

DIA TECH CORE

Data management module



DIA TECH CORE
System Architecture

System Architecture DIA TECH CORE consists of two software packages, the Master Module **DIA TECH MASTER** and the Graphical User Interface **DIA TECH GUI**.

DIA TECH MASTER is responsible for the data management. It checks all measured data, which are obtained from the various sensors and devices, for validity, reduces them by means of “windowing” and distributes them to data base, graphical user interface and various Knowledge Modules. The DIA TECH MASTER is the data turntable in the entire system for all Knowledge Modules. The Master is designed to allow parallel working connections to different external systems and to ensure safe data recording. Time stamping and data reduc-

tion belong to the basic functions of the DIA TECH MASTER.

DIA TECH GUI displays all available data in the system (measured values, calculated values, messages), and presents them in a user-friendly, ergonomic way.

Data processing, storage and Network

Smart data reduction: The data points will be recorded, if its individual pre-defined “window” is exceeded against its previous reading. On that way the data can be stored for a very long period (several years) without nearly lost of information.

Example: The “window” for a slot temperature was set at 0.5°. Thus the slot tempera-

ture will be taken over in the database, if the value has been changed by more than 0.5° relating to the previous value.

The **Database** is based on SQL-standard. The storage capacity of that database is limited to 2 GB. For long-term archive ANDRITZ Hydro has prepared a file system, in which the historic data will be periodically transferred from the database. The size of the file system depends on the size of hard disks.

DIA TECH CORE uses mainly the Ethernet TCP/IP environment, which enables all important possibilities of LAN and WAN applications between workstations, computers and various systems. Further it allows remote access to the DIA TECH System for remote data view and for system services as well.

DIA TECH CORE

Data management module

Graphical User Interface (GUI) and Message system

DIA TECH GUI is designed to provide relevant information for diagnosis applications. This contains individual configurable mimics, a special message system for diagnosis messages and a smart trend chart for long-term presentation. It provides special tools, which supports

the engineers and experts in making deeper analysis. The navigation of the DIA TECH GUI is menu/mouse driven and user-friendly. Its flexibility enables nearly any adjustment to customer-specific requirements as well as access to GUIs of 3rd party systems.

The main purpose of DIA TECH Systems is early fault detection. This means that DIA TECH Systems is designed to inform the plant's staff in an early stage with helpful (diagnostic) messages generated by the various Knowledge Modules, before heavy secondary damages will cause a long period of unit standstill. Diagnostic messages contain easy to understand problem descriptions and suggested actions to follow. DIA TECH GUI provides three types of notification:

- Pre-warnings
- Warnings
- Status messages

NOTE: DIA TECH represents an early fault detection system and not a protection system. Consequently no trip of the unit is intended.

Software

Basic software:

DIA TECH CORE is a Windows®-based application (Win 95, NT, XP, 7 ...)
 Database – Microsoft® SQL Server®, Microsoft® Access®

Communication options:

Ethernet TCP/IP (IEC 60870-5-104)
 Serial, RS 232 (485), MODBUS
 Modem, ISDN
 DIA TECH specific protocol

Hardware

State-of-the-art Industrial / desktop PCs / Notebooks with network possibilities

The final specification is made in accordance with the project requirements.

Related DIA TECH Knowledge Modules:

- DIA TECH CAA-HS (Cooling air analysis – hotspot detection)
- DIA TECH CAA-O3 (Cooling air analysis – ozone diagnosis for surface partial discharge)
- DIA TECH CAV (Cavitation monitoring)
- DIA TECH IRD (Rotor pole temperature module based on infrared measurement)
- DIA TECH MFX (Magnetic flux monitoring)
- DIA TECH MGM (Machine gap monitoring module for air gap and turbine clearance)
- DIA TECH RTMP (Rotor winding temperature module based on calculation)
- DIA TECH SBS (Structure borne sound diagnosis for stator core vibration)
- DIA TECH ThM (Thermal diagnosis for stator core & winding and cooling circuit)
- DIA TECH CORE (Data management package with graphical user interface)
- DIA TECH TPOT (Turbine / pump operation time counter)



DIA TECH is part of NEPTUN, the integrated common solution for secondary technology.

ANDRITZ HYDRO GmbH

Eibesbrunnnergasse 20
 1120 Vienna, Austria
 Phone: +43 50805 5
 Fax: +43 50805 5 1015
 E-Mail: contact-hydro@andritz.com

ANDRITZ HYDRO GmbH

Monitoring & Diagnosis
 Dr.-Karl-Widdmannstraße 5, 8160 Weiz, Austria
 Phone: +43 (3172) 606-2296
 Fax: +43 (3172) 606-496
 E-Mail: diatech@andritz.com