

# Walk-In Temperature Displays & Light Switches



## Overview

Walk-in cooler and freezer Temperature Displays come in many different shapes and sizes. From a simple readout to alarms with monitoring capabilities, we will cover the current offerings in the industry and explore the details behind Arctic's Temperature Display & Light Switches.

A Temperature Display is exactly what it sounds like: a thermometer. It gives the user information of the temperature inside the box on a convenient place – typically next to a door.

Nowadays it's common to bundle the Temperature Display and the Light Switch into one module. This has become the status quo of the walk-in industry. It's the features and capabilities added to those modules that keep evolving, offering improved technology and better value for the customer.

## Types of Displays

### ANALOG-DIAL DISPLAYS

A dial Temperature Display is the most basic of all. No power required combined with a classic design. It will work even if power to the box is interrupted.

They work using a "bulb" which is filled with a substance that changes in density with temperature (akin to a mercury thermometer) and creates pressure against a spring loaded diaphragm which translates into a reading in a calibrated dial.

They are not impervious to miscalibration, but this can be corrected by popping off the front cover and making a small adjustment to the hand using the small screw in the center. While practical and economical, they have quickly been replaced by digital thermometers modules.



## DIGITAL DISPLAYS

A digital display is the most common and now the standard for the walk-in industry. They can be basic and not include a light switch, but regardless of its type, they need a source of power for the display to work. The most basic types use a battery while the most common ones use field wiring. Since a walk-in needs field supplied power for the lights and other door components, it only made sense to make use of this source and power the temperature display while bundling the light switch along with it.

Digital displays use a thermistor, which is a sensor cable that converts temperature into voltage which is translated in the digital display as temperature. The thermistor is typically smaller than the “bulb” found in the dial displays allowing for smaller opening through the walls and allowing for much longer sensor runs enabling the user to set the sensor in a desired location inside the box.

Advantages of digital displays are:

- Easy to read
- Temperature lead (thermistor) can be replaced
- Temperature leads are longer allowing flexibility on the location.
- Very accurate
- Readable in dark conditions
- Backup battery (some models)
- Optional features available (alarms, light switches, door switches, etc.)



## Types of Switches

### SINGLE POLE

A single pole switch is used on applications where only one switch is needed to control the lights of the walk-in box. It is called a single pole because it is connecting and disconnecting the HOT leg of the 120V electrical circuit.

The mechanism by which they can connect and disconnect the power to the fixture is either:

- Manual – known as a **ROCKER TYPE** switch
- Electronic – with the use of a relay and typically use a **TOUCH BUTTON** switch.



Rocker Switch



Touch Button Switch



### 3-WAY & 4-WAY SWITCHES

Sometimes controlling a light from a single location is inconvenient. This is where 3-Way and 4-Way switches come in handy. They allow the user to control their fixtures from different locations regardless of the setting of the other switch(es). They're a great option for large boxes and boxes with multiple doors. A 3-way switch is used when you want to control the light from two different locations. When more than two locations are desired a 4-way switch must be used.

If the additional switches don't need to display the temperature, they can be a simple rocker type switch like the [Hubbell 3 & 4 Way switches](#). Display Modules like the 75LC have 3 and 4-Way capabilities with optional accessories if a temperature display is desired in multiple locations.



## Arctic Digital Displays

### ARCTIC/WEISS 24DT

- Reliable, simple, and economic NSF Listed electronic digital thermometer
- Equipped with fast-on type spade terminals for electrical connections
- Probe connections separated from the power supply connections
- Temperature probe is double insulated for safety
- Displays the current temperature and logs the max/min temperatures experienced with the use of an optional momentary switch (switch sold separately)
- Display alarm for “open probe” or “no probe connected” conditions
- Optional 9 Volt battery can supply backup power for temperature readings when there is a blackout (Battery, Battery bracket and harness sold separately)
- Single pole Rocker Switch with pilot light to control interior lights



### KASON 1967-A3

- NSF & UL Listed Digital thermometer with easy-to-activate light relay with touch technology
- Plug and play digital temperature probe included - no calibration required
- Easy to read, ultra-bright red LED display changes between freezer and cooler temperature probes when both probes are connected (second probe optional).
- Can be set to display Celsius or Fahrenheit
- Designed for wet (outdoor) and dry locations
- Electrical Ratings: 120VAC @ 16AMPS
- Quick installation with no connectors required
- 3-way hardwire compatible
- 9V battery harness connection for back up provided (9V battery not included)
- Optional Door Sensor: Turns lights ON when door is opened / OFF after 10 min



## MODULARM 75LC & 75LCT

The 75LC& 75LCT can save energy, improve efficiency, reduce coil icing, lower maintenance costs and help to maintain product integrity. **Built-in data port for remote communication & system expansion.**

- Sophisticated function with easy operation
- Compact design for flush or surface mounting in a single gang weatherproof enclosure
- Patented Autoset Technology, combined with common pre-programmed default settings eliminates the need for manual programming in most applications
- PAS-PRO™ programming is simple and secure
- Simple 3 button user interface
- Simple Touch Screen user interface (75LCT)
- Built-in power supply (no remote transformer)
- Built-in rechargeable battery with recharging circuitry
- Built-in audible & visual alarm annunciation
- Built-in programmable dry contacts (N/O & N/C) for remote notification
- HI & LO alarm temp setpoints
- Prioritized intuitive visual alarm display
- Ring back feature provides timed repeat audible alarms during an alarm condition
- Readout in °F or °C with automatic scale conversion
- Adjustable alarm delays
- One or two compartment monitoring capable
- 3 & 4 way light switching capable with optional accessories
- Motion sensor compatible for light activation (optional)
- Plug-n-Play with current 75LC (75LCT)
- Bluetooth connectivity (75 LCT)
- Optional low voltage IP-1 Illuminated Push Button remains lit in a power failure to help find the door



## Take Away

Whether a simple dial or a smart controller connected to a data logging module, a temperature display is an essential component of any walk-in. It gives you information of the most important aspect on a walk-in – the inside temperature.

Newer designs have effectively incorporated the light switch built into the same module saving space and simplifying connections. They are user friendly and available with alarm capabilities and many other options to help you save energy and prevent accidental losses.

Some modules like the 75LC or 75LCT allow you to connect several modules together either wirelessly or hardwired and can relay information to a command center where it can be logged using monitoring software with built in alarm systems and notifications.

When quoting a new project, our knowledgeable sales team at Arctic can help you choose the best temperature/lighting monitoring solution to fit your budget and your needs. For existing boxes and replacements, Arctic's full line of temperature displays, and switches is readily available at our [parts website](#).

## REFERENCES

<https://arcticwalkins.com/installation-and-operation/>

<https://www.kitchenbrains.com/>