



Smart Controllers for Commercial Refrigeration Equipment



TC Series Case Temperature Controllers



Reliable Coolness, Controlled

Remove the risk of guesswork with PENN TC Series Refrigeration and Defrost Controllers, a full line of microprocessor-based, programmable operating controls for commercial refrigeration equipment.

Reputation is at stake every time food and beverages are served, and that's why reliable and precise temperature control is key. PENN TC Series controllers are equipped with a capacitive touch display making it easy to clean and sanitize. Further, there are no buttons or membranes to wear-out which is a common source of failure.

PENN TC Series controllers are designed to easily and efficiently maintain optimal temperature in commercial refrigerators, prep tables and freezers. TC series are available with optional inputs and corresponding output relays to control and optimize refrigeration system performance.

Depending on the model, a TC Series controller can manage the defrost cycle (active or passive), evaporator fan and alarm functions, and case lighting – a lot of power from a single smart device.

TC series are panel mount controllers with included snap-in retaining brackets. All TC controllers use industry standard NTC type temperature sensors, which are available with various IP ratings and cable lengths. TC3 models are available with built-in RS485 Modbus communication or have the option of adding remote communications via a TCIF adapter.

What are the Benefits?



Stylish and compact

design complements any equipment and requires minimal space.



High reliability

capacitive touch screen eliminates source of failure with mechanical keys.



Protection plus

IP65 rated enclosure minimizes risk of damage due to water and moisture.



Intuitive functionality

makes navigation and programming changes easy.



Energy savings

adaptive algorithm optimizes the defrost cycle as required by system demands.



Temperature control

reduces temperature swings to ensure longer food shelf life.

Optional Features

Low-profile option

available (39.5 mm depth) for compact refrigeration system designs.

Communications Adapter

enables Modbus RS485 communications.

Real-time clock

ensures daily defrost schedules are performed at the correct time.

Color display lights

are available in red (standard), white, blue and green.



TC Series Controller Platforms

TC3X Series

A compact temperature controller, ideal for applications requiring a reduced panel-mount depth (1-9/16", 39.5mm). Provides temperature control and readout, along with alarm management functions.

TC3B Series

Provides temperature control and readout, along with alarm and optional defrost cycle management functions.

TC3 Series

Provides temperature control and readout, along with alarm, alarm buzzer, defrost cycle, evaporator fan and lighting control management functions. Available with built-in RS485 Modbus communications or the option of adding communications with a TCIF adapter.

Controller	Temperature Control	Temperature Readout	Alarm Management	Defrost Cycle Management	Evaporator Fan Control	Lighting Control	Communications Support
TC3X Series	✓	✓	✓				
TC3B Series	✓	✓	✓	✓	✓	✓	
TC3 Series	✓	✓	✓	✓	✓	✓	✓

All TC Series controllers are eligible for a limited 3-year warranty.

Accessories and Sensors

Programming Key

Cloning tool for uploading and downloading custom controller configuration settings from one controller to another.

TTL to RS485 Modbus Serial Communications Interface

Communication interface that enables connection to an RS-485 Modbus Network. Can also include an optional real-time clock for scheduled defrost and HACCP data reporting.

Connecting Cable

1 m (3.28 ft)-long cable that connects with PENN devices or to a personal computer using a USB.

Temperature Sensors

NTC temperature sensors provide accurate measurement through an electrical signal. Available in IP67 (water resistant) or IP68 (waterproof) construction and various cable lengths.



Uses and Applications

TC Controllers work in a variety of cold storage and display environments:

- Commercial refrigerators and freezers
- Prep-tables
- Under-counters
- Back-bar units
- Glass door display cases
- Ice cream freezers
- Bottle coolers
- Pizza counters
- Saladettes
- Refrigerated display cases
- Walk-in coolers and freezers



Innovation and Excellence for 100 Years and Beyond

The superior global reputation of PENN refrigeration controls is born from a century's worth of quality, reliability, performance and innovation. Today, we're not only looking back on our milestones and achievements from the past 100 years, we're also confidently looking forward to the next century, with the momentum of our expertise and spirit of innovation propelling us.

It's our promise to provide refrigeration controllers with simple and intuitive user interfaces that optimize system efficiency. All with our commitment to quality and reliability. As technology evolves, PENN will be there to support your ever changing requirements.



A421 Series
Standard Electronic
Temperature Controls



System 450
Multi-Stage Temperature,
Humidity and Pressure Control



P470 Series
Electronic Pressure
Control

About Johnson Controls' Building Technologies and Solutions

Johnson Controls' Building Technologies & Solutions is making the world safer, smarter and more sustainable – one building at a time. Our technology portfolio integrates every aspect of a building – whether security systems, energy management, fire suppression or HVACR – to ensure that we exceed customer expectations at all times. We operate in more than 150 countries through our unmatched network of branches and distribution channels, helping building owners, operators, engineers and contractors enhance the full lifecycle of any facility. Our arsenal of brands includes some of the most trusted names in the industry, such as Tyco®, YORK®, Metasys®, Ruskin®, Frick®, PENN®, Sabroe®, Simplex® and Grinnell®.