



Reliability You Trust

# COLDTECH IoT

## SMART REFRIGERATION MONITORING & CONTROL

Connected Cold Chain.  
Real-Time Visibility. Faster Response.



REAL-TIME  
MONITORING



INSTANT  
ALERTS



HISTORICAL  
TRENDS



ANYTIME  
ACCESS



AUTOMATED  
REPORTS



MULTI-ROOM  
CONNECTIVITY



Smart Refrigeration.  
Connected. Visible. Under Control.  
[www.coldtechgroup.com](http://www.coldtechgroup.com)



SECURE CLOUD  
PLATFORM



USER ACCESS  
CONTROL



DATA SAFETY  
& BACKUP



24/7 SYSTEM  
AVAILABILITY

# Connected Cold Chain.

## Real-Time Visibility.

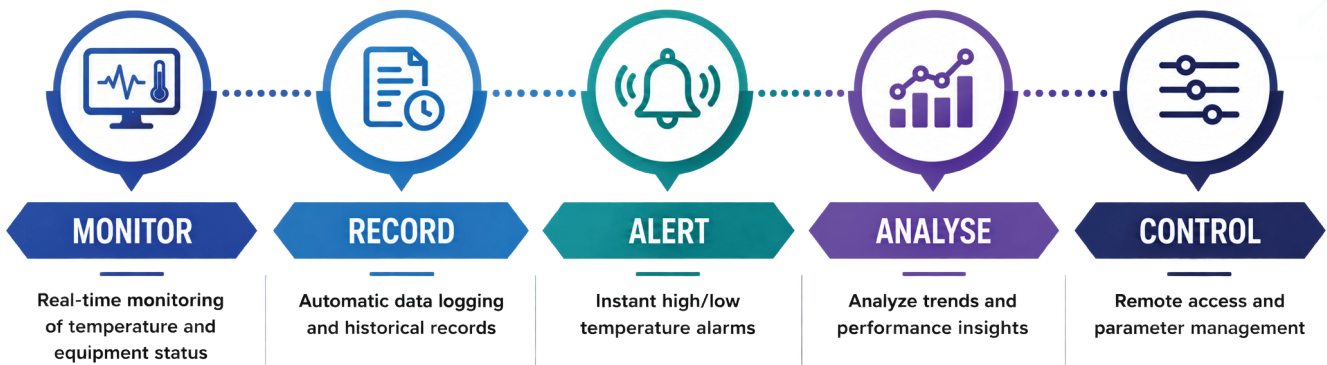
## Faster Response.

Refrigeration does not stop when the facility manager leaves the site.

ColdTech IoT connects refrigeration controllers, cold rooms and selected refrigeration equipment to a centralized monitoring platform, giving operators greater visibility of critical operating conditions from wherever they are.

From a single cold room to a multi-room facility, the system provides real-time information, alarm management, historical records and remote access to supported parameters through the ColdTech cloud platform.

Designed around practical refrigeration requirements, ColdTech IoT helps facility teams move from periodic manual checking towards continuous digital supervision.



## Stay Connected to Your Refrigeration

1. Real-time temperature and equipment status
2. 24/7 web and mobile access
3. High and low temperature alarms
4. Historical trends and graphs
5. PDF and CSV reporting
6. Scheduled reports by email
7. RS-485 Modbus connectivity
8. Wi-Fi / cellular connectivity depending on selected hardware
9. Remote parameter management on compatible controllers
10. Multi-device monitoring



# Connect Your Refrigeration From Cold Room to Cloud

Modern refrigeration facilities generate valuable operating information every minute. Temperature, compressor operation, evaporator status, door activity, protection signals and equipment current can provide an early indication of what is happening inside a refrigeration system.

ColdTech IoT brings this information together into one accessible monitoring environment.

## How the System Works

1

### Refrigeration Equipment:

Cold rooms, freezer rooms, condensing units, evaporators and other refrigeration equipment operate through compatible ColdTech controllers or control panels.



2

### Controller & Sensors:

The controller can receive information from: Room temperature probes / Evaporator / coil probes / Compressor current transformers / Door contacts / High-pressure safety / Low-pressure safety / Phase / voltage protection / Auxiliary safety inputs / Equipment operating outputs



Several controllers use NTC probes, digital protection inputs, compressor-current sensing and RS-485 communication.

3

### RS-485 Modbus Network:

Compatible controllers communicate with the ColdTech IoT modem through an RS-485 Modbus network.



RS-485



Up to 10 compatible devices in a daisy chain.

Larger installations can use additional gateways or separate communication networks.

4

### Internet Connection:

Communication with the cloud can be established using Wi-Fi or cellular connectivity, depending on the selected gateway or controller.



Wi-Fi



Cellular



4G



5

### ColdTech Cloud:

Operating data is transferred to the cloud platform, where authorized users can view connected equipment through web and supported mobile access.



Temperature



Compressor



Evaporator



Door Activity



Protection Signals



Equipment Current



### One Platform. Multiple Locations.:

A facility manager can supervise refrigeration equipment without continuously walking between individual cold rooms. For multi-location businesses, the same concept allows refrigeration performance to be viewed by site, room or connected controller, creating a more structured approach to cold-chain supervision.

# Real-time Monitoring Alarms

## Know what is happening. When it happens.

A refrigeration problem becomes expensive when it remains unnoticed.

ColdTech IoT gives authorized users continuous visibility of connected refrigeration systems and helps identify abnormal operating conditions earlier.



### 1 LIVE MONITORING



#### Room Temperature

Current room conditions



#### Evaporator / Coil Temperature

Coil performance



#### Compressor Status

ON/OFF status



#### Electrical Current

Current monitoring



#### Door Status

Door activity



#### Protection Status

HP / LP / phase safety

### 2 ALARM MANAGEMENT

Configure alarm conditions and get notified instantly.

- ✓ High / low temperature
- ✓ Door left open
- ✓ Compressor fault
- ✓ High-pressure / low-pressure trip
- ✓ Sensor / communication fault
- ✓ Auxiliary alarms



#### Email Alerts

Instant email notifications to authorized users.



#### SMS Alerts\*

SMS functionality for supported applications.

\*SMS available for supported applications.

### 3 FROM ALARM TO ACTION



Reduce the time between a refrigeration problem occurring and somebody knowing about it.

# Data logging, trends and reporting

## Turn Refrigeration Data into Useful Records



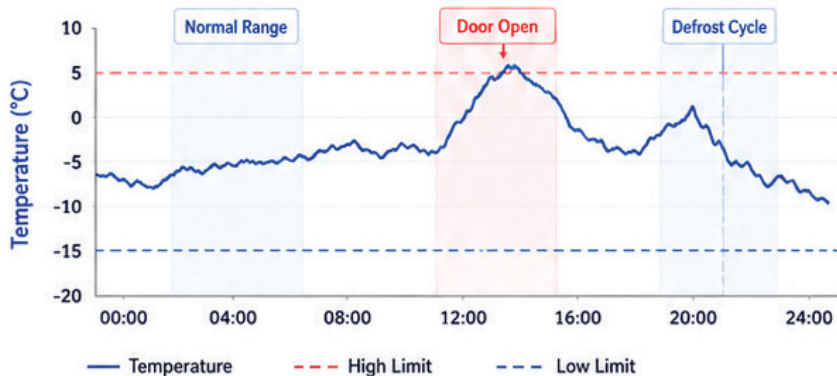
A temperature reading tells you what is happening now.



Historical data tells you what happened before.

ColdTech IoT stores monitoring information so operators can review refrigeration performance across selected dates and time intervals.

### 1 Historical Temperature Records



- ? When did the temperature start increasing?
- ? How long was the room outside its normal range?
- ? Did a door-opening event affect the trend?
- ? Was the pattern repeated?

### 2 Graphical Analysis



Trend graphs help teams identify patterns faster than single readings.



Min  
-16.2 °C



Max  
6.8 °C



Average  
-3.8 °C



Data Points  
288



Alarms  
2

### 3 Reports



PDF Format



CSV Format



Scheduled  
Email Reports

### 4 Better Recordkeeping

- ✓ Food-safety monitoring
- ✓ Maintenance analysis
- ✓ Internal audits
- ✓ Customer reporting
- ✓ Operational investigations



Monitoring points, alarms and reporting functions depend on the selected controller and project configuration.



*Monitor today. Review yesterday. Plan tomorrow.*

# Remote Management & Control



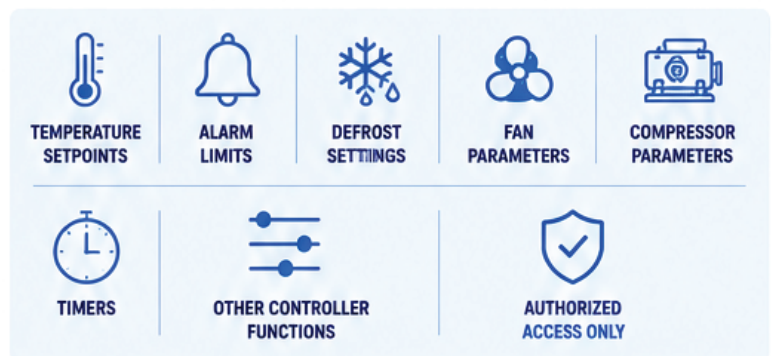
## MORE THAN TEMPERATURE MONITORING

ColdTech IoT provides real-time monitoring, alarm management, data logging, reporting, and remote management of supported refrigeration-controller parameters through its connected platform.



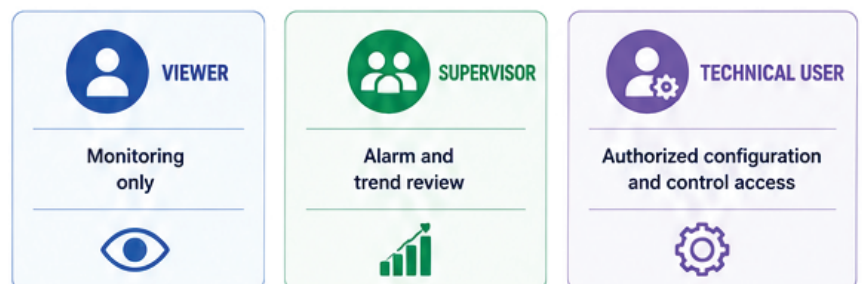
## REMOTE PARAMETER MANAGEMENT

For compatible controllers enabled during commissioning, authorized technical users can remotely manage selected settings such as temperature setpoints, alarm limits, defrost settings, fan and compressor parameters, timers, and other supported controller functions. Access should be limited to authorized personnel and configured according to the refrigeration-system design.



## USER ACCESS CONTROL

The ColdTech cloud uses secure user ID and password access. Typical access levels include:



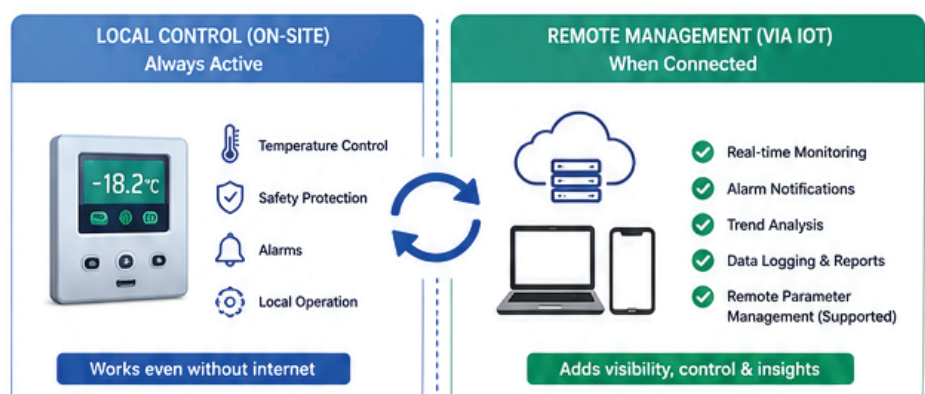
Available permissions depend on the project and software configuration.



## LOCAL CONTROL REMAINS ESSENTIAL

The refrigeration system continues operating on its local controller even if internet connectivity is lost.

The IoT platform adds remote supervision and supported interaction, while core temperature control and safety functions remain locally managed, ensuring reliable operation with the benefits of remote digital monitoring.



# Multi-Cold Room & System Integration

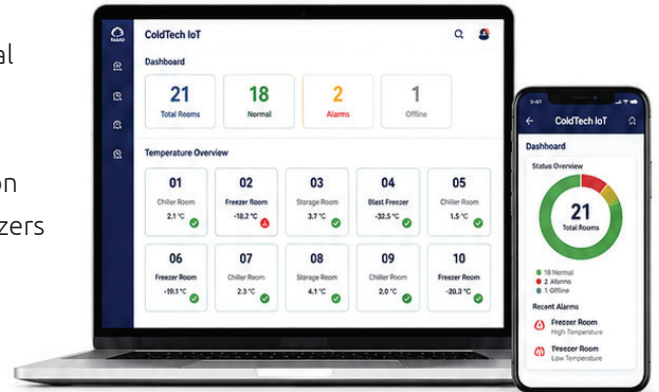
## One view across the facility

ColdTech IoT is particularly useful where a facility operates several refrigerated spaces.

A supermarket, central kitchen, food-processing plant, distribution centre or cold-storage facility may have multiple chillers and freezers operating at different temperature setpoints.

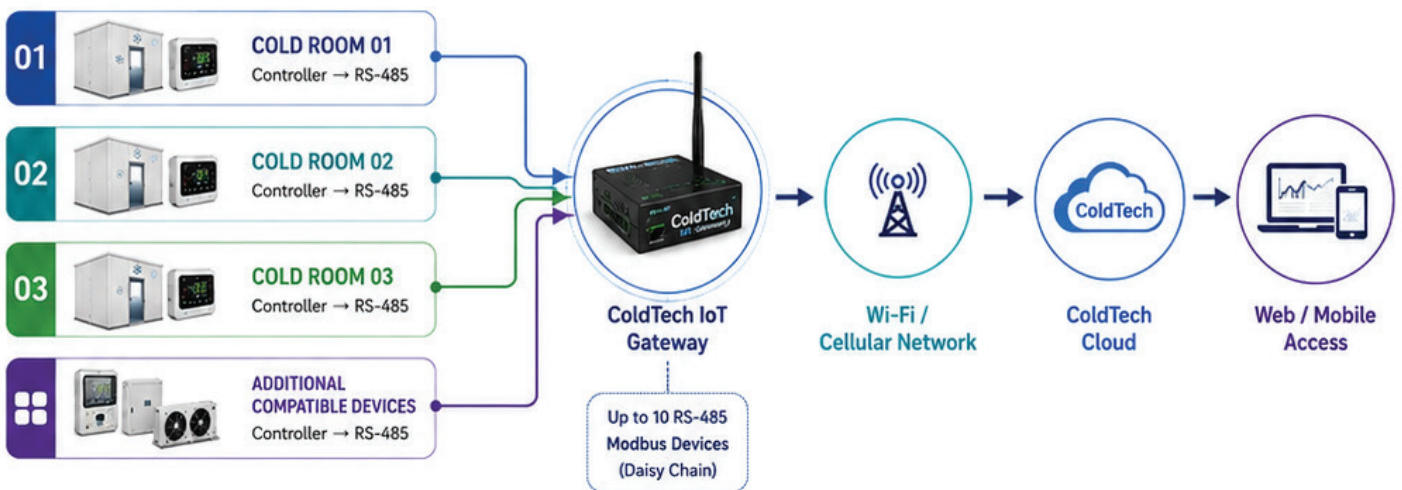
Checking every controller individually takes time.

A connected system brings key information together.



## Typical Integration

Compatible controllers connect through an RS-485 Modbus network to a coldTech IoT gateway, which sends data to the ColdTech Cloud for web and mobile access.



### BMS CONNECTIVITY

Selected ColdTech controllers support RS-485 communication for BMS integration, subject to the controller model and project configuration.

### CUSTOMIZED REFRIGERATION PANELS

ColdTech manufactures customized refrigeration control panels, including multi-cold-room, MCC, data-logging, ammonia, chiller, and other specialized electrical panels, enabling IoT monitoring to be integrated into a complete refrigeration-control solution.



### BUILT FOR EXPANSION

The system can start with a single cold room and expand to a complete facility, with communication architecture engineered according to the number of controllers, cable routing, networking requirements, and monitoring scope.



### RELIABLE & SECURE

- ✓ Secure data transmission
- ✓ Encrypted communication
- ✓ User access control
- ✓ Local control remains functional even if internet is unavailable
- ✓ Scalable and future-ready architecture

### CENTRALIZED MONITORING

One dashboard for the entire facility

### FASTER RESPONSE

Identify and respond to issues early

### BETTER INSIGHTS

Use data and trends to improve performance

### OPERATIONAL EFFICIENCY

Reduce downtime and manual checks

### LOWER COST OF OWNERSHIP

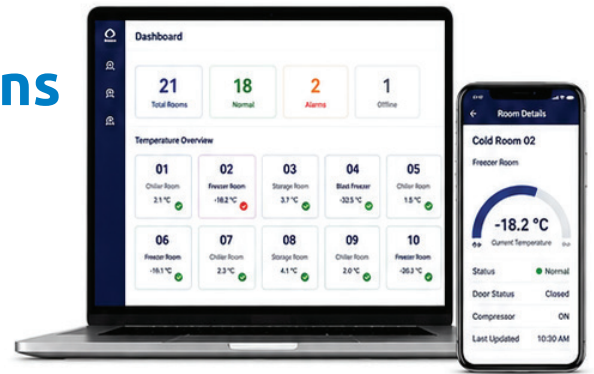
Prevent losses and optimize maintenance

# Applications

## Smart Monitoring for Temperature-critical Operations

ColdTech refrigeration solutions are used across food processing, cold-chain logistics, hospitality, supermarkets, healthcare and pharmaceutical applications, and agro and dairy refrigeration.

ColdTech IoT adds a digital monitoring layer to these refrigeration environments.



### FOOD PROCESSING

Monitor chillers, freezers, and production areas with historical temperature records.



### COLD STORAGE & WAREHOUSING

Centralize monitoring of multiple refrigerated rooms from a single platform.



### COLD CHAIN & DISTRIBUTION

Track storage conditions and respond quickly to alarms across logistics facilities.



### HOTELS, RESTAURANTS & CENTRAL KITCHENS

Monitor walk-in chillers, freezers, and food-storage areas remotely.



### SUPERMARKETS & HYPERMARKETS

View and manage multiple refrigeration zones through one monitoring system.



### HEALTHCARE & PHARMACEUTICALS

Support continuous temperature monitoring and traceable reporting for sensitive storage.



### AGRO & DAIRY

Monitor storage conditions for dairy products, fruits, vegetables, and other perishables.



### INDUSTRIAL REFRIGERATION

Integrate monitoring into customized refrigeration control and communication systems.



Across every application, ColdTech IoT ensures critical refrigeration data is accessible to the teams responsible for product quality, safety, and operational reliability.



REAL-TIME  
VISIBILITY



INSTANT  
ALARMS



BETTER DATA  
BETTER DECISIONS



#### REAL-TIME MONITORING

Live visibility of temperatures, equipment status, and alarms.



#### DATA LOGGING & REPORTING

Historical records, trends, and scheduled reports (PDF / CSV).



#### REMOTE ACCESS ANYWHERE

Secure web and mobile access from anywhere, anytime.



#### SECURE & RELIABLE

Role-based access, encrypted communication, and local control remains essential.



#### SCALABLE SOLUTION

Start small and expand as your facility grows and requirements increase.

# From Equipment to Information

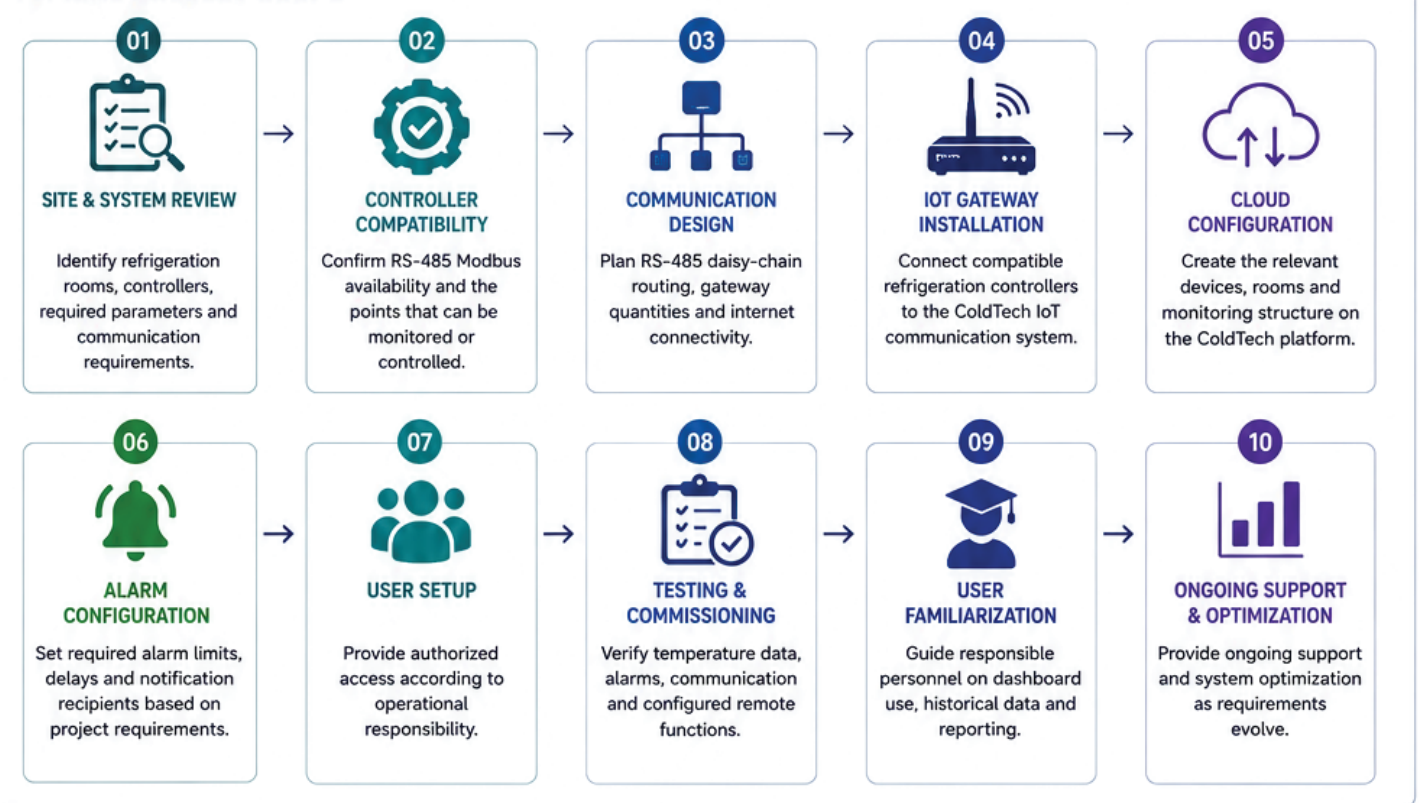
## A Practical IoT Solution for Refrigeration

A successful IoT installation starts with refrigeration engineering — not with the cloud.

ColdTech evaluates the refrigeration equipment, controller compatibility, required monitoring points, communication network and user requirements before defining the appropriate connectivity solution.



### TYPICAL PROJECT SCOPE



### INFORMATION REQUIRED FOR SYSTEM SELECTION



- Number of cold rooms or refrigeration systems
- Controller make and model
- Required monitored parameters and alarms
- Internet availability and Wi-Fi/cellular preference
- Need for remote parameter adjustment
- BMS integration requirement
- Number and type of users
- Reporting requirements

### TECHNICAL NOTE



Available monitoring points, alarms, remote-control functions, data intervals, and communication features depend on the selected controller, gateway, firmware, network, and project configuration and should be confirmed in the final approved ColdTech technical submittal.



### SECURE & RELIABLE

Secure cloud platform with role-based access and data protection.



### DATA SAFETY

Automatic data backup and secure storage in the cloud.



### 24/7 AVAILABILITY

Monitor your systems anytime, anywhere with complete peace of mind.



### EASY INTEGRATION

Seamless integration with ColdTech compatible controllers via RS-485 Modbus.



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our website

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