Choosing the Right Monitor for Your Application
An e-book guide to maximizing your resources and your services.
Introduction

It’s all about the drops per dollar

Getting your customers the product they need when they need it — efficiently — is one of your biggest challenges. How often do you dispatch a truck to fill a tank, only to find that it’s still nearly full? How many calls do you receive on a Friday afternoon from a customer needing a delivery now?

Tank monitors tightly control your fleet, drivers, and fuel so that you are never wasting resources because of a lack of information.

Never let your customers down — and keep your own costs in check — with Schneider Electric.

- Wireless tank monitoring
- Accurate and timely tank level data
- Robust and flexible data center software

Industries we serve:
- Commercial fuels
- Lubricants
- Oil and gas production
- Propane
- Heating oil
- Waste oil/water
- Agriculture (fertilizer)
- Chemicals

The possible reduction in overhead costs from improved tank fills and reduced deliveries.

20%
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Chapter 1: Narrow your options

Gain maximum control over distribution, collection, and vessels
Accurate and timely tank-level data with Schneider Electric

For as many different types of fuels and tanks that exist, there seem to be an equal number of tank monitor makes and models on the market.

Knowing where to even start looking can be overwhelming, let alone determining the right monitor for your business. Which monitors are available for your application? What benefits and features does each provide? Which transmission is right for you?

Schneider Electric wireless tank monitoring provides accurate and timely tank-level data, giving you more control over your inventory and costs. Using a variety of sensing technologies that deliver reliable data to the intuitive Centeron WebView portal, you can better schedule and dispatch your truck fleet, as well as reduce fuel costs through more efficient deliveries.

Harness a better understanding of your business through...

- Management reports for data analysis
- Polling capabilities for on-demand inventory levels
- Mobile app for specific site reporting
- Real-time set point alarms so customers never run out of fuel
Chapter 2: Monitor types and capabilities

A quick-guide to our suite of radio frequency and cellular monitors
RF monitors for nearly any application

We offer four RF monitor options.

- **Radar monitors** send a signal down to where the float is stationed to read the tank level, and then bounces back a signal that delivers the level information.
- **Pressure monitors** use a cable that sits at the bottom of the tank and collects pressure calculations to determine the reading.
- **Float monitors** use a mechanical arm to take readings. Float monitors are generally used in precarious situations where access to the tank may be difficult or if there is a lot of sludge on the tank bottom.
- **Gauge or propane monitors** are used for propane tanks, regardless of depth. Rather than a sensor, a gauge monitor magnetically reads the face dial on the propane tank.

All RF monitors features support automatic fill detection and a “poll now” feature that checks tank levels as often as needed. Because they are over-the-air upgradeable, devices are automatically updated as new features are added.

Be sure to compare and discuss your needs with the capabilities of each monitor with your Schneider Electric partner.
RF monitors for nearly any application

Encompass RF monitors

- Class I, Div 1, Group D certified
- 2.4 GHz radio
- 5-year battery life
- Scheduled and on-demand readings from WebView Data Center
- Radar: +/- 0.5% accuracy
- Pressure: +/- 1.0% accuracy
- Float & Propane: +/- 5% accuracy
- -40°C to +60°C operating range

All monitors have a one mile line of sight (500 feet obstructed).
We also offer turnkey radar, pressure, float, and propane cellular monitors that rely on cellular communication. These are some of our most popular monitors: Simply put the monitor on the tank, pull the magnetic strip, and the tank readings will transmit via the cellular network to your WebView portal. No external controller is required.

Cell monitors come in intrinsically safe and non-intrinsically safe models, depending on the type of fuel you have on site.
Choosing the Right Monitor for Your Application

Chapter 1
Monitor types and capabilities

Centeron Cellular Configuration

Cellular Tower
Tank 1
Tank 2

Centeron WebView
Data Center

Centeron Cellular Configuration
Chapter 3: Encompass controllers

Reliable communication for multi-tank sites
Choosing the Right Monitor for Your Application

Encompass controllers

Chapter 1
Chapter 2
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Chapter 6

Encompass RF Monitors

Ethernet and cellular transmission options

Schneider Electric’s Centeron Encompass gateways are the connection between your RF tank monitors and WebView, providing you with up-to-date inventory status information.

We offer two types of gateway technology for receiving and transmitting tank-level information:

- Cellular
- Ethernet

Both options support up to 40 monitors and are recommended for use when there are three or more tanks on a single site. Benefits include:

- Pull information 24/7/365
- Delivers information on each tank in one single report

How monitors, controllers and the data center communicate

Encompass monitors communicate wirelessly with one of these controllers.

Controller communicates with WebView.

Data Center.

2-way communication for on-demand polling.

Encompass RF Monitors

How monitors, controllers and the data center communicate
Ethernet and cellular transmission options

Encompass Gateway Configuration

Encompass controllers

Ethernet and cellular transmission options

Encompass Gateway Configuration

Encompass WebView Data Center
Chapter 4: A recap of what to know

Understand the ins and outs of your tanks and landscape
By now you should have a good understanding of your monitor and communication options, along with the best practices outlined in earlier chapters:

- **If you have a single tank or a few tanks on a remote site**, your best option is usually the economical cellular monitor.
- **When you have a bulk site or more than three tanks**, an Encompass Gateway Controller and RF monitors are typically recommended to deliver the fastest ROI.

There are many variables that go into your monitor and controller choices. On the following pages are some of the key areas your Schneider Electric partner will discuss with you.

⭐ By knowing what to expect, you can come equipped with a better understanding of your own needs and considerations.
Best practices and key variables

**Type of fuel:** Although any monitor will work in diesel or a lube, know the exact contents of each tank so that the appropriate weight can be applied to the monitor. For instance, a brass weight would contaminate diesel exhaust fuel.

**Depth:** Tank depth is important; as noted previously, certain depths will trigger a different type of monitor. Be sure to know whether your tank has a double wall and whether the pressure is vented (for pressure applications).

**Vertical or horizontal:** Knowing this is important to verify your tank measurements; some vertical tanks are partially buried and that makes it difficult to guess their depth.

**Bung flush or extended pipe:** If you have an eight-foot tank and a two-foot pipe, you may measure it at 10 feet but in reality you don’t want to include the two feet of pipe. Knowing these details will ensure you get an accurate reading from your monitor.

**Access:** Know whether the tank can be accessed easily and whether there is more than one hole.

**Propane tanks:** If you need one, Schneider Electric can supply a remote-ready dial when the monitor is connected.

**Distance from the top of the tank to the dial:** Some distances require longer connections. It’s best to know this ahead of time, especially if long trips are required to reach remote tanks.
Multi-tank site evaluations

There are several factors to consider that are unique to multi-tank sites.

**Location:** If you use an Encompass gateway, you want to ensure that the power/Ethernet is located within a good line of sight and location of the tank. If the tank is on the other side of a steel structure or at the opposite end of a large site, that will be a challenge. Know your landscape ahead of time.

**Any obstruction:** Obstructions can make tank measuring difficult, so it’s good to know whether the tanks are interior or exterior, the material that any enclosure is made of (rebar can cause issues with the signal, for instance), and how far from the building the tanks are located. This evaluation will help ensure you have a good connection before the monitors are applied.

**Power:** It sounds simple, but ensure that power to each tank is available. Your IT team can help answer questions around this topic, such as: If you have more than three tanks, do you have access to the Ethernet? If you have fewer than three tanks and are using cellular monitors, who is your cell provider?
Chapter 5: Customer examples

Test your knowledge
Let's take a look at a few customer examples and discuss the questions and information that need to be gathered in order to make the right decisions when selecting a tank monitor.

**Customer 1** has two gasoline and three lube tanks on site. The gasoline tanks hold 10,000 gallons and the lube tanks hold 2,500 gallons. There is an office on site with power and Ethernet.

**Key questions to know**

- Are the tanks horizontal or vertical?
- Are intrinsically safe monitors needed?
- Where exactly are the tanks located on the site? If they are all on the same site, are they in line of sight of the office?
- What is the tank depth of each tank?
Customer 2 has six tanks at three different sites. Each site has one 5W20 tank (5,000 gallons) and each site has one diesel tank (10,000 gallons).

Individual cell monitors are best in this instance, where there are three or fewer tanks on one site.

**Key questions to know**

- Are intrinsically safe monitors needed? (Tanks may have been changed on a site; it’s rare, but best to know for sure)
- What is the tank depth of each tank?
- Are the tanks vertical or horizontal?
Customer 3 has eight gasoline tanks (10,000 gallons) and six lube tanks (2,500 gallons) on site. There is an office on site with power and Ethernet. The customer also has 10 service station customers with underground tanks that they would like to monitor.

**Key questions to know**

- Are intrinsically safe monitors needed?
- Are all tanks on the same site?
- What is the tank depth of each tank?
- Are the tanks vertical or horizontal?
- Are the tanks in line of sight of the office?
- Is it possible to get access to the Ethernet?

Although the customer will need to use monitors from another provider to monitor the underground tanks, the data from those monitors can still be communicated to WebView, giving you a comprehensive view of all of your tanks all in one system.
Chapter 6: Stop guessing, start saving
Get bottom-line benefits with Schneider Electric
Protect and grow your business with tank monitoring

Schneider Electric’s tank monitoring systems provide a total solution for monitoring your tanks, analyzing current and historical tank-level data, and tracking your progress towards your efficiency goals. Leverage reports and alerts to manage changing tank levels and mitigate the risk of delivery problems and costly stock outs.

Maximize the drops per dollar with a robust tank monitoring solution.