

# Advanced lithium batteries

## Flexible power for dynamic metering needs



# Saft. Expert in batteries

## Advanced solutions in a world of industry

Saft is the world's premier designer and manufacturer of specialist batteries for high-end applications. We are involved pro-actively in meeting the diverse needs of multiple industrial, transportation, space and defence markets with innovative and powerful solutions. Now, as budgets and logistics prompt unprecedented growth in remote and automated metering, an urgent need has emerged for reliable and accurate data handling.

With a share of nearly 50%, Saft is the uncontested market leader. Working with major manufacturers and OEMs, we are developing advanced technologies for evolving electricity, gas, water and heat meters.

### Your local partner, with a global footprint

With production facilities of the highest standard in France, Germany (for the FRIWO brand), UK, USA and China, Saft meets factory-to-market schedules with minimised transportation times and reduced overall costs.

Saft's service is global. Our newly expanding markets in Asia join a worldwide network – including key manufacturers such as Itron, Actaris, Hydrometer, Elster, Kamstrup, Contazara, Jiangsu Linyang, Ningbo Sanxing – where high-tech power solutions are matched with world class technical and after-sales support.

### Saft – an integrated service at every stage

#### Design

- Liaise directly with application engineers
- Optimised battery selection
- Counselling
- Personalised service, tailored to your specific needs

#### Qualification

- Test data
- Product knowledge
- Life time modelling
- Customised testing

#### Deployment

- ISO
- Leadtime
- Proximity
- Reproducibility

#### Operations Management

- Life of battery = life of equipment
- Zero maintenance
- Reliability
- Predictability
- Traceability

#### Retrofit

- Obsolescence management
- Collection
- Recycling
- Life time support



# A total capability

## Intelligent power for reliable metering

### The best solution

Saft primary lithium batteries are safe, compact and lightweight. Because they are sealed in corrosion-proof containers you can be sure of their stability and reliability. They exceed the essential characteristics required for hi-tech indoor and outdoor metering applications. Operational lives of 20 years are not uncommon in certain meter types.

Saft's experience in metering parallels the fast evolution of modern electronic applications. Today, OEMs of electronic utility meters demand highly dependable, autonomous power to maintain the advanced functionality of technologies including:

- Automatic Meter Reading (AMR), such as
  - walk-by meter reading
  - drive-by meter reading
  - fixed networks
- Advanced Metering Infrastructure (AMI)
- Automated Meter Management (AMM).

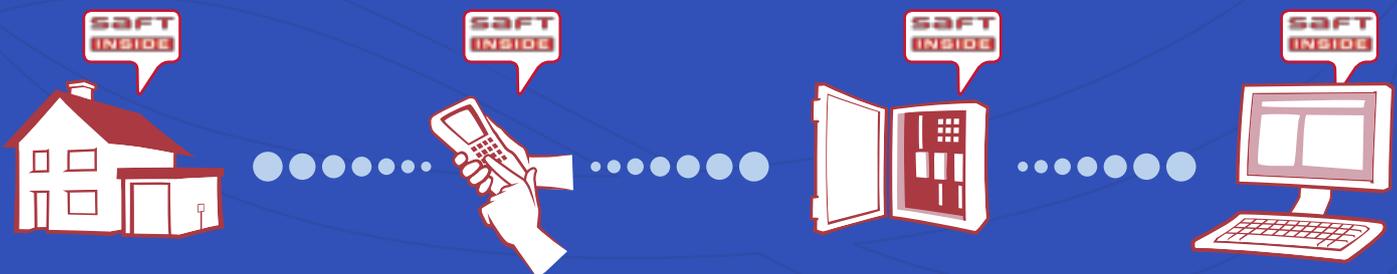
In gas, water, electricity and heat meters – as well as in heat cost allocators – batteries provide power for:

- Meter operation (if an autonomous unit)
- Generation of a pulse output for the AMR module
- Emergency back up power (if mains powered) for memory functions, internal clock, and for enabling tariff changes
- Meter accessories and auxiliary devices, including:
  - gas volume correctors
  - Radio Frequency (RF) signal repeaters
  - data loggers
  - satellite communication
  - safety shut down valves.



### Enabling AMR for fast and frequent use

AMR systems enable fast, remote access to utility meter data and add value by enabling meter management and historical and statistical analysis.



# Saft primary lithium

## Durable, low cost, high reliability...

Because metering power requirements vary from pulses of a few milliamps for operation over a few feet, to around 2 Amps to reach over several kilometers, selection of the correct cell type is essential.

By offering a very wide range of non-rechargeable lithium cells, Saft can provide the perfect solution for your metering and meter reading needs.



## ...for the life of your metering application

The long operational life of up to 20 years means that Saft primary lithium batteries can potentially match or exceed the life of your application.

### Construction types

Saft primary lithium batteries are available in high energy concentric **bobbin**, or power-optimised **coil** and **spiral** constructions.\* The Saft worldwide network of application engineers will assist in advising on cell type and will find the optimum configuration to meet predicted operating temperatures, storage conditions and other performance criteria.

\*For more information on cell types and construction methods, refer to our publication: Primary Lithium Batteries Selector Guide, Document No. 31048-2.

### Three lithium chemistries, extensive features

Saft's range of Li-SOCl<sub>2</sub>, Li-SO<sub>2</sub> and Li-MnO<sub>2</sub> enables unparalleled levels of design flexibility, between:

- Low self-discharge rate
- Minimum passivation through optimised electrolyte formulation
- Excellent safety characteristics: most meet 'Intrinsic Safety' standards for ATEX applications
- UL and IEC 60086-4 recognised
- Flexible pulse current capability
- High energy density
- Long shelf life
- High voltage
- Highest capacity on the market (e.g. exceeding 2.6 Ah for AA format)
- Resistance to extreme temperatures from -60°C to +150°C
- Resistance to corrosive environments



# An exceptional product range

Li-SOCl<sub>2</sub>

## 3.6 V

- Bobbin, coil or spiral construction
- Operating voltage > 3 V
- Operation in temperatures from -60°C to +150°C\*
- Non-flammable electrolyte
- Cells non-pressurised at room temperature
- Guaranteed hermeticity up to +165°C\*
- Stainless steel container
- Unrivalled nominal capacities

Li-SO<sub>2</sub>

## 3.0 V

- Spiral construction
- Operation in temperatures from -60°C to +70°C
- Superior power at -40°C
- Non-flammable electrolyte
- Superior pulse capability
- Excellent capacity above 1 A\*
- Guaranteed hermeticity up to +90°C

\*depends on cell type.

Li-MnO<sub>2</sub>

## 3.0 V

- Spiral construction
- Operation in temperatures from -40°C to +70°C
- Non-corrosive electrolyte
- Cells non-pressurised at room temperature
- Good pulse capability
- Excellent voltage start up after long-term storage
- Competitive capacity at high current and low temperature





**Saft is committed to the highest standards of environmental stewardship.**

Implementing this commitment to minimise the impact of its products and operations on the environment means that Saft gives priority to recycled over unrecycled raw materials, reduces its plant releases into the environment year after year, minimizes water usage, and ensures that its customers have recycling solutions for their batteries at the end of their lives.

For more information, please consult our web site: [www.saftbatteries.com](http://www.saftbatteries.com)

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Doc N° 31090-2-1008  
Edition: October 2008

Data in this document is subject to change without notice and becomes contractual only after written confirmation.

Published by the Communications Department.

Photo credits: Saft

Société anonyme au capital de 31 944 000 €  
RCS Bobigny B 383 703 873

Produced by Arthur Associates Limited.

