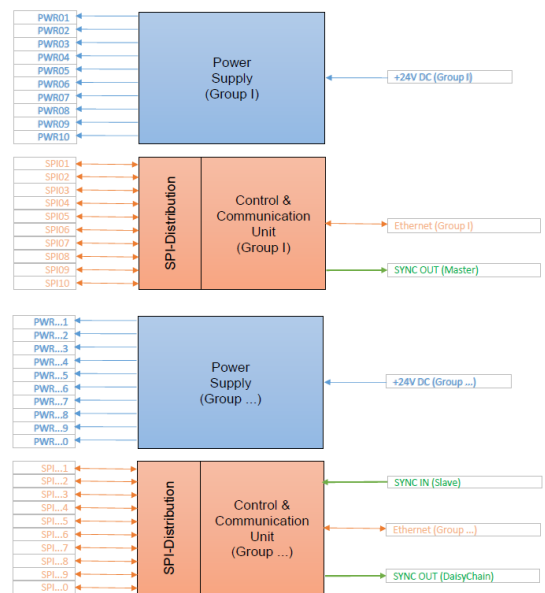
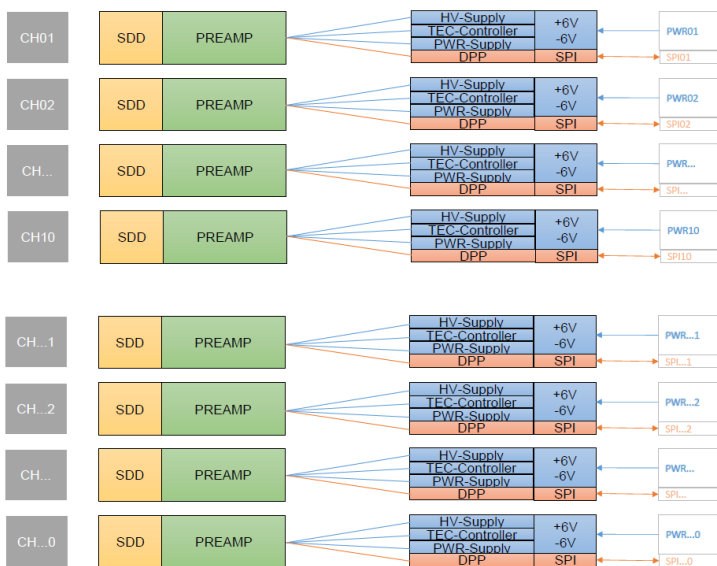
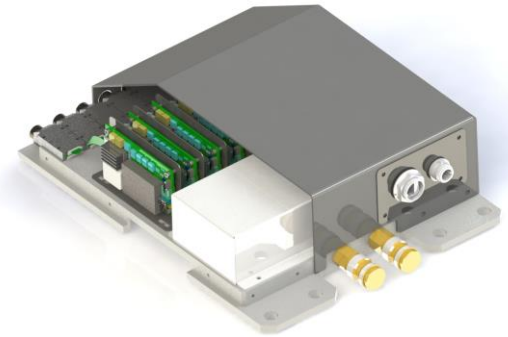
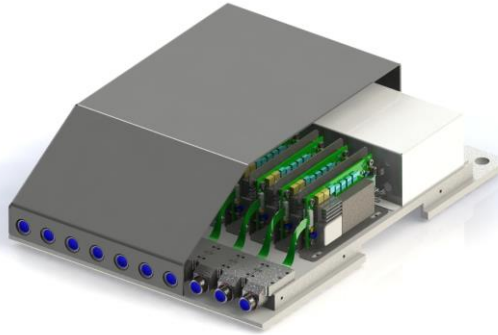


Fully Integrated, Scalable Multichannel Analyzer for Sorting Applications utilizing Silicon Drift Detectors and High Speed Ethernet Communication

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Conveyor belt based sorting applications require precise detectors of high sensitivity and wide dynamic range as much as continuous, high-frequency and reliable readout communication.

We will present a modular architecture of standard components with central controller that helps keeping investment cost low and minimize efforts in case of service. KETEKs SDD sizes from 7 to 50mm² can be utilized.

Ethernet communication via UDP protocol minimizes data overhead and enables fast and reliable communication with blindness-times far below 500µs per shot. Analytic snapshots can be performed faster than every 10msec, depending on the number of bins and resolution bits. Channel number per group can be up to ten; groups can be combined into large arrays where the number of channels is only limited by the capabilities of the network and the receiving PC. A synchronisation interface guarantees easy assignment of spectra packets even in case of very wide conveyor belts with tens of detectors. Status information can be read out, a TCP control connection and a web-based configuration tool will be presented, too.

The use of SDDs (Silicon Drift Detectors) as sensor allows a wide dynamic range of ICR (Input Count Rate) which facilitates the precise detection of single and tiny probes as well as huge metal rocks without exceeding the analyzer capabilities.

The external power supply can be a single-ended, industry standard 24V DC type; the power input accepts 20...28V. In case of extended temperature range, the system can be water-cooled.