

Primary Lithium Battery

Equal life to electronic devices



Company Introduction

FANSO is a high-tech company specialized in development and production of primary lithium batteries. We are proud of our specialists and technicians, some of them have been dedicated for innovation of primary lithium batteries technology for over 30 years. Our expertise combined with historical storage and real application case studies ensure batteries' long operating life.

We provide an array of sizes and power output rates of 3.6V Li-SOCl₂ batteries, 3.0V Li-MnO₂ batteries, and SPC/SLC. Equipped with 17 advanced production lines, we have the capability of 100 million units annually.

FANSO batteries are widely used for smart metering, alarms and security, active RFID, ESL, GPS and various IOT applications.

FANSO are certified in accordance with ISO9001 and GJB9001C. Batteries comply with UL, REACH, CE, ROHS, UN and other standards.

Focused on continuous refining and innovating, FANSO is committed to provide customers with professional and reliable batteries.



Milestones

- 2004 FANSO Was Founded
- 2005 ER/M Project Selected in China Torch Program
- 2005 to present High-tech Enterprises
- 2008 CP Pouch Cell First Produced in China
- 2011 CP Project Funded by Innofund of MOST
- 2019 Organizer & Drafter of Industry Standards of CP & Hi-temp Batteries
- 2019 ER/M Project Won the "IOTE2019" Gold Award
- 2020 Hidden Champion Enterprise in Hubei Pillar Industry
- 2021 National Small-sized Specialized ,Fined,Peculiar Innovative Giant
- 2022 Industry Standards of CP & Hi-temp Batteries Officially Released

Li-SOCl₂ Battery with High Capacity

Key features

- Stable high operating voltage
- Long shelf life(self-discharge rate < 1% at 25°C)
- High energy density (700wh/kg)
- Long operating life
- Wide temperature range
- Stainless steel can and cap
- Non-restricted for transport
- Hermetic glass-to-metal sealing
- Non-flammable electrolyte
- Compliant with IEC60086-4 standard

Main applications

- Utility metering
- Alarms and security
- Memory backup power
- GPS
- Automotive electronics
- NB-IoT/LoRa devices
- Real-time clock



Storage

- The storage area should be clean, cool (preferably below +20°C, not exceeding +30°C), dry and ventilated.

| Model | Size | Max dimension (φmm×mm) | Weight (g) | Nominal Voltage (V) | Nominal capacity/current (mAh/mA\25°C) | Max continuous Discharge current (mA) | Operating temperature (°C) | End voltage (V) |
|-----------|-------|------------------------|------------|---------------------|----------------------------------------|---------------------------------------|----------------------------|-----------------|
| ER14250H | 1/2AA | φ14.5×25.4 | 10 | 3.6 | 1200\1.0 | 15 | -55~+85 | 2.0 |
| ER14335H | 2/3AA | φ14.5×33.5 | 13 | 3.6 | 1650\1.0 | 35 | -55~+85 | 2.0 |
| ER14505H | AA | φ14.5×50.5 | 19 | 3.6 | 2600\1.0 | 60 | -55~+85 | 2.0 |
| ER17505H | A | φ17.5×51.0 | 26 | 3.6 | 3600\3.0 | 70 | -55~+85 | 2.0 |
| ER18505H | — | φ18.7×50.5 | 28 | 3.6 | 4000\3.0 | 70 | -55~+85 | 2.0 |
| ER26500H | C | φ25.7×50.0 | 48.5 | 3.6 | 8500\2.0 | 100 | -55~+85 | 2.0 |
| ER261020H | CC | φ26.2×102.0 | 101 | 3.6 | 16000\2.0 | 150 | -55~+85 | 2.0 |
| ER34615H | D | φ33.6×61.0 | 100 | 3.6 | 19000\2.0 | 150 | -55~+85 | 2.0 |
| ER341245H | DD | φ34.2×124.5 | 200 | 3.6 | 36000\10 | 300 | -55~+85 | 2.0 |

Warning: Don't recharge, over discharge, short circuit, crush, disassemble, heat above 100°C, incinerate, or expose contents to water. Dispose of used batteries properly in case of explosion, burn and leakage.

Li-SOCl₂ Battery with High Power



Patents ensure high safety

Patented explosion-proof technology, multiple protections, high safety and reliability.

Key features

- High and stable operating voltage
- Long shelf life (self-discharge rate < 2% at 25°C)
- Non-restricted for transport
- Long operating life
- High energy density (700wh/kg)
- Wide temperature range
- Stainless steel can cap
- Hermetic glass-to-metal sealing
- Non-flammable electrolyte
- Compliant with IEC60086-4 standard

Main applications

- Utility metering
- Alarms and security
- Memory backup power
- GPS
- Automotive electronics
- Professional electronic devices

Storage

The storage area should be clean, cool (preferably below +20°C, not exceeding +30°C), dry and ventilated.

| Model | Size | Max dimension (mm×mm) | Weight (V) | Nominal Voltage (V) | Nominal capacity/current (mAh\mA@25°C) | Max continuous Discharge current (mA) | Operating temperature (°C) | End voltage (V) |
|----------|------|-----------------------|------------|---------------------|----------------------------------------|---------------------------------------|----------------------------|-----------------|
| ER14505M | AA | φ14.5×50.5 | 19 | 3.6 | 2100\3.0 | 400 | -55~+80 | 2.0 |
| ER18505M | — | φ18.5×50.5 | 30 | 3.6 | 3500\5.0 | 800 | -55~+80 | 2.0 |
| ER26500M | C | φ26.2×50.0 | 57 | 3.6 | 6000\10 | 1000 | -55~+80 | 2.0 |
| ER34615M | D | φ34.2×61.5 | 109 | 3.6 | 13000\15 | 1800 | -55~+80 | 2.0 |

Warning: Don't recharge, over discharge, short circuit, crush, disassemble, heat above 100°C, incinerate, or expose contents to water. Dispose of used batteries properly in case of used batteries properly in case of explosion, burn and leakage.

CP Pouch Cell

FANSO CP pouch cells feature flexible size, high energy density, are ideal power solutions for ESL, smart cards, ETC, remote wireless transmission etc.



Key features

- High and stable operating voltage
- Low self-discharge rate (< 2% at 20°C)
- Hermetic sealing
- Compliant with IEC60086-4 safety standard
- Non-restricted for transport

Main applications

- ESL
- Active RFID
- Alarms and security
- Smoke detector
- Memory backup power
- NB-IoT/LoRa devices

Storage: The storage area should be clean, cool (preferably below +20°C, not exceeding +30°C), dry and ventilated.

| Model | Max dimension (LxWxT)(mm) | Weight (g) | Nominal Voltage (V) | Nominal capacity/current (mAh\mA@25°C) | Max continuous Discharge current (mA) | Operating temperature (°C) | End voltage (V) |
|-----------|---------------------------|------------|---------------------|----------------------------------------|---------------------------------------|----------------------------|-----------------|
| CP104851 | 51×49×1.1 | 4 | 3 | 380\1.0 | 30 | -40~+60 | 1.8 |
| CP224147 | 48.3×45.5×2.2 | 6.5 | 3 | 800\1.0 | 200 | -40~+60 | 1.8 |
| CP263638 | 38×38×2.8 | 6.3 | 3 | 700\1.0 | 200 | -40~+60 | 1.8 |
| CP305050 | 51×56.5×3.2 | 14 | 3 | 1600\1.0 | 600 | -40~+60 | 1.8 |
| CP352545 | 44×25.5×3.3 | 6.2 | 3 | 750\1.0 | 100 | -40~+60 | 1.8 |
| CP353030 | 28.5×29×3.5 | 3 | 3 | 350\1.0 | 150 | -40~+60 | 1.8 |
| CP383047 | 47.5×31×4 | 9.5 | 3 | 1350\1.0 | 400 | -40~+60 | 1.8 |
| CP405050 | 51×51×4.4 | 18 | 3 | 2400\1.0 | 750 | -40~+60 | 1.8 |
| CP502025 | 26×20.5×5.2 | 4 | 3 | 450\1.0 | 120 | -40~+60 | 1.8 |
| CP502425 | 26×24.5×5.2 | 5.5 | 3 | 550\1.0 | 150 | -40~+60 | 1.8 |
| CP502440 | 41.5×24.5×5.2 | 7.5 | 3 | 1200\1.0 | 300 | -40~+60 | 1.8 |
| CP562824 | 23×27×5.5 | 6 | 3 | 650\1.0 | 80 | -40~+60 | 1.8 |
| CP603448 | 49×35×6.2 | 15 | 3 | 2300\2.0 | 800 | -40~+60 | 1.8 |
| CP702440 | 41×24.5×7.2 | 11 | 3 | 1500\1.0 | 500 | -40~+60 | 1.8 |
| CP1003550 | 49×35.5×10.5 | 33 | 3 | 4200\5.0 | 1500 | -40~+60 | 1.8 |
| CP1003742 | 42×38×10.8 | 30 | 3 | 3800\2.0 | 2000 | -40~+60 | 1.8 |
| CP7839109 | 108×40×8.0 | 63 | 3 | 9500\10.0 | 2000 | -40~+60 | 1.8 |

Warning: Don't recharge, over discharge, short circuit, crush, disassemble, heat above 100°C, incinerate, or expose contents to water. Dispose of used batteries properly in case of used batteries properly in case of explosion, burn and leakage.

Cylindrical Li-MnO₂ Battery with High Power



Key features

- High and stable operating voltage
- Hermetic sealing
- Compliant with IEC60086-4
- Non-restricted transport
- Low self-discharge rate (less than 2% at 20°C)

Main applications

- Alarms and security
- Smoke detector
- Memory backup power
- NB-IoT/LoRa
- Medical devices

Storage

The storage area should be clean, cool (Temperature: 0~30°C; Humidity: < 70%RH), dry and ventilated.

| Model | Size | Max dimension (φmm×mm) | Weight (g) | Nominal Voltage (V) | Nominal capacity/current (mAh/mA\25°C) | Max continuous Discharge current (mAh) | Operating temperature (°C) | End voltage (V) |
|----------|-------|------------------------|------------|---------------------|----------------------------------------|----------------------------------------|----------------------------|-----------------|
| | | | | | | | | |
| CR14250H | 1/2AA | 14.5×25.2 | 11.5 | 3 | 950\0.5 | 7 | -40~+70 | 2.0 |
| CR17335E | 2/3A | 17×34.5 | 19 | 3 | 1500\5 | 700 | -40~+70 | 2.0 |
| CR17450E | AG | 17.0×45.5 | 24 | 3 | 2400\5 | 1000 | -40~+70 | 2.0 |
| CR26500E | C | 26.2×50.5 | 55 | 3 | 5000\10 | 1500 | -40~+70 | 2.0 |
| CR34615E | D | 34.0×61.5 | 125 | 3 | 12000\10 | 2000 | -40~+70 | 2.0 |



| Model | Max dimension (φmm×mm) | Weight (g) | Nominal Voltage (V) | Nominal capacity/current (mAh/mA\25°C) | Max continuous Discharge current (mAh) | Operating temperature (°C) | End voltage (V) |
|--------|------------------------|------------|---------------------|----------------------------------------|----------------------------------------|----------------------------|-----------------|
| CR 2 | 15.6×27.0 | 12 | 3 | 850\10 | 800 | -40~+70 | 2.0 |
| CR-P2 | 35×19.5×36 | 42 | 6 | 1500\5 | 1000 | -40~+70 | 4.0 |
| CR123A | 17.0×34.5 | 17 | 3 | 1500\5 | 1000 | -40~+70 | 2.0 |

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Li-ion Capacitor

Capacitor, device for storing electrical energy, can deliver instant big pulse at a temperature range from -40 to +85°C Combination of our 3.6V Li-SOCl₂ bobbin type batteries and capacitors are ideal power supply for IOT applications.



Key features

- Low self-discharge rate
- Excellent high pulse capability
- Long operating life
- High safety and reliability
- No voltage delay
- Excellent performance at high and low temperature

Main applications

- Data collection and recording
- Emergency rescue system
- GPS
- Container / High Value Goods Management
- Remote wireless transmission system
- Radio frequency identification (RFID)
- NB-IoT/LoRa devices

| Model | Max charging voltage (V) | Capacity (3.67V)/mAh | Max Current | | End voltage (V) | ESR (mΩ) | Dimension/mm | | | |
|---------|--------------------------|----------------------|-------------|-------|-----------------|----------|--------------|---------|----------|----------|
| | | | Constant | Pulse | | | D | P | L | d |
| SLC1016 | 3.95 | 10 | 500 | 1000 | 2.5 | 250 | 10.0±0.5 | 5.0±0.5 | 16.0±0.2 | 0.6±0.05 |
| SLC1025 | 3.95 | 22 | 1000 | 2000 | 2.5 | 100 | 10.0±0.5 | 5.0±0.5 | 25.0±0.2 | 0.6±0.05 |
| SPC1520 | 3.95 | 45 | 500 | 2000 | 2.5 | 150 | 15.1±0.1 | | 21.0±0.1 | |
| SPC1530 | 3.95 | 75 | 750 | 3000 | 2.5 | 100 | 15.1±0.1 | | 29.0±0.1 | |
| SPC1550 | 3.95 | 160 | 2000 | 5000 | 2.5 | 80 | 15.1±0.1 | | 51.0±0.1 | |
| SPC0920 | 3.95 | 8.5 | 150 | 500 | 2.5 | 500 | max:9.0 | | max:21.0 | |

9V Lithium Battery

Key features

- High and stable operating voltage
- Compliant with IEC60086-4 safety standard
- Low self-discharge rate (<2% at 20°C)
- Hermetic sealing

Main applications

- Utility metering
- Alarms and security
- Memory backup power
- Smoke detector
- Professional electronics
- Real-time clock



| Model | Max dimension (φmm×mm) | Weight (g) | Nominal Voltage (V) | Nominal capacity/current (mAh/mA\25°C) | Max continuous Discharge current (mA) | Max Pulse (mA) | Operating temperature (°C) | End voltage (V) |
|-------|------------------------|------------|---------------------|----------------------------------------|---------------------------------------|----------------|----------------------------|-----------------|
| CP9V | 48.5×26.5×17.5 | 37 | 9 | 1200\1.0 | 300 | 500 | -40~60 | 5.4 |

ER+SPC Solution

ER+SPC solutions combine a 3.6V Li-SOCl₂ bobbin type cell with a capacitor (SLC/SPC), feature high capacity, big pulse and no voltage delay, designed for wireless devices that require long operating life, periodic high pulses and safety.



Typical combination models

| Model | Nominal Voltage (V) | Nominal capacity (mAh) | Max. pulse current(A) | Dimension(m) |
|------------------|---------------------|------------------------|-----------------------|----------------|
| ER14250H+SPC1520 | 3.6 | 1200 | 2 | φ16.5×47.0 |
| ER26500H+SPC1520 | 3.6 | 8500 | 2 | φ29.0×67.0 |
| ER34615H+SPC1520 | 3.6 | 19000 | 2 | φ34.0×78.0 |
| ER14250H+SPC1550 | 3.6 | 1200 | 5 | 55.0×32.0×16.0 |
| ER26500H+SPC1550 | 3.6 | 8500 | 5 | 55.0×44.0×28.0 |
| ER34615H+SPC1550 | 3.6 | 19000 | 5 | 64.0×50.0×35.0 |
| ER14250H+SLC1016 | 3.6 | 1200 | 0.5 | 27.0×25.0×15.0 |
| ER26500H+SLC1016 | 3.6 | 8500 | 0.5 | 52.0×37.0×27.0 |
| ER34615H+SLC1016 | 3.6 | 19000 | 0.5 | 63.0×45.0×35.0 |
| ER14250H+SLC1025 | 3.6 | 1200 | 2 | 27.0×25.0×15.0 |
| ER26500H+SLC1025 | 3.6 | 8500 | 2 | 52.0×37.0×27.0 |
| ER34615H+SLC1025 | 3.6 | 19000 | 2 | 63.0×45.0×35.0 |

Warning: Don't recharge, over discharge, short circuit, crush, disassemble, heat above 100°C, incinerate, or expose contents to water. Dispose of used batteries properly in case of used batteries properly in case of explosion, burn and leakage.

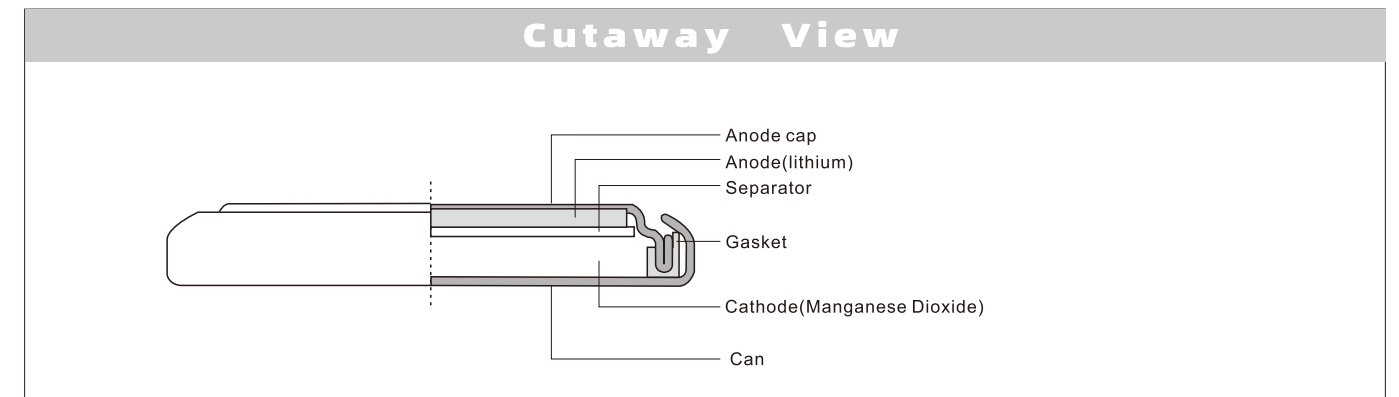
Button Type Li-MnO₂ Battery

Key features

- High and stable voltage
- Low self-discharge rate
- Wide operating range
- High safety and reliability

Main applications

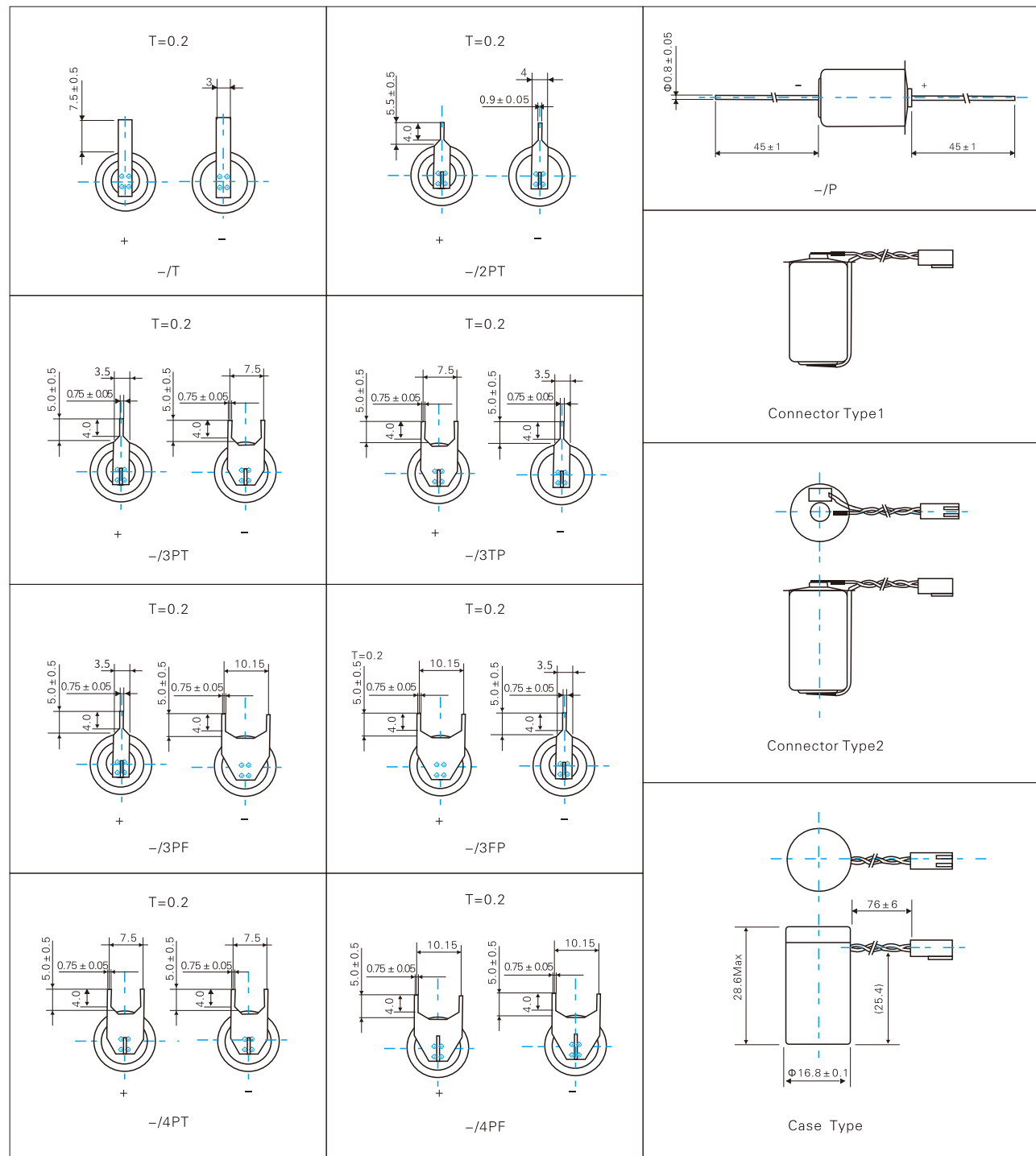
- CMOS, remote control, etc.
- Electronic cards, such as electronic dictionary, etc.
- Small crafts, such as flash tourist shoes, necklaces, etc.
- Electronic watch, flash light, etc.



| Model | Voltage (V) | Capacity (mAh) | Load(kΩ) | End voltage (V) | Temperature(°C) | Diameter (mm) | Height(mm) | Weight(g) |
|--------|-------------|----------------|----------|-----------------|-----------------|---------------|------------|-----------|
| CR1616 | 3 | 55 | 30 | 2.0 | -20°C~+70 | 16.0 | 1.6 | 1.1 |
| CR1620 | 3 | 75 | 47 | 2.0 | -20°C~+70 | 16.0 | 2.0 | 1.3 |
| CR1632 | 3 | 130 | 47 | 2.0 | -20°C~+70 | 16.0 | 3.2 | 1.8 |
| CR2016 | 3 | 90 | 30 | 2.0 | -20°C~+70 | 20.0 | 1.6 | 1.7 |
| CR2025 | 3 | 150 | 15 | 2.0 | -20°C~+70 | 20.0 | 2.5 | 2.7 |
| CR2032 | 3 | 220 | 15 | 2.0 | -20°C~+70 | 20.0 | 3.2 | 3.2 |
| CR2450 | 3 | 550 | 7.5 | 2.0 | -20°C~+70 | 24.5 | 5.0 | 7.2 |
| CR2477 | 3 | 750 | 2.0 | 2.0 | -20°C~+70 | 24.5 | 7.7 | 10 |

Terminals

Custom Terminals Available Upon Request



General Recommendations

This page is not intended to provide all the information that you will need to be able to work safely with FANSO batteries, but only to help facilitate site-specific guidance in accordance with local regulations.

If you have any doubts about battery handling, please consult us directly.

Storage

- Battery should be stored in a dry and ventilated environment (storage temperature less than 30°C).
- Battery should be stored away from moisture, high heat, fire sources.
- Keep batteries in their original packaging until use.
- Do not jumble batteries.
- Do not apply pressure to the battery, which may cause deformation.
- Appropriate fire extinguishing means should be available.
- It is recommended that the storage area be equipped with automatic sprinkler.
- Appropriate personal protective equipment should be available (gloves, glasses, work coat ...).

Handling

- Do not mix batteries of different types and brands.
- Do not mix new and used batteries.
- Do not charge the primary lithium battery.
- Do not directly heat or solder.
- Do not dismantle.

Misoperation may lead to battery short circuit during receipt, incoming inspection, and storage of the battery. To significantly reduce the short-circuit problem caused by misoperation, perform the following operation:

- Cover all conductive work surfaces with an insulating material
- Work areas should be free of sharp objects that could puncture the insulating material.
- Never disassemble a cell or battery pack or attempt to replace a blown fuse.
- Conductive materials (jewelry, etc.) should not be worn by personnel handling cells and batteries.
- Cells should be stored in their original packaging or by similar means.
- Cells should be moved in trays using pushcarts to reduce the probability of dropping.
- Dropped cells or batteries should be treated as a potential hot cell and must be segregated from the lot/batch.
- All inspection tools should be non-conductive, or covered with a non-conductive material.
- Cells should be inspected for physical damage.
- Open-circuit-voltage (OCV) should be checked.
- After a cell has been inspected, it should be returned to its storage packaging.

Installation and replacement

- Install only new batteries, same model made by the same manufacturer.
- Follow FANSO recommendations regarding maximum deliverable currents and operating temperature range.
- Only use batteries of a type that has been homologated by the device manufacturers in which they are fitted.

Disposal

- Dispose of batteries in accordance with local regulations.
- Secure terminals to prevent short-circuiting.
- Package each cell or battery in a manner that prevents shorting with the container of another cell / battery.
- Use packaging material that is in compliance with local regulations.
- Package leaking cells/batteries in a manner that contains the leak and use specific equipment to handle these products (gloves, safety glasses, appropriated working clothing, respirator, Ziploc plastic bags)

Safety with primary lithium batteries

- Do not incinerate!
- Do not short-circuit!
- Do not expose contents to water!
- Do not disassemble battery packs!
- Do not expose to temperatures beyond the specified temperature range!
- Do not recharge!
- Do not open cells!
- Do not connect with false polarity!
- Do not weld or solder to the battery's body!
- Do not overdischarge!
- Do not cruse or puncture!