

LUDLUM MODEL 272D

DIGITAL REMOTE

**March 2020
Serial No. 315591 and Succeeding
Serial Numbers**

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LUDLUM MEASUREMENTS, INC
501 OAK STREET, P.O. BOX 810
SWEETWATER, TEXAS 79556
325-235-5494, FAX: 325-235-4672

STATEMENT OF WARRANTY

Ludlum Measurements, Inc. warrants the products covered in this manual to be free of defects due to workmanship, material, and design for a period of twelve months from the date of delivery. The calibration of a product is warranted to be within its specified accuracy limits at the time of shipment. In the event of instrument failure, notify Ludlum Measurements to determine if repair, recalibration, or replacement is required.

This warranty excludes the replacement of photomultiplier tubes, G-M and proportional tubes, and scintillation crystals which are broken due to excessive physical abuse or used for purposes other than intended.

There are no warranties, express or implied, including without limitation any implied warranty of merchantability or fitness, which extend beyond the description of the face there of. If the product does not perform as warranted herein, purchaser's sole remedy shall be repair or replacement, at the option of Ludlum Measurements. In no event will Ludlum Measurements be liable for damages, lost revenue, lost wages, or any other incidental or consequential damages, arising from the purchase, use, or inability to use product.

RETURN OF GOODS TO MANUFACTURER

If equipment needs to be returned to Ludlum Measurements, Inc. for repair or calibration, please send to the address below. All shipments should include documentation containing return shipping address, customer name, telephone number, description of service requested, and all other necessary information. Your cooperation will expedite the return of your equipment.

**LUDLUM MEASUREMENTS, INC.
ATTN: REPAIR DEPARTMENT
501 OAK STREET
SWEETWATER, TX 79556**

**800-622-0828 325-235-5494
FAX 325-235-4672**

TABLE OF CONTENTS

1. GENERAL.....	1
2. CABLE	1
3. SPECIFICATIONS	2
4. ENVIRONMENTAL CONDITIONS FOR NORMAL USE	2
5. WARNING MARKINGS AND SYMBOLS	3
6. RECYCLING	4
7. DRAWINGS AND DIAGRAMS.....	5

Model 272D Digital Remote

March 2020

1. GENERAL

The Model 272D Digital Remote is a remote status instrument for the Ludlum Model 375 series of Area Monitors. A large four-digit LED (light emitting diode) display shows the current radiation reading from 0.1 to 9999 in the same display units as the Model 375. The Model 272D also shows the current status of the Model 375. The LOW ALARM, HIGH ALARM, SYSTEM OK, and DET FAIL status indicators are all provided. The audio has a toggle switch that allows the audio to be enabled or disabled. There is only an audio alarm in a HIGH ALARM or DET FAIL condition. In a LOW ALARM, there is no audio, but a blinking light indicates the LOW ALARM condition. A pushbutton RESET switch allows the alarm on both the Model 375 and the Model 272D to be reset.

If the Model 272D becomes disconnected from the Model 375, or loses communication with the Model 375, after 15 seconds, the Model 272D blanks the display, lights the DET FAIL indicator, and activates the relay and audio. Upon restoration of communication, the Model 272D resumes normal operation automatically.

A form C relay connection (providing common, normally open, and normally closed contacts) enables further alarms to be triggered on HIGH ALARM and FAILURE status, which includes the audio alarm. The internal relay is configured to be fail-safe. The fail-safe configuration is where the relay is activated when the status is normal. The relay is deactivated whenever the power is off or the status changes to the alarm or fail conditions. Connections to the relay are provided through a three-pin circular connector. A short pigtail cable with the mating connector is provided.

A communications cable is supplied to connect the Model 375 and Model 272D. The Model 272D is powered with a wall-mounted 5 Vdc regulated supply capable of supplying more than the typical 0.5A needed by the Model 272D.

2. CABLES

1. CABLE WIRE-UP FROM MODEL 375 TO MODEL 272D (8303-765)

MALE PINS--MODEL 375		MALE PINS--MODEL 272D
9-PIN D-SHELL CONNECT. W/3 PINS		9-PIN D-SHELL CONNECT. W/3 PINS
4	TXD/RXD	4
8	RESET	8
2	GND	2

2. FORM C RELAY CABLE (8303-722)

Three pin circular connector pinouts and wire colors:

PIN 1-WHT-normally open

PIN 2-BLK-common

PIN 3-GRN-normally closed

The relay contacts are rated for 240VAC, 1 amp max.

Model 272D Digital Remote
March 2020

3. SPECIFICATIONS

INDICATED USE: remote display for Model 375 Area Monitor

DISPLAY: 0.0 to 9999 or 0.00 to 9999 (same as connected Model 375)

SYSTEM OK: (*green light*) indicates the instrument is functioning properly

HIGH ALARM: (*red LED and audio alarm*) indicates the radiation level exceeds the high alarm point

LOW ALARM: (*yellow LED*) indicates the radiation level exceeds the low alarm point

RESET: pushbutton to reset the alarm condition

DET FAIL: (*red LED and audio alarm*) indicates detector overload, no count from detector, or communication failure

RELAY: 3-pin connector and form C relay allowing for external alarm indicators

AUDIO: unimorph type with Audio Enable ON/OFF switch (*greater than 68 dB at 2 feet*)

POWER: provided by wall-mount adapter, 5.0 Vdc (*regulated*)

Warning!

If not using the wall-mount power supply that is provided, be sure to fuse the input voltage using a 1 amp fuse.

CONSTRUCTION: Aluminum housing with ivory powder coat

TEMPERATURE RANGE: -20 to 50 °C (-4 to 122 °F); may be certified for operation from -40 to 65 °C (-40 to 150° F)

SIZE: 16.8 x 20.3 x 4 cm (6.6 x 8 x 1.6 in.) (H x W x D)

WEIGHT: 0.68 kg (1.5 lb)

4. ENVIRONMENTAL CONDITIONS FOR NORMAL USE

Indoor use only

No maximum altitude

Temperature range of -20 to 50 °C (-4 to 122 °F); may be certified for operation from -40 to 65 °C (-40 to 150 °F)

Maximum relative humidity of less than 95% (non-condensing)

Installation Category II (Overvoltage Category as defined by IEC 1010-1)

Pollution Degree 1 (as defined by IEC 664) (No pollution or only dry, nonconductive pollution occurs. The pollution has no effect.)

5. WARNING MARKINGS AND SYMBOLS

Caution!

The operator or responsible body is cautioned that the protection provided by the equipment may be impaired if the equipment is used in a manner not specified by Ludlum Measurements, Inc.

The Model 272D is marked with the following symbols:



The “**crossed-out wheellie bin**” symbol notifies the consumer that the product is not to be mixed with unsorted municipal waste when discarding. Each material must be separated. See the “Recycling” section for further information. This symbol appears on the front panel next to the CAUTION symbol.

Warning!

The operator is strongly cautioned to take the following precautions to avoid contact with internal hazardous live parts that are accessible using a tool:

1. Turn the instrument power OFF and disconnect the power cord.
2. Allow the instrument to sit for one minute before accessing internal components.



CAUTION (per ISO 3864, No. B.3.1) – designates hazardous live voltage and risk of electric shock. During normal use, internal components are hazardous live. This instrument must be isolated or disconnected from the hazardous live voltage before accessing the internal components. This symbol appears on the front of the panel.



DIRECT CURRENT (DC) (IEC 417, No. 5032) – designates an input receptacle that accommodates a power cord intended for connection to DC voltages. This symbol appears on the side panel.

**Model 272D Digital Remote
March 2020**

6. RECYCLING

Ludlum Measurements, Inc. supports the recycling of the electronics products it produces for the purpose of protecting the environment and to comply with all regional, national, and international agencies that promote economically and environmentally sustainable recycling systems. To this end, Ludlum Measurements, Inc. strives to supply the consumer of its goods with information regarding reuse and recycling of the many different types of materials used in its products. With many different agencies – public and private – involved in this pursuit, it becomes evident that a myriad of methods can be used in the process of recycling. Therefore, Ludlum Measurements, Inc. does not suggest one particular method over another, but simply desires to inform its consumers of the range of recyclable materials present in its products, so that the user will have flexibility in following all local and federal laws.

The following types of recyclable materials are present in Ludlum Measurements, Inc. electronics products, and should be recycled separately. The list is not all-inclusive, nor does it suggest that all materials are present in each piece of equipment:

Batteries	Glass	Aluminum and Stainless Steel
Circuit Boards	Plastics	Liquid Crystal Display (LCD)

Ludlum Measurements, Inc. products that have been placed on the market after August 13, 2005 have been labeled with a symbol recognized internationally as the “crossed-out wheelie bin,” which notifies the consumer that the product is not to be mixed with unsorted municipal waste when discarding. Each material must be separated. The symbol is located on the side of the Model 272D.

The symbol appears as such:



**Model 272D Digital Remote
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7. DRAWINGS AND DIAGRAMS

Main Circuit Board Schematic, Drawing 396 x 901 (3 sheets)

Main Circuit Board Component Layout, Drawing 396 x 902 (2 sheets)

1

2

3

4

5

A

A

B

B

C

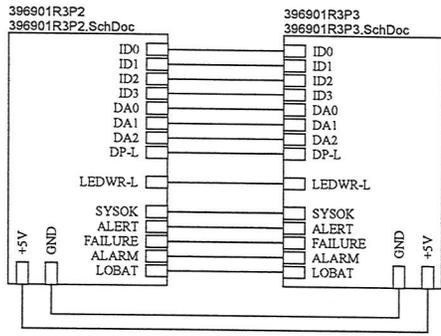
C

D

D

E

E



		PO Box 810 501 Oak Street Sweetwater, Texas 79556 U.S.A. 1-800-622-0828	
Drawn: PAB	02/04/2016	Title: MAIN BOARD	
Design: RSS	02/04/2016	Model: 272D	
Approve: <i>[Signature]</i>	Board#: 5396-901	Sheet: 1 of 3	
Print Date: 2/4/2016 2:38:55 PM	Rev: 3	Series	Sheet
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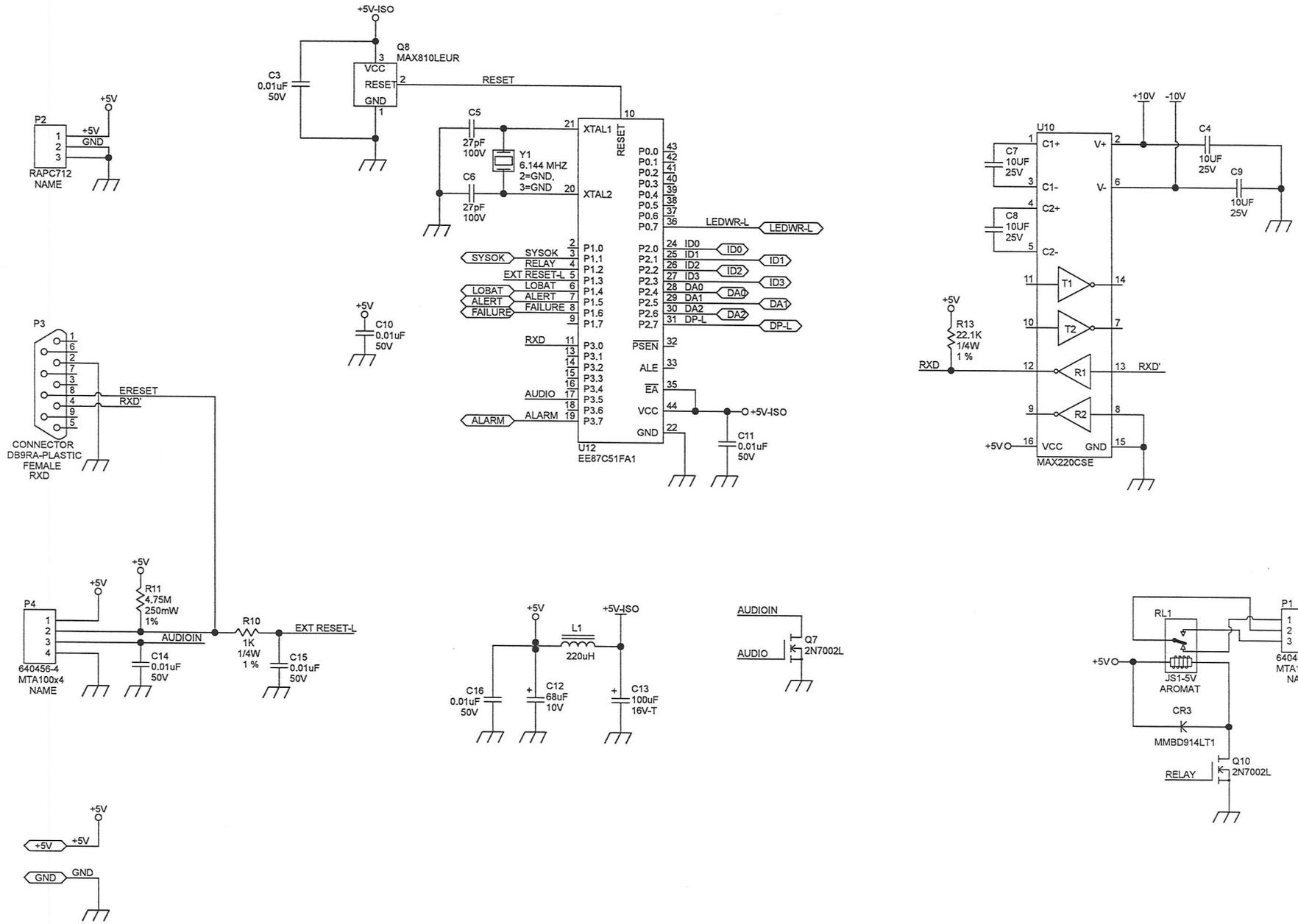
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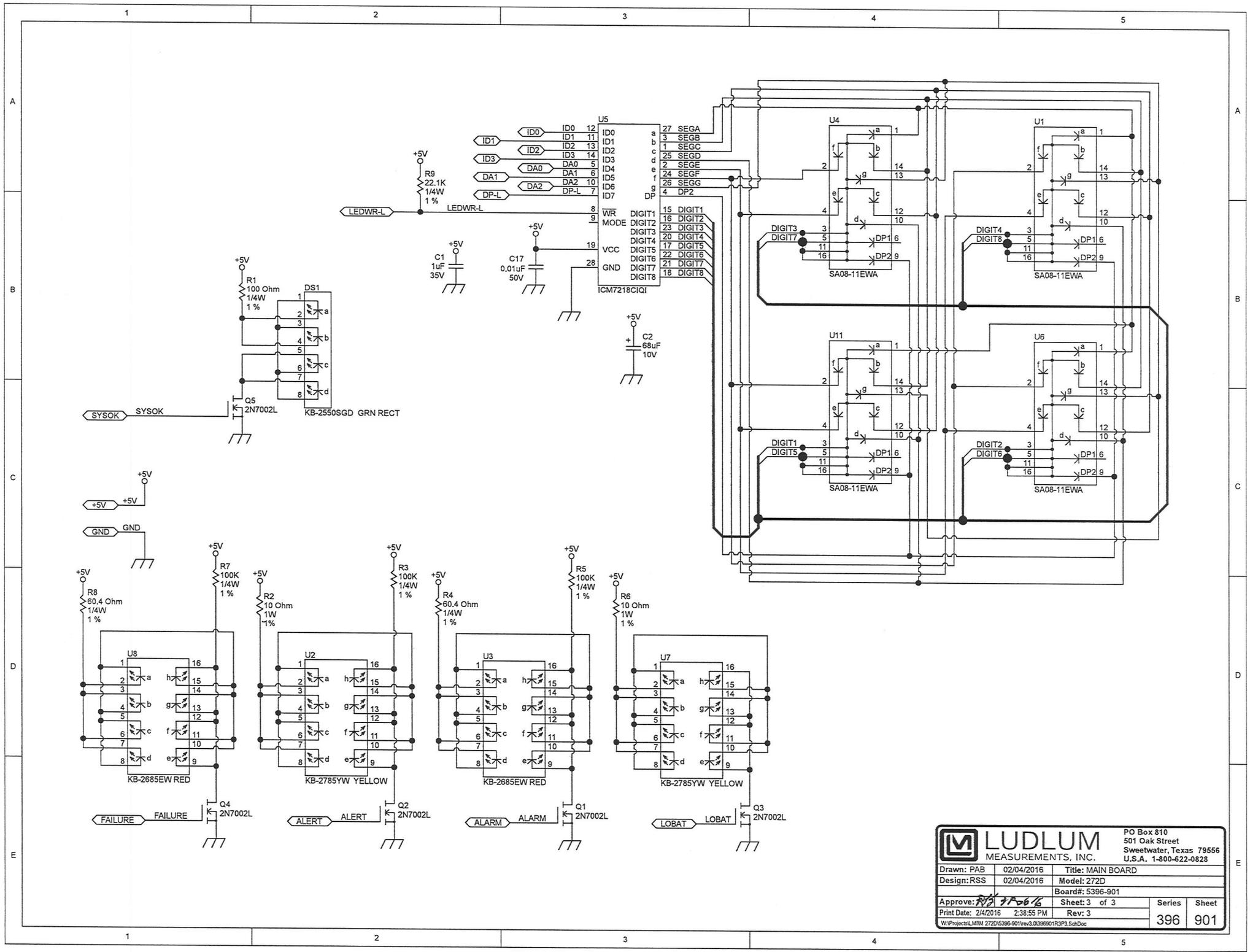
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5

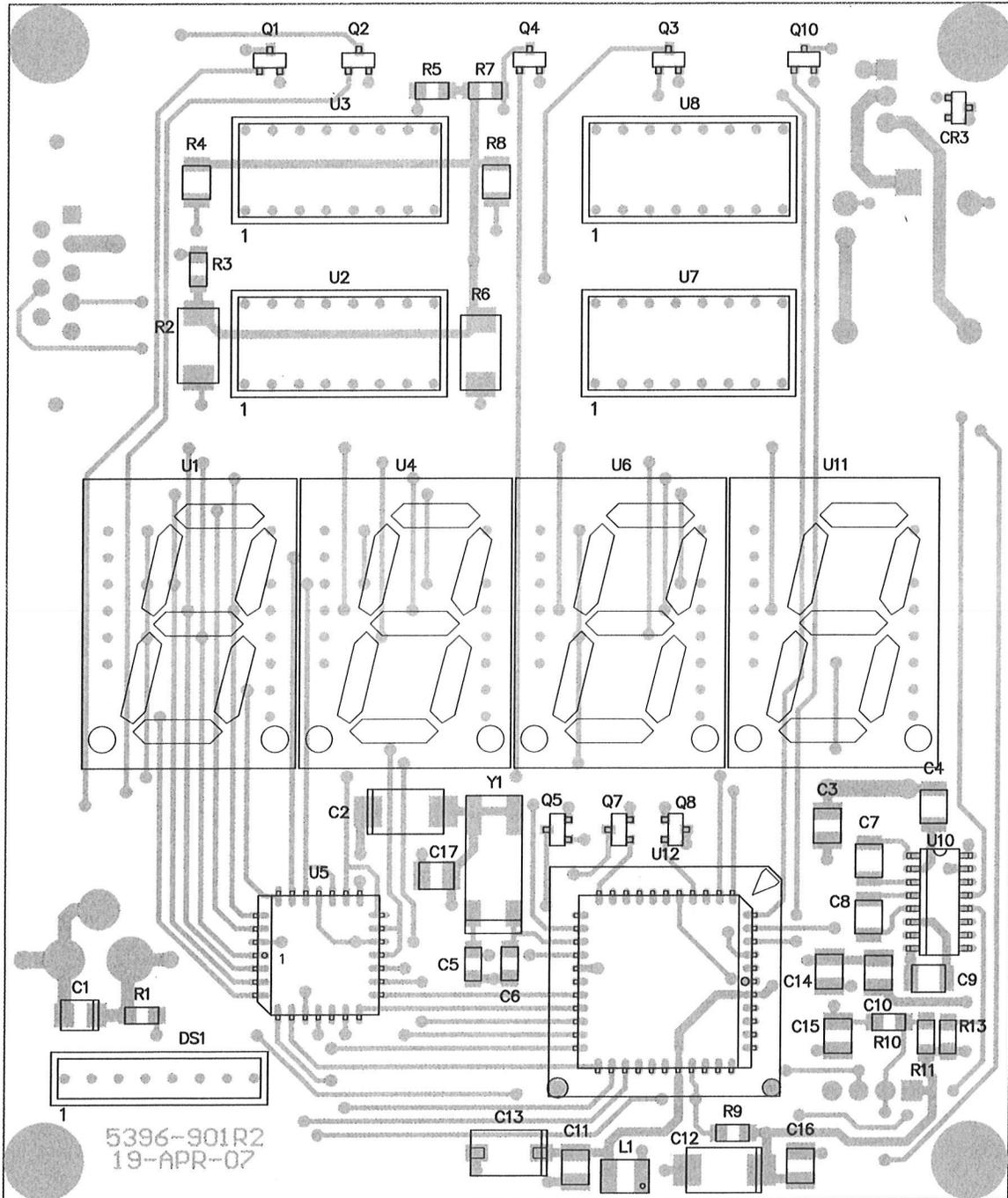


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Drawn: PAB	02/04/2016	Title: MAIN BOARD
Design: RSS	02/04/2016	Model: 272D
Board#: 5396-901		
Approve: <i>RSS</i>	Sheet: 2 of 3	Series
Print Date: 2/4/2016 2:38:55 PM	Rev: 3	Sheet
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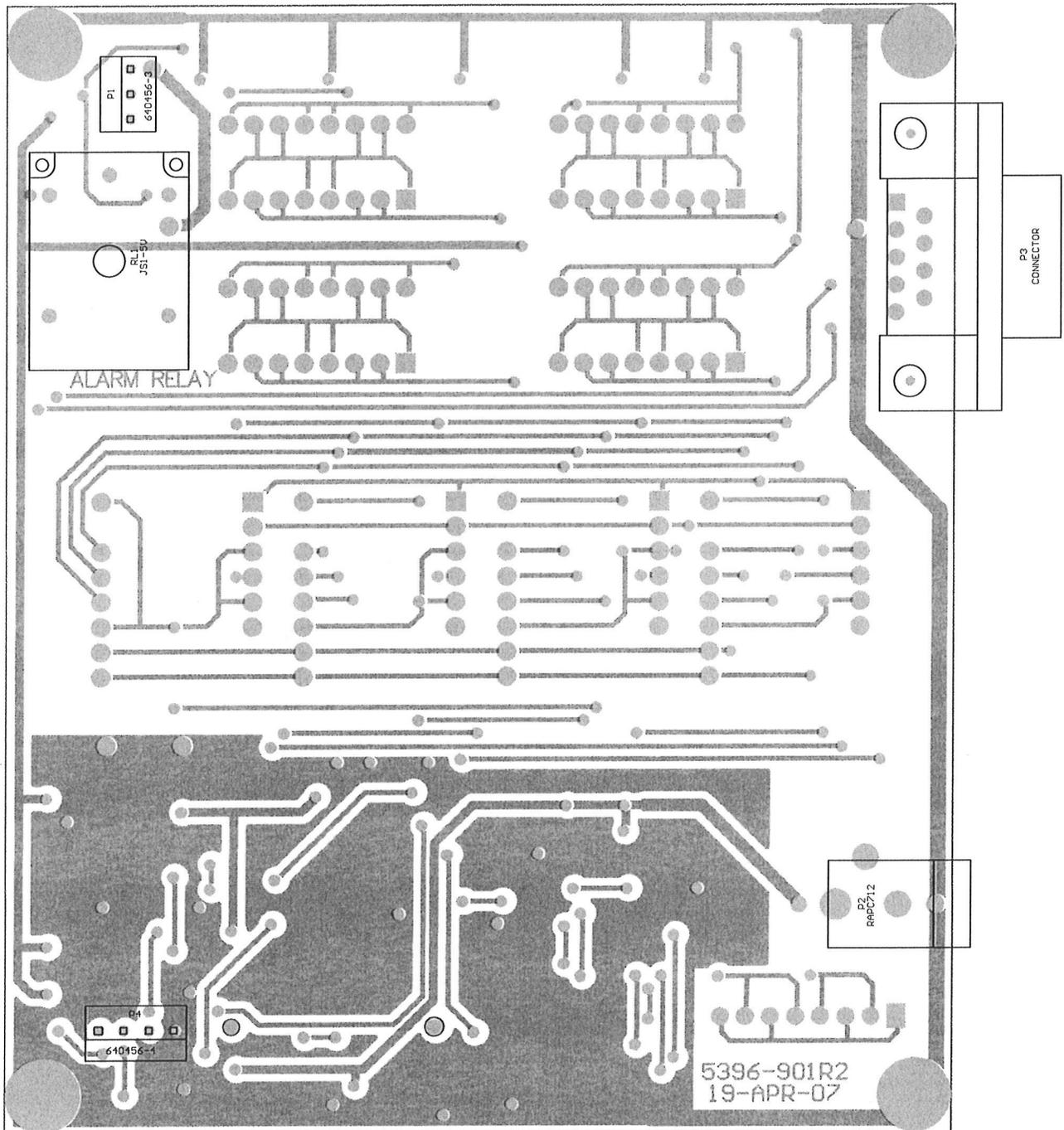


LUDLUM		PO Box 810 501 Oak Street Sweetwater, Texas 79556 U.S.A. 1-800-622-0828	
Drawn: PAB	02/04/2016	Title: MAIN BOARD	
Design: RSS	02/04/2016	Model: 272D	
Approve: <i>[Signature]</i>		Board#: 5396-901	Sheet: 3 of 3
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Title: MAIN BOARD			
Drawn: PAB	02/04/2016	Model: 272D	
Design: RSS	02/04/2016	Board#: 5396-901	
Approve: <i>RSS</i>	<i>18/04/16</i>	Rev: 3	
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 LUDLUM MEASUREMENTS, INC.		PO Box 810 501 Oak Street Sweetwater, TX 79556 U.S.A. 1-800-622-0828	
Title: MAIN BOARD			
Drawn: PAB	02/04/2016	Model: 272D	
Design: RSS	02/04/2016	Board#: 5396-901	
Approve: <i>RSS</i>	<i>15/07/16</i>	Rev: 3	
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