Connectors:

Main line: cable with PP-connector + Red and – Black.
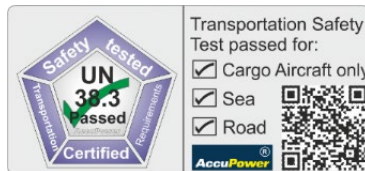http://www.accupower.at/products_connector.php

Communication Connector: FGJ.1B.306.CLLD62, 6Pin

Lithium-Battery Pack with protection electronics
(PCM single cells monitoring), protects the battery against overcharge,
deep discharge and short circuit,
Implemented cell balancing, with interface for service purposes (number
of cycles, capacity, temperature, etc.)

Applications
Automotive
Industrial
Testing equipment
Sport
Medical
and others

Transportation Safety Test passed for:
- ☑ Cargo Aircraft only
- ☑ Sea
- ☑ Road

UN 38.3 passed — Certified — AccuPower ®

Pack Specifications	
Nominal Voltage	25.6 V
Capacity (Nominal)	37050 mAh ±2%.
Energy	948.48 Wh
Weight	4700 grams ±50g.
Size, Max. (L x W x H) mm	236 x 142 x (80 ±2)

Operating Specifications	
Operating Voltage	21.0 V to 29.4 V
Charge Voltage	(**Max**. 29.40 V)
Discharge End Volt.	21.0V
Operating Temperature: Discharge / Charge	-20°C to 55°C / -10°C to 50°C
Max. Discharge Current Continuous / Peak	40 A @ -20 to +55°C / 50 A (max. 1Sec.)
Max. Charge Current	18A @ (-10°C-50°C) / 37A @ (+10°C-45°C)

Storage Specifications	
Storage Temperature Rh: (0% ~ 75%) SoC: *State-of-Charge* ≥ 70%	1 year: -20 ~ +25°C[1*] 3 months: -20~ +45°C[1*] 1 month: -20~ +60°C[1*]

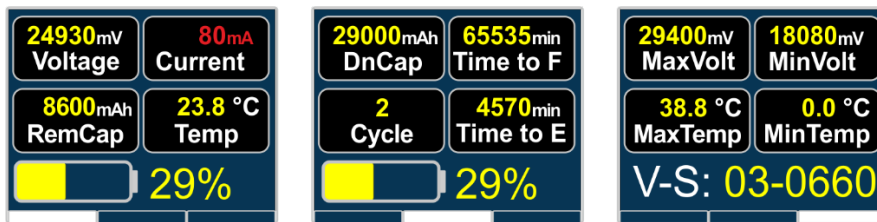Note (1): If the cell is kept as ex-factory status (≤ 30% of charge), the capacity recovery rate is more than 80%.

Standard charging method:

0.5C CC   constant current   charge to Max. 29.40V, then CV (constant voltage Max. 29.40V) charge till charge current decline to ≤ 0.02C

Embedded battery management with data monitoring and displaying

Lithium-Battery Pack with interface for service purposes provide battery information (voltage, remaining capacity, number of cycles, full charge capacity, temperature, average current, etc). This data can be displayed through the interface connection via PC or with the appropriate LCD display unit.

24930 mV Voltage	80 mA Current
8600 mAh RemCap	23.8 °C Temp

29%

29000 mAh DnCap	65535 min Time to F
2 Cycle	4570 min Time to E

29%

29400 mV MaxVolt	18080 mV MinVolt
38.8 °C MaxTemp	0.0 °C MinTemp

V-S: 03-0660

Applications
Automotive
Industrial
Testing equipment
Sport
Medical
and others

Transportation:

Transport according to the current regulations: ADR / RID / ADN / IATA / IMDG
Battery over 100Wh / Class: 9 / UN-Number: UN3480
Shipping name: Lithium ion batteries
Environmental hazards / Marine pollutant: No

Care and safety recommendations:

Never open, short circuit or put in fire. Do not install backwards. Avoid short circuit with metal objects.

ATTENTION:

Please pay attention to following recommendations:

1. **Recharge batteries immediately after receipt**!, the batteries are delivered with low capacity (< 30%) according to IATA DG Regulations!
2. Charge the batteries to the recommended value before storing them for a long time: State Of Charge between 50% ~ 70% depending on the storage time, Store the battery in a dry place, Temperature (0° ~ +25°C), relative humidity should be less than 75% Rh.
3. Please fully charge the batteries before using! Use only the battery charger specified for this battery type.
4. Do not leave battery in charger over 24 hours.
5. Always avoid deep discharge of the battery.
6. Avoid exposure to high temperatures.
7. Do not disassemble or modify the battery, may cause the battery to generate heat, explode or ignite.
8. Dispose properly used batteries. Dispose it according to the applicable recycling regulations. Contact your city recycling coordinator. Thank you

Overcharge/Overdischarge/Overcurrent Safety Circuits:

The controller IC measures the voltage for each cell (or for each parallel battery block) and shuts off a control switch to either prevent overcharging (if the voltage exceeds the specified voltage range) or to prevent over discharging (if the voltage falls below the specified voltage range). Moreover, the voltage of the control switch is measured on both ends and in order to prevent overcurrent, control switches are shut off if the voltage exceeds specifications.

• The Functions of the Safety Circuits (typical functions)
The voltages listed below are typical values and are not guaranteed. The charge voltage varies according to model number.

1. The Overcharge Safety Function
The charge stops when the voltage per cell rises above 4.30 ± 0.05 V.
The charge restarts when the voltage per cell falls below 3.90 ± 0.05 V.

2. The Overdischarge Safety Function
The discharge stops when the voltage per cell falls below 2.95 ± 0.05 V.
The discharge restarts when the voltage per cell rises above 3.35 ± 0.05V.

3. The Overcurrent Safety Function
The discharge is stopped when the output terminals are shorted. The discharge restarts when the short is removed.

Attention: Please fully charge the batteries before using!!!

⚠ **ATTENTION! Recharge batteries immediately after receipt:** ⚠

Due to the new IATA Dangerous Goods Regulations since April 2016, the state of charge condition for air transport must not exceed 30% of the nominal capacity!
If you receive a battery pack with airfreight with 30% charge and it will be sent by air again after storage, the state of charge 30% (this corresponds approximately to an idle voltage for this Battery-pack of 24.80V to 25.00V) must be checked every 2 months and recharged according to 30%.

Communication Connector for AccuPower 7S13P Battery-Packs:

FGJ.1B.306.CLLD62 or FGJ.1BC.306.JS52 solder Connector **or** FGJ.1B.306.CYMD52, crimp Connector: 6Pin Female
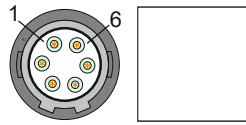
Front view
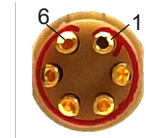
Back view

Receptacle, Cable assembly:

PIN number 1: P+ Wire color Red
PIN number 2: SM Clock (SMC) Wire color Green
PIN number 3: SM Data (SMD) Wire color Yellow
PIN number 4: P- Wire color Black
PIN number 5: PRES Wire color White
(Enable Pin: Enable PIN pull down to Ground to enable battery (on Ground = ON, Open = OFF)
PIN number 6: NC

SM Bus Data (V1.1 konform)
Device address: 0x16 (default)
Bus frequency: 100kHz (default)
Bus voltage: 3.3V

Following information's can be accessed via the SMBus. / Folgende Informationen können über den SMBus abgerufen werden.

The values **"actual current"**, **"avg. current"**, **"remaining capacity"** and **"full charge capacity"** **are scaled down by factor 10** due to high battery power and capacity.

Funktion / Function	Register	Type	Min Value	Max Value	Einheit / Unit
State of charge / Aktueller Ladezustand	0x0D	U1	0	100	%
Remaining capacity / Verbleibende Kapazität	0x0F	U2	0	65535	10 mAh
Full charge capacity / Vollständige Kapazität	0x10	U2	0	65535	10 mAh
Battery voltage / Aktuelle Akkuspannung	0x09	U2	0	65535	1 mV
Average current (smoothed) / Durchschnittlicher Strom	0x0B	I2	-32768	32767	10 mA
Actual current / Aktueller Strom	0x0A	I2	-32768	32767	10 mA
Battery temperature / Akkupack Temperatur	0x08	U2	0	65535	0.1°K
Average time to „Empty" at actual current / Voraussichtliche Zeit bis „Akku leer" bei momentanem Strom	0x12	U2	0	65535	minutes
Average time to „Full" at actual current / Voraussichtliche Zeit bis „Akku voll" bei momentanem Strom /	0x13	U2	0	65535	minutes
Cycle count / Zyklenanzahl	0x17	U2	0	65535	cycles
Serial Number / Seriennummer	0x1C	H2	0x0000	0xFFFF	-

Abbreviations:

U1 unsigned integer of 1byte size
U2 unsigned integer of 2byte size
I1 signed integer of 1byte size
I2 signed integer of 2byte size
H2 unsigned integer in hex format

Die Daten liegen im Little Endian Format vor / the data is provided in little endian format.
Achtung, Bat- und Bat+ darf nicht mit mehr als 100 mA belastet werden (Kurzschlussgefahr) /
Attention, Bat- and Bat+ must not be loaded with a higher current than 100mA (Danger of short circuit)
For PC to battery communication you will need a SMBus to USB Converter (EV2400 from Texas Instruments) and as PC GUI the "Battery Management Studio" is needed. With this device all battery BMS data could be read out.

Information and contents in this datasheet are for reference purpose only. They do not constitute any warranty or representation and are subject to change without notice.