U-RSKU-H Series

Automatic Rescue Devices for Hydraulic Elevators

User Manual

Version 1.0

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1.0 General Description

The U-RSKU-H Series is an elevator ARD (Automatic Rescue Device) Series for hydraulic machines that are fully designed and manufactured at Ultimatrue Engineering Industries. The U-RSKU-H Series user manual operates to serve multiple elevator U-RSKU-H models where their power rating is specifically tailored to accommodate the requirements of different elevator door types.

Door Operating Voltage	Product Model
220V AC (Fully-Automatic, and Semi-Automatic Doors)	U-RSKU-H/A-220
380V AC (Fully-Automatic and Semi-Automatic Doors)	U-RSKU-H/A-380

Table 1.0 – U-RSKU-H Series Models

The U-RSKU-H Series contains safety circuits by hardware and software designed to control rescue operations. The U-RSKU-H Series provides distinct battery charging operations and battery optimization for extended battery lifetime. The U-RSKU-H Series provides a total of thirteen general software programs, accustomed with a user-friendly menu interface.

The U-RSKU-H Series complies with the international lift safety standards EN 81-20 & EN 81-50.

Ultimatrue Engineering Industries is a certified ISO 9001:2015 and ISO 45001:2018 company.

1.1 Table of Locations

Pointer	Function
1	Hydraulic Automatic Rescue Board Power Supply
2	Charging Batteries 24V DC Power Supply
3	Charging Batteries 12V DC Power Supply
4	Emergency Siren Output
5	Car Rescue Lamp Output
6	Emergency Valve Output
7	Safety Circuits
8	Stop Magnet and Shaft Common
9	Automatic Door Signals
10	Automatic Door Power Supply
11	Main Control Panel Transformer Power Supply
12	Operating Transformer Secondary Coil
13	Operating Transformer Primary Coil

Table 2.0 - Table of Locations

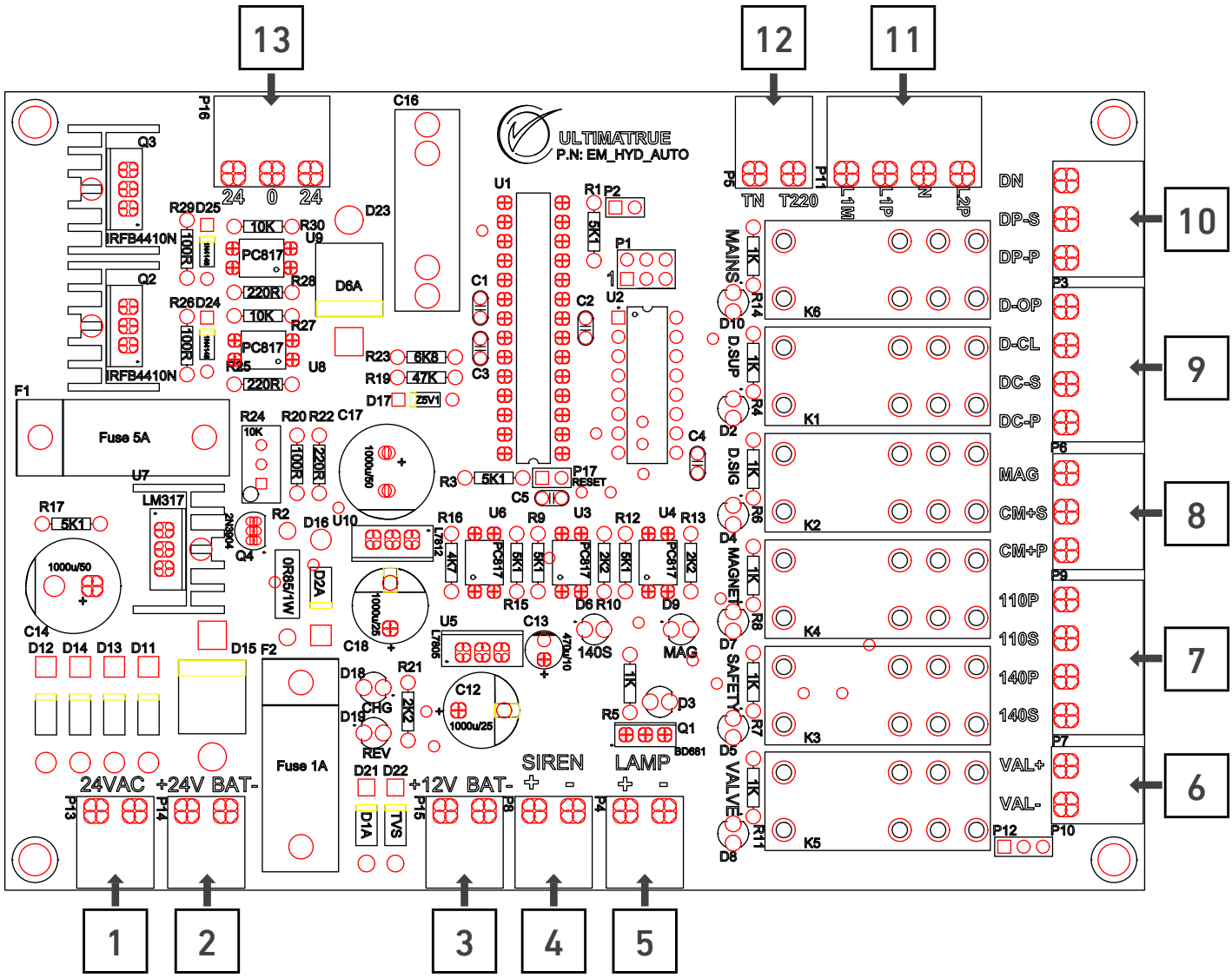

Figure 1.0 – Hydraulic Automatic Rescue Board Layout

Note:

Please head over to the Installation and Wiring section for more information on the individual inputs/outputs.

1.2 Safety Precautions

To fully benefit from using the U-RSKU-H Series please read the user manual carefully before installation and initiating operation. Keep it nearby for future reference whenever necessary.

1.2.1 Transport and Inspection

The units are delivered from the factory and ready for installation.

Upon receiving the U-RSKU-H Series units please check that the delivered equipment has not been damaged during transport. If any such damage occurs, a claim must be submitted to the carrier immediately.

After unpacking, the following must be checked:

- The U-RSKU-H Series is not damaged.
- The U-RSKU-H Series package is sealed.

1.2.2 Storage

The U-RSKU-H Series must be stored under cover in a dry and well-ventilated area until it's installed and ready for operation.

1.2.3 Warnings and Hazards

Before initiating operations, make sure that all connections, wiring, and board connectors are connected properly.

Warnings and Hazards
⚠ The cross-sectional area of the cables used to connect the remaining terminals of the U-RSKU-H should be 1 mm^2.
⚠ The polarity of the terminals must be taken into account when connecting to avoid short circuits or damage to the board.
⚠ Before starting operation, you must ensure that all connections and all connectors of the board are connected correctly.
⚠ The installer/operator must be a qualified individual.
⚠ Never install the U-RSKU-H Series in places subject to rain, direct sunlight, or places with a degree of high dust.
⚠ All safety circuits must be connected to the terminals of the safety circuit in the U-RSKU-H.
⚠ Electricity must be turned OFF during the removal or installation of the U-RSKU-H Series.

Table 3.0 - Warnings and Hazards

2.0 Technical Specifications

2.1 Models Description

Model	U-RSKU-H/A-220	U-RSKU-H/A-380
Dimensions (cm^3)	L x W x H 40 x 27 x 23	
Machine Type	Hydraulic	
Door Type	220V Automatic and Semi-Automatic	380V Automatic and Semi-Automatic
Operating Voltage	3 Phase (380V or 220V) / (50HZ or 60HZ) 1 Phase (220V or 110V) / (50HZ or 60HZ)	
Motion Direction	Down to the level of the nearest floor	
Control Panel Type	Hydraulic Control Panel	
Inputs	Stop Level Magnet and Safety Circuits	
Emergency Valve	12V DC / 24V DC	
Car Lighting	Car rescue lamp (12V DC)	
Emergency Siren	12V DC	
Protection MCB	2P MCB 6A	
Number of Batteries	Two Batteries 12V-7AHr SLA	
Device Shape	Horizontal	

Table 4.0 - Models Description

3.0 Installation and Connections

3.1 Main Control Panel Transformer

The terminals of the Main Transformer in the main control panel are connected as illustrated in Figure 2.0.

- Disconnect one of the two terminals of the primary winding supply of the main transformer in the control panel and connect this terminal to L1M on the U-RSKU-H Series.
- Connect the L1P terminal on the U-RSKU-H Series to the terminal primary winding supply of the main transformer.
- Connect the output terminal N on the U-RSKU-H Series to the Neutral N form the main phases in the main control panel.

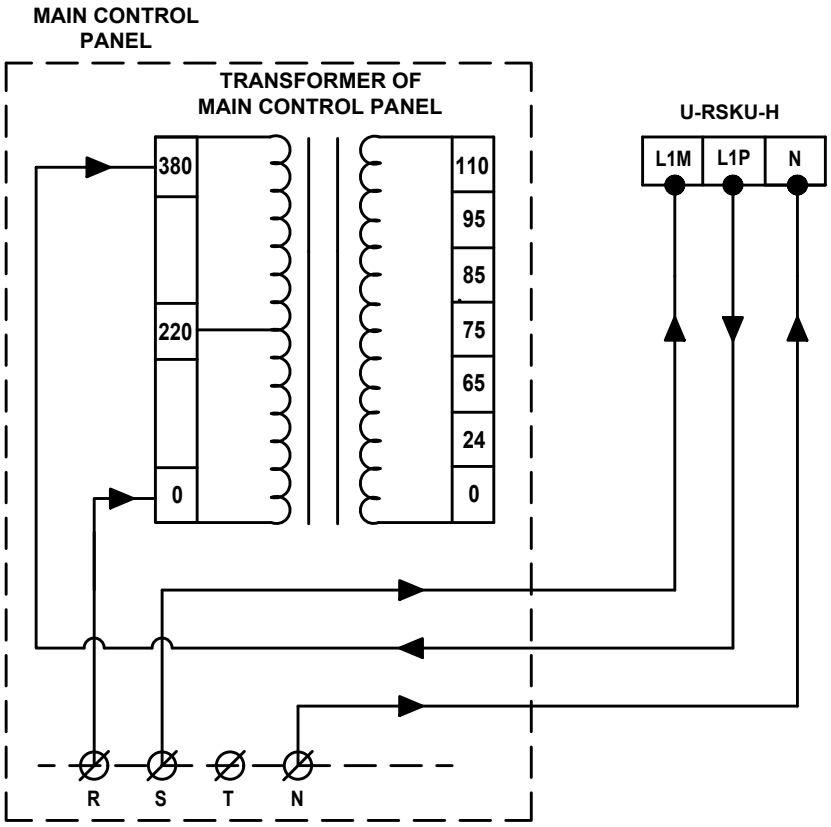

Figure 2.0 – Main Transformer Connections

3.2 Hydraulic Automatic Rescue Board Power Supply

The supplying voltage of the hydraulic control board of the U-RSKU-H Series is illustrated in Figure 3.0.

- The 0V and 24V terminals of the U-RSKU-H are connected to a 24V AC supply from the main transformer in the main control panel, supplying voltage to the hydraulic board.

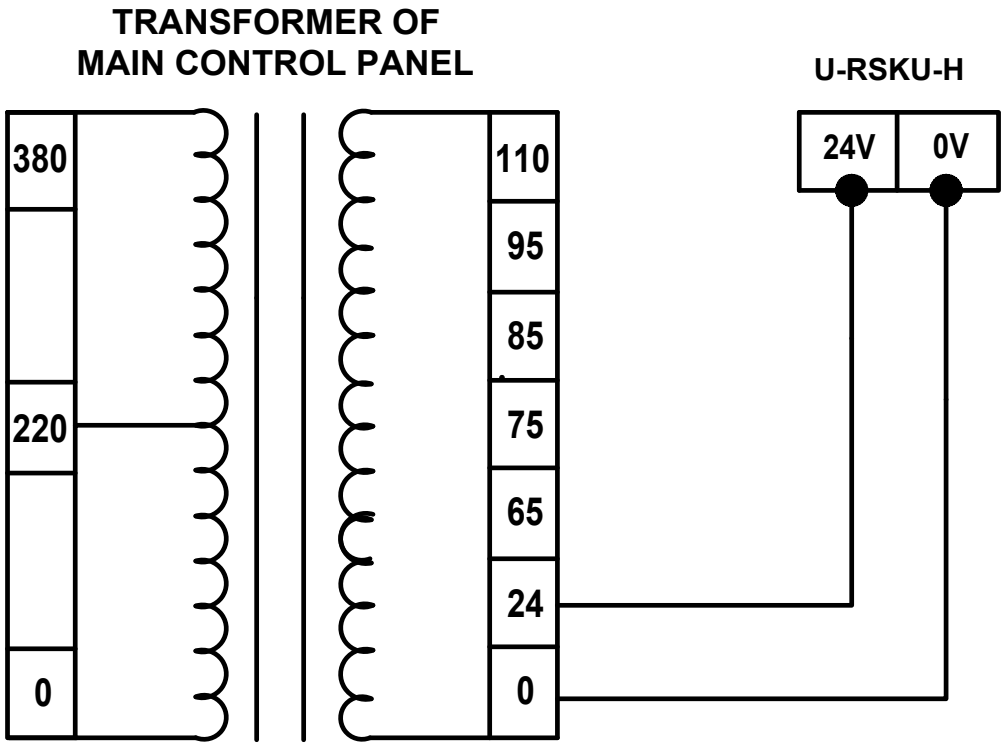

Figure 3.0 – U-RSKU-H 24V AC Supplying Voltage

3.3 Safety Circuits

For fully-automatic doors (car and landing automatic doors), the terminals of the Safety Circuits are connected as illustrated in Figure 4.0.

- Disconnect the positive terminal of the Safety Circuits rectifier in the main control panel and connect it directly to the 110P terminal on the U-RSKU-H Series.

- Connect the 110S terminal on the U-RSKU-H Series to the starting terminal of the safety circuits in the shaft, previously connected to the rectifier positive terminal.

- Disconnect the end of the safety circuits in the main control panel (Lock Relay terminal) then connect it directly to the 140P terminal on the U-RSKU-H Series.

- Connect the 140S terminal on the U-RSKU-H Series to the end terminal of the safety circuit of the shaft, previously connected to the Lock Relay terminal.

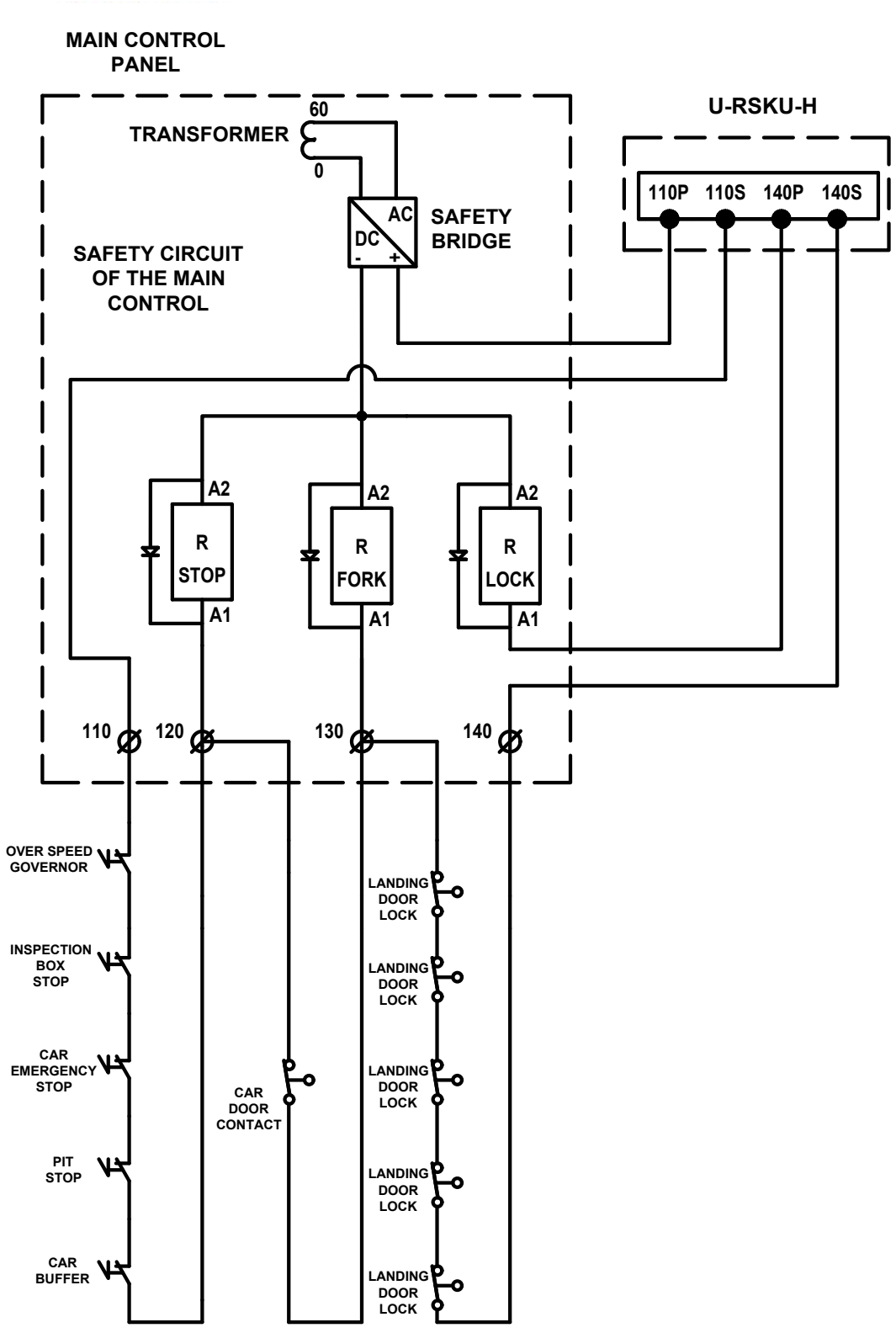

Figure 4.0 - Safety Circuits Connections

For semi-automatic doors (car automatic door and landing manual doors), the Retiring CAM cannot be connected. Therefore, only the terminals of the Stop circuits, landing door contacts, and car door contacts are connected as illustrated in Figure 5.0.

- Disconnect the positive terminal of the Safety Circuits rectifier in the main control panel and connect it directly to the 110P terminal on the U-RSKU-H Series.

- Connect the 110S terminal on the U-RSKU-H Series to the starting terminal of the safety circuits in the shaft, previously connected to the rectifier positive terminal.

- Disconnect the end of the car door contact terminal in the shaft then connect it directly to the 140S terminal on the U-RSKU-H Series.

- Connect the 140P terminal on the U-RSKU-H Series to the beginning of the landing door locks' terminal, previously connected to the terminal of the end of the car door contact in the shaft.

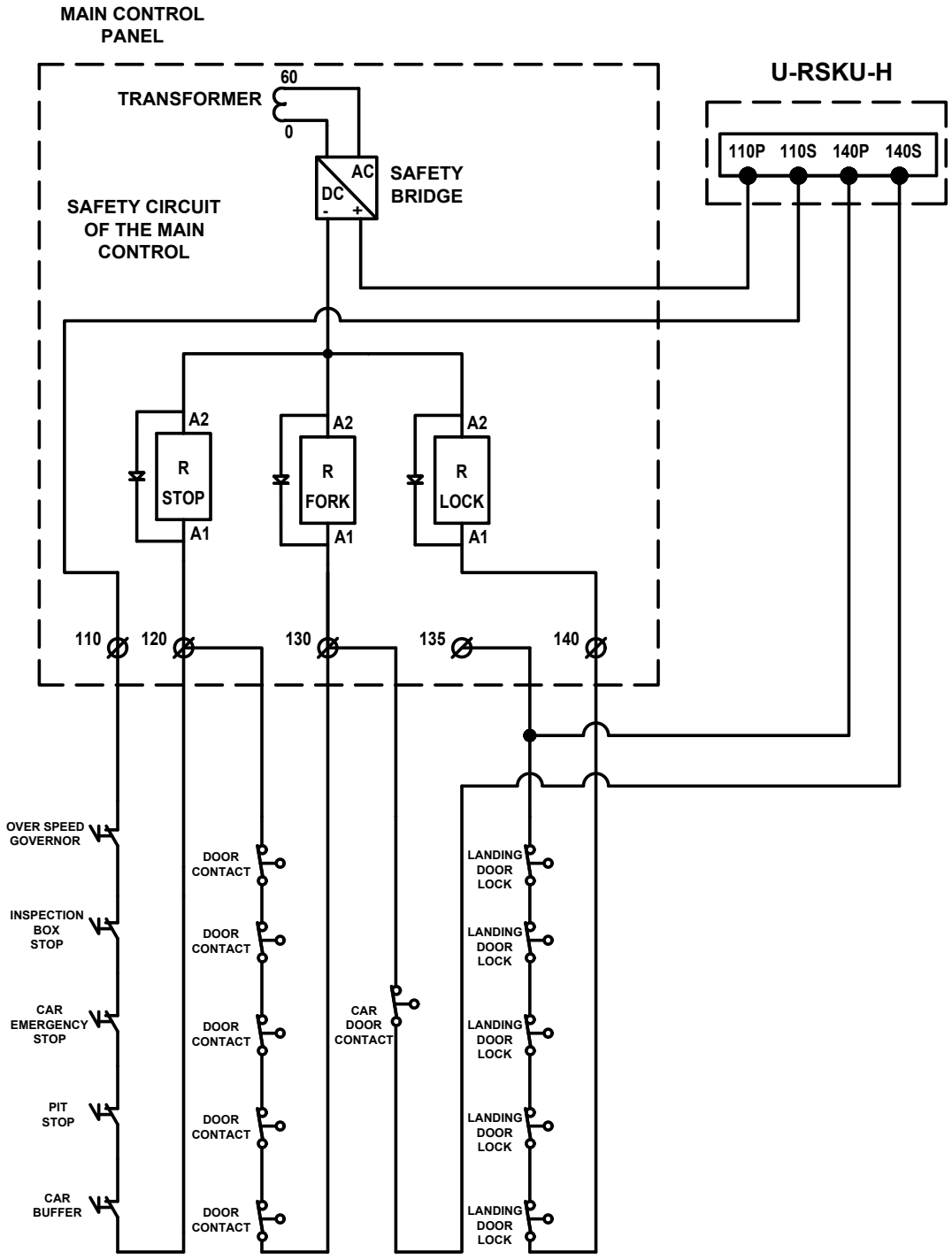

Figure 5.0 - Stop and Car Door Contact Connections

3.4 Shaft Connections

The terminals of the Shaft common and Level Magnet are connected as illustrated in Figure 6.0.

- The CM+P terminal on the U-RSKU-H Series is connected to the Shaft Common terminal of the main control panel while disconnecting any terminal that was previously connected.

- The CM+S terminal on the U-RSKU-H Series is connected to the terminals that have been disconnected from the Shaft Common terminal of the main control panel.

- The MAG terminal on the U-RSKU-H Series is connected in parallel to the NC (Normally Closed) STP (Stop Magnet) terminal of the main control panel.

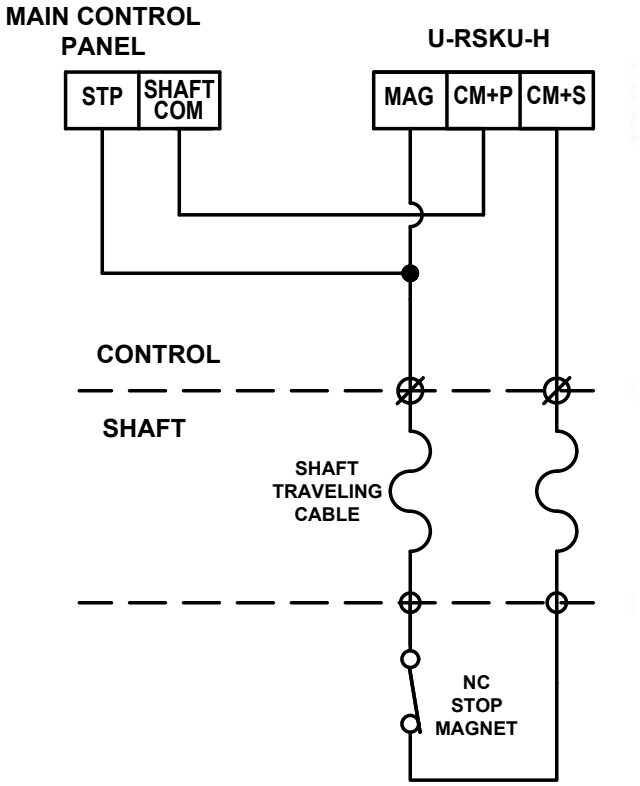

Figure 6.0 - Shaft Connections

3.5 Emergency Valve

The terminals of the Emergency Valve are connected as illustrated in Figure 7.0.

- The emergency valve of the hydraulic machine is connected to the two terminals VAL+ and VAL-, which operates with a voltage of 12V DC or 24V DC.

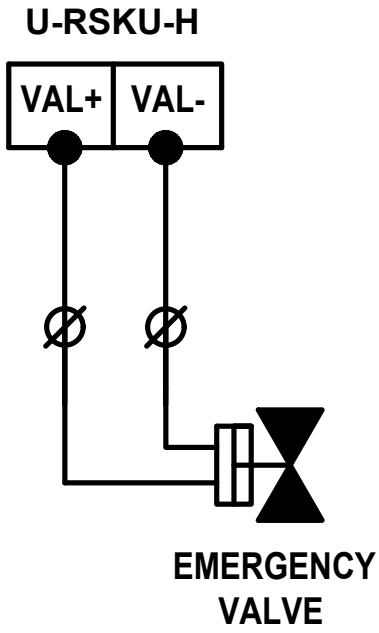

Figure 7.0 - Valve Connections

3.6 Emergency Siren

The terminals of the Emergency Siren are connected as illustrated in Figure 8.0.

- The distress or emergency siren is connected to the two terminals SIR+ and SIR-, which operates with a voltage of 12V DC.

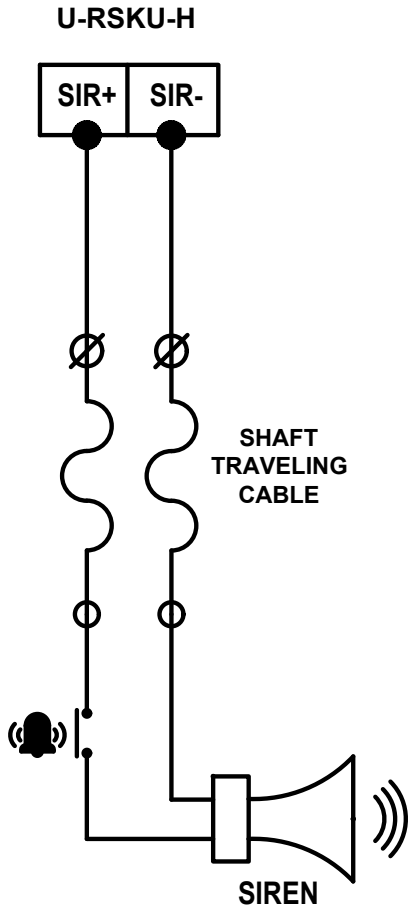

Figure 8.0 – Emergency Siren Connections

3.7 Car Rescue Lamp

The terminals of the Car Rescue Lamp are connected as illustrated in Figure 9.0.

- The two lamp terminals on the U-RSKU-H Series are connected to a separate lamp used for lighting the car in case of rescue operations.
- These two lamp terminals must not be connected to the car lighting terminals which are used in normal conditions.
- The Car Rescue Lamp is connected to the two terminals LMP+ and LMP-, which it is operated with a voltage of 12V DC.

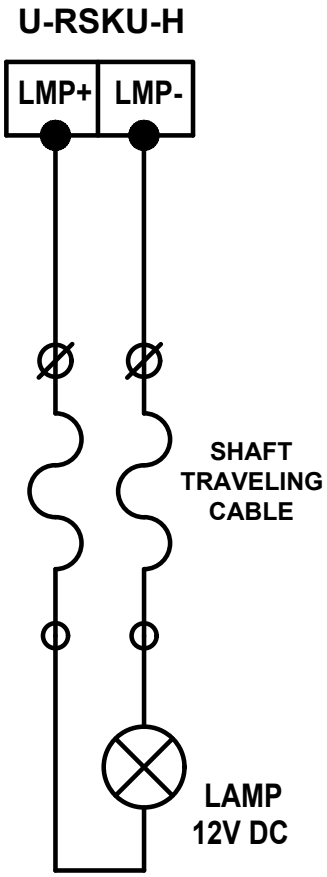

Figure 9.0 – Car Rescue Lamp Connections

3.8 220V AC Single-Phase Automatic Doors

The signals terminals of the 220V AC Single-Phase Automatic Doors are connected as illustrated in Figure 10.0.

- The door control board's common point is disconnected from the door's common outlet of the main control panel, and then connected to the DC-S (Door Common Shaft) terminal on the U-RSKU-H Series.
- The DC-P (Door Common Panel) terminal on the U-RSKU-H Series is connected to the door common outlet on the main control panel.
- The D-OP (Door Open) terminal on the U-RSKU-H Series is connected in parallel to the open signal terminal of the main control panel.
- The D-CL (Door Close) terminal on the U-RSKU-H Series is connected in parallel to the close signal terminal of the main control panel.

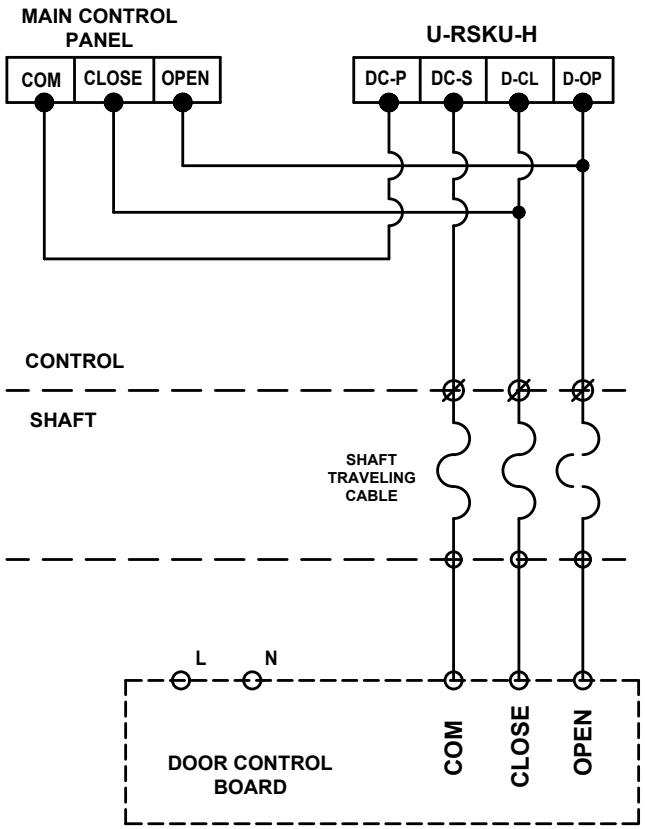

Figure 10.0 - 220V AC Single-Phase Automatic Door Signals Connections

The terminals of operation the 220V AC Three-Phase Automatic Doors as illustrated in the Figure 11.0.

- The door control board's supply terminal is disconnected from the 220V AC outlet of the main control panel and then connected to the DP-S (Door Phase Shaft) terminal on the U-RSKU-H Series.

- The DP-P (Door Phase Panel) terminal on the U-RSKU-H Series is connected to the 220V AC outlet in the main control panel.

- The N (Neutral) terminal of the door device is disconnected from the main control panel and connected to the DN terminal on the U-RSKU-H Series.

- The DN (Door Neutral) terminal on the U-RSKU-H Series is a Neutral terminal in the case that the three-phase power is active.

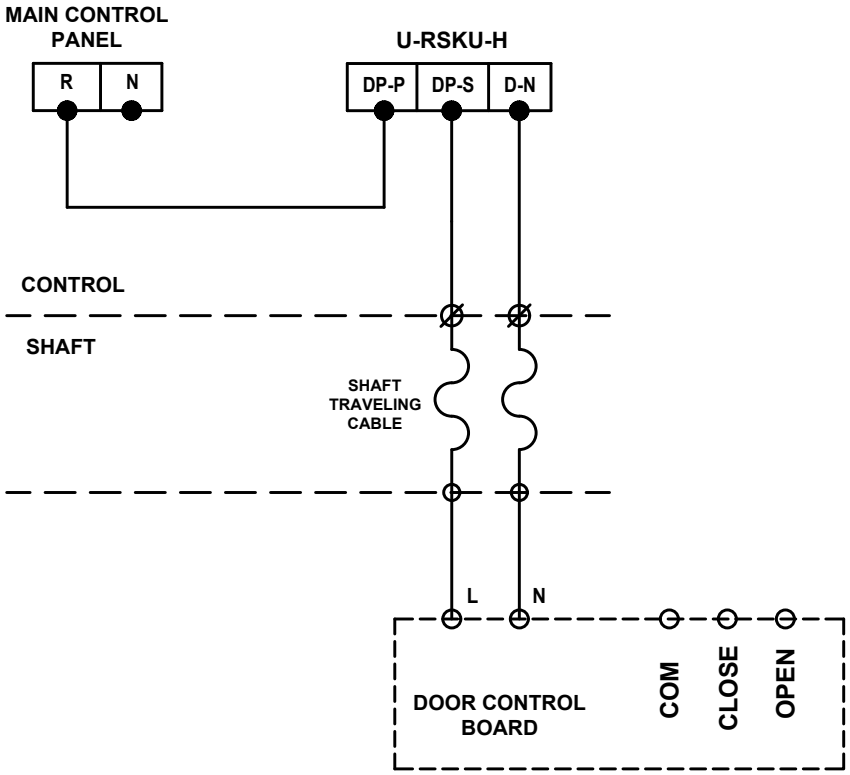

Figure 11.0 - 220V AC Single-Phase Automatic Door Operation Connections

3.9 380V DC Three-Phase Automatic Doors

The terminals of the 380V AC Three-Phase Automatic Doors are connected as illustrated in Figure 12.0.

- The Ud, Vd, and Wd terminals on the U-RSKU-H Series are connected in parallel to the door motor terminals of the main control panel.
- The Ud terminal on the U-RSKU-H Series should be connected in parallel to the UD terminal of the main control panel.
- The Vd terminal on the U-RSKU-H Series should be connected in parallel to the VD terminal of the main control panel.
- The Wd terminal on the U-RSKU-H Series should be connected in parallel to the WD terminal of the main control panel.

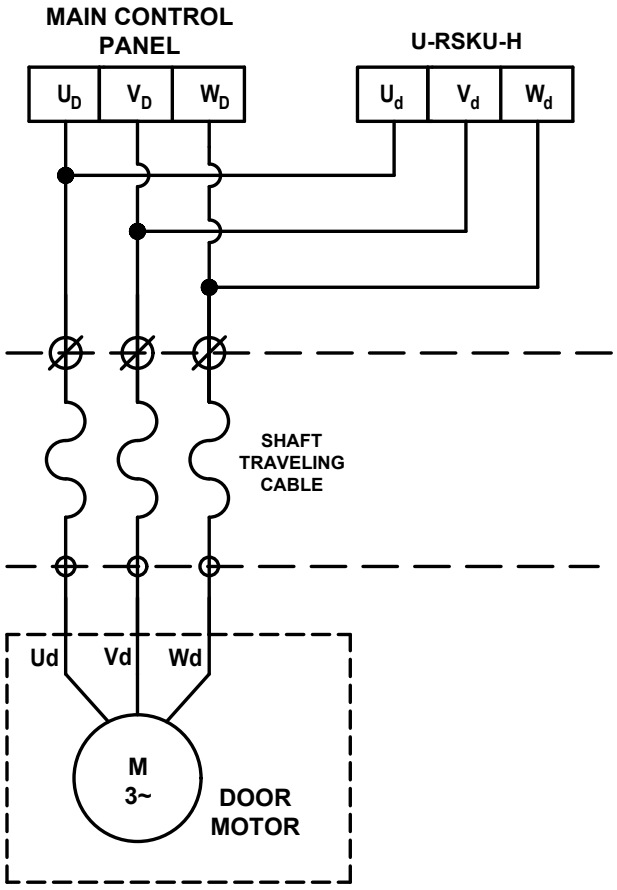

Figure 12.0 - 380V AC Three-Phase Automatic Door Connections

4.0 Disclaimer

The manufacturer shall have no obligation for damage, injury, or any legal responsibility incurred directly or indirectly from the use of any of the products. The user shall observe safe and lawful practices including, but not limited to, those set forth in this document. Should further information be desired or should particular obstacles arise which are not specifically covered for the client's purposes, the matter should be referred to Ultimatrue Engineering Industries.

Ultimatrue Engineering Industries reserves the right to make technical changes or modify the contents of this document without prior notification. With regard to purchase orders, the agreed particulars shall prevail. Ultimatrue Engineering Industries does not accept any responsibility for possible lack of information in this document.

5.0 Warranty

Ultimatrue Engineering Industries warrants the U-RSKU-H Series against all manufacturing defects for a period of one year after the date of installation and operation, provided that the user strictly adheres to all technical specifications and instructions illustrated in the user manual. The warranty is not valid in the following cases:

1. Defects caused by failures or mistakes in the U-RSKU-H Series board connections or wiring.
2. Defects caused by high or low voltage.
3. Defects caused by misuse and non-compliance with the illustrated operating instructions in the user manual.
4. Defects caused by intended damages or fire.

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As standards, specifications, and design vary over periods of time, please ask for confirmation of the information provided in this publication.

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