The PLC receives commands such as changing the undulator gap, getting the status of limit switch, from the VME by FL-net.

There are 18 units of undulators and single PLC to control two of them.

We develop a limit switch box that receive signals from limit switches such as limit switches of undulator height. The box send a signal to each PMC, and each limit switch state to PLC-BIC by DeviceNet.

The moving permissible deviation of bellows with the vacuum chamber is 2mm.

We monitor the magnet array temperature by Pt100 RTD. E-069 connect to twenty-four pairs of a four-terminal RTD. Temperature resolution of E-069 is 0.1℃.

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For the lasing, we set the undulator gaps less than 1-micrometer positioning accuracy. We have to control the undulator gap to be less than sub-micrometer resolution. This table shows that the resolution of these motors is suf-