



INSTRUCTION DATA

Dowty RFL Industries Inc. • Boonton, New Jersey

Model 66 ALRT ALERT CARD

DESCRIPTION

The Model 66 ALRT is one of the RFL 66 TDMS Series of plug-in logic cards. It provides the logic and power boosters for driving visual and audible alarms, and it contains the oscillator which generates the FLASH signal required by other types of lamp driver cards.

A circuit which detects the loss of data is included on the board. There is also a general-purpose pattern etched on the printed-circuit board for the system designer to use as required for special logic circuitry required by the specific system.

SPECIFICATIONS

Output Lamp Drive Current: 160 mA max. each out.

Output Transistor Breakdown Voltage: 40 V min.

Flash Signal Frequency: 2Hz nominal.

Data Loss Detect Time: 8 seconds.

Ambient Temperature: -30 to +70°C.

Power: 11 to 13 Vdc @ 19 mA + lamp current.

Size: One standard one-half-inch module increment in a RFL Model 68 Chassis.

CONNECTIONS AND THEORY

CAUTION

These modules contain CMOS logic circuits and special handling precautions should be observed. Refer to "CMOS Handling Precautions", RFL Document 12175.

All unused input terminals or unused inputs to IC's must be returned to +V or common.

Refer to Figure 4, the schematic. The description of the logic for each transistor driver is as follows: A logic 1 at Terminal S turns on all the transistors. When the MUTE switch is in the HEAR position, Q5 is kept off; otherwise, in the MUTE position Q5 will be on steadily until GEN ALARM at Terminal 15 drops low or a power failure indication at Terminal 16 occurs. In either of those cases the MUTE lamp will flash. Whenever GEN ALARM or

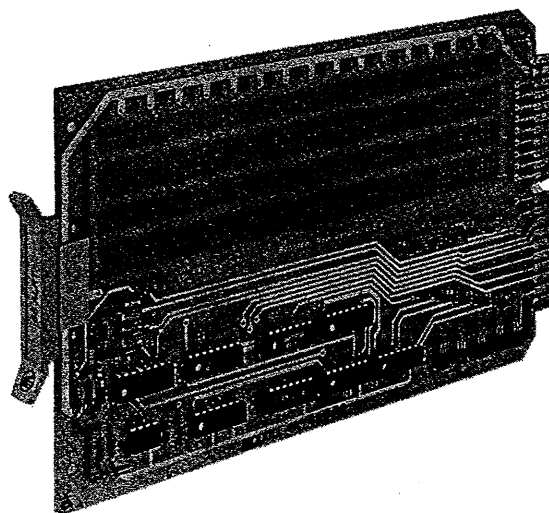


Figure 1. Model 66 ALRT Alert Card.

PWRFL are True, Q3 will flash and Q4 will be on unless the MUTE switch is in the MUTE position, in which case Q4 will be forced off. Q2 will flash if Terminal R is held low, and Q1 will flash whenever there has been a power failure.

Figure 2 shows the 66 ALRT connections in a typical system. Whenever a change occurs the GEN ALARM and ALARM EXISTS busses drop to a low level. Pushing the AUDIBLE RESET switch clears the general alarm flip-flops in the 66 LD/CD and R15 pulls IC1F-14 high which, in turn turns off the AUDIBLE ALARM and prevents operator annoyance. The alarm still exists; however, and the FLASH RESET lamp will remain flashing — as will the individual status lamps driven by the 66 LD/CD — until the FLASH RESET switch is pushed to reset the change detector(s) in the 66 LD/CD and allow R14 to pull the ALARM EXISTS buss high.

IC5 and its associated circuitry form an oscillator running at approximately 8192 Hz which is divided by 4096 in IC2 to provide a 2-Hz FLASH signal.

IC7 is continually trying to count 8 seconds. If it ever does, it stops counting and signals DATA LOST. If the Decoding Controller detects a valid word received because BDSB=0 when the LMPB pulse goes high, IC7 will be reset. As long as one or more valid words are detected every eight seconds, IC7-5 will stay low and DATA LOST will equal zero.

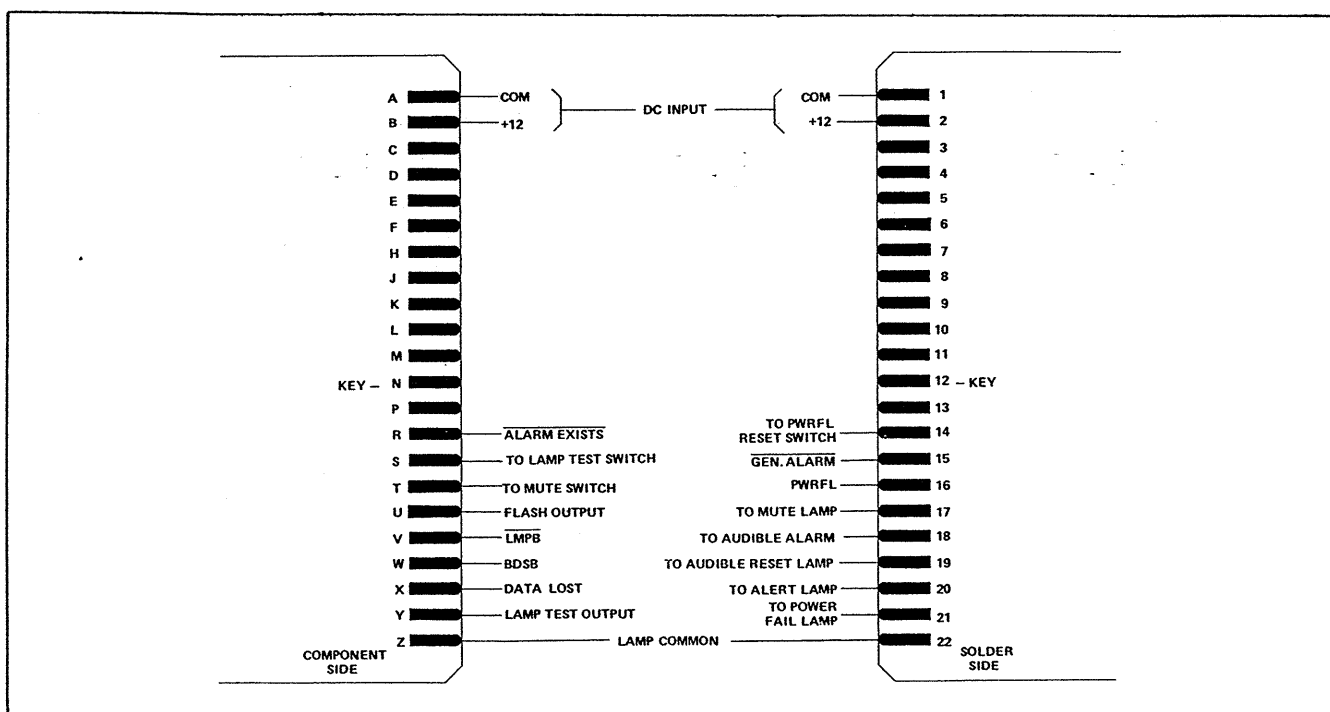
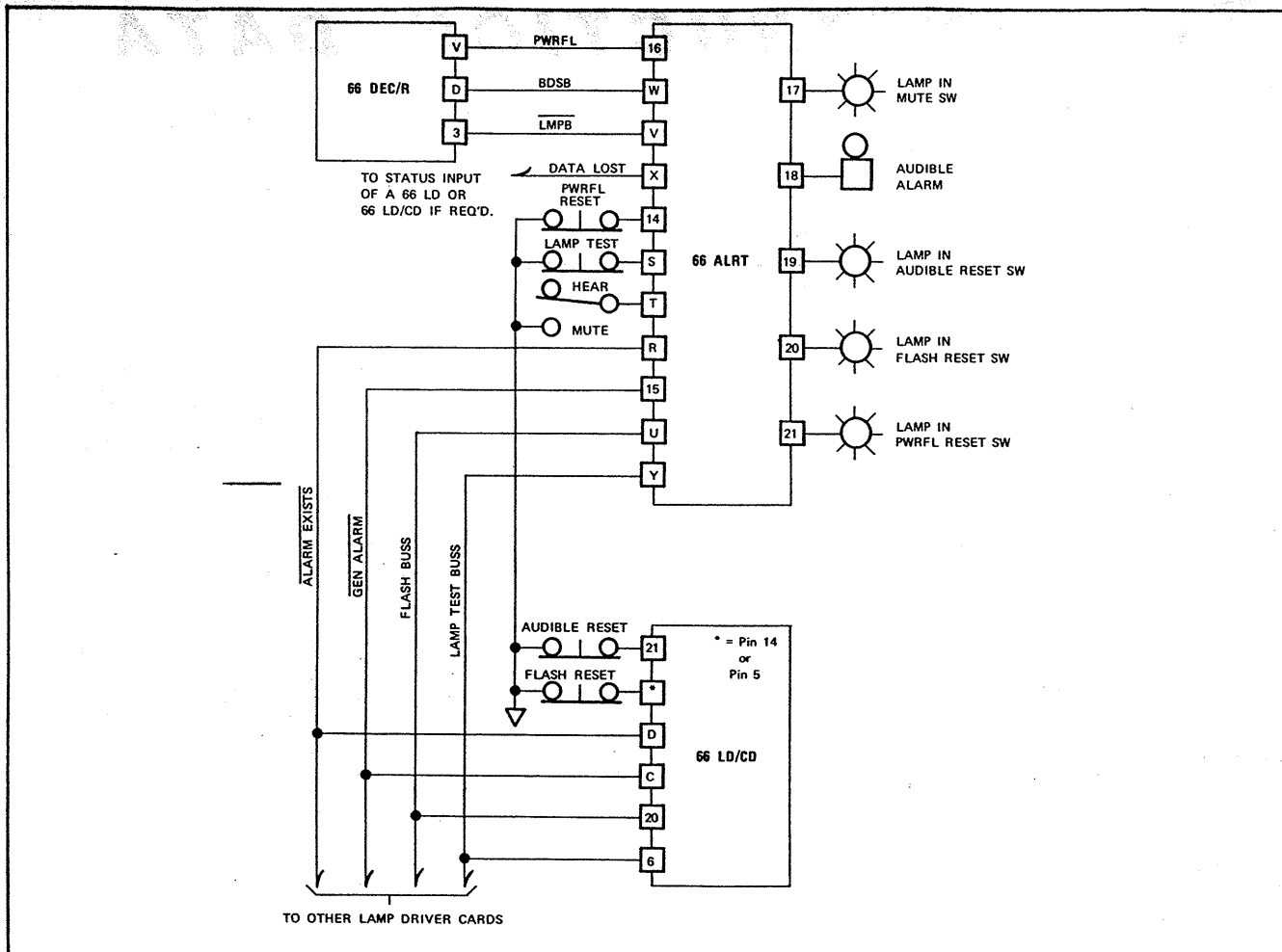


Table 1
Replaceable Parts

Circuit Symbol (See Figure 4)	Description	Part Number
Model 66 ALRT Alert Card - Assembly No. HB-44570		
CAPACITORS		
C1	Capacitor, tantalum, 4.7 μ F, 20%, 20V, Kemet T322B475MO20AS or equiv.	1007 711
C2	Capacitor, ceramic, 0.001 μ F, 10%, 100V, Union Carbide CK12BX102-K or equiv.	1007 1360
C3-7	Capacitor, ceramic, 470pF, 10%, 100V, Union Carbide CK12BX471-K or equiv.	1007 1358
RESISTORS		
R1-5	Resistor, metal film, 5.11K, 1%, 1/4W, Type RN1/4	0410 1356
R6-10	Resistor, metal film, 100K, 1%, 1/4W, Type RN1/4	0410 1480
R11-13	Resistor, metal film, 12.1K, 1%, 1/4W, Type RN1/4	0410 1392
R14, 15	Resistor, metal film, 47.5K, 1%, 1/4W, Type RN1/4	0410 1449
R16, 17	Resistor, metal film, 10K, 1%, 1/4W, Type RN1/4	0410 1384
R18	Resistor, metal film, 20K, 1%, 1/4W, Type RN1/4	0410 1413
R19	Resistor, metal film, 150K, 1%, 1/4W, Type RN1/4	0410 1497
R20	Resistor, metal film, 1K, 1%, 1/4W, Type RN1/4	0410 1288
SEMICONDUCTORS		
IC1	MOS hex inverter/buffer, RCA CD4049AE or equiv.	0615 7
IC2	MOS 14-stage counter/divider, RCA CD4020BE or equiv.	0615 2
IC3, 9	MOS quad 2-input OR gate, RCA CD4071BE or equiv.	0615 24
IC4, 8	MOS quad 2-input NOR gate, RCA CD4001BE or equiv.	0615 3
IC5	Operational amplifier, high-performance, Texas Instruments LM301AP or equiv.	0620 76
IC6	MOS dual D-type flip-flop, RCA CD4013BE or equiv.	0615 1
IC7	MOS 7-stage binary counter, RCA CD4024BE or equiv.	0615 14
Q1-5	Transistor, Darlington, 2N6426, TO-92 case	46531
MISCELLANEOUS COMPONENTS		
---	Shorting bar, single, Aries LP300 or equiv.	42904

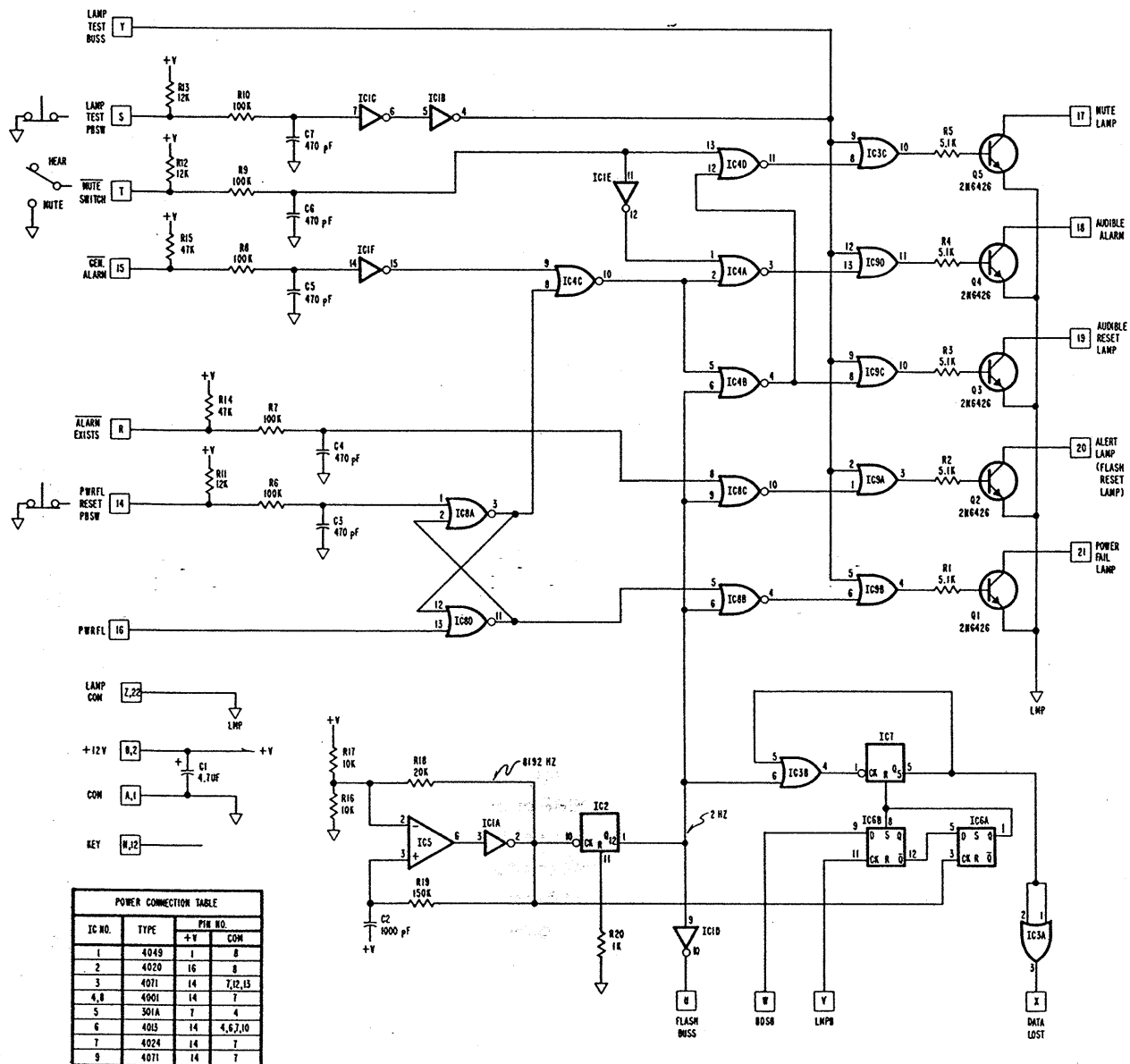


Figure 4. Schematic of Circuit, Model 66 ALRT (HE-44574).



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