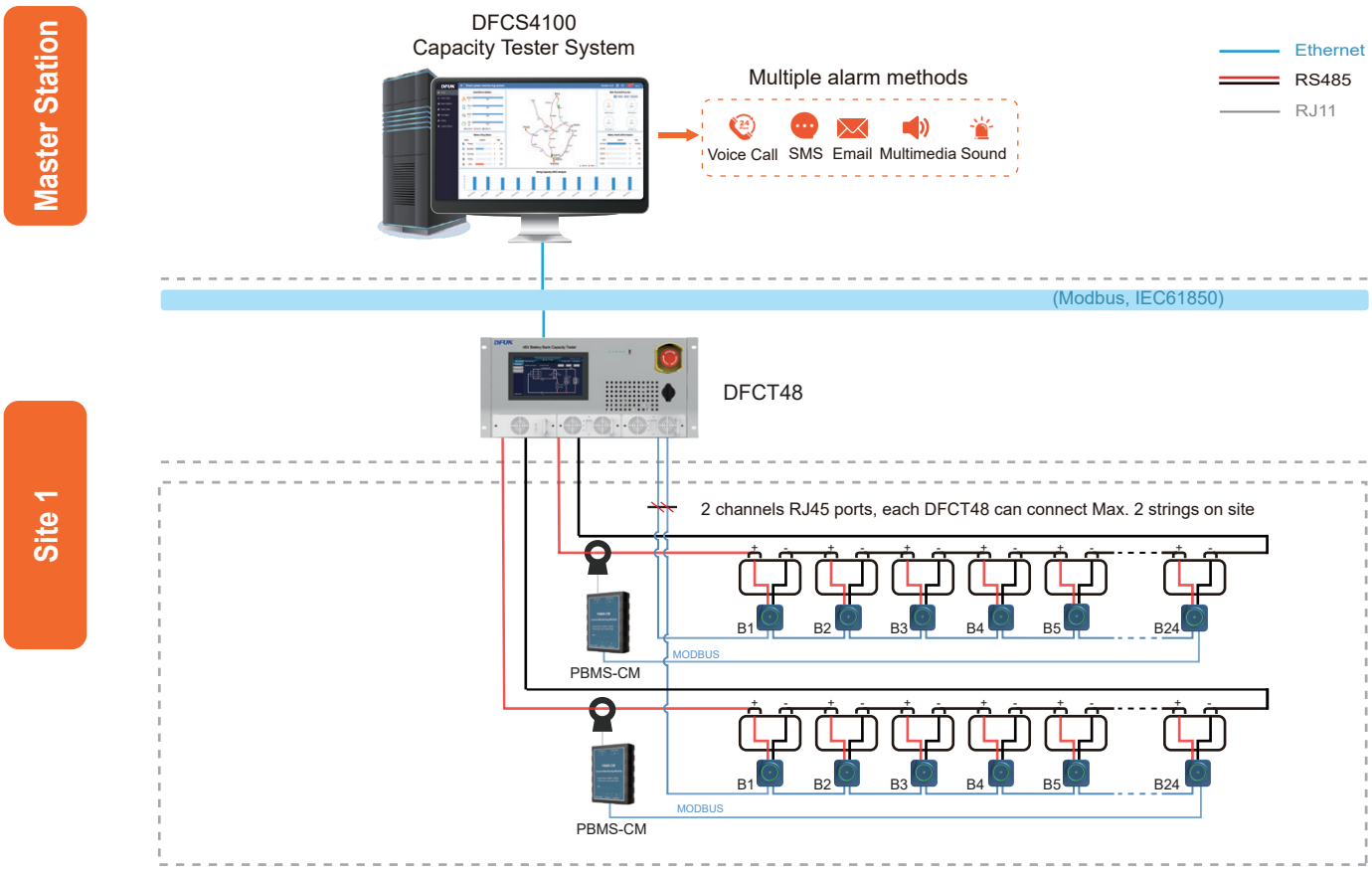
# DFCT48
# 48V Battery Bank Capacity Tester

### Battery protection
Pre-charging to balance the voltage difference of the busbar, which can prevent the battery from being shocked by high voltage difference and large current

### Stable performance
Isolation design with primary side, secondary side structural, strong anti-interference and stable operation

### Safety & Energy saving
Adopt real load discharge, boost constant current discharge, circuit physical isolation

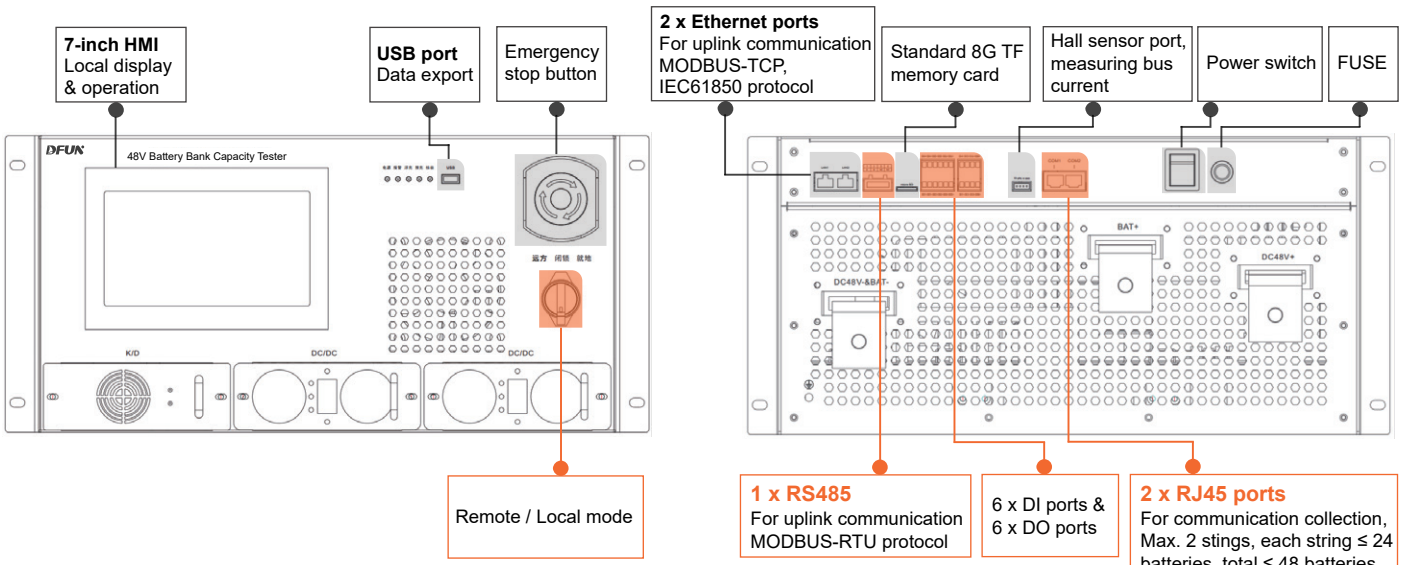
### Cost saving
Online discharge capacity tester, extend battery life & maintenance-free



# Feature

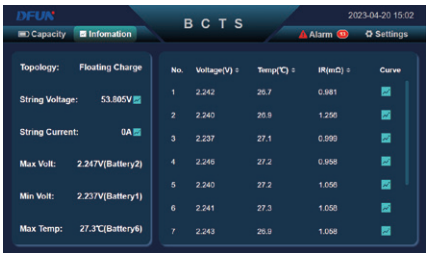
- Apply to 48V power systems, like substation, telecom site, railway transport
- Integrated battery bank capacity tester, battery monitoring
- Discharge the actual load by DC/DC voltage boost, without additional dummy load
- Build-in BMS : monitor battery voltage, charge and discharge current, impedence, internal temperature, environment temperature & humidity, voltage & current
- Historical data storage for 3 years, support query and export
- Shallow charging and discharging to activate the battery regularly, extended battery life
- Build-in touch screen HMI
- IEC61850, Modbus communication protocol


## Terminal Introduction




## 7-inch HMI for local display & Optional


Capacity tester report




Battery parameters


History alarm

# 48V Battery Bank Capacity Tester

## Technical Specification

| | | | | |
|---|---|---|---|---|
| **CPU** | ARM cortex A7 528MHz | **Display** | 7-inch LCD for local display & operation | |
| **Memory** | 512MB DDR3, 4G EMMC + 8G TF memory card | **Measure range** | Current | 1~2 strings, range: -2000 ~ 2000V (±2.0%, under 15℃ ~ 35 ℃), resolution: 0.01A |
| **MTBF** | ≥ 100,000 hours | | Ripple current | 1~2 strings, according to the rated current of the hall sensor, range: DC 0 ~ 0.4*I (peak), resolution: 0.01A |
| **Power supply** | Rated: 48VDC<br>Standby consumption: 45W | | Voltage | 1~2 strings, range: 20 ~ 1000VDC (±0.5%), resolution: 0.01V |
| **Up-link communication** | - 2 Ethernet ports (10/100M), (MODBUS-TCP, IEC61850)<br>- 1 RS485 port (MODBUS-RTU) | **Operation environment** | Working temperature: -15℃ ~ 60℃<br>Storage temperature: -40℃ ~ 70℃<br>Humidity: 10% ~ 95% non-condensing | |
| **Down-link communication** | 2 channels RJ45 ports (connect 1~2 strings, each string ≤ 24 batteries, total Max. 48 batteries) | | | |

| | |
|---|---|
| **Oscillatory waves immunity test** | GB/T17626.12-1998 (IEC61000-4-12:1995), Level 3 |
| **Electrostatic discharge immunit test** | GB/T17626.2-2006 (IEC61000-4-2:2008), Level 3 |
| **RF electromagnetic field immunity test** | GB/T17626.3-2006 (IEC61000-4-3:2006+A1:2007+A2:2010), Class A |
| **Electrical fast transient immunity test** | GB/T17626.4-2008 (IEC61000-4-4:2012), Level 3 |
| **Surge immunity test** | GB/T17626.5-2008 (IEC61000-4-5:2014+A1:2017), Level 3 |
| **RF conducted immunity test** | GB/T17626.6-2008 (IEC61000-4-6:2013), Class A |
| **Power frequency magnetic field immunity test** | GB/T17626.8-2008 (IEC61000-4-8:2009), V |
| **Electromagnetic emission limits test** | GB/T14598.16-2002 (IEC60255-25:2000), Comply |

## String Measuring Sensor

### PBMS-CM String Current Measuring Sensor & Hall Sensor

- One string need 1 PBMS-CM, each PBMS-CM with 2 hall sensor ports
- Measure battery string charge and discharge current, ripple current
- Measure multi-pole battery's string charge and discharge current and ripple current with flexiable module and hall sensor
- Accessories:
  1） Hall sensor and cable: range from 0~±1000A with 2m cable
  2) Communication cable : 5m with RJ45 port


**PBMS-CM**

**Hall Sensor**

| Item | Power supply | Measuring range | | Environment |
|---|---|---|---|---|
| | | String current | Ripple current | |
| **PBMS-CM** | 24VDC (range: 9 ~ 32VDC)<br>Power consumption: ＜0.5W | 1 Hall sensor: -1000 ~ 1000A<br>2 Hall sensor: -2000 ~ 2000A<br>(±2.0%, 15°C ~ 35°C) | 20% of Hall sensor<br>Rated current (peak value)<br>Frequency: 50Hz ~ 1KHz | Working temperature: 0°C ~ 45°C<br>Working temperature limit: -15°C ~ 55°C<br>Humidity: 5% ~ 95%RH, non-condensing<br>Storage temperature: -40°C ~ 70°C |

## Battery Cell Sensor

### PBAT71-02 / PBAT71-12 Battery Cell Sensor

- PBAT71-02 for 2V Lead-Acid battery or 1.2V Ni-Cd battery
  PBAT71-12 for 12V Lead-Acid battery
- Monitor individual battery voltage, internal temperature (negative pole), impedance(ohmic value)
- Calculate individual battery state of charge (SOC), state of health (SOH)
- Powered by communication bus, no consuming battery power
- Auto-balancing

Running status

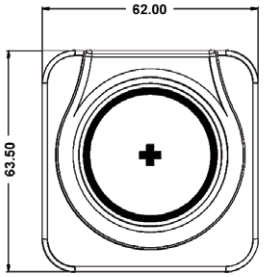
Alarm status

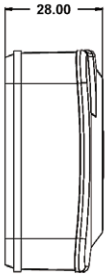
# 48V Battery Bank Capacity Tester

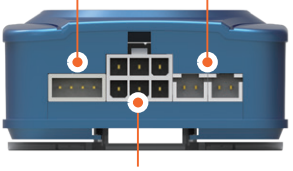
| Item | Power supply | Rated input voltage | Measuring range | | |
|---|---|---|---|---|---|
| | | | Voltage | Internal temperature | Impedance |
| PBAT71-02 | 24VDC<br>Power consumption:<br>< 0.25W | 02V / 1.2V | 0.5 ~ 3VDC (±0.2%) | -20°C ~ 85°C<br>(±0.5°C) | Range: 0.1mΩ ~ 50mΩ<br>Repeatability error: 1.0%±25μΩ<br>Conformity error: 1.5% ±25μΩ |
| PBAT71-12 | | 12V | 5 ~ 18VDC (±0.2%) | | |

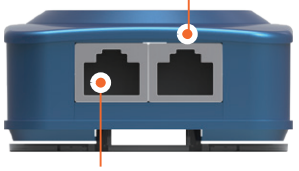
## Dimension and Installation

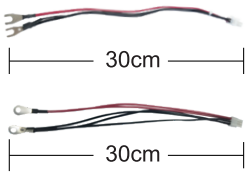
Unit : mm



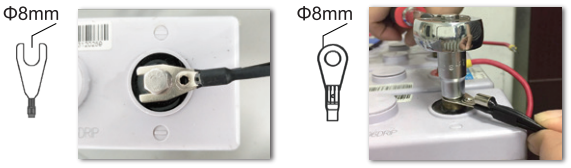




| Battery measuring cable | Item | Description |
|---|---|---|
| | Length | 30cm |
| | Terminal & size | U Type, hole diameter: 8mm |
| | | O Type, hole diameter: 8mm |




## Order Information

| System Structure | Model | Descrption | Remark |
|---|---|---|---|
| Management layer | DFCT48-21 | 48V Battery Bank Capacity Tester | 100A discharge,200A load for 1 string. |
| | DFCT48-22 | | 100A discharge,200A load for 2 strings. |
| | DFCT48-41 | | 100A discharge,400A load for 1 string. |
| | DFCT48-42 | | 100A discharge,400A load for 2 strings. |
| | DFCT48-61 | | 200A discharge,600A load for 1 string. |
| | DFCT48-62 | | 200A discharge,600A load for 2 strings. |
| BMS layer | DFCT-BMS-02 | Contents :24 x PBAT71-02<br>1 x PBMS-CM、1 x Hall | Hall specifications Based on the host type<br>DFCT48-21 and DFCT48-22 Hall select CS200EK2T5<br>DFCT48-41 and DFCT48-42 Hall select CS300EK2T5<br>DFCT48-61 and DFCT48-62 Hall select CS400EK2T5 |
| | DFCT-BMS-12 | Contents :4 x PBAT71-12<br>1 x PBMS-CM、1 x Hall | |


**DFUN (ZHUHAI) CO., LTD.**

6th Floor, Building A3, No. 7 Gangwan, Jintang Road, Tangjiawan Town, High-tech Zone, Zhuhai, Guangdong, China

+86 756 6123188 519085

info@dfuntech.com www.dfuntech.com


Your Representative