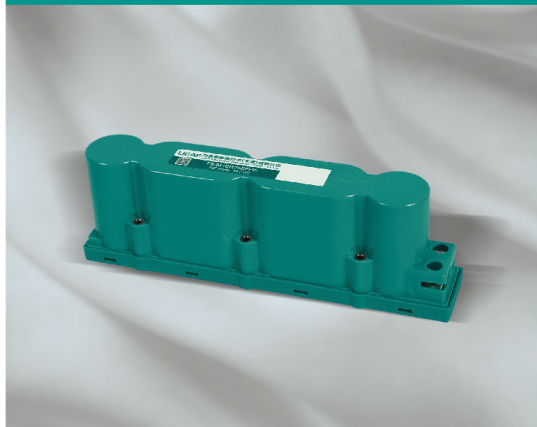


# TS/M016V0058FPA



## APPLICATIONS

- New Energy Vehicle
- Engineering Machinery
- Electrical Power System
- Industrial Equipment

## FEATURES AND ADVANTAGES

- One Million Cycles Lifetime
- High Power Density
- Wide Range of Operation Temperature

## Electrical Performance

|                     |                                                 |          |
|---------------------|-------------------------------------------------|----------|
| Capacity            | Rated Capacity                                  | 58F      |
|                     | Capacity Tolerance                              | 0/+20%   |
| Voltage             | Rated voltage                                   | 16V DC   |
|                     | Surge Voltage                                   | 17V DC   |
| Internal resistance | ESR(initial )                                   | 22mΩ     |
| Electric current    | Maximum leakage current<br>( 25°C , after 72h ) | 25mA     |
|                     | Maximum continuous current                      | 19A      |
| Energy              | Maximum peak current                            | 200A     |
|                     | Stored energy E <sub>stored</sub>               | 2.1Wh    |
| Power density       | Energy density E <sub>max</sub>                 | 3.2wh/kg |
|                     | Power density P <sub>max</sub>                  | 4588W/kg |

## Temperature Features

|                      |                             |             |
|----------------------|-----------------------------|-------------|
| Temperature features | Operating Temperature Range | -40 ~ +65°C |
|                      | Storage Temperature Range   | -40 ~ +70°C |

## Monitor and Control

|               |                     |     |
|---------------|---------------------|-----|
| Alarm Monitor | Over voltage alarm  | N/A |
|               | Temperature monitor | N/A |

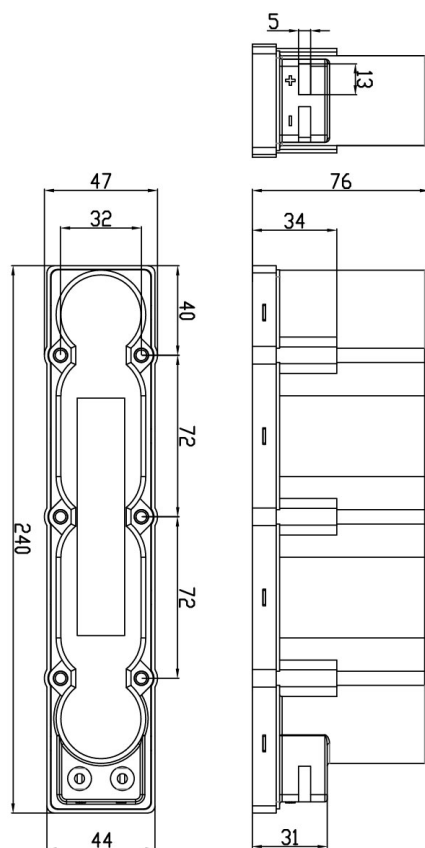
## Service Lifetime

|                                   |                                                                                             |       |
|-----------------------------------|---------------------------------------------------------------------------------------------|-------|
| Lifetime Under Normal Temperature | Operated over 10 years under 25°C at rated voltage                                          |       |
|                                   | Change in capacity                                                                          | ≤20%  |
|                                   | Change in internal resistance                                                               | ≤100% |
| Lifetime Under High Temperature   | After operated for 1500h under 65°C at rated voltage                                        |       |
|                                   | Change in capacity                                                                          | ≤20%  |
|                                   | Change in internal resistance                                                               | ≤100% |
| Storage Lifetime                  | 4 years (under the highest storage temperature, uncharged)                                  |       |
| Cycling Test                      | 1 million cycles between rated voltage and half rated voltage at 25°C with constant current |       |
|                                   | Change in capacity                                                                          | ≤20%  |
|                                   | Change in internal resistance                                                               | ≤100% |

## Safety Specification and Mechanical Features

|                      |                          |                                     |
|----------------------|--------------------------|-------------------------------------|
| Safety               | Insulation resistance    | 500V DCInsulation resistance ≥100MΩ |
|                      | Insulation intensity     | 5600V DCLeakage current ≤10mA       |
|                      | Protection level         | IP54                                |
| Mechanical Vibration | Operation vibration      | GB/T 11287-2000                     |
|                      | Transportation vibration | GB/T 4798.2-2008                    |
|                      | Impact                   | GB/T 14537-1993                     |

## Outline Drawing(For Reference)



| External Dimension                   |               |               |                            |                    |        |
|--------------------------------------|---------------|---------------|----------------------------|--------------------|--------|
| Weight                               | Unit: kg      |               |                            | ≤0.65              |        |
| Size                                 | Unit: mm      |               |                            | 240*47*76 ( L*W*H) |        |
| Shell                                | Plastic shell |               |                            |                    |        |
| Module Fastener (For Reference Only) |               |               |                            |                    |        |
| Positon                              | Name          | Specification | Material                   | Quantity           | Torque |
| Module installation                  | Screw bolt    | M4×40         | Stainless steel 10.9 level | 6                  | 3N*m   |
|                                      | Flat gasket   | Φ4            |                            | 6                  |        |
|                                      | Spring gasket | Φ4            |                            | 6                  |        |
|                                      | Nut           | M4            |                            | 6                  |        |
| Module Output                        | Screw bolt    | M5×10         |                            | 2                  | 6N*m   |
| Terminal Installation                | Flat gasket   | Φ5            |                            | 2                  |        |

# TS/M048V0165FAA



## APPLICATIONS

- New Energy Vehicle
- Engineering Machinery
- Rail transit
- UPS and Telecom Systems
- Industrial Equipment

## FEATURES AND ADVANTAGES

- One Million Cycles Lifetime
- High Power Density
- Active Voltage Equilibrium
- Wide Range of Operation Temperature
- Temperature and Voltage Control

## Electrical Performance

|                     |                                                 |          |
|---------------------|-------------------------------------------------|----------|
| Capacity            | Rated Capacity                                  | 165F     |
|                     | Capacity Tolerance                              | 0/+20%   |
| Voltage             | Rated voltage                                   | 48V DC   |
|                     | Surge Voltage                                   | 51V DC   |
| Internal resistance | ESR(initial )                                   | 6mΩ      |
| Electric current    | Maximum leakage current<br>( 25°C , after 72h ) | 6mA      |
|                     | Maximum continuous current                      | 150A     |
| Energy              | Maximum peak current                            | 2000A    |
|                     | Stored energy E <sub>stored</sub>               | 52.8Wh   |
| Power density       | Energy density E <sub>max</sub>                 | 3.7wh/Kg |
|                     | Power density P <sub>max</sub>                  | 6760W/Kg |

## Temperature Features

|                      |                             |             |
|----------------------|-----------------------------|-------------|
| Temperature features | Operating Temperature Range | -40 ~ +65°C |
|                      | Storage Temperature Range   | -40 ~ +70°C |

## Monitor and Control

|               |                     |                                   |
|---------------|---------------------|-----------------------------------|
| Alarm Monitor | Over voltage alarm  | The voltage of single module≥2.7V |
|               | Temperature monitor | NTC10K                            |

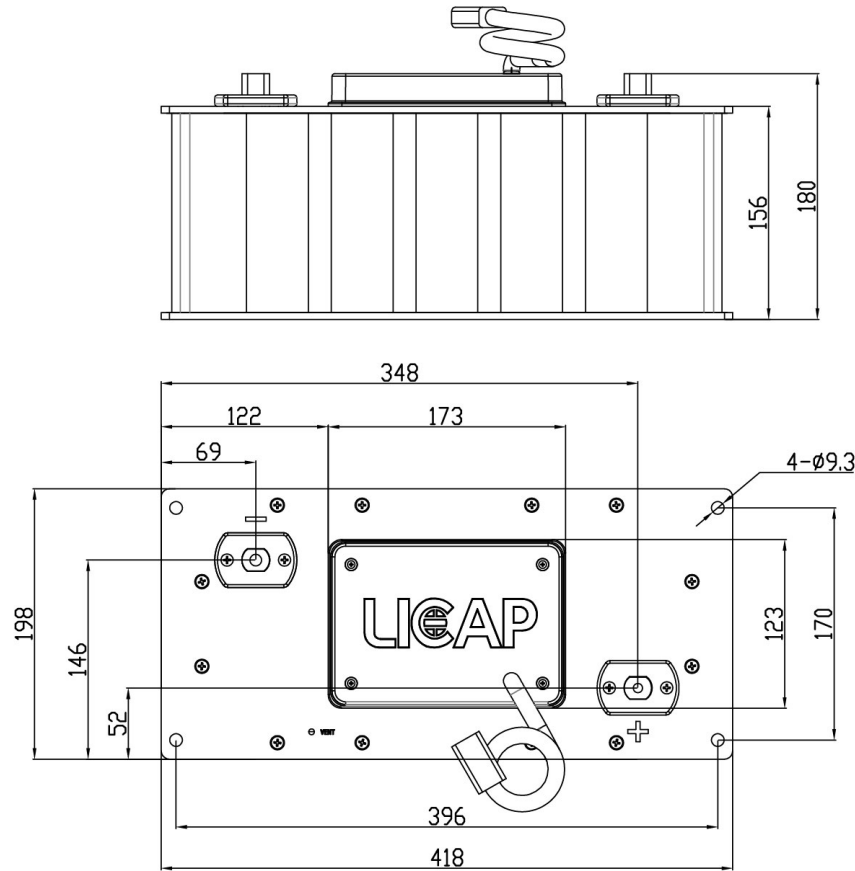
## Service Lifetime

|                                   |                                                                                             |       |
|-----------------------------------|---------------------------------------------------------------------------------------------|-------|
| Lifetime Under Normal Temperature | Operated over 10 years under 25°C at rated voltage                                          |       |
|                                   | Change in capacity                                                                          | ≤20%  |
|                                   | Change in internal resistance                                                               | ≤100% |
| Lifetime Under High Temperature   | After operated for 1500h under 65°C at rated voltage                                        |       |
|                                   | Change in capacity                                                                          | ≤20%  |
|                                   | Change in internal resistance                                                               | ≤100% |
| Storage Lifetime                  | 4 years (under the highest storage temperature, uncharged)                                  |       |
| Cycling Test                      | 1 million cycles between rated voltage and half rated voltage at 25°C with constant current |       |
|                                   | Change in capacity                                                                          | ≤20%  |
|                                   | Change in internal resistance                                                               | ≤100% |

## Safety Specification and Mechanical Features

|                      |                          |                                     |
|----------------------|--------------------------|-------------------------------------|
| Safety               | Insulation resistance    | 500V DCInsulation resistance ≥100MΩ |
|                      | Insulation intensity     | 2500V DCLeakage current ≤10mA       |
|                      | Protection level         | IP65                                |
| Mechanical Vibration | Operation vibration      | GB/T 11287-2000                     |
|                      | Transportation vibration | GB/T 4798.2-2008                    |
|                      | Impact                   | GB/T 14537-1993                     |

Outline Drawing(For Reference)



External Dimension

|        |          |                      |
|--------|----------|----------------------|
| Weight | Unit: kg | ≤14.2                |
| Size   | Unit: mm | 418*198*180 ( L*W*H) |
| Shell  | Aluminum |                      |

Module Fastener (For Reference Only)

| Positon                                | Name          | Specification | Material                   | Quantity | Torque |
|----------------------------------------|---------------|---------------|----------------------------|----------|--------|
| Module installation                    | Screw bolt    | M8×30         | Stainless steel 10.9 level | 4        | 20N*m  |
|                                        | Flat gasket   | Φ8            |                            | 4        |        |
|                                        | Spring gasket | Φ8            |                            | 4        |        |
|                                        | Nut           | M8            |                            | 4        |        |
| Module Output<br>Terminal Installation | Screw bolt    | M8×12         |                            | 1        | 30N*m  |
|                                        | Flat gasket   | Φ8            |                            | 1        |        |
|                                        | Spring gasket | Φ8            |                            | 1        |        |
|                                        | Screw bolt    | M10×12        |                            | 1        |        |
|                                        | Flat gasket   | Φ10           |                            | 1        |        |
|                                        | Spring gasket | Φ10           |                            | 1        |        |