



Automatic Rescue Device

ARIN28 Datasheet _ English

ARIN28 DATASHEET

Datasheet Version:	V1.2
Language:	English
Date:	20-Jun-24

General notes

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Version History				
Version	Date	Old Content	New Content	By
V1.0	06-Jun-24	-	First released	Intery JSC
V1.1	17-Jun-24	-	- Updated table 1: Max inverter and Battery information. - Added table 1 note (1). - Added additional LED features. - Added Battery LED table 2. - Improved motor rate. - Update battery recommendation note.	Intery JSC
V1.2	20-Jun-24	Battery 9Ah and 15Ah	- Updated table 1: Battery information. -Updated Humidity -table 1: Added ” No water droplets formed”. -Battery min. 7Ah and min.12Ah - Updated Fig 6: Added 2 recommended options	Intery JSC

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I. Introduction

This document describes the hardware interface of the ARD board, which can help users quickly understand the General Features, Highlight Features, electrical performance and structure size of the ARD board. Each ARD set includes HP board, CP board, FT board.

II. Functional Overview

Table 1: General Features

Feature	Description				
Using for traction machine up to 22kW					
Max. Inverter power	7.5kW	11kW	15kW	18.5kW	22kW
Battery	DC12V7AH × 4 ⁽¹⁾			DC12V12AH × 8 ⁽¹⁾	
Power Supply	DC Voltage 48VDC(4×12V7AH), 48VDC(4×12V9AH), 48VDC(4×12V15AH)				
Output	220VAC 1-Phase ±5%, 50Hz ±0.2Hz, 2600W ⁽²⁾				
Wave Output	Pure sine				
Filter	Intergrated EMI output noise filter circuit				
Charger Type	A controlled rectifier to charge the battery when power is present (3-stage charging to ensure battery life)				
Physical Characteristics	Closure dimensions: ~ 249 × 162 × 119 mm Weight: ~5kg				
Temperature Range	Normal operation temperature: 0 °C to 65 °C Extended operation temperature: 0 °C to 70 °C ⁽³⁾ Storage temperature: 0 °C to 60 °C				
Humidity Range	<95% RH (No water droplets formed)				

Note:

- (1) For detailed information about Battery, please refer to Chapter V - Page 13.
- (2) External Fan is Recommended for Output Current above 10A-2200W (Motor Rate above 13kW).
- (3) In the extended operation temperature range, the ARD board can work normally, but a cooling fan must be installed. *

Highlight features:

- Short circuit and overload protection.
- 3-stage charging to ensure battery life.
- Optimum performance, high efficiency.
- Easy for installation.
- Output status warning by LED light ([Table 2](#)).

LED warning display:

Table 2: Led Warning Display

Status	Description
Normal	
Over current	
Over voltage	
Below voltage	

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III. Pin Assignment Overview

Figure 1:HP Board Pin Assignment

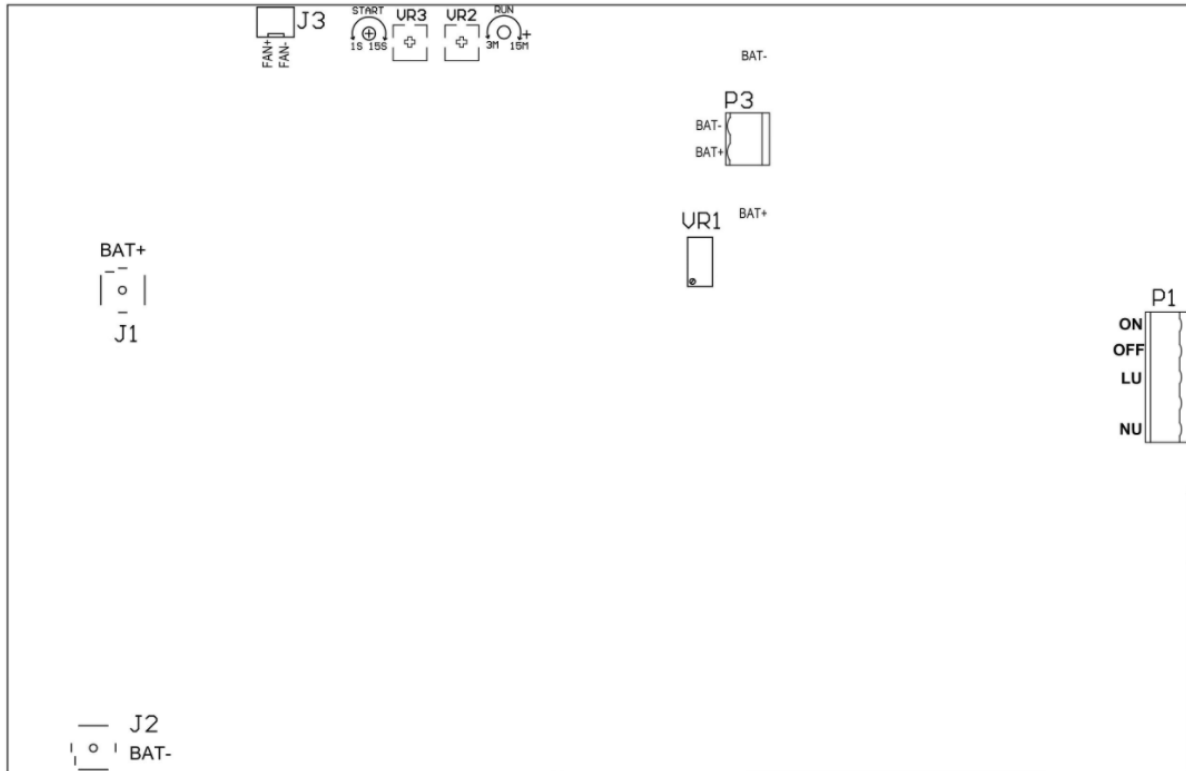


Table 3: HP Pin's Descriptions

Pin No	Pin Name	Pin Type	Description
J1	BAT+	PI	Input voltage ranges from 40V to 60V
J2	BAT-	-	Ground
J3	Fan +	PO	12VDC Output voltage, output current up to 100mA
	Fan -	-	Ground
P1	ON	DI	24VDC Input voltage, Connect to J1 on FT
	OFF	DI	24VDC Input voltage, Connect to J1 on FT
	LU	PO	220VAC 1-Phase $\pm 5\%$, 50Hz $\pm 0.2\text{Hz}$, 2600W, Connect to J1 on FT
	NU	PO	Connect to J1 on FT
P3	BAT+	PI	N/C
	BAT-	-	
VR1	VR1	AI	Adjust output voltage
VR2	Time RUN	AI	Adjust time Run
VR3	Time START	AI	Adjust time Start

Figure 2: CP Board Pin assignment



Table 4: CP Pin's Descriptions

Pin No	Pin Name	Pin Type	Description
P1	BAT+	PO	Output voltage ranges from 40V to 60V
	BAT-	-	Ground
P2	AC1	PI	Input voltage 220VAC

Figure 3: Reference Battery Charging Stages

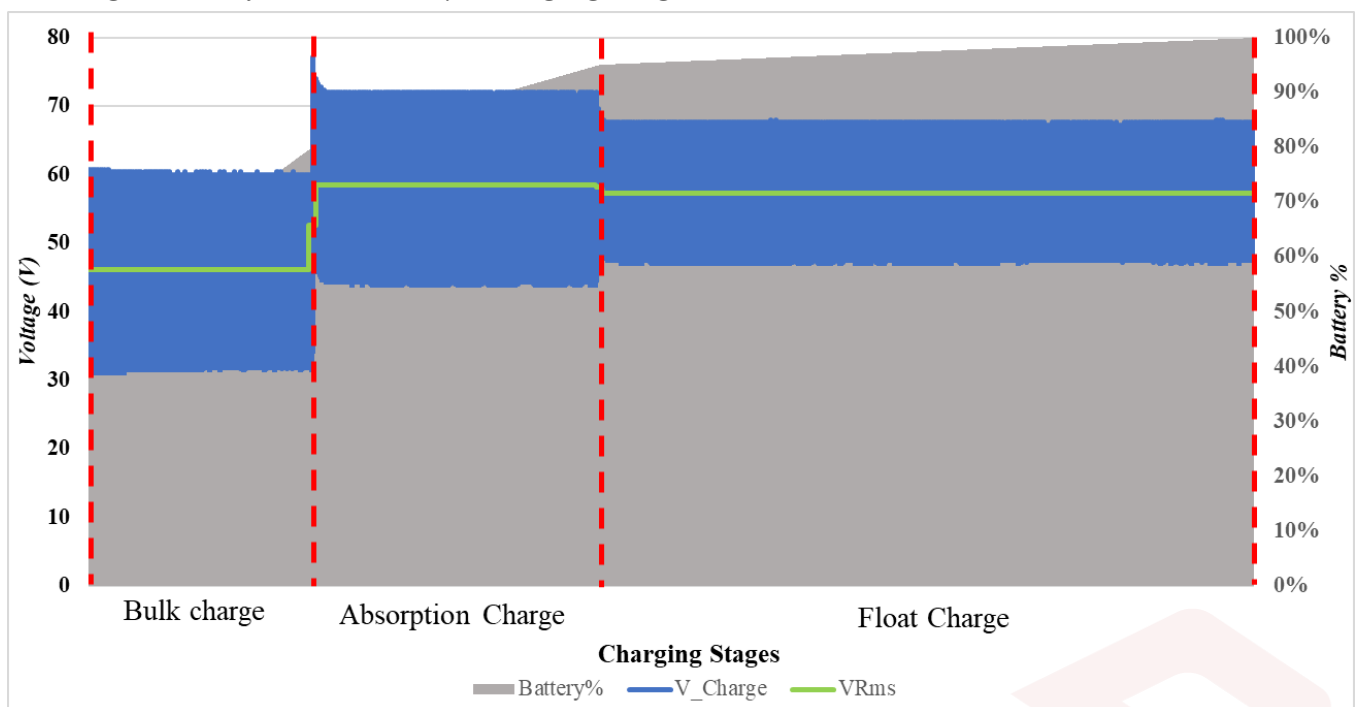


Table 5: Product Charging Stages Descriptions

Stage	VRms	Note
Bulk Charge	~ 40.1 – 44.9 V	-
Absorption Charge	~ 56.6 – 59.0 V	-
Float Charge	~ 53.5 – 55.5 V	-

Figure 4: FT Board Pin Assignment



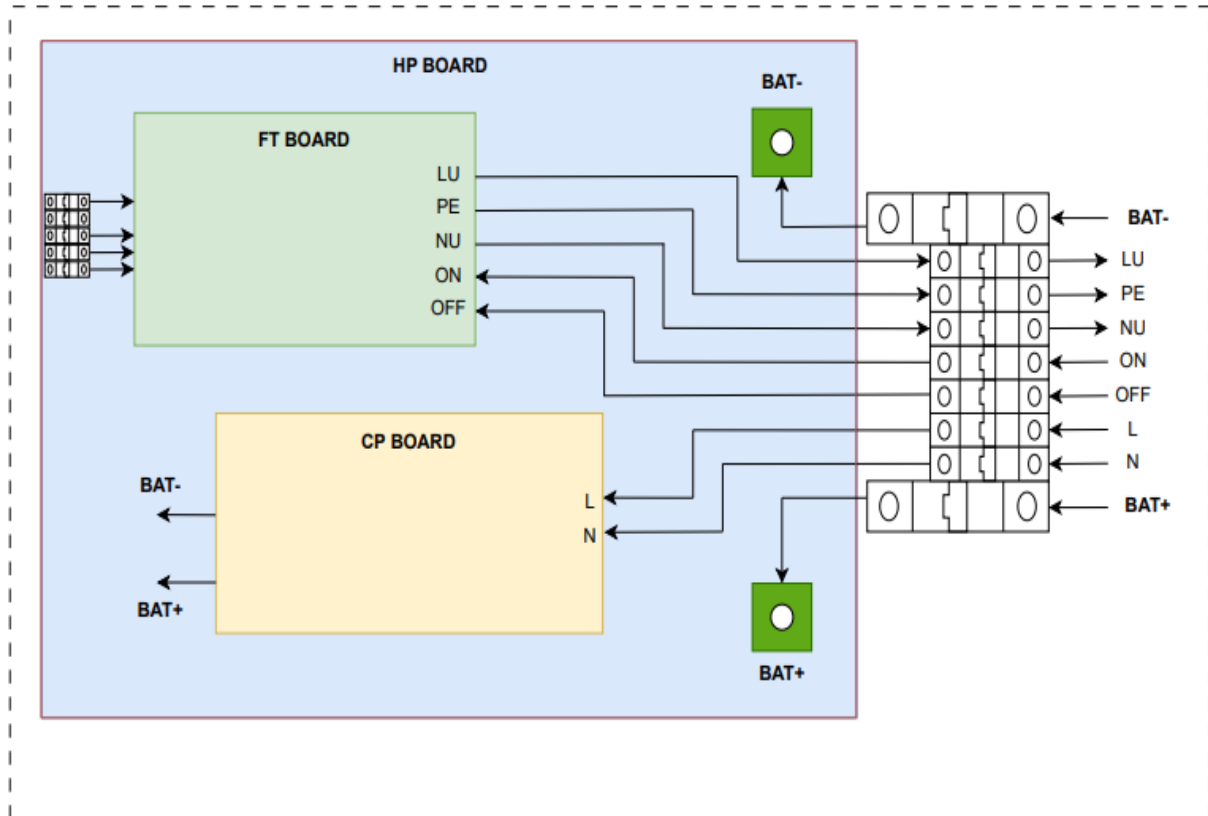
Table 6: FT Pin's Descriptions

Pin No	Pin Name	Pin Type	Description
J1	ON	DI	24VDC Input voltage, Connect to P1 on HP
	OFF	DI	24VDC Input voltage, Connect to P1 on HP
	L	PO	220VAC 1-Phase $\pm 5\%$, 50Hz ± 0.2 Hz, 2600W, Connect to P1 on HP
	N	PO	
J2	ON	DI	24VDC Input voltage, Turn on ARD
	OFF	DI	24VDC Input voltage, Turn off ARD
	LU	PO	Output 220VAC 1-Phase $\pm 5\%$, 50Hz ± 0.2 Hz
	NU	PO	
	PE	PO	Power Earth

IV. Hardware Block Diagram

The block diagram of the ARD board is shown in the figure below.

Figure 5: ARD Block Diagram



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The connection drawing of ARD board to Cabinet is shown in the figure below.

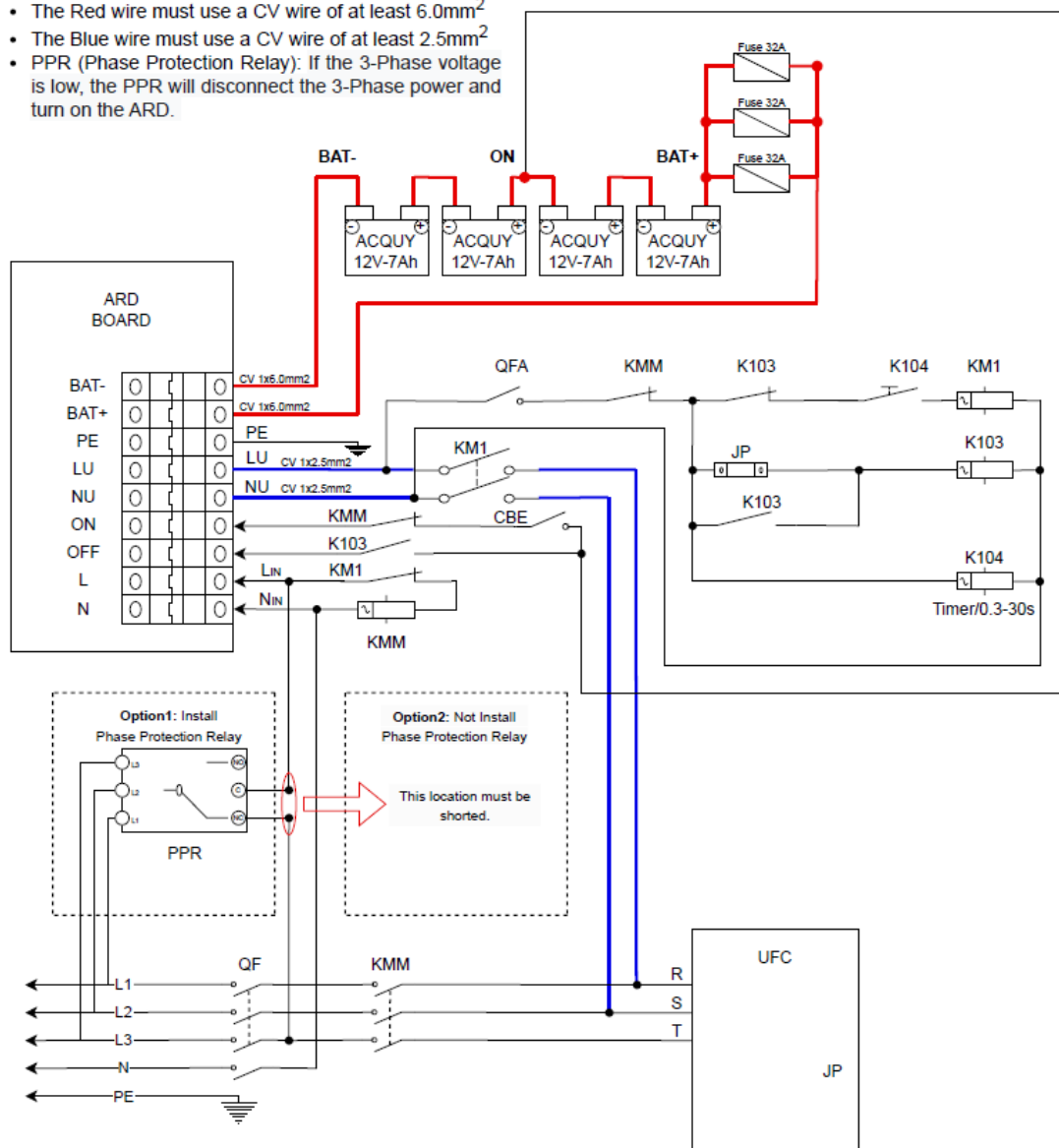
Option 1: Extended for Phase Protection Relay installation

Option 2: No Phase Protection Relay installation

Figure 6: ARD Connection Drawing

Note:

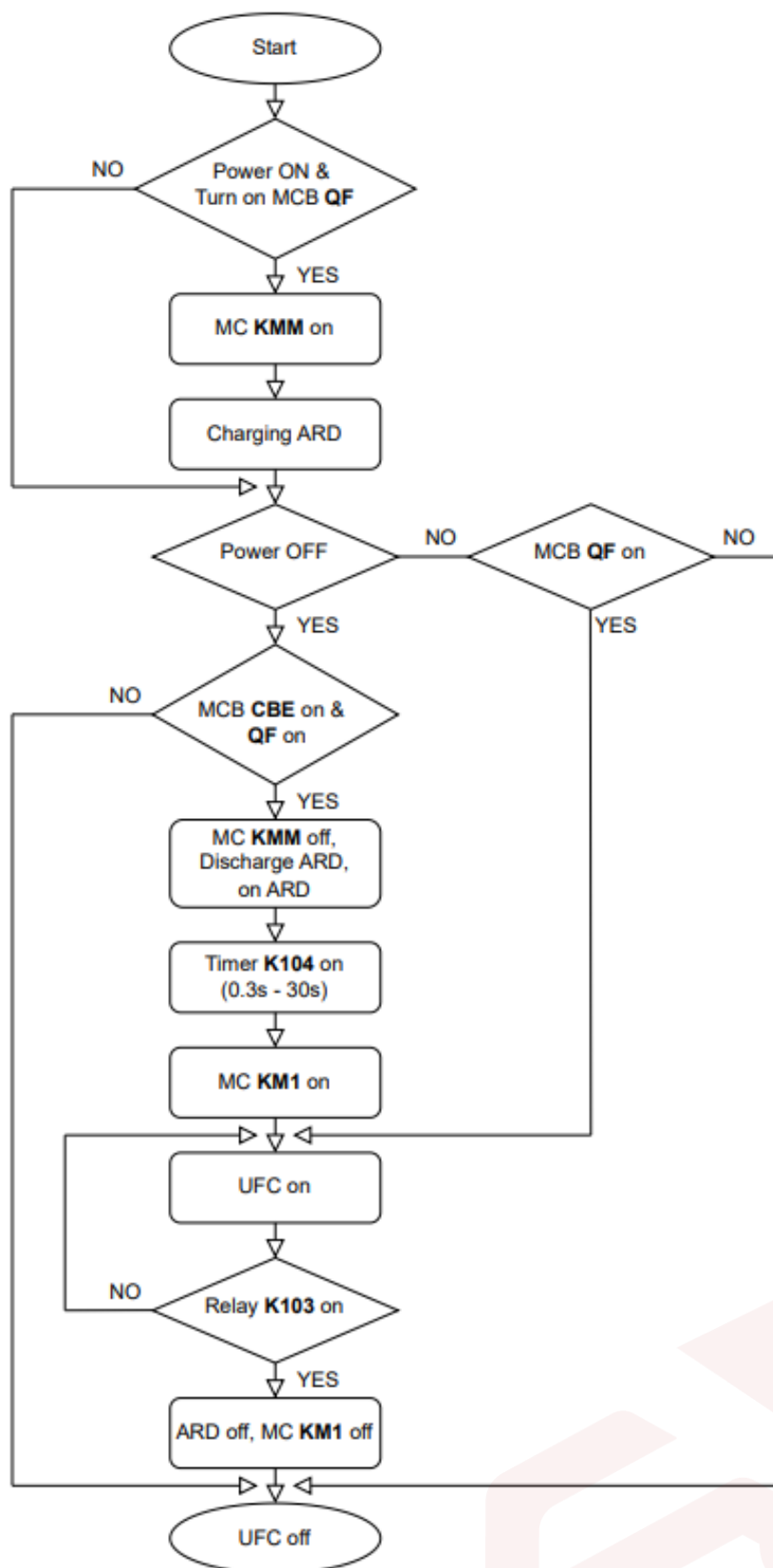
- The Red wire must use a CV wire of at least 6.0mm^2
- The Blue wire must use a CV wire of at least 2.5mm^2
- PPR (Phase Protection Relay): If the 3-Phase voltage is low, the PPR will disconnect the 3-Phase power and turn on the ARD.



Remark:

- QF – MCB *;
- CBE, QFA – MCB 1P *;
- KMM, KM1 – Magnetic Contactor 3P *;
- K103 – Relay *;
- K104 – Timer *;
- JP – Connect to UFC *.
- Phase Protection Relay (PPR): Recommended [Schneider RM22TR33](#)

Figure 7: Activity Description

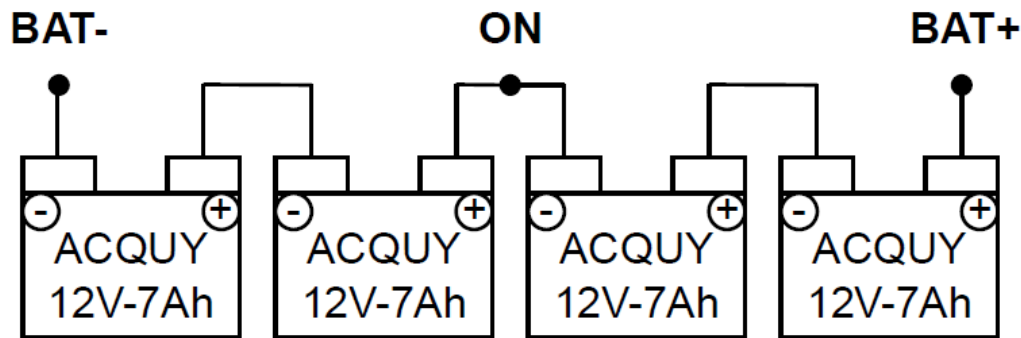


V. Battery Information

The device is available in 2 sizes for motors with different power rating.

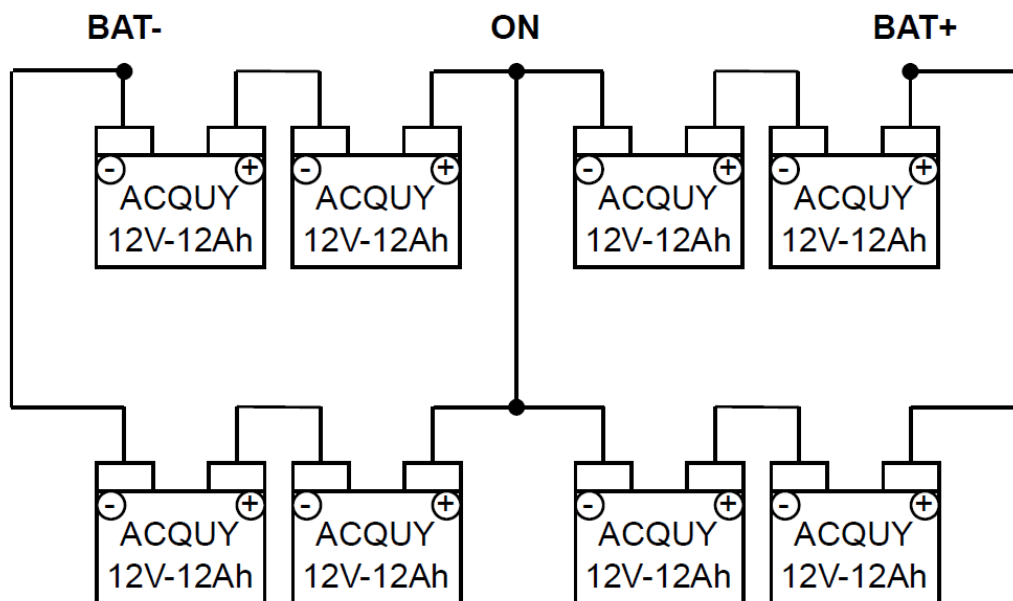
- Motor Rate **up to 15kW** - (4 batteries **min.** 7Ah) *

Figure 8: Battery For Motor Rate Up To 15kW



- Motor Rate **above 15kW** - (8 batteries **min.** 12Ah) *

Figure 9: Battery For Motor Rate Above 15kW



Assume Elevator normal speed: 1m/s and rescue speed: 0.05m/s

Note:

- It is recommended to check battery condition at least once every year.
- If motors in rescue mode and have a current greater than 12A, special solution is needed. Please contact the technical department for consultant.

VI. Recommended Electrical Equipment

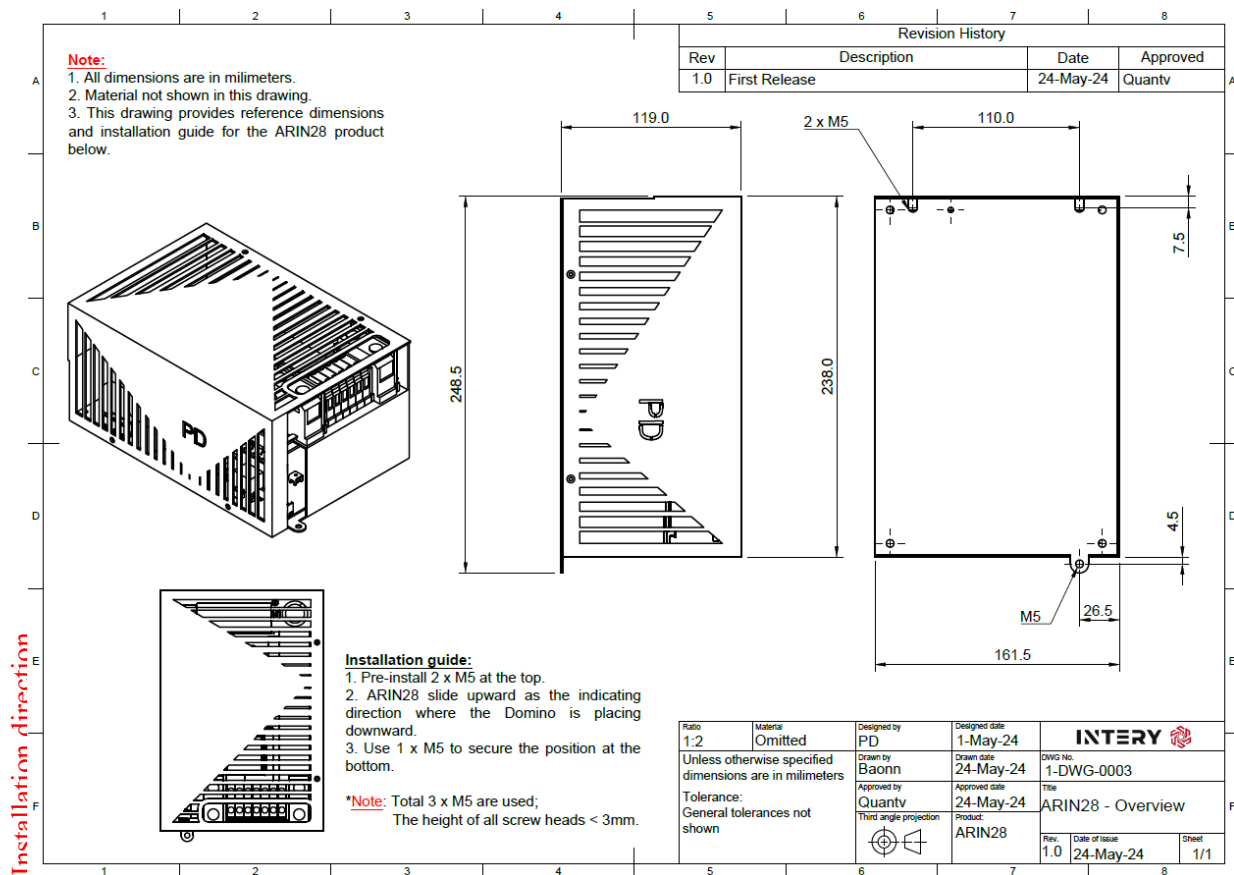
Table 7: Recommended Equipment

No.	Items	Manufacturer	Part Number	Note
1	Fan	Nidec	U40X12MLZ7-51	=
2	MCB QF	Nader	NDB1-63C/63/4P	-
3	MCB QFA, CBE	Nader	NDB1-63B10/1P	-
4	Relay K103	Omron	MY4N AC200/220	-
5	Timer relay K104	ABB	1SVR550107R1100	-
6	Contactor KMM	Schneider	LC1D32	-
7	Contactor KM1	Schneider	LC1D18	-
8	Inverter UFC	Shanghai Step Electric	AS380S	-
9	Fuse 32A	ABB	2CSM258713R1801	-
10	Fuse Case	OMEGA	OMG-FS32X	-

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VII. Dimension Overview

Figure 10: Product's Reference Dimensions



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