NBB CONTROLS & COMPONENTS AG
POSTFACH 28 · D-75246 ÖLBRONN-DÜRRN

TELEFON 07237/999-161
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All input devices except emergency push button:
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All joysticks, toggle switches and push buttons except the emergency push button (discussed later) set some bits and bit combinations in a data telegram which define the functions for the receiver and which is repeated continuously (ca 60 msec refresh rate) as long as the time-out of <5 sec has not come into action. In terms of the programmed time-out (ceasing transmission) the behaviour of all the input devices mentioned above is like this: If you let off with your hands and every toggle switch, push button and joystick goes into zero position the transmitter ceases generating an RF signal within <5sec. This can easily be tested. I may agree to some concerns if we didn't use spring-loaded toggle switches (multipostion switches) which eventually don't go into zero position by themselves. In terms of the time-out issue there are no input devices with a higher or lower priority. They are you can say in terms of the time out OR'ed.

Emergency push button:
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The emergency push button simply cuts off the power of the transmitter. It generates no special signal. This push button is mechanically constructed that this can be achieved with high reliability.
The receiver has a 0.5 sec time-out waiting for valid telegrams. If they are not present within this time it makes a from application to application different defined shut down of the system to be controlled. The main thing that happens in the receiver is to open a special safety relay which you can use to cut off the power of the machine to be controlled. This relay is carried out in a mechanically and electrically redundant manner and is tested for correct function by the receiver microprocessor before every session.

It is clear to us that we can use radio remote control with this type of approval only for some applications where a special reset operation after time out will not be necessary.

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I suggest to discuss with the final review whether the design as described above is well suited for this type of approval or not. In a second step when it is clear that the design is sufficient we should think about how to adjust the manual accordingly. The manual is the generic manual we use worldwide so it doesn't by its nature exactly reflect such special issues like time-out behaviour.

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