

Goodtech High Speed Data Logger

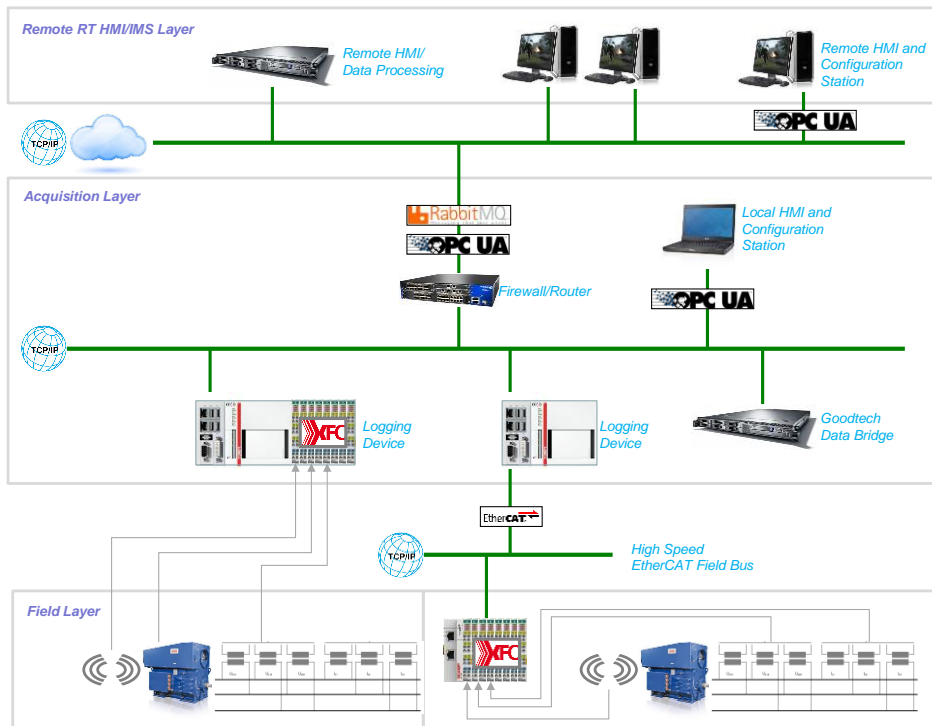
The **Goodtech High Speed Data Logger** is a modular high performance logging device based on industry standard hardware and software. The system is based on Beckhoff standard IPC hardware for high speed data acquisition, and standard Microsoft Windows PC hardware and software for data storage and data processing.

The **Goodtech Data Acquisition Device** is capable of acquiring data with a maximum speed of up to one megahertz. The acquisition device is primarily designed to acquire voltages and current data from electrical power system and vibration data from mechanical components in the same systems. The acquisition device can however be used to acquire data from any system. The device itself calculates power data such as apparent power, active power, and reactive power based on acquired voltages and currents, and based on these data energy data is accumulated. In addition the device performs frequency analysis on voltages and current measurements up to 10 KHz with a resolution of down to two hertz. The acquisition device supports the OPC UA standard protocol for data exchange and parameterisation purposes.

The data storage and data processing devices, the **Goodtech Data Bridge**, connects to the acquisition devices using a standard TCP/IP network and stores acquired data in standard databases for further processing. The DataBridge is capable of transferring large volumes of data over the network at high speed assuring that data transfer is lossless. Data stored in the databases can be exported to third party systems when the third party system data format is known. These data can also be analysed further by data processing devices using mathematical and statistical methods to facilitate system analysis and rapid detection of system abnormalities.

Engineering of the system is performed using standard Microsoft Visual Studio programming tools. Programming and configuration of the high speed data acquisition system is according to IEC 61131-3 norm.

The figure below shows the principle for the Goodtech High Speed Data Logger system from field layer devices to data storage and data processing devices.



The figure shows the Goodtech System for high speed data acquisition and data processing. The system can acquire data at a speed up to 1 MHz using oversampling technology.

The data acquisition layer devices uses EtherCAT field bus terminals or EtherCAT remote IO units for high speed data acquisition. The acquisition layer uses IPC devices for high speed data acquisition and processing, and standard PCs for long term data storage and bulk data processing.

The acquisition devices can be directly interfaced via OPC UA, reading out all acquired and processed data, except the high resolution base data (data series).

The figure shows two logging devices, one with central IO, and one with remote IO over EtherCAT field bus.

Goodtech High Speed Data Logging System

High speed data logging is vital for Condition Based Maintenance (CBM) in industrial processes.