TADIRAN BATTERIES

Batteries for Smart Utility Meters

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Abstract

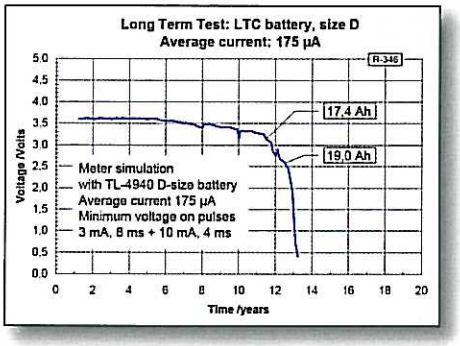
Smart metering systems can reduce energy consumption by up to 15 % thus contributing to energy efficiency and climate protection. Batteries are used as the power source for gas, water and heat meters and must last between 10 and 20 years.

Batteries for meter functions

One typical application is an electronic gas meter using a Lithium battery as the power source. The electronics require a mix of low and high currents to power microprocessors, sensors and flow measurement functions and needs a battery capacity of 16.2 Ah over 11.5 years without falling below 3.2 Volts when operating between -20°C and +60°C.

These requirements can only be met with a single cell by using the Lithium thionyl chloride (LTC) system.

The chart shows a real time 13 years test on this battery.



Batteries for prepayment meters with radio module

A common method of transmitting meter reading data is by means of a radio module. A prepayment gas meter with a radio module and a shutoff valve could typically have an average current of 140 µA, valve current peaks up to 30 mA and be required to work for 11.5 years with temperatures down to –20 °C. Such a requirement can only be met with a single cell by an LTC system battery. An analysis shows that the battery voltage will fall below the minimum 3.0 Volts after about 10 years due to increases in internal resistance even though there is still enough capacity to last much longer.

The addition of a capacitor of suitable size and low leakage current improves the expected service life to about 12 years. Where radio modules require more current or longer transmission times, the **PulsesPlus** technology is the most cost effective solution.

Tadiran Batteries GmbH

Tadiran Batteries is a leader in the development of lithium batteries for industrial use. Its Lithium Thionyl Chloride (LTC) technology is well established for more than 25 years. Tadiran LTC-Batteries are suitable where a 3.6 Volt high energy primary battery is required for up to ten years and more stand alone operation.

The **PulsesPlus** technology, providing high current pulses in combination with high energy, has been successfully introduced into the market and plays a significant role especially in the utility meter market segment.