

# Tel.X Ni-Cd battery

The compact solution for stationary applications



**SAFT**

# Tel.X, delivering high-energy performance in a compact maintenance-free package



## Tel.X: guaranteed power continuity for remote or hard to access installations

Tel.X delivers exceptional reliability to offer effective insurance against unexpected outages for industrial installations where continuity and reliability of power supplies is an absolutely critical factor, such as oil & gas exploration and production, utilities and manufacturing plant. Tel.X is especially suited for remote and/or decentralized locations where travel time and restricted access demand an optimized maintenance regime

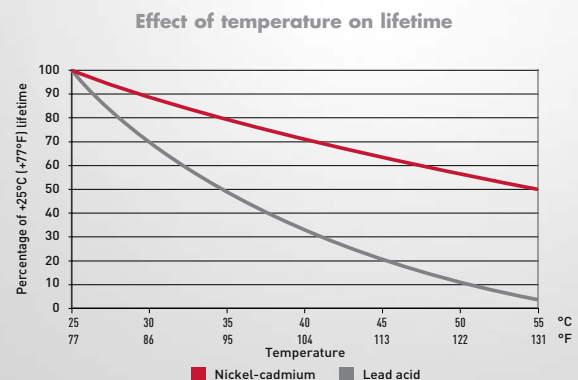
and guaranteed performance to ensure quality of service.

Typical Tel.X applications include supporting vital control and instrumentation systems in onshore and offshore oil & gas facilities for outdoor or indoor installations.

Tel.X is also ideally suited for railway signalling and infrastructure applications, for trackside signals, switches, crossing control signals & barriers and other equipment – both to guarantee public safety and ensure the effective control of trains and other traffic on highway crossings.

## Tel.X's robust Ni-Cd construction and engineered electrolyte ensure total reliability and a long, predictable service life.

The Tel.X battery has a Ni-Cd construction designed for more than 20 years' service life at + 25°C (+ 77°F). Like any other battery, high temperature operation will reduce its life expectancy. For comparison, at + 35°C (+ 95°F), the lifetime reduction for a Ni-Cd battery is 20%, while it reaches 50% for a lead-acid battery.



# Tel.X, perfectly adapted for battery installations in tight spaces



The Tel.X Ni-Cd battery delivers the optimum combination of high-energy performance, reliability and long-life in a new compact, modular maintenance-free design that ensures the lowest possible TCO (Total Cost of Ownership). Thanks to its outstanding energy density of up to 100 Wh/l, Tel.X is the perfect direct replacement for VRLA batteries in stationary back-up applications where limited space is available. Tel.X reduces battery weight by 30% in the same space.

## Reliable backup performance guaranteed – even in extreme temperatures

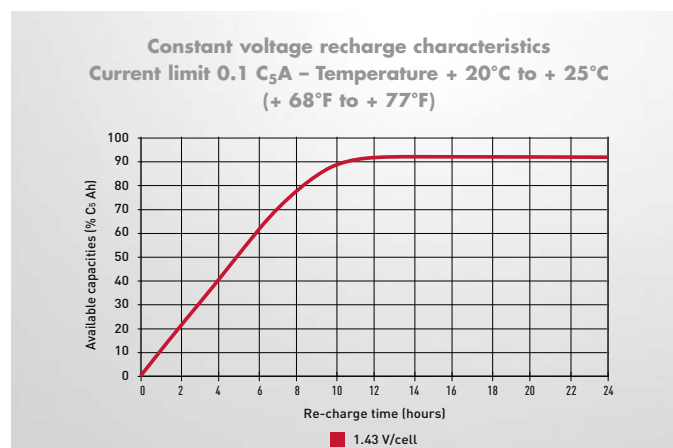
Tel.X offers the ideal combination of reliability, performance and long-life over a wide range of operating temperatures.

- Utilizes robust construction based on unique well-proven Ni-Cd electrochemistry
- Eliminates the corrosion, sudden death and thermal runaway risks associated with VRLA batteries
- Combines superior performance with high charging efficiency
- Operates in temperatures from - 20°C to + 50°C (- 4°F to + 122°F) and tolerates - 50°C to + 70°C (- 58°F to + 158°F) for short durations
- Exceptional reliability removes the need for dual-redundant systems

## Operating and maintenance requirements are reduced – even for remote installations

Tel.X's reliable maintenance-free design is perfectly adapted for difficult to access installations.

- Maintenance free design, with a low pressure venting system, reduces water consumption to an absolute minimum
- No topping up is necessary (in recommended operation) – water addition is possible under exceptional circumstances
- Periodic checks of charging voltage are recommended, but Tel.X requires no further attention once installed
- Extended lifetime matches the stationary equipment it supports





# Tel.X, for ease of installation and operation



## Easy installation makes Tel.X a simple and direct replacement

Compact modular design makes Tel.X the ideal direct replacement for VRLA batteries in backup floating applications - it fits easily within the available space and is fully compatible with existing equipment.

- Highly compact design optimizes:
  - Volume: high energy density of up to 100 Wh/l
  - Weight: 30 % lighter than VRLA
- Modular design suits specific capacity needs:
  - From 83 to 185 Ah in modular block construction
  - Each module comprises 3 to 10 cells in flame retardant material
  - Parallel assembly possible up to 4 strings
- Layout provides easy access to front terminals
- Lifting handles on each module ensure easy handling and installation
- Can be assembled into standard stationary racks

## Designed for ease of operation

Tel.X offers the ease of operation that contributes to a long and trouble-free service life.

- Tel.X is compatible with VRLA charging systems thanks to its single step 1.43 V /cell floating voltage, with no need for temperature compensation
- Environmental protection for terminals and connectors is provided by a protection cover (meeting IP2 level against electrical shock according to safety standard EN 50272-2/IEC 62485-2)
- Cabling is carried out from back to front, with front accessible connection points between adjacent blocks
- Active cooling is not required, even in harsh environments
- Central gas venting system option is available for use in enclosures without ventilation
- Tel.X batteries may be stored for up to one year without special maintenance before installation

Tel.X  
Ni-Cd battery

# Tel.X, the sustainable battery solution



## Designed with sustainability in mind

Tel.X is purpose designed for minimum environmental impact throughout its entire life cycle, from manufacturing to operation and recycling at end-of-life.

- Tel.X manufacturing processes are designed to minimize consumption of upstream energy
- In operation, Tel.X contributes to a significant reduction in energy consumption throughout its service life
- Highly efficient charging reduces peripheral energy consumption, including cabinet air conditioning and maintenance
- Advanced design reduces the environmental impact of waste processing

Fully conforms with quality, safety  
and environmental standards



## Meets the highest quality standards including:

### Electrical

- Certified IEC 60623 - Secondary cells and batteries containing alkaline or other non-acid electrolytes
- Vented nickel-cadmium prismatic rechargeable single cell
- Certified NF C 15-100 - Low-voltage electrical installations

### Safety

- EN 50272-2/ IEC 62485-2 - Safety requirements for secondary batteries and battery installations Part 2: Stationary batteries
- UL-94 V0 - UL standard for flammability safety of plastic materials for parts in devices and appliances testing

### Quality

- ISO 9001 and ISO 14001
- Saft world class continuous program

### Environment

- Fully recyclable
- RoHS - Although batteries and accumulators are not within the scope of the RoHS directive, Saft has taken voluntary measures to ensure that the substances prohibited by RoHS are not present in the battery, with the exception of the electro-chemical core
- REACH - The Saft Group has adopted internal procedures to ensure conformity with the European REACH (Registration, Evaluation, Authorisation and Restriction of Chemical Substances) Regulation

# Tel.X

## Technical data



### Tel.X Physical properties

Cell type	Capacity C <sub>5</sub> Ah	Height		Width		Approx. weight per cell		Internal resistance*	Cell connection bolt per pole
		mm	in	mm	in	kg	lb		
TLX 80	83	254	10	105	4,13	2,2	4,8	2,35	M6
TLX 100	103	254	10	105	4,13	2,7	5,9	1,88	M6
TLX 150	152	254	10	105	4,13	4,1	7,9	1,37	M6
TLX 180	185	254	10	105	4,13	5,1	10,0	1,15	M6

\* Inter-cell connections included

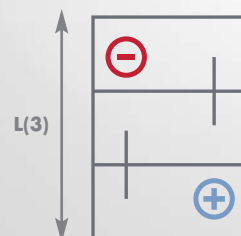
Cell type	Length per block															
	3 cells		4 cells		5 cells		6 cells		7 cells		8 cells		9 cells		10 cells	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
TLX 80	127	5,0	166	6,6	206	8,1	245	9,7	285	11,3	325	12,8	364	14,4	404	15,8
TLX 100	154	6,1	202	8,0	251	10,0	299	11,8	348	13,7	397	15,7	445	17,6	494	19,5
TLX 150	209	8,3	276	10,9	342	13,5	409	16,1	476	18,8	-	-	-	-	-	-
TLX 180	250	9,9	331	13,0	411	16,2	492	19,4	-	-	-	-	-	-	-	-

### Flexible block assembly and configuration

Tel.X batteries can be assembled either on shelves or into Saft's standard and seismic battery racks. The rack assembly method (with 2 rows of Tel.X on each step) enables the installation to be optimised in terms of footprint and volume. For series connection on racks or on shelves, a block with an even number of cells should be selected to ensure short, straight, inter-block connectors. If it is necessary to specify a block with an odd number of cells it should be placed at the end of a row.

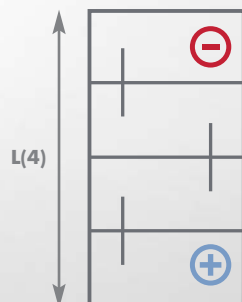
#### Block with an odd number of cells

L(3) - L(5) - L(7) - L(9)



#### Block with an even number of cells

L(4) - L(6) - L(8) - L(10)



Performance characteristics after prolonged float charge of fully charged cells  
Available Amperes at + 20°C ± 5°C (+ 68°F ± 9°F)

**Final voltage: 1.00 V/cell**

Cell type	C <sub>5</sub> Ah	Hours						
		10	8	5	3	2	1,5	1
TLX 80	83	7,9	9,9	15,3	24,7	35,2	46,5	58,0
TLX 100	103	10,3	12,8	19,7	32,0	45,6	60,0	73,9
TLX 150	152	14,9	18,5	28,5	46,2	66,4	83,8	101,0
TLX 180	185	18,3	22,8	35,1	56,7	81,6	102,0	123,0

**Final voltage: 1.05 V/cell**

Cell type	C <sub>5</sub> Ah	Hours						
		10	8	5	3	2	1,5	1
TLX 80	83	7,8	9,7	14,9	24,0	33,7	42,2	50,6
TLX 100	103	10,1	12,6	19,3	30,9	43,7	54,2	64,7
TLX 150	152	14,6	18,2	27,9	44,3	63,0	76,2	89,9
TLX 180	185	17,9	22,3	34,2	54,5	77,4	93,3	110,0

**Final voltage: 1.10 V/cell**

Cell type	C <sub>5</sub> Ah	Hours						
		10	8	5	3	2	1,5	1
TLX 80	83	7,6	9,3	14,4	22,5	31,2	38,0	44,8
TLX 100	103	9,8	12,1	18,6	29,0	40,0	48,8	57,5
TLX 150	152	14,2	17,5	26,9	41,6	56,3	68,7	81,2
TLX 180	185	17,4	21,5	33,0	51,0	68,9	84,0	99,5

**Final voltage: 1.14 V/cell**

Cell type	C <sub>5</sub> Ah	Hours						
		10	8	5	3	2	1,5	1
TLX 80	83	7,3	9,1	13,7	20,7	27,5	33,6	39,6
TLX 100	103	9,5	11,8	17,7	26,8	35,2	42,7	50,1
TLX 150	152	13,7	17,0	25,6	38,4	48,9	57,9	66,7
TLX 180	185	16,8	20,9	31,5	47,1	59,8	70,4	80,9



# Saft is committed to the highest standards of environmental stewardship

As part of its environmental commitment, Saft gives priority to recycled raw materials over virgin raw materials, reduces its plants' air and water releases year after year, minimizes water usage, reduces fossil energy consumption and associated CO<sub>2</sub> emissions, and ensures that its customers have recycling solutions for their spent batteries.

Regarding industrial nickel-based batteries, Saft has had partnerships for many years with collection companies in most EU countries. This collection network receives and dispatches our customers' batteries at the end of their lives to fully approved recycling facilities, in compliance with the laws governing trans boundary waste shipments.

This collection network meets the requirements of the EU batteries directive. A list of our collection points is available on our web site. In other countries, Saft assists users of its batteries in finding environmentally sound recycling solutions. Please contact your sales representative for further information.



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