**PO2EBL\_ELECTRIC BLENDER**

**SRS DOCUMENT**

**Version 2.1**

**Proposed**

|  |  |  |  |
| --- | --- | --- | --- |
| **Date** | **Version** | **Document Status** | **Author** |
| 03/03/2020 | 2.2 | Proposed | Mohamed Ibrahem |

**Document Status**

1. Document History

|  |  |  |  |
| --- | --- | --- | --- |
| **Version** | **Date** | **Author** | **Change** |
| 1.1 | 01/24/2020 | Kariman mohamed | Initial Draft, specifying Introduction, system overview and document outline. |
| 1.2 | 01/24/2020 | Kariman mohamed | Edit description of Functional Requirements. |
| 1.3 | 02/04/2020 | Kariman mohamed | Update the SRS document version and edit description of Functional Requirements. |
| 1.4 | 02/06/2020 | Kariman mohamed | Update the SRS requirements according to change in CYRS to remove safety monitor requirement with id REQ\_PO2EBL\_SRS\_03\_V1.3 |
| 1.5 | 02/07/2020 | Kariman mohamed | Update the SRS requirements according to changes in CYRS and according to the SRS review. |
| 1.6 | 02/08/2020 | Kariman mohamed | Update the SRS version and add requirement id to deleted safety monitor requirement. |
| 1.7 | 02/08/2020 | Kariman mohamed | Update the SRS version and edit date format. |
| 1.8 | 02/10/2020 | Kariman mohamed | Update the SRS version, add requirements and edit id of all requirements. |
| 1.9 | 02/12/2020 | Mohamed Ibrahem | Update the date format, Update document status table in page, Update date format and, Update the reference table, add table of figures, add 2 requirements  REQ\_PO2EBL\_SRS\_018\_V1.0  REQ\_PO2EBL\_SRS\_019\_V1.0 |
| 2.0 | 02/20/2020 | Kariman mohamed | Update the SRS version, add 3 requirements covering voltage monitoring requirement in CYRS, edit id and description of all requirements, add reading switch state requirement and the required denouncing time, edit the block diagram. |
| 2.1 | 02/21/2020 | Mohamed Ibrahem | Update the block diagram |
| 2.2 | 03/03/2020 | Mohamed Ibrahem | Update block diagram |

Contents

[**Document Status** 2](#_Toc33120263)

[Table of figures 4](#_Toc33120264)

[1 Introduction 5](#_Toc33120265)

[**1.1 Specification Definition** 5](#_Toc33120266)

[**1.2 Specification Objectives** 5](#_Toc33120267)

[2 System Overview: 6](#_Toc33120268)

[**2.1 Definition:** 6](#_Toc33120269)

[**2.2 Objective:** 6](#_Toc33120270)

[**2.3** **Block** **Diagram** 6](#_Toc33120271)

[**3 Software Requirements:** 7](#_Toc33120272)

[4 Reference table: 17](#_Toc33120273)

# Table of figures

[Figure 1 Block Diagram 6](file:///D:\ITI\software\project\Software%20Specification\SRS\PO2EBL_ELECTRIC_BLENDER_SRS.docx#_Toc32412963)

# 1 Introduction

This section introduces the software requirements specification (SRS) for the KENOVO Electric Blender.

## **1.1 Specification Definition**

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

## **1.2 Specification Objectives**

The objectives of this specification are to:

* Provide a software overview of the Electric Blender.
* To formally specify its associated:
* Software 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**

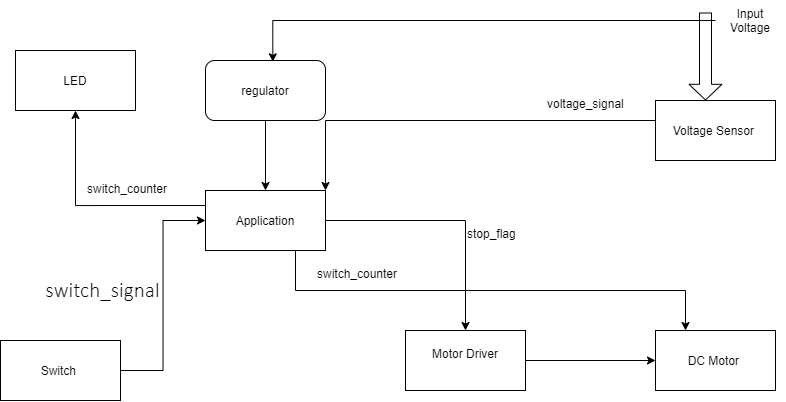


Figure Block Diagram

**3 Software Requirements:**

|  |  |  |  |
| --- | --- | --- | --- |
| **REQ\_ID** | REQ\_PO2EBL\_SRS\_01\_V2.0 | | |
| **Covers** | REQ\_PO2EBL\_CYRS\_02\_V1.6 | | |
| **Description** | SW shall read switch state, if switch is pressed for the debouncing time (50 ms), switch\_counter will be increased. | | |
| **Inputs** | switch\_signal | **Outputs** | switch\_counter |
| **Test scope** | ITD/VTD | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **REQ\_ID** | REQ\_PO2EBL\_SRS\_02\_V2.0 | | |
| **Covers** | REQ\_PO2EBL\_CYRS\_02\_V1.6 | | |
| **Description** | SW shall set \_1st\_press\_flag if switch\_counter =1  else clear it. | | |
| **Inputs** | switch\_counter | **Outputs** | \_1st\_press\_flag |
| **Test scope** | ITD/VTD | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **REQ\_ID** | REQ\_PO2EBL\_SRS\_03\_V2.0 | | |
| **Covers** | REQ\_PO2EBL\_CYRS\_02\_V1.6 | | |
| **Description** | SW shall set \_2nd\_press\_flag if switch\_counter =2  else clear it. | | |
| **Inputs** | switch\_counter | **Outputs** | \_2nd\_press\_flag |
| **Test scope** | ITD/VTD | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **REQ\_ID** | REQ\_PO2EBL\_SRS\_04\_V2.0 | | |
| **Covers** | REQ\_PO2EBL\_CYRS\_02\_V1.6 | | |
| **Description** | SW shall set \_3rd\_press\_flag if switch\_counter =3  else clear it. | | |
| **Inputs** | switch\_counter | **Outputs** | \_3rd\_press\_flag |
| **Test scope** | ITD/VTD | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **REQ\_ID** | REQ\_PO2EBL\_SRS\_05\_V2.0 | | |
| **Covers** | REQ\_PO2EBL\_CYRS\_02\_V1.6 | | |
| **Description** | SW shall set \_4th\_press\_flag if switch\_counter =4  else clear it. | | |
| **Inputs** | switch\_counter | **Outputs** | \_4th\_press\_flag |
| **Test scope** | ITD/VTD | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **REQ\_ID** | REQ\_PO2EBL\_SRS\_06\_V1.8 | | |
| **Covers** | REQ\_PO2EBL\_CYRS\_02\_V1.6 | | |
| **Description** | SW shall set \_1st\_press\_flag to repeat the sequences if switch\_counter =5 and return switch\_counter to 1  , else clear it. | | |
| **Inputs** | switch\_counter | **Outputs** | \_1st\_press\_flag |
| **Test scope** | ITD | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **REQ\_ID** | REQ\_PO2EBL\_SRS\_07\_V2.0 | | |
| **Covers** | REQ\_PO2EBL\_CYRS\_02\_V1.6 | | |
| **Description** | SW shall set \_1st\_speed\_flag and duty\_cycle\_value = 30 if \_1st\_press\_flag is true. | | |
| **Inputs** | \_1st\_press\_flag | **Outputs** | \_1st \_speed\_flag and duty\_cycle\_value |
| **Test scope** | ITD | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **REQ\_ID** | REQ\_PO2EBL\_SRS\_08\_V2.0 | | |
| **Covers** | REQ\_PO2EBL\_CYRS\_02\_V1.6 | | |
| **Description** | SW shall set \_2nd\_speed\_flag and duty\_cycle\_value = 60 if \_2nd\_press\_flag is true. | | |
| **Inputs** | \_2nd\_press\_flag | **Outputs** | \_2nd\_speed\_flag  and duty\_cycle\_value |
| **Test scope** | ITD | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **REQ\_ID** | REQ\_PO2EBL\_SRS\_09\_V2.0 | | |
| **Covers** | REQ\_PO2EBL\_CYRS\_02\_V1.6 | | |
| **Description** | SW shall set \_3rd\_speed\_flag and duty\_cycle\_value = 90 if \_3rd\_press\_flag is true. | | |
| **Inputs** | \_3rd\_press\_flag | **Outputs** | \_3rd\_speed\_flag and  duty\_cycle\_value |
| **Test scope** | ITDV | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **REQ\_ID** | REQ\_PO2EBL\_SRS\_10\_V2.0 | | |
| **Covers** | REQ\_PO2EBL\_CYRS\_02\_V1.6 | | |
| **Description** | SW shall set stop\_flag and duty\_cycle\_value =0  if \_4th\_press\_flag is true. | | |
| **Inputs** | \_4th\_press\_flag | **Outputs** | stop\_flag and  duty\_cycle\_value |
| **Test scope** | ITD | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **REQ\_ID** | REQ\_PO2EBL\_SRS\_12\_V2.0 | | |
| **Covers** | REQ\_PO2EBL\_CYRS\_01\_V1.3 | | |
| **Description** | SW shall turn the motor on in low speed mode if the \_1st\_speed\_flag is true and duty\_cycle\_value =30. | | |
| **Inputs** | \_1st\_speed\_flag and  duty\_cycle\_value | **Outputs** | - |
| **Test scope** | ITD/VTD | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **REQ\_ID** | REQ\_PO2EBL\_SRS\_13\_V2.0 | | |
| **Covers** | REQ\_PO2EBL\_CYRS\_01\_V1.3 | | |
| **Description** | SW shall turn the motor on in medium speed mode and if \_2nd\_speed\_flag is true and duty\_cycle\_value =60. | | |
| **Inputs** | \_2nd\_speed\_flag and  duty\_cycle\_value | **Outputs** | - |
| **Test scope** | ITD/VTD | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **REQ\_ID** | REQ\_PO2EBL\_SRS\_14\_V2.0 | | |
| **Covers** | REQ\_PO2EBL\_CYRS\_01\_V1.3 | | |
| **Description** | SW shall turn the motor on in high speed mode if \_3rd\_speed\_flag is true and duty\_cycle\_value =90. | | |
| **Inputs** | \_3rd\_speed\_flag and  duty\_cycle\_value | **Outputs** | - |
| **Test scope** | ITD/VTD | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **REQ\_ID** | REQ\_PO2EBL\_SRS\_15\_V2.0 | | |
| **Covers** | REQ\_PO2EBL\_CYRS\_01\_V1.3 | | |
| **Description** | SW shall turn the motor off if stop\_flag is true. | | |
| **Inputs** | stop\_flag | **Outputs** | - |
| **Test scope** | ITD/VTD | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **REQ\_ID** | REQ\_PO2EBL\_SRS\_16\_V2.0 | | |
| **Covers** | REQ\_PO2EBL\_CYRS\_03\_V1.4 | | |
| **Description** | SW shall turn on the led in low intensity mode if \_1st\_speed\_flag is true and duty\_cycle\_value =30. | | |
| **Inputs** | \_1st\_speed\_flag and  duty\_cycle\_value | **Outputs** | - |
| **Test scope** | ITD/VTD | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **REQ\_ID** | REQ\_PO2EBL\_SRS\_17\_V2.0 | | |
| **Covers** | REQ\_PO2EBL\_CYRS\_03\_V1.4 | | |
| **Description** | SW shall turn the led on in medium intensity mode if \_2nd\_speed\_flag is true and duty\_cycle\_value =60. | | |
| **Inputs** | \_2nd\_speed\_flag and  duty\_cycle\_value | **Outputs** | - |
| **Test scope** | ITD/VTD | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **REQ\_ID** | REQ\_PO2EBL\_SRS\_18\_V2.0 | | |
| **Covers** | REQ\_PO2EBL\_CYRS\_03\_V1.4 | | |
| **Description** | SW shall turn the led on in high intensity mode if \_3rd\_speed\_flag is true and duty\_cycle\_value =90. | | |
| **Inputs** | \_3rd\_speed\_flag and  duty\_cycle\_value | **Outputs** | - |
| **Test scope** | ITD/VTD | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **REQ\_ID** | REQ\_PO2EBL\_SRS\_19\_V2.0 | | |
| **Covers** | REQ\_PO2EBL\_CYRS\_03\_V1.4 | | |
| **Description** | SW shall turn the led off if stop flag is true. | | |
| **Inputs** | stop\_flag | **Outputs** | - |
| **Test scope** | ITD/VTD | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **REQ\_ID** | REQ\_PO2EBL\_SRS\_20\_V2.0 | | |
| **Covers** | REQ\_PO2EBL\_CYRS\_05\_V1.0 | | |
| **Description** | SW shall set \_UV\_flag if voltage\_signal is less than or equal min\_voltage, else clear it. | | |
| **Inputs** | voltage\_signal | **Outputs** | \_UV\_flag |
| **Test scope** | ITD/VTD | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **REQ\_ID** | REQ\_PO2EBL\_SRS\_21\_V2.0 | | |
| **Covers** | REQ\_PO2EBL\_CYRS\_05\_V1.0 | | |
| **Description** | SW shall set \_OV\_flag if voltage\_signal is more than or equal max\_voltage, else clear it. | | |
| **Inputs** | voltage\_signal | **Outputs** | \_OV\_flag |
| **Test scope** | ITD/VTD | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **REQ\_ID** | REQ\_PO2EBL\_SRS\_22\_V2.0 | | |
| **Covers** | REQ\_PO2EBL\_CYRS\_05\_V1.0 | | |
| **Description** | SW shall set stop\_flag if \_OV\_flag or \_UV\_flag is true else clear it. | | |
| **Inputs** | \_OV\_flag and \_UV\_flag | **Outputs** | stop\_flag |
| **Test scope** | ITD | | |

# 4 Reference table:

|  |  |  |  |
| --- | --- | --- | --- |
| **ID** | **Version** | **Status** | **Document** |
| 1 | 2.4 | Proposed | CYRS |