SMARTCONTROL SX
Hydro Control System

Open, intelligent and cost-effective solution to optimize power plant control

SMARTCONTROL SX is an open, intelligent and cost-effective hydro control system designed with the latest technology for power control applications in hydropower plants.

The system includes open and intelligent system solutions for hydropower control as well as integrated hardware and software solutions for remote control and dispatching of grids for all plant operation and maintenance optimisation.

Customer benefits

OPEN – Ethernet-based SMARTCONTROL SX supports a large set of international protocols to connect third party equipment.

SCALABLE – SMARTCONTROL SX is suited to a variety of customer projects for small to medium hydropower plants, either new or retrofit, in simplex or redundant configurations.

EASY TO MAINTAIN – SMARTCONTROL SX includes a compact flash memory card for PLCs (Programmable Logic Controller), fan free PLCs, I/O slice system, push-in principle (tool free wiring), hot pluggable electronics and separate “Terminal–Electronic–Bus” design allowing pre-writing and fast repair, online application software upgrade, self-reprogramming switches.

LONG TERM SUPPORT – Customisable maintenance agreements help meet the specific operational needs of each customer. Basic and advanced courses are available at Alstom’s regional training centres. Alstom’s Hydro PlantLife® programme proposes a large set of services for plant owners to manage, protect and maximise investment during the lifetime of their equipment.

Overview of capabilities

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A COMPLETE SOLUTION

SMARTCONTROL SX is a complete solution with two levels of control:
• SCADA (Supervisory Control and Data Acquisition) level for supervisory control and monitoring
• Control level for the process automation
Both have been specially built for demanding real-time industrial environments for operation in a full-distributed configuration. An Ethernet Local Area Network IEC104 ring up to 1Gbps featuring redundancy options and rugged switches is used for interconnection between both levels.

A full suite of software complements SMARTCONTROL SX:
• Engineering software tools enable plant operators to configure the HMI and field controllers
• HYDROSET software provides joint control functionality so plant managers can regulate water flow and distribution through the hydro power plant

To ensure customers can rapidly implement a SMARTCONTROL SX hydro control solution, Alstom offers full application simulation before delivery to the customer’s site.

FEATURES
• HMI (Human-Machine-Interface) with Hydro specific views designed by Alstom which are intuitive and easy to configure
• Automation cells with compact and high performance PLCs with fully open and distributed Ethernet technology
• Remote I/O capability with real-time Ethernet communication
• 1ms time tagging
• Redundancy at all levels: server, controller and network. Controller switchover in less than 3ms
• Modbus/Profibus DP/ IEC101/104/61850 supported
• Industrial switches selected for their very high MTBF (mean time between failures) and extremely low MTTR (mean time to repair)
• Raid5 server to secure data
• SIL3 controller
• Unicode compliant, SMARTCONTROL SX can be implemented in virtually any operating language

SMARTCONTROL SX IS AN OPEN, INTELLIGENT AND COST-EFFECTIVE HYDRO CONTROL SYSTEM FOR SMALL TO MEDIUM HYDRO POWER PLANTS.