

Benefits & Specification

❖ Automation

The system is automated and easy to operate. It greatly reduces errors caused by manual checking. The operation efficiency is increased drastically.

❖ Accurate Measurement

The digital sensor of the Moist tag provides accurate environment data without requiring any complicated calibration.

❖ Reliable Equipment

The Empress™ readers and Moist tags have FCC and CE certifications guaranteeing safety and reliability. Performance of all equipment is also stable and reliable.

❖ Cost reduced

Both time and effort involved in measuring environment data is reduced greatly resulting in a reduction in overall operation cost.

❖ Real Time management

The wireless humidity monitoring system provides means for real time supervision of environment changes so actions could be taken immediately.

❖ Easy application

Empress™ readers and Moist tags are easy to install. Time and cost required for system setup is comparatively low.

Tempcorder™ Moist Tag HKRAT-HT02	
Dimension	52mm x 30mm x 4.5mm
Operation Temperature	-25°C to +80°C
Detection Temperature	-25°C to +80°C
Temperature Accuracy	+/- 1°C
Humidity Detection Range	0-100%
Humidity Accuracy	+/- 5%
Weight	8g
Empress™ Wi-Fi Reader HKRAR-EMWF	
Dimension	125mm x 108mm x 26mm
Operation Temperature	-40°C to +60°C
Interface	Wireless connection Cable connection



For enquiries, please contact:

Email: sales@hk-rfid.com

Tel: (852) 3426 9511

Fax: (852) 3426 9519

Company Awards:



Case Study - Humidity Monitoring System

2.4GHz Active RFID Solution for Museum

[Powered by Empress™ 2.4GHz Active RFID]

There are many valuable exhibits at every museum. These exhibits require delicate care and well-controlled environment to ensure good preservation. Humidity is the most related factor in affecting the storage environment of museum exhibits. If the environment is too humid, exhibits might be eroded and destroyed. We would not be able to restore these treasures from the past once they are destroyed. With humidity monitoring system using active RFID equipment, museums can better protect the valuable exhibits in a real time and automated manner.



Challenges for monitoring exhibit storage environment in the museums:

- ◆ How to closely monitor the storage environment of each exhibit?
- ◆ How to monitor and control storage environment at a low cost but with high efficiency?
- ◆ How to monitor storage environment on a real time basis and prevent damages before it's too late?

Active RFID Equipment used for the System:

Tempcorder™ Moist Tag
Model: HKRAT-HT02

- Accurate digital sensor
- Convenient mounting design
- Replaceable battery



Empress™ Handheld Reader
Model: HKRAR-EMWF

- Wi-Fi connection with PC
- Long range identification



Museum Humidity Monitoring System

Background:

Paintings, statues and pottery are examples of exhibits that should be stored in controlled environment in order to preserve their original state and appearance. Apart from the material of the exhibit, the number of visitors, the weather and air conditioning are all factors affecting the relative humidity and temperature of the museum environment. Managing and maintaining the constantly changing storage environment of each exhibit in the museum is thus a difficult task.



Problems Resulted:

Manual efforts are required to check the temperature and relative humidity from time to time in order to adjust the ventilation and air-conditioning systems accordingly. This results in the following problems:

1. High time and manpower cost
2. Inaccurate or missing records due to manual operation
3. Slow reaction to abnormal humidity and temperature levels



Solution:

Humidity Monitoring System with active RFID equipment replaces manual operation of museum staff in checking and maintaining the environment for exhibits.

1. Moist tags with humidity and temperature sensor are installed in exhibit cases or near exhibits.
2. Empress™ readers are installed in the museum to provide full coverage for reading Moist tags.
3. Moist tags send humidity and temperature data together with the tag ID to Empress™ reader constantly.
4. Empress™ readers send the data received from Moist tags to PC with software program. Any change or abnormality in the museum or exhibit storage environment could be identified.



Operation Flow of MHMS



Tempcorder™ Moist Tag
Model: HKRAT-HT02

Step 1:

Moist tags are attached inside the cases of or near exhibits. Digital sensor of the tag captures relative humidity and temperature data. Such readings are sent to the Empress™ readers and for further processing.



Empress™ Wi-Fi Reader
Model: HKRAR-EMWF



Step 2:

Empress™ readers are installed at different locations of the museum. With such installation, full coverage for reading Moist tags is established. Humidity and temperature readings are sent from the reader to the PC periodically.



Step 3:

Real time humidity and temperature data are received by PC with software program. Museum staff can closely monitor the museum or exhibit storage environment through the program. Alarms could also be sent to notify museum staff in order to respond more efficiently to unexpected environment changes.