EnOcean

PTM 2xy switches CONTINUOUSLY PRESSED – Avoiding potential malfunction of the contact nipples

PTM 2xy switches are not developed for being continuously pressed

PTM 2xy modules have been developed to realize remote switches with rockers or single pushbuttons. During the major product lifetime, this rocker is in medial position e.g. the pushbutton is not permanently pressed, means the rocker itself are time dominantly not pressed.

Possible failure after being pressed for a longer time

Using a PTM 2xy in very special applications where "contact nipples" are pressed a long time, e.g. most of the time or even for hours/days, a certain deformity can happen to the contact "tongue". Depending on ambient temperature and pressing time, the plastic of the contact tongue will get lasting out of shape. Depending on construction and single part tolerances, after certain time the "rocker system" can fail in function.

Note: No fail function of the <u>energy bow and the energy generator</u> has been observed after long time pressed. So, even if the PTM switch is operated after weeks/months of being pressed, a valid PTM telegram will be always send, but probably with wrong rocker Data.
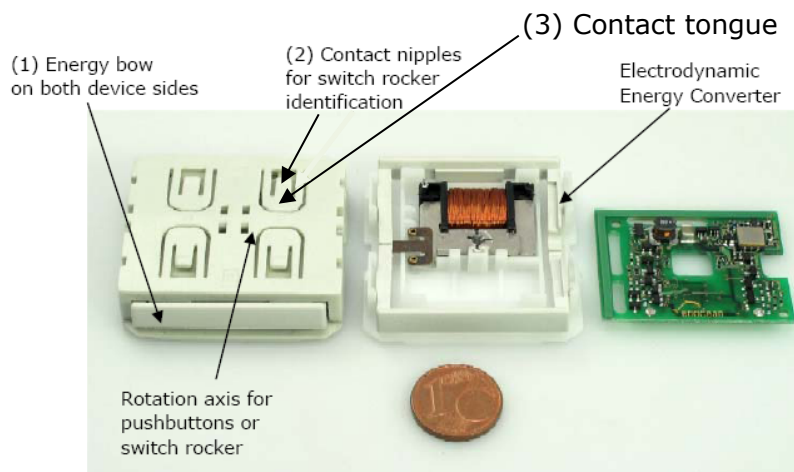

Figure 1: Electro-dynamic powered radio transmitter device PTM 200

Workaround #1

A mechanical solution could be a sophisticated mechanical tuning of the rocker/module system without 100% functional guarantee for lasting correct rocker identification.

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Workaround #2

Another workaround is to realize a system function where the receiver acts as desired without interpretation of the rocker Data itself. In this case, only "pressed" and "released" States are processed and the rocker Data is neglected.

Workaround #3

If the specific contact nipple Data interpretation is really needed, another mechanical solution could be the following:

To avoid the deformation of the contact tongue, don't operate the contact tongue at the defined contact "nipple" (2 in fig 1) according to the PTM user manual, but in the middle of the tongue (3 in fig 1) directly above the rubber contact mat.

Attention: Doing so you will get rid of the mechanical protection behaviour of the contact tongue: On the one hand the tongue offers during switch-over of the energy bow a minimum contact mat pressure, on the other hand it avoids any "over pressure" of the rubber mat (mechanical defect of PCB or mat contact). In addition, the deviation of the contact nipples also compensates tolerances and potential pressing deformation of the rocker to a certain degree.

So realizing this workaround, a suited elastic contact tongue must be implemented for the specific mechanical application! Both, the design of the mechanical interface and the right choose of material is important, to avoid lasting deformation and to emulate the elastic function of the contact tongue.

Product Endurance Test

For any of the mentioned cases to secure long time functionality of product implementation we urgently recommend to do suited final product endurance tests with empiric reasonable lot sizes.