

OPTIMISATION OF FRUIT TRANSPORT



A newly developed system to slow the ripening of fruit during transport and storage has been implemented with the aid of E+E humidity sensors.

The system is integrated into CA (Controlled Atmosphere) containers. Here, the oxygen is replaced by up to 98% nitrogen. As well as this, the air is compressed in a cooling compressor, the water is extracted (and stored) and then the oxygen and nitrogen are separated by means of membrane technology. The nitrogen is fed into the container and the oxygen to the outside air.

As the fruit requires a high humidity to prevent drying, an appropriate proportion of water obtained from the compression of the air is mixed with the nitrogen. This achieves a relative humidity of between 70 and 95%, depending on the fruit to be transported.

The container is therefore filled with up to 98% nitrogen with a high humidity. The temperature is also kept stable at a level that depends on the individual requirements of the fruit. In this atmosphere the fruit "hibernates" and the speed of the ripening process is considerably reduced, without loss of quality. This enables transport to be transferred from air freight to sea freight and therefore provides potential savings.

In this system it is important that the humidity can be kept constant for the fruit. E+E EE16 sensors are used to control the supply of water into the nitrogen. The measurement transducers which were previously used did not have the necessary accuracy and above all the required stability to protect the fruit from drying out.



For land transport, the system is installed in refrigerated trucks which are designed for transporting food and ensure the conditions described there.

• Application conditions

Measurement range: 10-95% rel. hum.; 0...50°C
Output: 0 - 10 V or 4-20 mA
Accuracy: ± 3% rel. hum. ± 0.5°C

• E+E solution



EE16
Measuring transducer for humidity & temperature

Cost-effective and accurate measurement of relative humidity and temperature.