

## DATA LOGGING VS MONITORING

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As one of the largest US distributors of data logging and monitoring equipment, we receive hundreds of calls every year from users looking to put new systems in place. One of the first questions we ask is if “are looking for a monitoring system or data logging system?” And, it’s surprising how often they are confused as to what is really needed. Hopefully, by looking at the different functions that are available the differences between them will become clearer.

### WHAT ARE THE DIFFERENCES BETWEEN DATA LOGGING & MONITORING SYSTEMS?

In thinking about differences between data logging and monitoring systems there are 3 important factors to consider:

1. Data display
2. Alarming and notification
3. Data storage

Let’s discuss each of these in more detail.



One of the most basic functions of a system is the ability to display current data, for example the temperature inside a refrigerator. The data could be displayed on a simple LCD screen right on the device itself, via a connected PC, through a web page using a cloud based server or even via an app on a smart phone or tablet. So, when evaluating systems you really need to consider where and when you want to look at the current readings – a local display on the device might not do you much good when you are at home at night or on a weekend and get an alarm notification. Also, some users want more than just an indication of the current value, they may want the minimum and maximum value for the day/week/month.

The second thing to consider are any requirements for alarming. The majority of customers we work with are looking for a system that provides some type of notification in case the parameter, for example temperature, goes outside of some specified range. There are many ways that a system can provide an alarm indication including:

- Indicator on the display
- Relay closure
- External light and/or buzzer
- Email
- Text message
- Phone call/voice message



There are really a lot of different options in this area! Which is right for you depends on how quickly and where you need to be notified. If it you are measuring water level in a tank a local light or buzzer might be all that is needed if you want notice before it starts overflowing but if you are monitoring the temperature in a [LN2 freezer](#) with unique biological samples you would probably want a message or phone call anytime when the temperature goes up to allow you time to address the issue before the samples are damaged.

Finally, there is the issue of data storage. This is one of the main differences between a monitoring system and a [data logger](#). In most cases, either a data logger or monitoring system can, to a lesser or greater degree, provide both the display and notification capabilities discussed above. However, data loggers are specifically designed to provide non-volatile recording of the value of the parameters being monitored. Simple monitoring systems, for example panel indicators or auto-dialers don't have any recording capabilities.

## WHICH DO YOU NEED?

At the end of the day, the type of system you need really depends on the "Why?" question, which is to say "why are you taking the measurements?" If you are simply taking the measurements to allow you to get the current value, see if it's in range and maybe get an alarm if it's out of range then a monitoring system is all you need. However, if you need to do this AND get the data for further analysis, trending, record keeping or regulatory compliance then you really need a data logger.

## SUMMARY

While data loggers and monitoring systems share a lot of the same characteristics, there are 3 important factors to consider when choosing which type of system you need, data display, alarming, and data storage requirements. At the end of the day, it comes down to the question of why you are putting the system in place.