

HYDAC

INTERNATIONAL

**Networked Protection
of Productivity:
HYDAC CM-Expert.**



HYDAC CM-Expert:
Online monitoring of
production systems.
Directly on-site
or via remote inquiry.

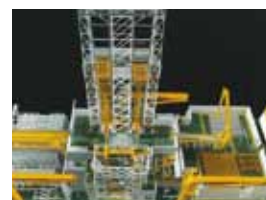
Regardless of the application, whether for wind turbines, chemical industry, rolling mills, machining centres, mobile hydraulics or off-shore applications, with HYDAC CM-Expert your worldwide production is under as much control as if you personally were always at the right place at the right time.

For the proactive operator who may be on the other side of the world, the "remote" version of CM-Expert provides constant and timely online information about the condition of his system by satellite and in real-time.

In addition, CM-Expert can trigger alarms automatically, log the actual condition and service lives, and as a result any necessary service work and repairs can be initiated.

Costly maintenance carried out unnecessarily early, as well as unplanned interventions, have therefore become a thing of the past. Moreover: Since monitoring is consistently reliable and required maintenance work can be identified in good time, it is not only possible to plan and protect the service life of machines and systems specifically, but it can also be extended significantly.

The system is equally suited to stationary or mobile hydraulics, on land, underground, above ground, subsea or on water – e.g. on a drilling vessel.



detects weaknesses in production in good time.



HYDAC CM-Expert:

**The only system for all industries,
all applications and all parameters.**

HYDAC CM-Expert is a powerful monitoring and control system for use with any standard PC. Its decentralised configuration makes the system extremely reliable and flexible for use in fluid power systems.

Since the controller is specific to the particular purpose, there is no limit to the number/type of sensors, actuators, operating and signal components which can be connected, or to the control tasks and data exchange with other systems.

All common physical parameters can be recorded by the data acquisition unit and processed: temperature, pressure, differential pressure, viscosity, water content, particles, flow rate, etc.

And in almost all areas:

- Offshore / drilling vessels
- Mining
- Steel works
- Wind turbines and power plants
- Paper mills
- Machine tools
- Hydraulic presses
- Automotive production, test rigs
- and other production processes

Advantages at a glance:

- Constant monitoring of the production media
- Automatic message when maintenance-relevant values are reached
- Immediate alarm when limits are exceeded
- Early detection of faults and prevention of emergencies
- Optimization of service intervals
- Reduction of maintenance and repair costs
- Prevention of system downtime and consequential damage



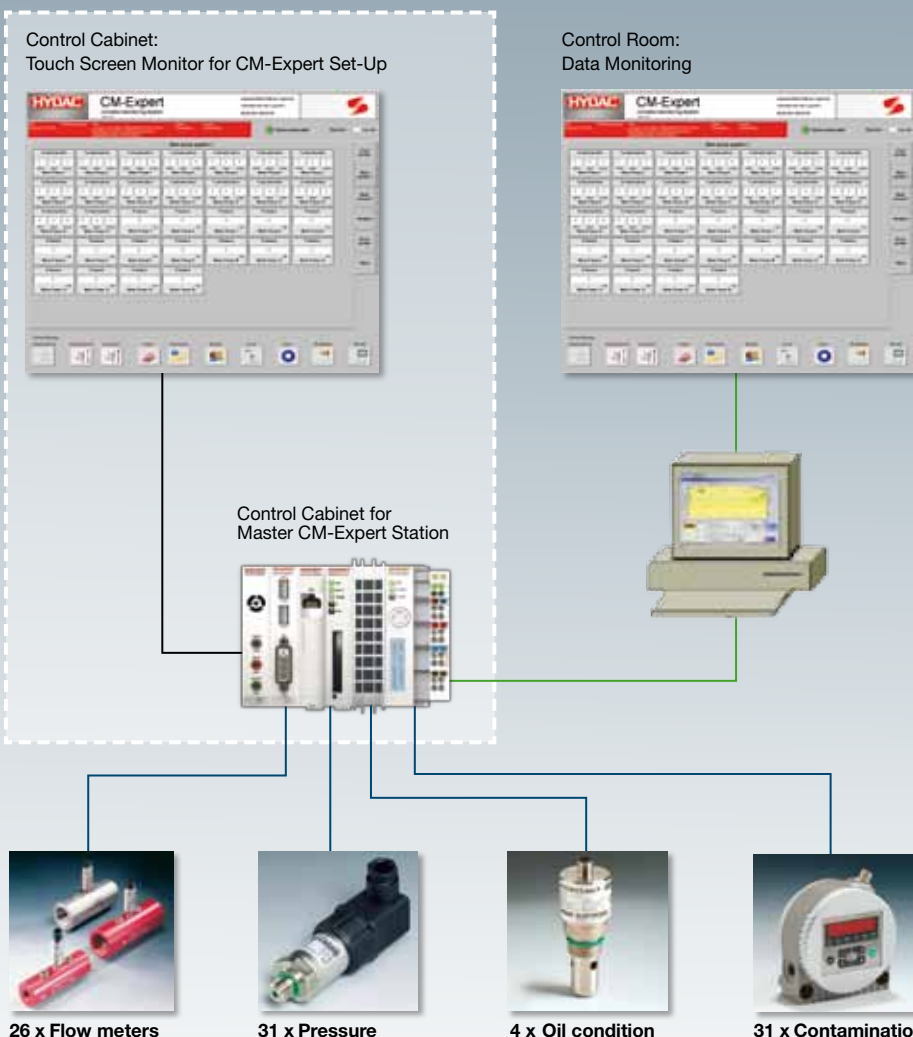
HYDAC CM-Expert: Using a network of sensors and software, it acts as the nerve-centre of your production system.

CM-Expert monitors and stores the data recorded by sensors and detects changes emerging in the system of machines and within systems. Experience developed over decades and the reference data accumulated enable analyses and forecasts for production-relevant parameters, such as remaining service life, service intervals and risks, to be made and evaluated – in good time and long before a standstill threatens. The CM-Expert software does not just work with HYDAC sensors and actuators but also of course with other brands without restriction.

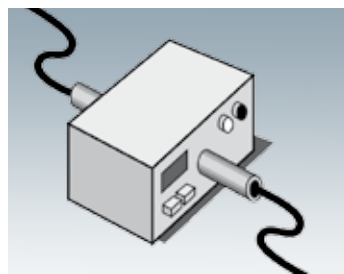
Drilling ship reference: HYDAC CM-Expert for the central hydraulics.

90,000 litres oil, 29 pumps with a maximum flow rate of 33,000 l/min to control 5 cylinders with 24 m stroke constitute the framework of this system. To monitor the pumps and medium, 92 sensors are used. Contamination, flow rate and oil condition are monitored around the clock – nothing is left to chance.

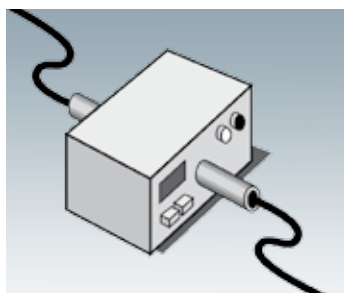
Fluid Condition Monitoring with HYDAC CM-Expert, Drilling vessel example



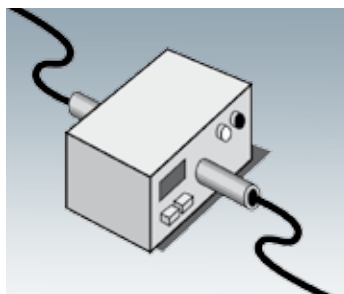
re provides an Intelligent System for reliable



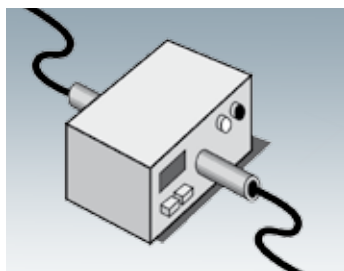
Coolant lubricant



Impact sound



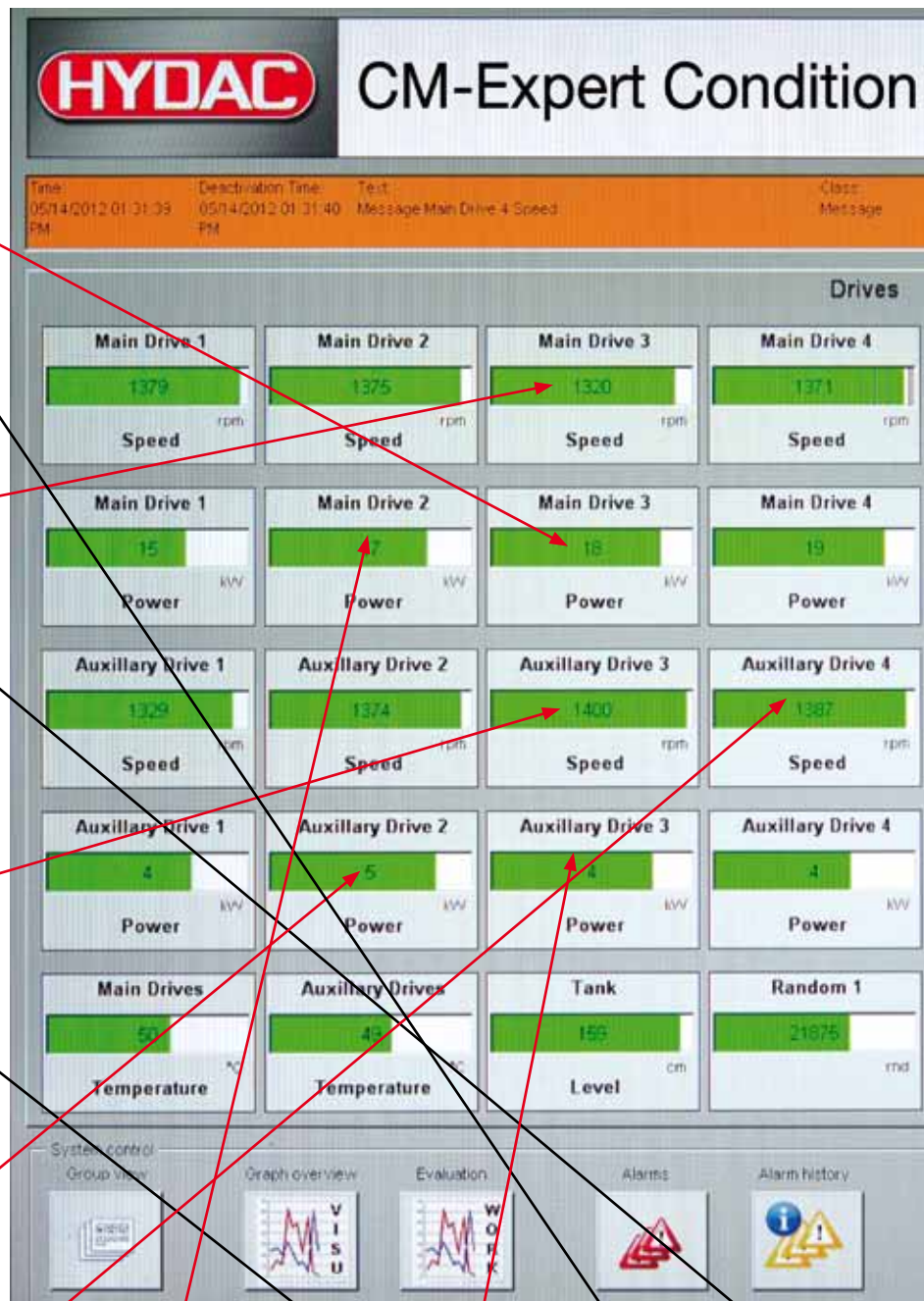
Particle count



Vibration



Metallic particles



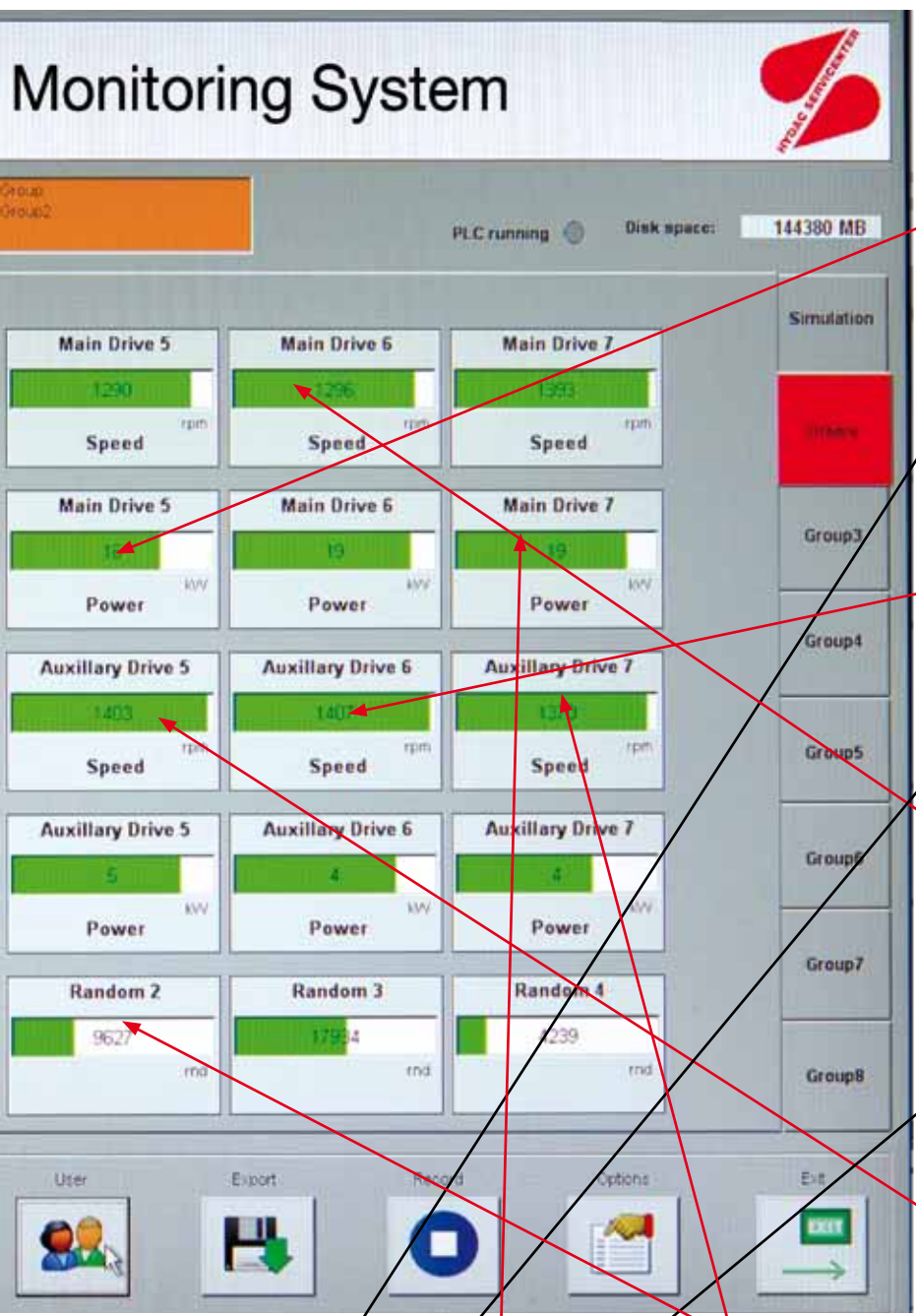
Moisture



Oil condition



Monitoring and Control of Production based



Pressure



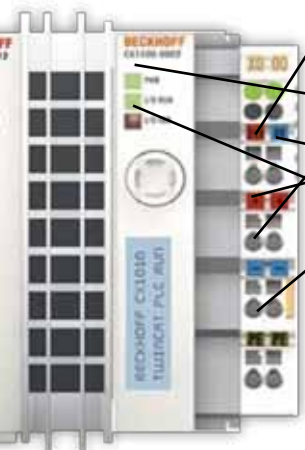
Contamination



Temperature



Flow rate



Pressure differential



Fluid level



Dissolved water

on conventional Condition Monitoring.

HYDAC CM-Expert:
The same precision as having
expert calibration on site.



The quality of monitoring and control of production systems rests not only on the quality of hard and software supplied, but to a great extent on precise compliance with the prescribed reference data. To safeguard this last but very important element of the monitoring chain, HYDAC offers a calibration service which operates all over the world.

The basis for this is the calibration rig installed at the production facility on which the HYDAC service experts can carry out the recommended annual calibration. Depending on the type of parameter, the calibrations are carried out according to existing standards or factory settings. So the standard ISO11943 is used to calibrate the HYDAC online particle counter, to ISO4406:1987 or ISO4406:1999, depending on the size classification. When calibrating pressure transmitters, the calibration laboratory which is accredited to ISO17025 follows the guideline DAKKS-DKD-R6-1; for temperature, humidity and fluid level sensors, the factory standards giving traceability of the measuring instrument are used and the same is so for sensors recording fluid level through to flow rate. The results and latest settings are stored for each instrument and recorded in test protocols and calibration certificates.

Productivity optimized
by laboratory analysis
and fluid engineering.



Over 75 % of all breakdowns in hydraulic and lubrication systems are due to contamination of the fluids and components used. An extensive condition monitoring system, made complete by HYDAC CM-Expert, forms the basis of sound production monitoring and control. HYDAC is your professional partner for analyzing, eliminating and preventing the sources of errors through the application of its comprehensive laboratory service and expert fluid engineering. HYDAC's laboratory service can be both permanent and mobile, getting to the root of emerging differences and tackling them with service systems and service measures. If the cause can be traced to an overburdening of old system parts by new, more efficient machines and system configurations, HYDAC's fluid technology and electronic specialists will provide efficient solutions to optimize and retrofit production systems.

Safety through
worldwide approvals
and service centres.



Since HYDAC components and systems are used both in Germany and internationally in almost all industries, it goes without saying that our production facilities and safety-critical products have the appropriate approvals from the certifying bodies with jurisdiction in the place of installation.

Notwithstanding the approvals required for every country, HYDAC also has a close network of service support teams and skilled service partners across the world. So you always have additional operating reliability, just a phone-call away, wherever you are.



Accumulators E 30.000



Filter Technology E 70.000



Process Technology E 77.000



Filter Systems E 79.000



Compact Hydraulics E 53.000



Accessories E 61.000

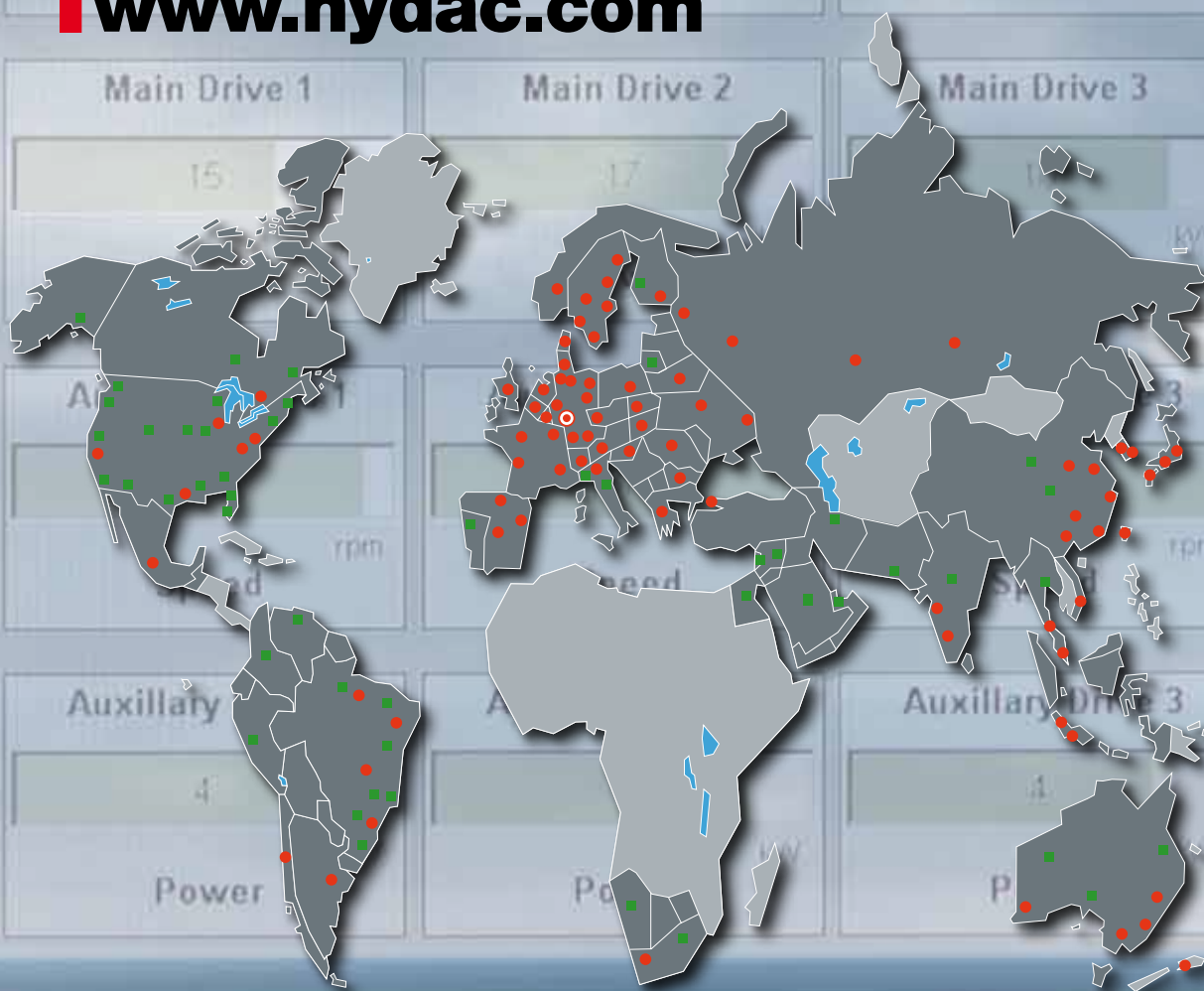


Electronics E 180.000



Cooling Systems DEF 5.700

Global Presence. Local Expertise. www.hydac.com



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- HYDAC Companies
- HYDAC Sales and Service Partners

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