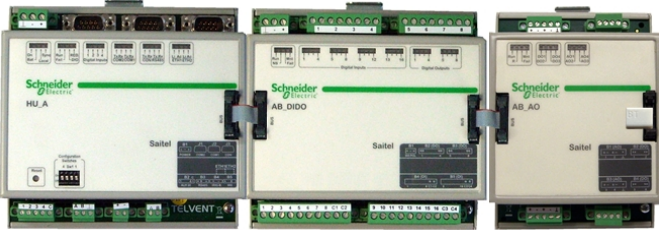# Saitel DR

The versatile, scalable and compact platform for secure field acquisition, automation and communication.

Saitel DR has been designed to support a variety of industry applications targeted by Schneider Electric's technical markets.

Due to the modular and scalable design, it can be used as gas flow computer, electric substation controller, weather station, traffic controller, etc. This is achieved by choosing the appropriate I/O modules (called acquisition blocks) and the flexibility of Schneider Electric's Baseline software package, which enables easy configuration and diagnostics/monitoring.

## Architecture

An Intelligent Terminal Block consists of a Head Unit with zero, one or several acquisition blocks. Head units are CPU units (based on Freescale™ Coldfire® microcontrollers) with integrated communications ports (Ethernet, serial ports) and digital inputs.
There are four Head Unit versions: HU_A (advanced head unit), HU_B (basic head unit), HU_AF similar to a HU_A, including acquisition signals.

## Main Features

➢ **Scalable**: add acquisition blocks to match whatever requirements the customer may have. Several rows of acquisition blocks are possible, without the need of an additional Head Unit.

➢ **Secure**: the advanced head unit is equipped with an embedded encryption engine for secure communications. This encryption engine is optimized to process all the algorithms associated with IPSec, SSL/TLS, iSCSI and SRTP.

➢ **Large storage capabilities**: the advanced head unit can be ordered with an optional compact flash interface in case large amounts of storage memory are required.

➢ **Powerful yet cost effective**: the advanced head unit has a powerful (200 MHz maximum clock speed) microcontroller, which enables calculation intensive applications such as multi run flow calculation. The advanced head unit runs Wind River®'s VxWorks® real-time operating system and incorporates Schneider Electric's Baseline software package, which enables easy configuration, diagnostic and monitoring. The basic head unit provides a cost effective alternative in case less calculation power and communication facilities are required. Examples of basic head unit applications: pole top RTU, data logger, water control RTU, small signal count controller in an IEC61850 environment.

➢ **Distributed**: Saitel DR anticipates on the trend of distributed applications; the head units are equipped with several serial ports and Ethernet port(s) (2 in case of the advanced head unit, 1 in case of the basic head unit). Several smaller basic head units (with corresponding acquisition blocks) can be connected to an advanced head unit, serving as a concentrator.

➢ **Compact:** small DIN rail mounted acquisition blocks with integrated terminal blocks.

## HU_A: Main Features

- Freescale™ Coldfire® MCF 5485 microcontroller.
- 2 Fast-Ethernet ports, 1 console port, 2 RS-232 ports and 1 RS-485 port.
- It includes a compact flash memory interface.
- Real time clock (7 ppm) & battery backed up RAM.
- Synchronization by GPS (via RS-232 port), IRIG-B (dedicated input) and SNTP.
- VxWorks® RTOS & Baseline.
- Embedded web server.
- Easergy Builder for configuration and Webtool for diagnostic & monitoring purposes.

## HU_B: Main Features

- Freescale™ Coldfire® MCF 5282 microcontroller.
- 1 Fast-Ethernet port, 1 console port and 2 RS-232 ports.
- HU_B is equipped with an RTC (7 ppm) & battery backed up RAM.
- Synchronization by GPS possible (using one of the RS-232 ports) and SNTP.
- Configuration via Easergy Builder or via (integrated) dipswitches.

## HU_AF: Main Features

- **Processing and control**: HU_AF includes the main features of an advanced head unit (HU_A).
- **Acquisition**: Both modules include the main features of AB_DI, AB_DO, AB_AI and AB_AO modules

## Acquisition Blocks: Examples

- **AB_AI**: 8 analog inputs.
- **AB_DI**: 16 digital inputs.
- **AB_DO**: 8 digital outputs.
- **AB_AO**: 4 analog outputs.
- **AB_AC**: transducerless AC measurements module, with three voltage inputs and three current inputs.
- **AB_SER**: 4 serial ports expansion module.
- **AB_DIDO**: 16 digital inputs and 8 digital outputs to relay.
- **AB_MIO**: 2 fast counter inputs with signal fidelity (double pick up), 2 RTD inputs, 8 analog inputs and 2 analog outputs.









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