

The Dew-Point

Solutions to humidity problems
Produced by Seibu Giken DST AB



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Dry turbines in Fukuoka

Power utility Kyushu Electric Power in Fukuoka, Southern Japan, supplies power to several million Japanese people! Of course, a lot of kilowatt hours are needed when the summer turns warm and all the air-conditioning systems are turned on...

Kyushu Electric Power is located in Fukuoka, on the island of Kyushu in southern Japan. Fukuoka City has more than 1.4 million inhabitants and the city spreads out along the Hakata bay. This city has the geographical advantage of being both close to the Korean peninsula and the Chinese continent, and in the olden days Kyushu served as a port for Asiatic cultural exchange.

The Japanese summer climate often involves temperatures in excess of 30°C and high relative humidity. So in the summer, energy consumption reaches its peak as everyone who has air-conditioning turns it on. Utility company Kyushu Electric Power supplies many billions of kilowatt hours to the region that shares its name.

The weather turns cooler after the summer, and a number of turbines are then



Spring in Japan, showing the typical, beautiful cherry blossom

shut down as the demand for energy tails off. But if these turbines were just shut down and left to stand, corrosion damage would occur. And so they have to be protected against corrosion.

Regular maintenance work was carried out on the turbines before the utility company installed dehumidifiers. Seibu Giken in Fukuoka suggested to Kyushu Electric Power that it would be a good idea to dehumidify the premises on which the turbines are stored. A DST dehumidifier was installed, and relative humidity fell to less than 40%RH* once this work had taken place. As a

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Nice and fresh with dehumidification!

A superstore selling fresh produce in Japan has resolved its previous problems with condensation thanks to dehumidification.

Nishitetsu Store is a chain selling fresh produce, and one of its markets is in Fukuoka City. This market, which sells fruit, vegetables and other fresh produce, used to have problems with condensations. Condensation formed on the ceilings in the rooms where the fresh produce was handled. The area

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The Fukuoka region – some facts:

Area: 4 971 km²

Located in Northern Kyushu, on the third-largest island in Japan

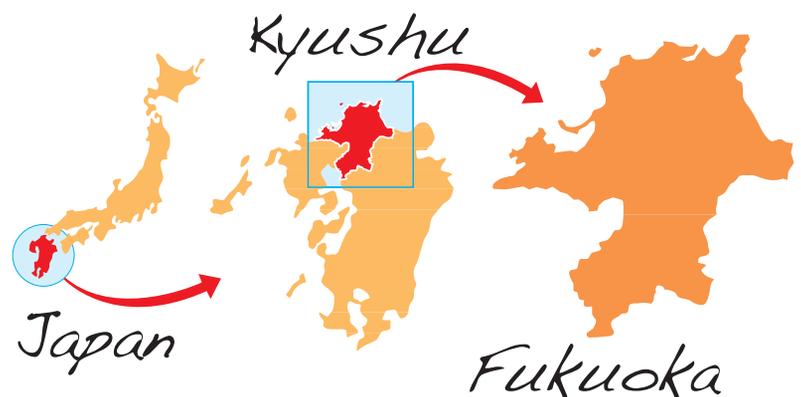
Inhabitants: Around 5 000 000

Both Fukuoka City and Kitakyushu have more than a million inhabitants each, which makes these cities some of the more urbanised areas in Japan.

Average annual temperature: 17.1 °C (62.8 °F)

The hottest month is August, with an average temperature of 27.6 °C (81.7 °F), while the coldest is January, with an average temperature of 5.8°C (42.4 °F). This climate is comparable with the south coast of the USA or southern Europe.

Vist www.welcome-fukuoka.or.jp/english/index.html



Damp – the facts

100 % RH*
Fog or rain

~93-96 % RH
Salmonella bacteria die
out below this level

80 % RH
Annual average, outdoors

70 % RH
Massive increase in the
risk of mould and fungus
forming

60 % RH
Massive increase in the
risk of mould and fungus

50% RH
Massive increase in the
risk of corrosion above
this limit.

35-40 % RH
Timber dry enough for
carpentry.

ca 30-40 % RH
Maximum limit for
archiving.

20-25 % RH,
Maximum humidity for
cornflour moulds.

10 % RH Maximum
humidity for
gelatine manufacture.

1-2 % RH*
Maximum humidity for
lithium battery
manufacture.

Cont. Dry turbines in Fukuoka

result, no corrosion damage will occur. Iron and steel won't rust if the relative humidity of the air in contact with the surface is less than 50 % RH. This investment in dehumidification to provide protection against corrosion has meant that Kyushu Electric Power won't need to carry out complex, expensive maintenance work.

It's also very common in Europe to use dehumidification to protect against corrosion, because this is far more cost effective than manually applying corrosion protection to boilers, turbines and so on. And since the ambient air gets literally everywhere, even into places difficult, or even impossible, for humans to access.

Cont. Nishitetsu superstore

above the ceiling also got damp. A number of electric cables are laid there, and moisture can cause short-circuits. Condensation on the ceiling can drip down onto the products and make the floors slippery, which can be dangerous for staff. The indoor climate was damp, too. These problems with moisture occur when water is used for flushing down in areas which are relatively cool. The moisture doesn't evaporate. And so the Nishitetsu market decided to install a dehumidifier to get rid of the moisture. And now the market has no problems with condensation, hygiene is great and the working environment is a much nicer place to be!

**RH= Relative humidity is, to put it simply, "the percentage of water in the air, compared with the maximum possible amount of water present in the air at the current temperature".
100 % RH = water vapour.*

Seibu Giken DST AB

- design & manufacturer of desiccant dehumidifiers

Seibu Giken DST AB is one of the world's top suppliers of sorption dehumidifiers. DST is currently represented in approximately 40 countries all over the world. You can get in touch with all DST representatives at our web-site www.dst-sg.com.

DST was founded in 1985 and in 1993, DST became a subsidiary of Seibu Giken Co Ltd, Japan - a world leader in desiccant technology.

Seibu Giken Co manufactures dehumidifier rotors, VOC-rotors, heat-exchangers, honey-comb rotors etc.

Visit Seibu Giken Co Ltd at: www.seibu-giken.co.jp

The Seibu Giken DST range of products is specifically designed to solve humidity problems in commercial and industrial applications.

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