**PO2EBL\_ELECTRIC BLENDER**

**CYRS DOCUMENT**

**Version 2.7**

**Proposed**

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| --- | --- | --- | --- |
| **Date** | **Version** | **Document Status** | **Author** |
| 02/22/2020 | 2.7 | Proposed | May Alaa |

# Document Status:

# Revision History

|  |  |  |  |  |
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| **Date** | **Version** | **Status** | **Description** | **Author** |
| 01/22/2020 | 1.1 | Draft | Initial Draft, specifying Introduction, system overview and document outline. | May Alaa El-din |
| 01/23/2020 | 1.2 | Draft | Update the draft, requirements table | Mohamed Ibrahem |
| 01/25/2020 | 1.3 | Proposed | Reviewed Document structure and updated Document status to Proposed | May Alaa El-din |
| 01/31/2020 | 1.4 | Proposed | Update the requirement according the review (safe monitoring, monitoring speed, add reference table). | Mohamed Ibrahem |
| 02/01/2020 | 1.5 | Proposed | Update the reference table, requirement table | Mohamed Ibrahem |
| 02/03/2020 | 1.6 | Proposed | Update the CYRS document versioning | Mohamed Ibrahem |
| 02/06/2020 | 1.7 | Proposed | Update the CYRS requirements according to SIQ sheet (Remove REQ\_PO2EBL\_CYRS\_03) | Mohamed Ibrahem |
| 02/06/2020 | 1.8 | Proposed | Review CYRS and update Current document status table | Ali Samir |
| 02/07/2020 | 1.9 | Proposed | Update the date format in page 2 , modify REQ\_P02EBL\_CYRS\_02 and remove Hardware section | Mohamed Ibrahem |
| 02/08/2020 | 2 | Proposed | Update the CYRS documents versioning | Mohamed Ibrahem |
| 02/08/2020 | 2.1 | Proposed | Update the Date format | Mohamed Ibrahem |
| 02/11/2020 | 2.2 | Proposed | Update the date format Add Block diagram and Add Control inputs with outputs REQ\_PO2EBL\_CYRS\_04\_V1.0 | Mohamed Ibrahem |
| 02/11/2020 | 2.3 | Released | Changed the Document status to released | May Alaa |
| 02/20/2020 | 2.4 | Proposed | Update the block diagram, adding table figures,2 requirement REQ\_PO2EBL\_CYRS\_04\_V1.0  REQ\_PO2EBL\_CYRS\_05\_V1.0  rename requirement  REQ\_PO2EBL\_CYRS\_03\_V1.4 | Mohamed Ibrahem |
| 02/21/2020 | 2.5 | Proposed | Update requirements adding denouncing mechanism. REQ\_PO2EBL\_CYRS\_02\_V1.7  Adding motor driver in requirement  REQ\_PO2EBL\_CYRS\_03\_V1.4  Update block diagram | Mohamed Ibrahem |
| 02/22/2020 | 2.6 | Proposed | Update requirement by adding speed ranges  REQ\_PO2EBL\_CYRS\_01\_V1.4  Adding the time between each pressed in requirement  REQ\_PO2EBL\_CYRS\_02\_V1.8  Remove ADC usage from and add voltage level ranges in requirement REQ\_PO2EBL\_CYRS\_05\_V1.1  Adding table of constraints | Mohamed Ibrahem |
| 2/22/20 | 2.7 | Proposed | Breaking down REQ\_PO2EBL\_CYRS\_05\_V1.1 into 3 Requirements  REQ\_PO2EBL\_CYRS\_05\_V1.2  REQ\_PO2EBL\_CYRS\_06\_V1.0  REQ\_PO2EBL\_CYRS\_07\_V1.0 | May Alaa |

**Contents**

[Document Status: 2](#_Toc33271666)

[Revision History 3](#_Toc33271667)

[Table of figures: 6](#_Toc33271668)

[**1 Introduction** 6](#_Toc33271669)

[1.1 Specification Definition 6](#_Toc33271670)

[1.2 Specification Objectives 6](#_Toc33271671)

[2 System Overview: 7](#_Toc33271672)

[2.1 Definition: 7](#_Toc33271673)

[2.2 Objective: 7](#_Toc33271674)

[2.3 Block Diagram 7](#_Toc33271675)

[3 Functional Requirements: 9](#_Toc33271676)

[Feature 9](#_Toc33271677)

[3.1 Speed Levels 9](#_Toc33271678)

[3.2 Speed Controls 9](#_Toc33271679)

[3.3 Speed indication 9](#_Toc33271680)

[3.4 DC motor Control 10](#_Toc33271681)

[3.5 Optimum voltage 10](#_Toc33271682)

[3.6 Under voltage 10](#_Toc33271683)

[3.7 Over voltage 11](#_Toc33271684)

[4 table of constraints: 12](#_Toc33271685)

[5 Reference table: 12](#_Toc33271686)

# Table of figures:

[Figure 1 Block Diagram 7](#_Toc33082078)

# **1 Introduction**

This section introduces the customer requirements specification (CYRS) for the KENOVO Electric Blender.

## 1.1 Specification Definition

This specification documents the system-level requirements for the Electric Blender.

## 1.2 Specification Objectives

The objectives of this specification are to:

* Provide a system overview of the Electric Blender including definition, goals, objectives, context, and major capabilities.
* To formally specify its associated:
* Functional requirements.
* Data requirements.
* Quality requirements.
* Constraints.

# 2 System Overview:

## 2.1 Definition:

The Electric Blender System is an appliance created by KENOVO. The electric blender system has 3 speeds that can be configured by the user with high safety to avoid system failure caused by unexpected voltage peaks.

## 2.2 Objective:

The objective of the Electric Blender System is to provide the user with a high quality home appliance with high-speed configurability as well as safety monitoring.

## 2.3 Block Diagram

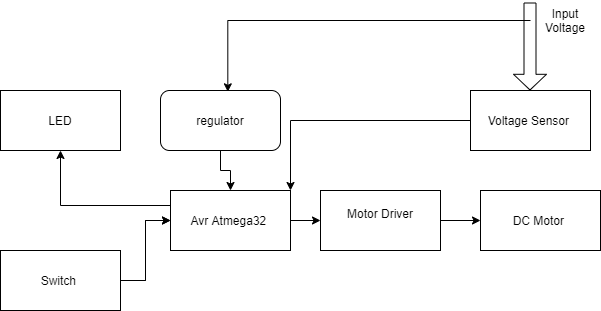


Figure Block Diagram

# 3 Functional Requirements:

|  |  |  |
| --- | --- | --- |
| Feature | Requirement ID | Description |
| 3.1 Speed Levels | REQ\_PO2EBL\_CYRS\_01\_V1.4 | The system has four status three speed levels and the Off status.  Speed1->500rpm  Speed2->1000rpm  Speed3->1500rpm  **#imp SW** |
| 3.2 Speed Controls | REQ\_PO2EBL\_CYRS\_02\_V1.8 | the blender shall operate between 3 different speeds (Speed1 → Speed 2 → Speed 3) triggered by a button press after the fourth press it returns back to its initial state (off).  The time between each 2 presses on the button is 50 (ms)  **#imp SW** |
| 3.3 Speed indication | REQ\_PO2EBL\_CYRS\_03\_V1.4 | The system shall monitor the blender speed and turns on led and its light intensity correspond to a specific speed of the blender. **#imp SW** |
| 3.4 DC motor Control | REQ\_PO2EBL\_CYRS\_04\_V1.1 | The DC motor can be controlled using a motor driver that act as an isolation level between the controller and the motor. When the system needs to switch on the motor the controller shall give an enable signal to the motor drive that enable the motor to operate.  **#imp SW** |
| 3.5 Optimum voltage | REQ\_PO2EBL\_CYRS\_05\_V1.2 | The system shall monitor the voltage level that entered to the system by voltage level sensor.  If the voltage level is within the optimum level between 9V -13V, the system will operate safely according to the system functionality.  **#imp SW** |
| 3.6 Under voltage | REQ\_PO2EBL\_CYRS\_06\_V1.0 | The system shall monitor the voltage level that entered to the system by voltage level sensor.  If the voltage level is below 9V, the system shall switched off.  **#imp SW** |
| 3.7 Over voltage | REQ\_PO2EBL\_CYRS\_07\_V1.0 | The system shall monitor the voltage level that entered to the system by voltage level sensor.  If the voltage level is above or equal to 13V, the system shall be switched off.  **#imp SW** |

# 4 table of constraints:

|  |  |  |
| --- | --- | --- |
| Constraints | Requirement ID related | Description |
| 1 Optimum voltage level | REQ\_PO2EBL\_CYRS\_05\_V1.2 | * Normal level voltage above 9v till 13v |
| 2 Under Voltage level | REQ\_PO2EBL\_CYRS\_06\_V1.0 | * Under voltage level below 9v |
| 3 Over Voltage level | REQ\_PO2EBL\_CYRS\_07\_V1.0 | * Over voltage above or equal 13v |
| 4 push button pressed | REQ\_PO2EBL\_CYRS\_02\_V1.8 | * The time between 2 presses is 50 ms |

# 5 Reference table:

|  |  |  |  |
| --- | --- | --- | --- |
| **ID** | **Version** | **Document** | **Status** |
| 1 | 1.0 | Electric Blender customer requirement | Released |
| 2 | - | SIQ | - |