

CONTEG TESTCENTER FOR DATA CENTERS

*Research, development
and training center for data
centers, server rooms, as well
as telecommunication and
networking solutions*

The Conteg company is a major European manufacturer and supplier of comprehensive solutions for data centers and ICT cabinets. It significantly invests into the development of new technologies, thus contributing to the progress in this dynamic field.

In 2011, the company Conteg substantially extended its production plant in the town of Pelhřimov. The new multi-functional building will provide sufficient space for state-of-the-art production technologies for both metal sheet processing and for development. Researchers, designers, and IT technicians have Conteg TestCenter for Data Centers at their disposal.



TestCenter for Data Centers

TestCenter's total area of 156 m² is divided into a technical room and a climatic laboratory. In the laboratory's frontroom, hardware and software for the center's management are installed. The laboratory itself is separated by a glass wall and is designed as a data center, with a raised floor and suspended ceiling. The data center's area is 75 m²; it is possible, similar to real applications, to install there stand-alone cabinets as well as cabinet rows, contained aisles and closed loops.



View of a contained aisle in the laboratory

TestCenter's equipment

In the testing data center, different arrangements of both traditional and experimental setups of heat-generating IT cabinets are validated. Different cooling units of precision air conditioning systems may be connected to water and refrigerant systems. Two water-cooled CRAC (Computer Room Air Conditioning) units are available, blowing cold air under an 80cm high raised floor. Up to 12 inrow cooling units may be connected to the chilled water distribution system. These units are used for installations within rows of cabinets which are included in Conteg production program and continuously further developed by the company.

Two water-cooled chillers are the source of chilled water; one of the chillers is equipped with a free-cooling system. Dry coolers are situated on the roof of the multifunctional building and the cooling machinery room is installed in the basement. A sophisticated regulation system enables both systems to independently supply the laboratory with chilled water at the required levels of flow rate and temperature values. All energy flows can be accurately measured.



Cooling distribution system under the raised floor



Cooling units in the laboratory

Measurement devices

Variables of the laboratory environment are monitored on a long-term basis with the aid of installed sensors from which signals go to the measurement central point. There, they are processed with a specially designed laboratory software which makes possible evaluation of data for individual experiments, as well as visualization and presentation of the outcome. Another – independent – measurement system consists of wireless temperature and humidity sensors which may be used both in the laboratory and in another (real) data center for practical verification of the laboratory measurements. A third option is to make use of separate calibrated tools for accurate measurements of all local variables.



Propeller-type flow meter,
diameter 100mm



Multifunctional measurement
device for connection of special



Proximity infrared
thermometer



Digital measurement gauge for
cooling devices

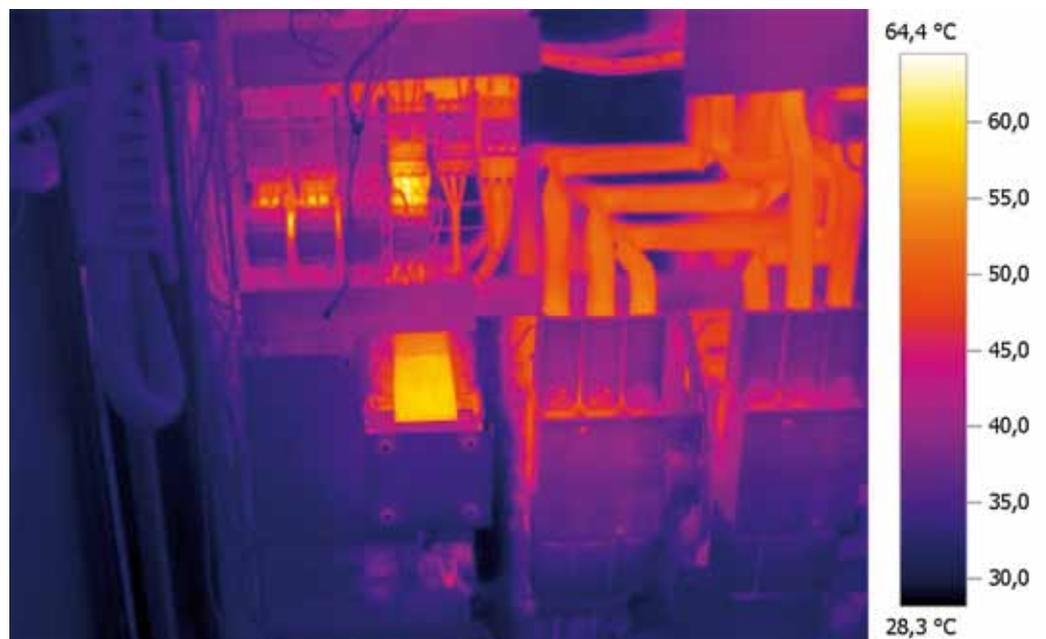
The following data are measured in the laboratory:

- temperature values (water, air, and surface of all cabinets and machines)
- air humidity
- air and water flow rate values
- velocity of air and water flows
- pressure differences between individual sections of experimental setups
- CO₂ concentration
- electrical variables (voltage, current, energy consumption)
- acoustic variables
- fan speed values

Two state-of-the-art thermo-cameras are used for a simple graphical visualization of the temperature mappings, especially on surfaces of cabinets and structures.



Thermo-camera and visual preview



Basic functions of TestCenter

Basic testing of designed, prototyped, and finalized Conteg products

- to help designers and R&D teams in optimization of technical design parameters
- for maximum quality assurance for customers

Research and verification of general principles, comparing energy efficiency, and the use of different setups of data centers:

- open versus contained aisle
- hot contained aisle versus cold contained aisle
- chimney solutions
- closed loops
- free-cooling efficiency
- water versus refrigerant systems
- impact of temperature values on energy consumption and safety
- ... and many other possibilities

Validation of designs for actual data centers

- validation of CFD computer simulation outcome
- decision on best-quality and best-fitting solutions for real designs
- proof of functionality for each design before implementation = certainty for our customers

The TestCenter will not only be used for validation of energy efficiency and quality of comprehensive solutions of data centers designed, and set up from components made by Conteg but also for verification of correct selection, efficiency, economy, functionality and safety of technologies already implemented, as requested by our customers.



Laboratory machinery room



Laboratory fore-room

Conclusions

The company Conteg has demonstrated by its focus on developing and building its unique Conteg TestCenter for DataCenters its position among the top manufacturers and suppliers of components for data centers. Consultations and management of large-scale projects are now based not only on the theoretical knowledge of our experts, but also practical, experimentally validated experience. All financial investments and efforts of our employees in the area of development is our driving force towards keeping our customers satisfied by providing them with top-quality products and services.

CONTEG, spol. s r.o.

Czech Republic Headquarters:

Na Vítězné pláni 1719/4, 140 00 Praha 4

Tel.: +420 261 219 182

Fax: +420 261 219 192

Production plant in the Czech Republic:

K Silu 2179, 393 01 Pelhřimov

Tel.: +420 565 300 300

Fax: +420 565 533 955

Local Branches/Offices:

Austria: +43 699 1819 7071

Benelux: +32 477 957 126

Eastern Europe / Nordics: +49 172 8484 346

France, Maghreb: +33 686 074 386

Germany / Switzerland /

Baltics / Denmark / Italy: +49 170 523 4958

Middle East: +971 555 08 32 41

Russia, CIS: +7 495 967 3840

Slovakia: +421 917 874 111

CONTEG[®]
to complete your network

conteg@conteg.com

www.conteg.com



**EUROPEAN UNION
EUROPEAN REGIONAL DEVELOPMENT FUND
INVESTMENT IN YOUR FUTURE.**