MAGNET POWER SUPPLY CONTROL SYSTEM IN KEKB ACCELERATORS

A. Akiyama, KEK; T. Katoh, KEK; T. Kubo, KEK; T.T. Nakamura, KEK; N. Yamamoto, KEK; M. Yoshida, KEK

There are more than 2500 magnet power supplies for KEKBstorage rings and injection beam transport lines.To construct a control system for such a large number ofpower supplies, one of the important things is to reducethe cost of the interface between the power supplies andthe control computers.For this purpose we developed the Power Supply InterfaceController Module(PSICM) of 3U Euro-Card mounted in each power supply.PSICMs and a local control computer are connected byARCnet STP cables in the daisy-chain manner.A PSICM has a microprocessor which communicates withthe local control computer.Magnet power supply control system is carefully designed tosatisfy conditions for efficient beam handling.A PSICM can change the power supply current with an arbitrarytracking curve which is sent from the control computer.An arbitrary number of PSICMs can start tracking synchronouslywith each other by using external trigger signal.The KEKB magnet power supply control system has beenoperated since Dec. 1998.Its operation status and performance will also be reported.