

1p INT 176065 isr FL

Rechargeable Li-ion battery

3.65 V high energy Li-ion battery, high performance and **intrinsic safety**

Saft's 1p MP 175065 isr FL battery is compatible with applications requiring intrinsic safety, long operating life under cycling conditions and excellent performance in temperature environments from -30°C to +60°C.

Benefits

- Excellent operating lifetime in calendar and cycling life with a very stable internal resistance
- High level of safety, compatible with potentially explosive atmospheres
- Long shelf life with extremely low capacity loss in storage
- Smaller environmental footprint than other technologies

Key features

- High energy density
- Cycle life more than 2250 cycles at 100% DoD at C/2 discharge, C charge
- The battery connection area is resin encapsulated with flying leads
- Aluminium casing
- Hermetically sealed
- Operates in any orientation
- Maintenance free
- No memory effect
- **Manufactured in the EU**

Designed to meet all major quality, safety and environmental standards

- Safety: UL 1642 and IEC 62133-2:2017
- Transport: UN 3480, UN 38.3
- IEC 60079-11 compatible component (see over for details) ^[v]
- Quality: ISO 9001, Saft World Class program
- Environment: ISO 14001, RoHS and REACH compliant

Typical applications

- Backup for industrial equipment
- Medical devices
- Tracking
- Oil & Gas applications
- Internet of Things
- Wireless Sensor Networks
- Emergency lighting



Electrical characteristics

Typical capacity (at C/5 rate, +25°C, 2.5V cut-off) ^[i]	5.6 Ah	
Nominal voltage	3.65 V	
Nominal energy	20.4 Wh	
Recommended maximum discharge current ^[ii]	Continuous	11 A (~2C rate)
	Pulse	22 A (~4C rate)

Physical characteristics

Thickness ^[iii]	20.6 mm
Width (max)	62.0 mm
Height (max not including cable)	73.5 mm
Typical weight	155 g
Volume (including terminals)	0.094 l
IEC battery designation	1INP21/62/74
Saft internal cell designation	MP 176065 ise
Saft part number	70463K
Saft model / type reference	1p INT 176065 isr FL GP31659

Operating conditions

Typical cut-off voltage	2.5 V	
Charging method	Constant current/Constant voltage	
Charging voltage	4.2 ± 0.05 V	
Maximum continuous charge current ^[iv]	5.6 A (~1C rate)	
Operating temperatures	Charge	-30°C to +60°C
	Discharge	-30°C to +60°C
Storage & transportation temperatures	Recommended	+10°C to +30°C
	Allowable	-40°C to +60°C

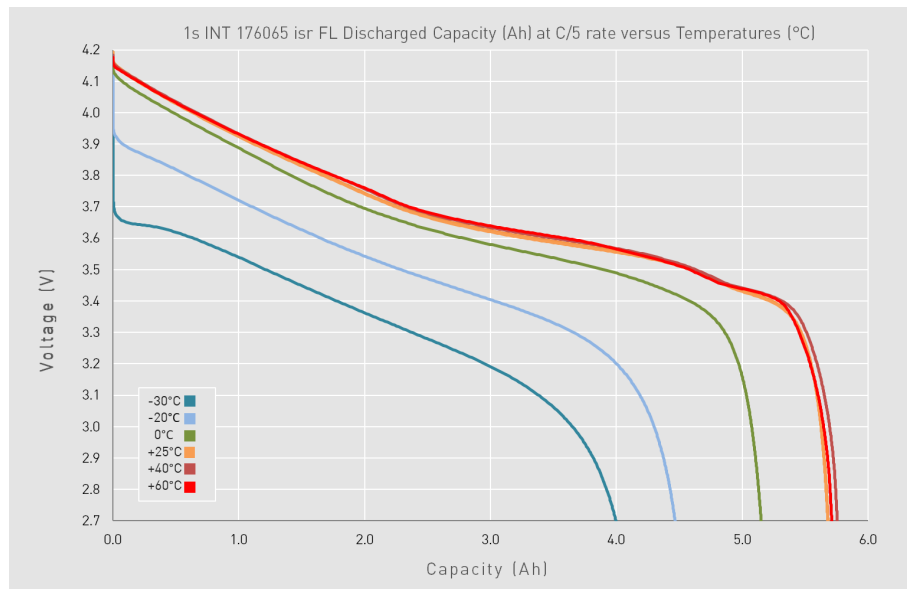
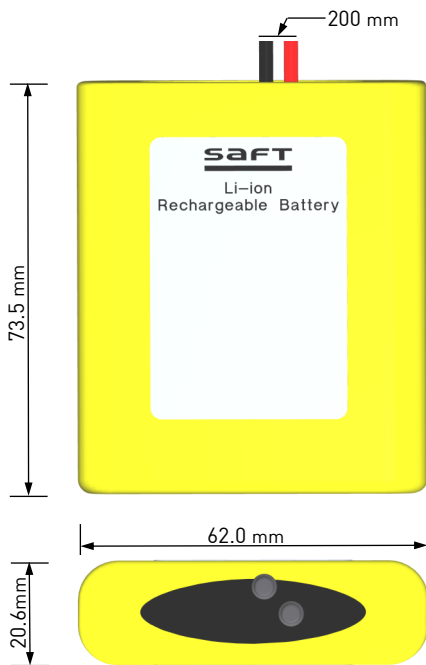
[i] Can vary depending on temperature and discharge rate

[ii] Can vary depending on temperatures. Consult Saft

[iii] At beginning of life, 100% State-of-Charge. May increase with temperature and the cells' calendar life. Refer to drawing GP 31659.

[iv] For optimised charging below 0°C and +60°C, consult Saft

[v] Compatible with a temperature classification T4 for an ambient temperature of +60°C. The temperature classification shall be verified during the assessment of the intrinsically safe apparatus in which the cell will be used.



Battery assembly

The battery must be mechanically and electrically integrated into a complete system. The battery must include electronic devices for performance, thermal and safety management specific to each application.

IEC 60079-11 Ed. 6.0:

- The battery is verified as compliant with the following parts of the above standard; 6.3.2.1, 6.3.3, 6.3.5, 6.3.6, 6.3.12, 6.6.1, 6.6.2, 10.5.1, 10.5.2 and 10.5.3

Battery surface temperature

- The cell can be compatible with a temperature classification of T4 at an ambient temperature of +60°C.
- The temperature classification shall be verified during the assessment of the intrinsic safety apparatus in which the battery is to be used.

Spark ignition

- The spark ignition risk shall be verified during the assessment of the intrinsically safe apparatus in which the battery will be used.

Storage

- The storage area should be clean, cool (preferably not exceeding +30°C), dry and ventilated. For long term storage keep the battery within 30±15% State of Charge.

Warning

- Do not crush, short-circuit, incinerate, dismantle, immerse in any liquid or heat above +60°C
- Observe charging conditions at all times

Pretest conditions	Value
Test chamber temperature	60 °C
Cell state of charge	100 %
Short circuit resistance	≤ 3.0 mΩ

Test data recorded	Value (max)
Maximum current	262.6 A
Cell maximum surface temperature	113.7 °C
Temperature rise	86.4 °K

Test results	Result
Temperature >100 °C and ≤135 °C	Temperature class T4
Externally visible electrolyte ≥24 h	No visible electrolyte
Discharge current interruption	No partial discharge
IECEx ExTR Reference No.	FR/INE/ExTR19.0047/00

