

Safe server cooling with GVHX

Telefonica O2, a renowned service provider in the area of information and communication technology, uses Güntner GVHX condensers with especially silent EC fans in order to cool their servers in the Nagano Centre in Prague.



Line of Business:	Air conditioning
Application:	Server room cooling
Country / City:	Czech Republic / Prague
Fluid:	R 410A
Product:	Condenser GVHX

Telefónica O2 Czech Republic operates a data centre in the office complex Nagano in Prague's district Zizkov. This data centre is one of the largest in the whole of the Czech Republic. Since starting its services in 2002, the capacity of the centre has been enlarged in several steps.

Of course, data and operational safety are the most important things when operating a data centre. Should the servers fail, even for a very short period of time, the damage would be devastating. Therefore, operational reliability has the highest priority when it comes to cooling server rooms.

Improving energy efficiency

In the spring of 2011, O2 Telefónica decided to replace the meanwhile outdated chilled water system with a direct expansion (DX) refrigerating plant in order to improve on energy efficiency. The project was realized in cooperation with the companies ALTRON a.s. and LAKA CZ s.r.o. ALTRON a.s. is the largest Czech and globally active non-IT supplier who – excepting IT hardware – offer everything regarding the IT like air conditioning, humidifiers, extinguishing systems, emergency power supply etc. In a later stage of the project, they served as general contractor. LAKA CZ s.r.o. is one of the leading companies in IT cooling in the Czech Republic using technology of the German manufacturer Stulz GmbH.

In two halls with a total of 2000 m² surface, 29 DX precision air conditioning systems with 105 kW refrigerating capacity each and another four air conditioning systems with 50 kW each (for the cooling of the emergency power supply) were installed. All systems have two circuits so totally, 66 condensers were installed on the roof – 58 pcs. of 64 kW condensing capacity 64 kW and 8 pcs. of 31 kW. In order to

keep the energy consumption of the systems low, they are designed for a temperature difference of 10.5 K, the smaller systems even for only 8 K.

Best solution: microox® units

The operational reliability of the units was one of the factors that made O2 Telefonica decide to use the Güntner GVHX condensers. Another important reason was one of the main characteristics of the new microox® technology: Given that the heat exchanger coils are made completely of aluminium, the total weight of the units is considerably lower than the weight of comparable units with the renowned finnox® technology that mostly uses copper tubes and aluminium fins. The lower weight was decisive for the structural analysis of the building on which the condensers were to be placed.

Another plus of this series – a plus it shares with the other condenser and drycooler series – is the possibility to use the especially energy-efficient and silent EC fans. In this case, the fans are operated at their optimum using a Güntner GSW continuous control. Given the requirements regarding the energy efficiency, the continuous control and the sound pressure level – the office complex is located near apartment buildings – the decision was immediately made in the beginning to use EC fans with energy efficiency class A. The condensers have a sound pressure level of 32 dB(A)/10 m, the smaller ones of only 31 dB(A)/10 m.

Refurbishing in several steps

The replacement of the old with the new systems was realized without disturbing the operability of the data centre. For this reason, it was done in several steps. It goes without saying that delivery reliability and on-time delivery were of the utmost importance.

Since autumn 2011, the new plant is in operation. The old units were integrated into the system as free-cooling heat exchange coils and therefore maintain free-cooling operation during the winter.

