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Recovery and check of the switching relay in the BPMs in the J-PARC MR

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The present BPMs of the J-PARC Main Ring have adopted mechanical relays in its processing circuits. Frequency range is limited less than 10 MHz by LPFs. Mechanical relay is chosen due to its good isolation. But the drawback is contact failures due to insulating materials after long suspension period of months. Methods of recovery and checking are reported. Recovery of contacts are performed with injecting dummy pulses. Contact is checked examining consistency comparing four independent position pairs (x, y) calculated from 3 electrodes out of four electrodes. The hermetically seal reed relays will be implemented in the new processing circuits under development.

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Footnotes

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Yes

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