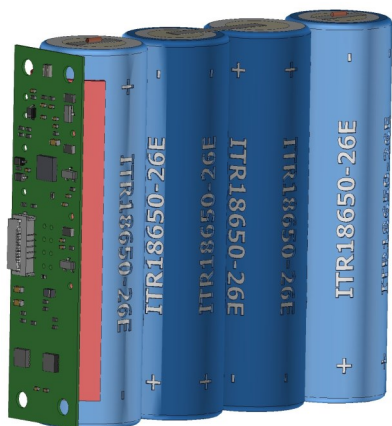


# IoT 4s1p 18650

## Designed to be a Fit & Forget battery solution

Safts' 4s1p ITR 18650-26E IoT battery is compatible with commercial applications requiring safety, reliability, long operating life under cycling conditions, offering excellent performance for industrial and commercial IoT applications.



### Benefits

Excellent operating lifetime and cycling with a very stable internal resistance. Standard form factor enabling easy interconnection.

### Key features

- High energy density (244 Wh/l, and 142 Wh/kg).
- Cycle life > than 1600 cycles at 100% DoD at C/2 discharge, C/ charge.
- Maintenance free.
- No memory effect.
- **Designed and Manufactured in the United Kingdom.**

### Designed for today's safety and environmental standards.

- Safety: UL 1642 and IEC 62133-2
- Transport: UN 3480, UN 3481.
- Medical: ISO 13485.
- Quality: ISO 9001, Saft World Class.
- Environment: ISO 14001, RoHS and REACH compliant.

### Typical applications

- Internet of Things devices.
- Industrial Internet of Things
- Wireless Sensor Networks.
- Tracking appliances.

### Electrical characteristics

|  |            |        |
|--|------------|--------|
| Typical capacity (at C/5 rate, +25°C, 2.5V cut-off) <sup>(i)</sup> | 2.6 Ah     |        |
| Nominal voltage  | 14.4 V     |        |
| Nominal energy   | 37.44 Wh   |        |
| Recommended maximum discharge current <sup>(ii)</sup>              | Continuous | 7.8 A  |
|  | Pulse      | 13.0 A |

### Physical characteristics (sleeved cell)

|                              |                    |  |
|------------------------------|--------------------|--|
| Length                       | 85 mm              |  |
| Thickness                    | 25 mm              |  |
| Height (including terminals) | 73 mm              |  |
| Typical weight               | 252 g              |  |
| Volume (including terminals) | 0.118 l            |  |
| IEC battery designation      | 4INP25/85/73       |  |
| Saft battery designation     | 4s1p ITR 18650-26E |  |
| Saft part number             | 0097-385-019       |  |

### Operating conditions

|   |                                   |                |
|---|-----------------------------------|----------------|
| Typical cut-off voltage                           | 11.0 V                            |                |
| Charging method                                   | Constant current/Constant voltage |                |
| Charging voltage                                  | 16.8 V                            |                |
| Maximum continuous charge current <sup>(iv)</sup> | 2.6 A                             |                |
| Operating temperatures                            | Charge                            | 0°C to +45°C   |
|   | Discharge                         | -20°C to +60°C |
| Storage & transportation temperatures             | Recommended                       | +10°C to +30°C |
|   | Allowable                         | -20°C to +60°C |

[i] Can vary depending on temperature and discharge rate

[ii] Can vary depending on temperatures—limited by electronic protection circuit. Consult Saft

[iii] (reserved)

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

## Provenance

The cells used in the battery are a product of the Tianneng Saft Energy joint venture.

## Battery level features

Saft provides complete battery system designs. Built-in protection devices at battery level ensures safe operation and user safety in case of abusive or extreme conditions. These conditions include, but are not limited to;

- Exposure to excessive heat.
- Sustained exposure to direct sunlight.
- External short circuit.
- Over-charge (resettable).
- Over-discharge (resettable).
- Mechanical damage.
- Communication (I<sup>2</sup>C) for State-of-Charge and State-of-Health.

## Technical note

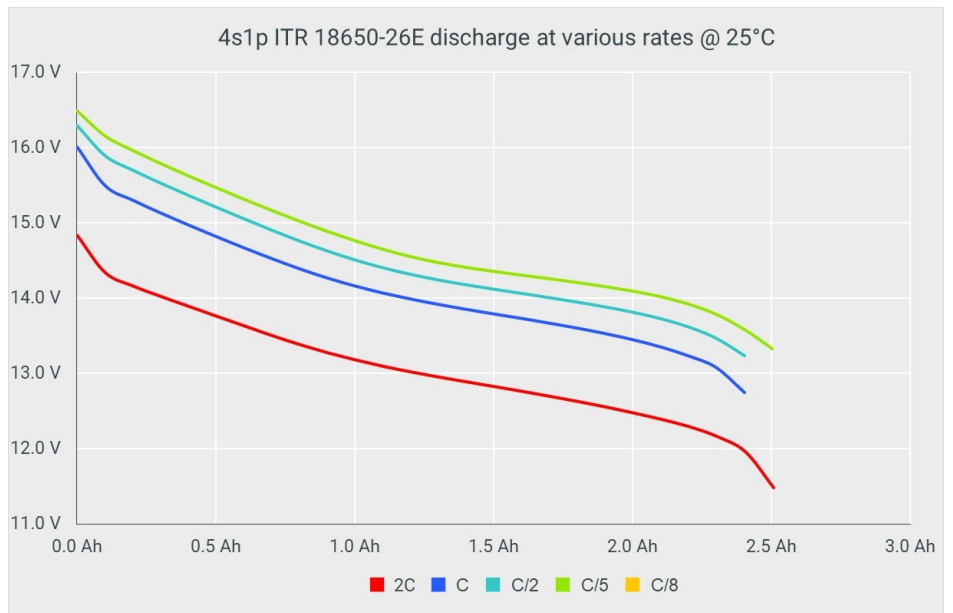
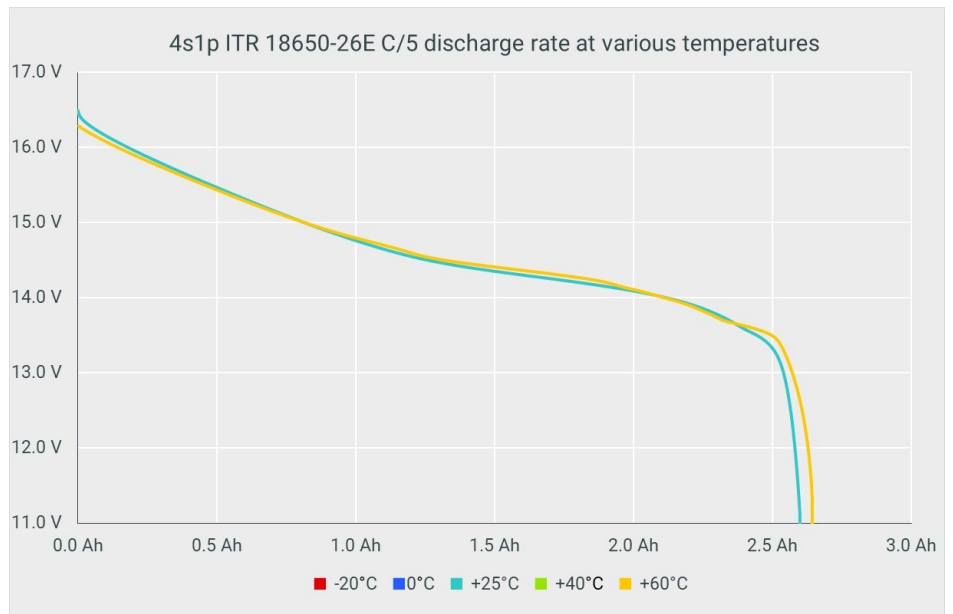
Battery lifetime event data is available via the SMBUS port in accordance with the BQ4050 data sheet. In operation, cell voltage, Thermistor (on board) and current in discharge/charge is continually monitored as control inputs. A sense resistor on the negative side provides a low level signal to the BQ4050 which is an analogue of current flowing. Mosfet charge and discharge switches are controlled by the BQ4050 with automatic reset. Sleep and wake-up are automatic. Short circuit capability utilized by using AOLD thresholds on the BQ4050. The battery incorporates passive balancing.

## Transport and storage

The storage area should be dry, clean, cool and well ventilated (preferably not exceeding +30°C). Never store in direct sunlight.

## Warning

- Do not crush, short-circuit, incinerate, dismantle, immerse in any liquid, or heat above +60°C.
- Observe charging conditions.
- Refer to our Li-ion User Manual for further information on the use and handling of Saft products.



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