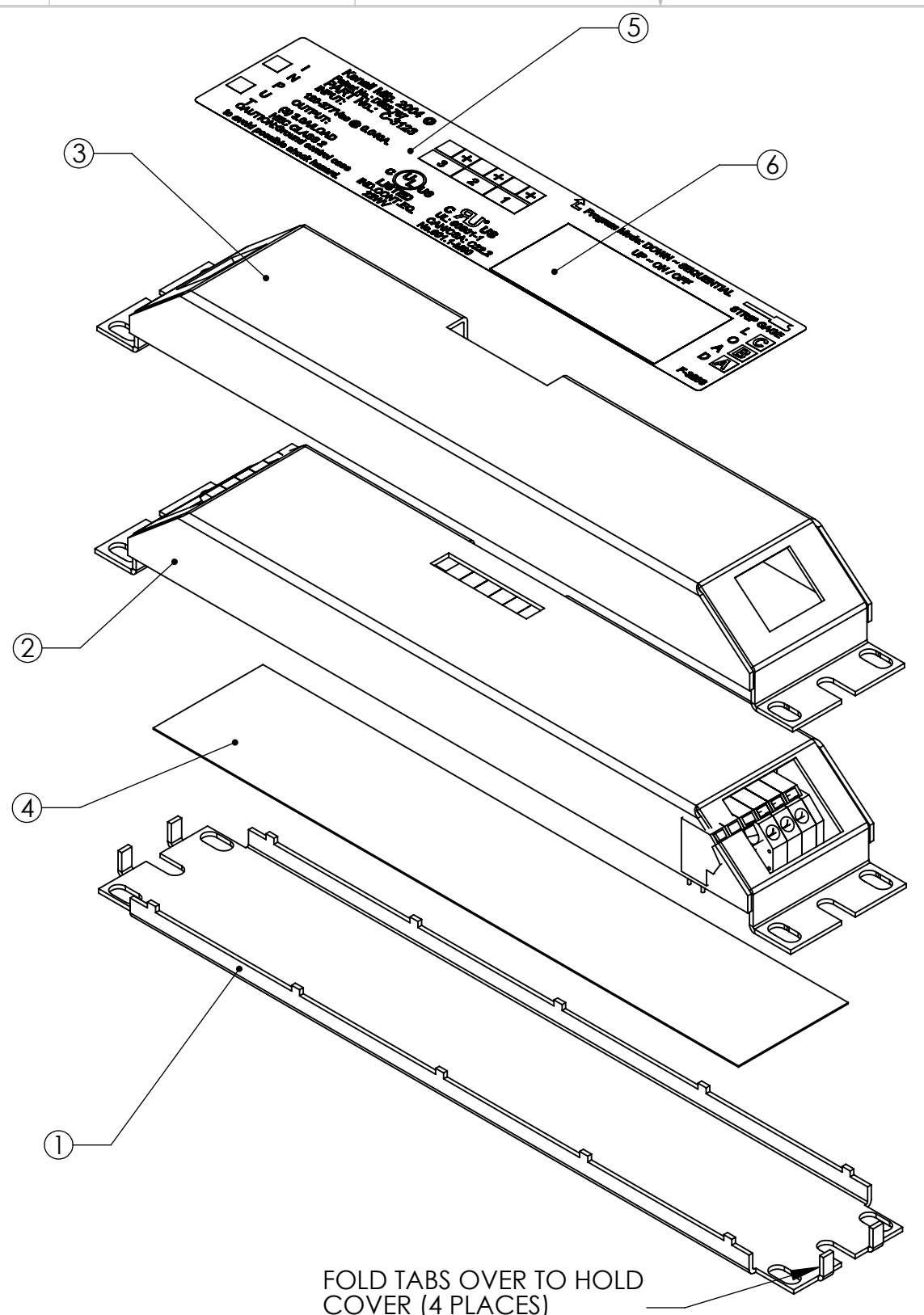


D

C

B

A



FOLD TABS OVER TO HOLD COVER (4 PLACES)

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	B35631	MTG-BAST;_SKT_BOARD
2	1	P10006	CONTROL MODULE
3	1	B35632	COVER_CONTROL_MODULE
4	1	E-0374	SELECTIVE SWITCH INSULATOR
5	1	F-3266	LVCM_LABEL

REVISIONS				
REV.	ECN NO.	DESCRIPTION	BY	DATE
1	6343	ADDED TAPE INFORMATION TO BOM	JMG	6/28/2010
2	6461	R9 1.5K 5% WAS R8	ESW	9/17/2010
3	6637	Added alternate TVS and AC-DC Module	JMG	1/24/2011
4	6845	MODIFIED COPPER PLANE ON THE BOTTOM & ADDED FUSE TO BOM	JMG	6/8/2011
5	7112	CHANGED LOW VOLTAGE SWITCHING TO A TRANSISTOR TYPE TO ELIMINATE NOISE.	JMG	11/14/2011
6	8062	ADDED NUMBER 6 TO ASSEMBLY INSTRUCTIONS.	PP	9/16/2013
7	8641	RAW BOARD REV.6 BECAUSE CHANGE TO RECOM MODULE	JMG	6/18/2014
8	8894	UPDATED DRAWING TO SHOW UPDATE TO LABEL F-3266	TEC	9/29/2014

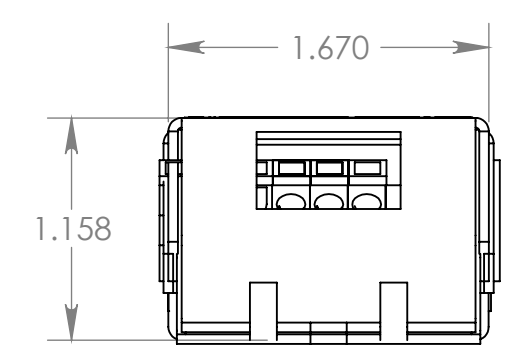
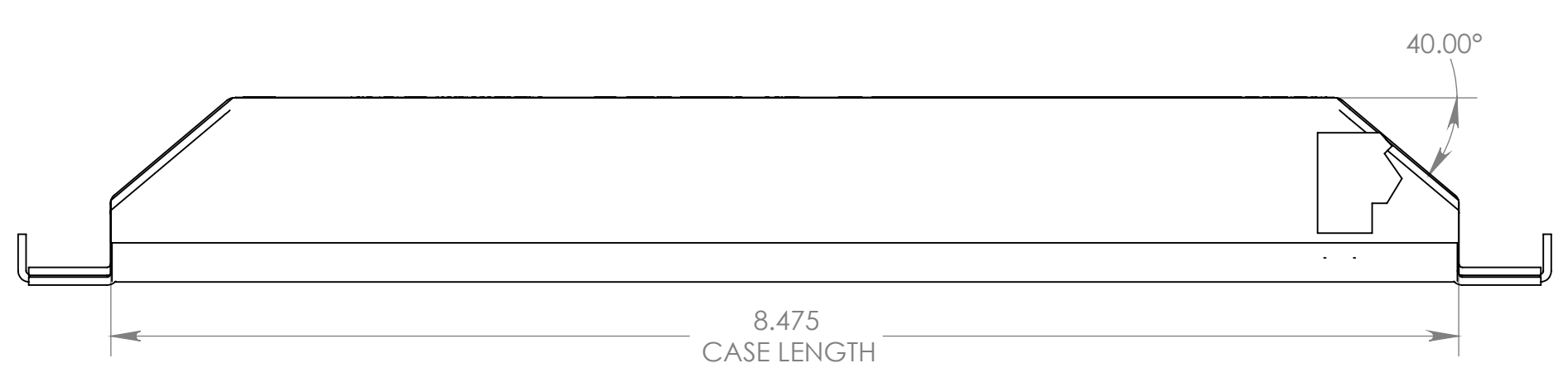
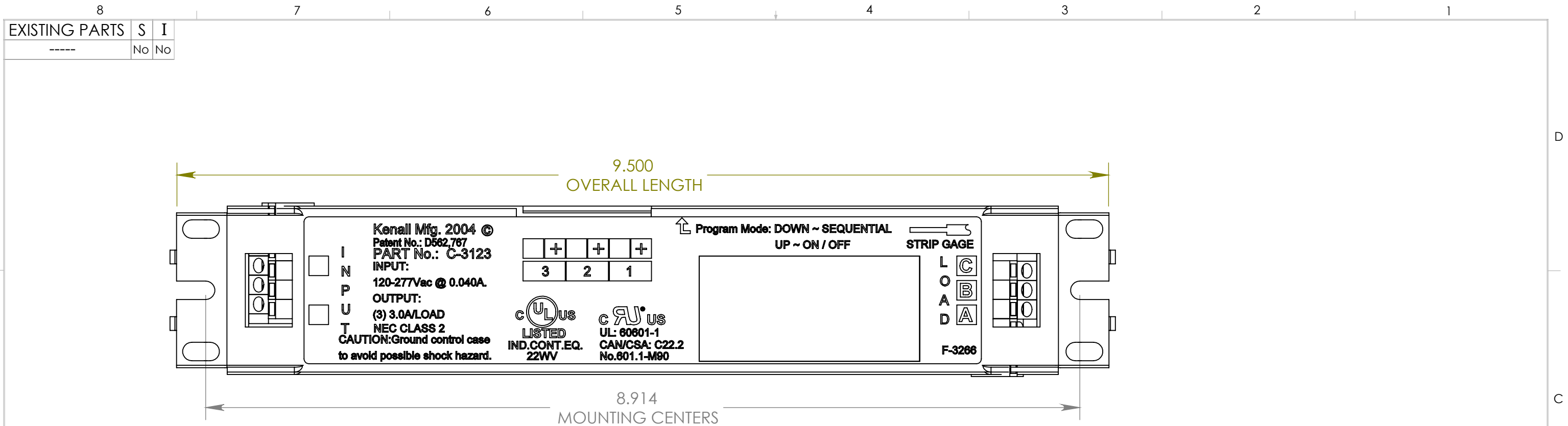


ASSEMBLY INSTRUCTIONS

- 1: BASE , ITEM #1
- 2: ADHERE SWITCH INSULATOR ITEM #4 USING TAPE (F-0079) TO ITEM #1
- 3: PLACE CONTROL ITEM #2 TABS FIT INTO GROOVES ON PCB
- 4: PLACE COVER ITEM #3 OVER ITEM #2 FOLD 4 TABS OVER ON ITEM #1 TO HOLD ITEM #3 IN PLACE.
- 5: PLACE ITEM #5 LABEL ONTO ITEM #3.
- 6: PLACE LABEL TO SHOW WEEK/ YEAR PART WAS PRODUCED.

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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ANGLES .XXX±.015 ±1/2°	CAD GENERATED DRAWING. DO NOT MANUALLY UPDATE		
	APPROVALS	DATE	
MATERIAL:	DRAWN JMG	CHECKED	LVC; ASSM; 120 / 277 VOLT DUAL PROGRAM
SEE BILL OF MATERIAL	ENG. APPROVAL	MFG. APPROVAL	
FINISH:	SCALE: -- DO NOT SCALE DRAWING	SIZE DWG. CAD FILE No: B	SHT: 1 REV. 8 OF: 1



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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:			CAD GENERATED DRAWING, DO NOT MANUALLY UPDATE		 1020 Lakeside Drive Gurnee Illinois 60031
FRACTIONS	DECIMALS	ANGLES	APPROVALS	DATE	
--	.XXX±.015	±1/2°	DRAWN JMG	11/30/2009	LOW VOLTAGE CONTROLLER 120/ 277 VERSION
MATERIAL: Input Material			ENG. APPROVAL		
FINISH: Input Finish			MFG. APPROVAL		SCALE: -- DO NOT SCALE DRAWING SIZE B DWG. CAD FILE No: C-3123

Kenall	RoHS					
Build	Designator	Description	Mfg	Mfg P/N	Subtr. P/N	Qty Per
C-3123	PCB	2 LAYER, FR4, 2 OUNCE COPPER, ROHS	UNITED	P10006	R50000048	1
	RV1	510V / 6000A, 320VACrms TVS VARISTOR	PANASONIC	ERZV140511	600001143	1
	F1	FUSE, 300V / 2 AMPS	LITTLEFUSE	38312000000	600001183	1
	T1	AC -DC MODULE, 5V, 14V OUTPUT (4W)	RECOM	RAC04-0512DC/277	600001072	1
	J1,J3	3 POSITION CONNECTOR	WAGO	254-453	600001025	2
	J2	6 POSITION CONNECTOR	WAGO	254-456	600001026	1
	S1	2 POSITION DIP PIANO SWITCH	GRAYHILL	76PSB02ST	600001027	1
	J4	100 MIL DUAL IN LINE CONNECTOR, 6 POSITION	3M	961206-6404-AR	600001269	1
	C8,C15	47uF, 50V ALUM. ELECTRO. THRU-HOLE	PANASONIC	ECA-1HM470	200000245	2
	C1,C5,C6,C14,C18, C21	0.1uF, 0805	VISHAY	VJ0805Y104KXATW1BC	R22200093	6
	C7	2.2uF, 0805	MURATA	GRM21BR70J225MA01L	R22200051	1
	K1,K2,K3	12V RELAY, SPST	MATSUSHITA	JW-1A-FSNB-DC12V or DC12VF or FSN-12C12V OR FSN-12C12	600000998	3
	D1,D2,D3	1N4148 DIODE, SMT, 75V, 200mW	DIODES INC	1N4148WS-7-F	R33300057	3
	C13,C16,C19	0.01uF, 0805	VISHAY	08051C103KAT2A	222000189	3
	Q1,Q2,Q3,Q4,Q5,Q6	2N3904 (SMT)	ST MICRO	MMBT3904	333000021	6
	R1,R2,R3	1.82K, 0805, 5%	ANY		111000202	3
	U3	MICROCONTROLLER 20 PIN	ZILOG	Z8F0431SH020FKEA	444000364	1
	R10,R11,R12,R20,R23, R26	10K, 5%	VISHAY		R11100124	6
	R5	1.2K, 0805, 1/8W, 1%	ANY		111000806	1
	R19,R22,R25	2K, 0805, 1/8W, 1%	ANY		111000044	3
	U2	LDO 3.3V REGULATOR	NATIONAL	LM34901M5-3.3/NOPB	444000365	1
	R14,R15,R17	62 OHM 0805 5%	ANY		111000675	3
	R13,R16,R18	10 OHM 0805 5%	PANSONIC	ERJ-6GEYJ100V	111000054	3
	C9,C10,C11	100pF 0805	PANASONIC	ECJ-1VC1H101J	222000267	3
	TAPE	TAPE, DOUBLE SDED (TO SECURE NOMEX)	KENALL	F-0079		0.02
	WIRE	TFFN 18AWG UL 1316		TFFN 1816	600001052	6.25 in.
	LABEL	WARRANTY VOID IF BROKEN			600001066	1

LVC Programming Instructions for C-3123 and C-3149

Software Program: REV D

1. Make sure 120V or 277V power is supplied to the LVC across the terminals on J1.
2. Make sure the Zilog USB programmer is connected to the PC.
3. Hook up the six pin programming connector to J4. The red strip should line up with pin 1 on J4.
4. Next, load the Zilog Development Studio program.
5. Open the Project file for the LVC. It is named "LVC" under the Revision D folder.
6. Select "Tools" then "Flash Loader."
7. When this menu loads, select "Program and Verify."
8. Once programming is complete, unplug the programming connector from the LVC.
9. Remove the incoming AC power to the LVC for at least 10 seconds before proceeding to the TEST phase.

Testing Procedure

1. Perform after programming the Zilog microprocessor.
2. Test first with the S1 DIP switch actuators in the closed position (down). This is known as the sequential mode of operation.
3. Hook up Loads A,B,C on J3 of the LVC to the appropriate test fixture (120V for C-3149 and 277V for C-3213) located on the back wall in Subtronics production floor.
4. Apply power to J1 (120V for C-3149 or 277V for C-3123).
5. Next use test switch apparatus (normally open test switch) to switch 5V on J2 for Loads 1, 2, and 3 individually. The operation should be according the LVC module Program A truth table provided below in Figure 1.
6. After this sequential program passes (agrees with logic chart), proceed to testing the On/Off Program B. Flip the DIP switch (S1) actuators to the open (up) position.
7. Next use test switch apparatus (normally open test switch) to switch 5V on J2 for Loads 1, 2, and 3 individually. The operation should be according the LVC module Program B truth table provided below in Figure 1.
8. After this straight through, ON/OFF program passes test, put S1 DIP switch actuators back in the down (closed) position.
9. Unit has passed test and can be disconnected.

LVC Module Control Logic-Figure 1

PROGRAM -A	Sequential Program Truth Table				
	# Switch Presses	LOAD A (PIN 3)	LOAD B (PIN 2)	LOAD C (PIN 5)	
4 states	(M-1) : 1	ON	OFF		S1- Closed (Down)
	(M-1) : 2	OFF	ON		
	(M-1) : 3	ON	ON		
	(M-1) : 4	OFF	OFF		
2 states	(M-2) : 1	ON			M-2 Controls only LOAD A
	(M-2) : 2	OFF			
2 states	(M-3) : 1			ON	M-3 Controls only LOAD C
	(M-3) : 2			OFF	

PROGRAM -B	ON/OFF Straight Through Program Truth Table				
	# Switch Presses	LOAD A (PIN 3)	LOAD B (PIN 2)	LOAD C (PIN 5)	
2 states	(M-1) : 1	ON	OFF	OFF	S1-Open (Up)
	(M-1) : 2	OFF	OFF	OFF	
2 states	(M-2) : 1	OFF	ON	OFF	
	(M-2) : 2	OFF	OFF	OFF	
2 states	(M-3) : 1	OFF	OFF	ON	
	(M-3) : 2	OFF	OFF	OFF	