

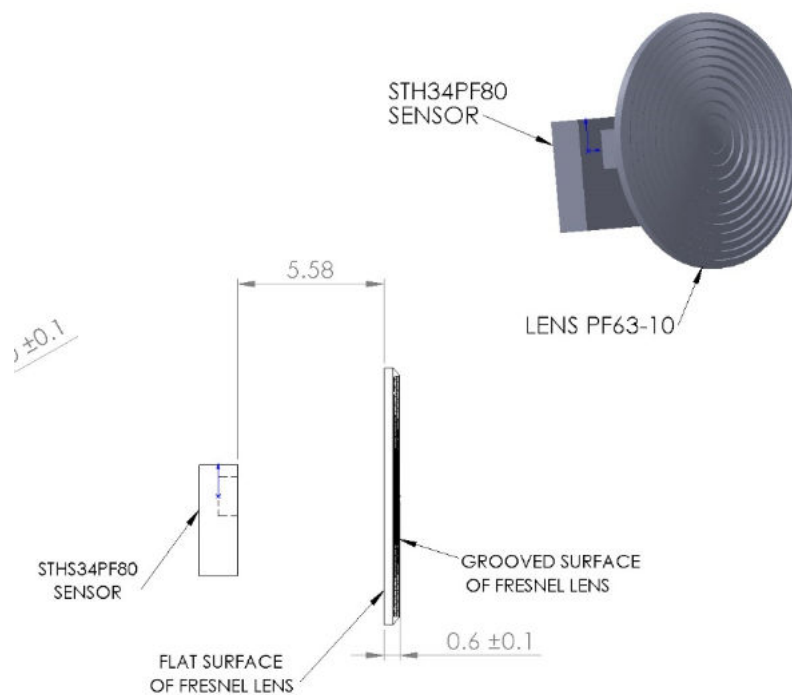
How to use holder in STEVAL-MKI231KA

Introduction

The STEVAL-MKI231KA electronic part must be manually assembled to have better performance in terms of data acquisition.

It is possible to use STHS34PF80 itself but has been verified that in some applications, the performance is better if a lens is applied over the sensor. The purpose of the holder is to maintain the correct distance between lens and sensor as per figure below:

Figure 1. Correct distance between sensor and lens



1 Main components

Table 1. Main components

Main components	
ST sensor with Qvar. example of products	
STHS34PF80	Low-power, high-sensitivity infrared (IR) sensor for presence and motion detection
Evaluation board	
STEVAL-MKI231KA	Evaluation kit composed by STHS34PF80 industrial board and standard DIL24 adapter
Optical lens	
TMOS63-10	Pir sensor fresnel lens

2 Purpose and benefits

The STHS343PF80 demo kit is composed by electronic section (evaluation board, interface for DIL24, interface cable), and mechanical section (unplanned plastic holder screws and nuts) and a particular lens TMOS63-10 coming from a fresnel factory.

Figure 2. Example of an application board



Figure 3. Mounted kit

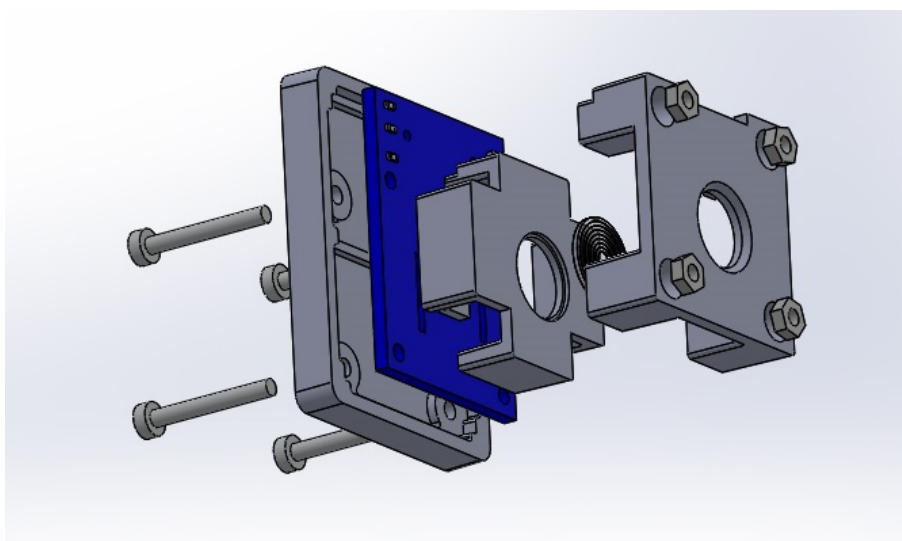


3 Mounting holder

The PF63-10 lens has been designed with two different surface: one part is smooth and the other face is rough. The holder is created with a special black resin and it is composed by three parts:

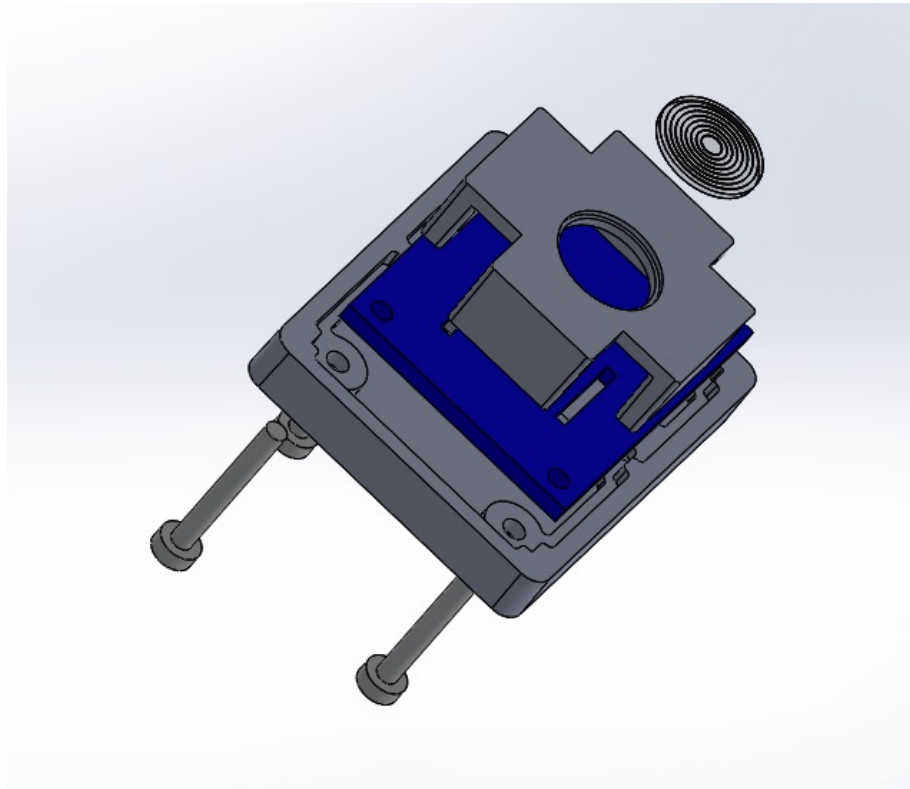
1. Base holder where is possible to place the PCB containing the sensor (STEVAL-MKI231AA board)
2. Lens positioning where is possible to hold the lens in proper location
3. Holder closure that is the part of holder that closes lens position and lens

Figure 4. Commercial electrode for seat occupancy detection



The smooth part is the part that captures the light and for this reason must be put versus the external respect to the board.

Figure 5. Lens position respect to the board



Lens positioning and holder closure have a proper insertion key visible in bottom. This “special” must be put in the top of the board close to connector.

Figure 6. Insertion key

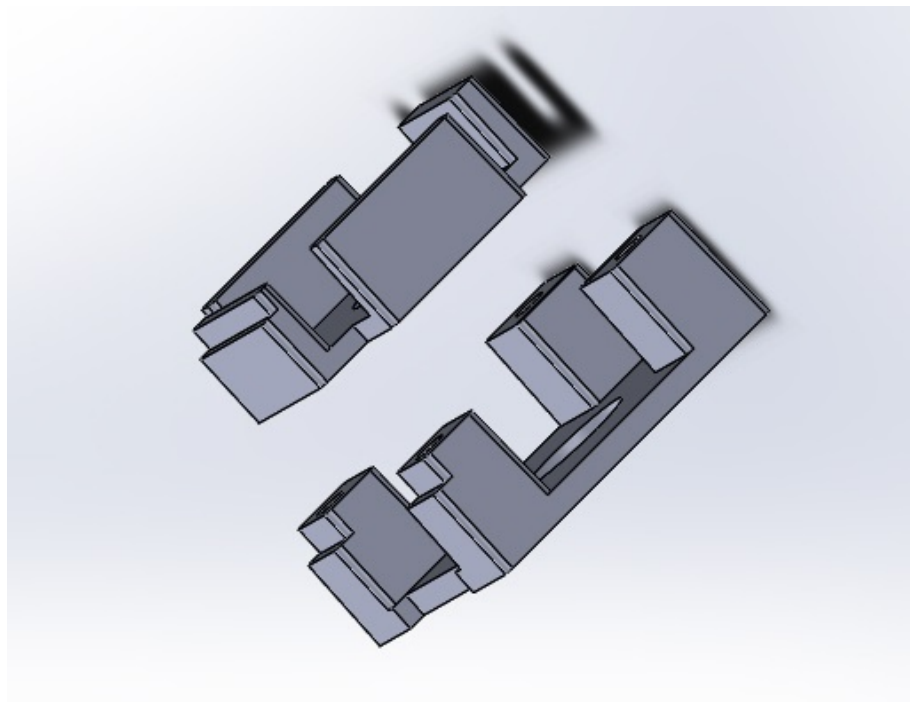
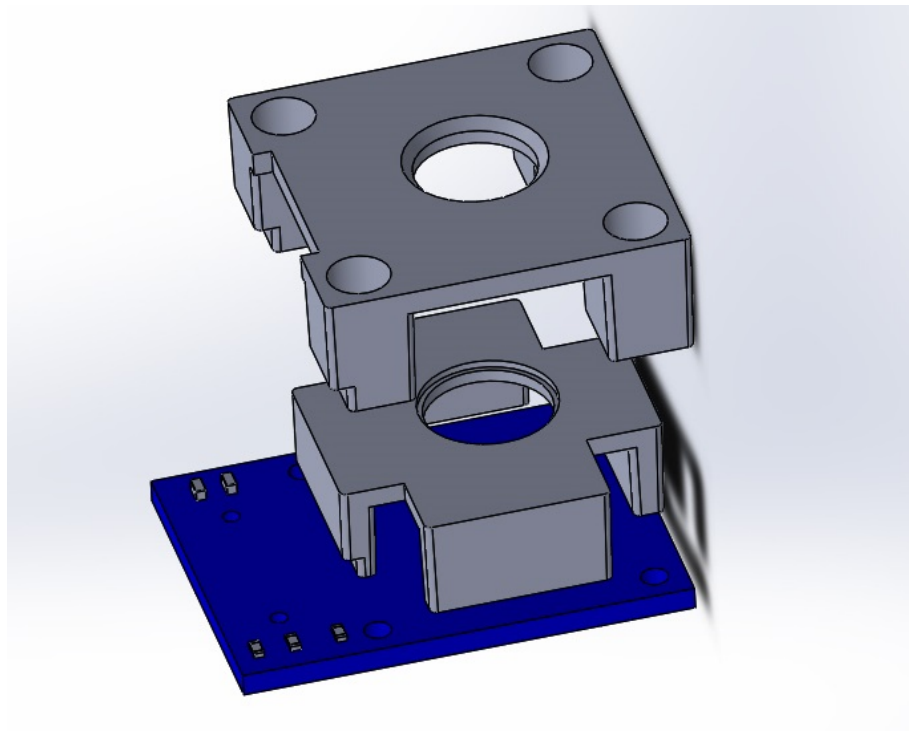
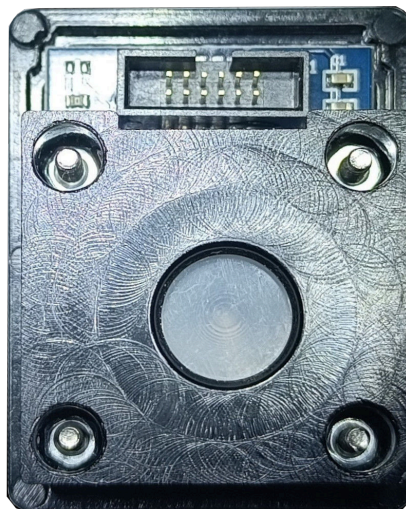


Figure 7. Holder positioning

The final solution after mounting is shown in next picture:

Figure 8. Final mounting

It is possible to put the screws on the bottom side (and nuts on the top). In this last case it is possible to lock the system using a proper adhesive avoiding different thickness on the base of the holder.

Revision history

Table 2. Document revision history

Date	Revision	Changes
08-Feb-2024	1	Initial release.
08-May-2024	2	Updated Figure 3 . Mounted kit and Figure 8 . Final mounting.

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