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Wed-Af-Po3.16-01 [19]: Control System for a Cryogenic Permanent Magnet Undulator at Taiwan Photon Source

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A hybrid-type cryogenic permanent-magnet undulator (CPMU) with a 15-mm period length is being constructed for the TPS Phase-II beamline. A control system for CPMU called CU15 which is developed since 2018. The control system for CU15 is based on the Experimental Physics and Industrial Control System (EPICS) architecture and Ethernet Control Automation Technology (EtherCAT) framework. The main control components include the motor with encoder for gap adjustment, trimming power supply for corrector magnets, ion pumps and BA gauges for vacuum system, resistance temperature detectors (RTD) for cryogenic environmental monitoring, and safety interlock for motion and cryogenic system. The design and implementation of CU15 control system will be summarized in this paper.

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