LAUNCH Europe

X-431 EV tools

EV diagnostic and maintenance tools

LAUNCH
EUROPE GMBH

Introducing the new EV tools

- With these different EV diagnostic and maintenance tools, the modern workshop is perfectly prepared for the daily work on EV vehicles.
- Some EV tools are standalone devices that can be used without a diagnostic device: ELB300 EV Battery Pack Cell Equalizer, ELP400 EV HV Battery Charger and Discharger, ELT500 EV Battery Pack Airtightness Tester, ELA320 Intelligent Digital Power Supply
- Some are diagnostic tools that can only be used in combination with the X-431 EURO TAB 3: EM101N oscilloscope and multimeter or the EV Diagnosis Add-On Kit
- Both options are available for the ES200. This unit can be used as a standalone and in combination with the X-431 TAB 3
- For the diagnostic products that can only be used in combination with the X-431 EURO TAB 3, a new Toolbox is added on the start screen especially for EV diagnostics.

EV Diagnostic Tools

EV Diagnosis Add-On Kit

Article number:	AC-DIAG-301190852
Product name:	EV Diagnosis Add-On Kit

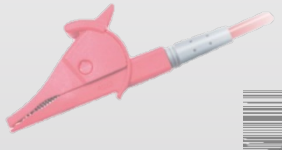
EM101N EV Oscilloscope & Multimeter

Article number:	LE-EV-301180889
Product name:	EV Oscilloscope & Multimeter

LAUNCH
EUROPE GMBH

EV Diagnostic Tools

EV Insulation Resistance Tester

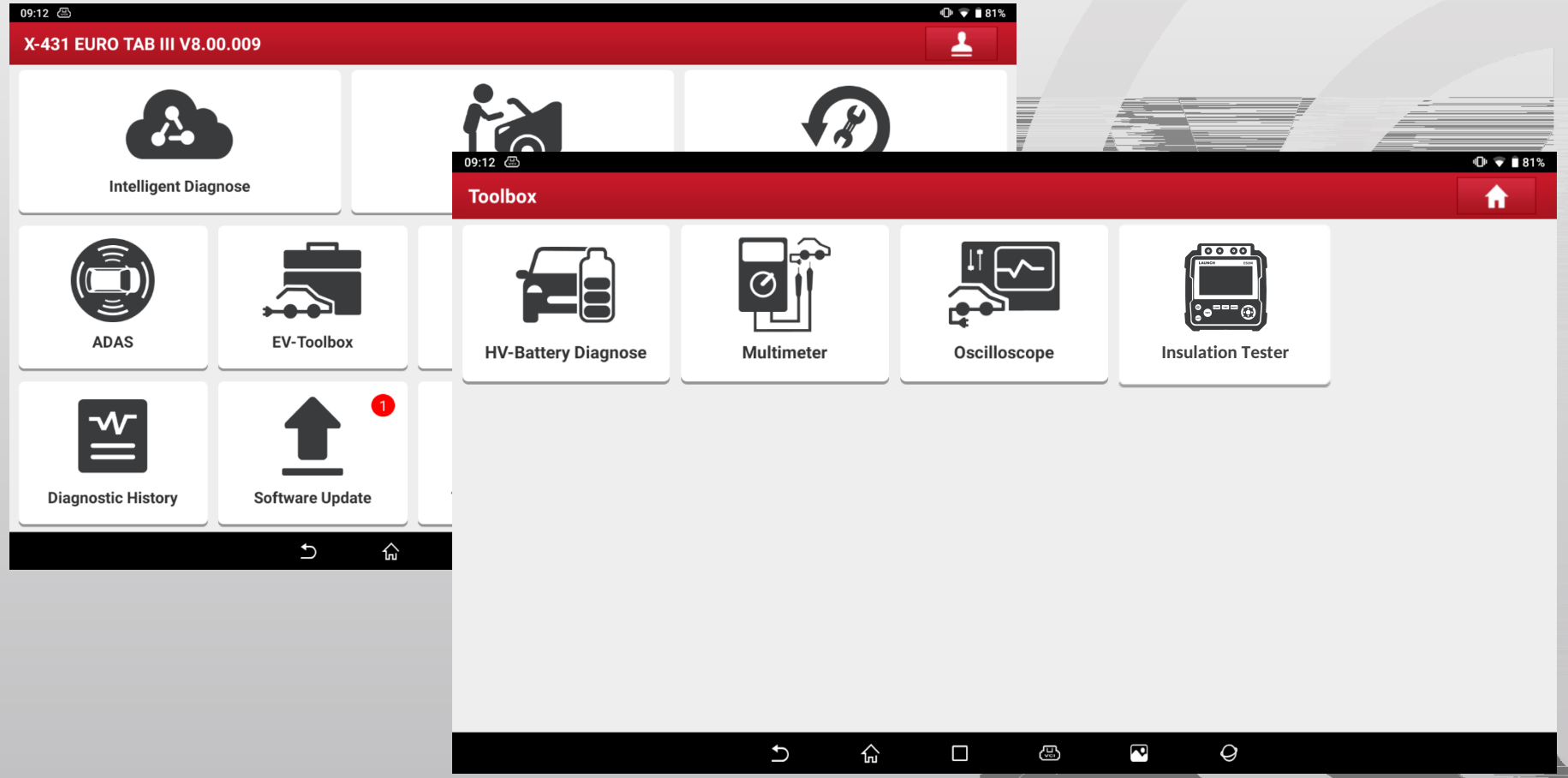


Article number:	LE-ES200-301181047
Product name:	EV Insulation Resistance Tester

LAUNCH
EUROPE GMBH

EV Diagnostic Tools

EV Toolbox:

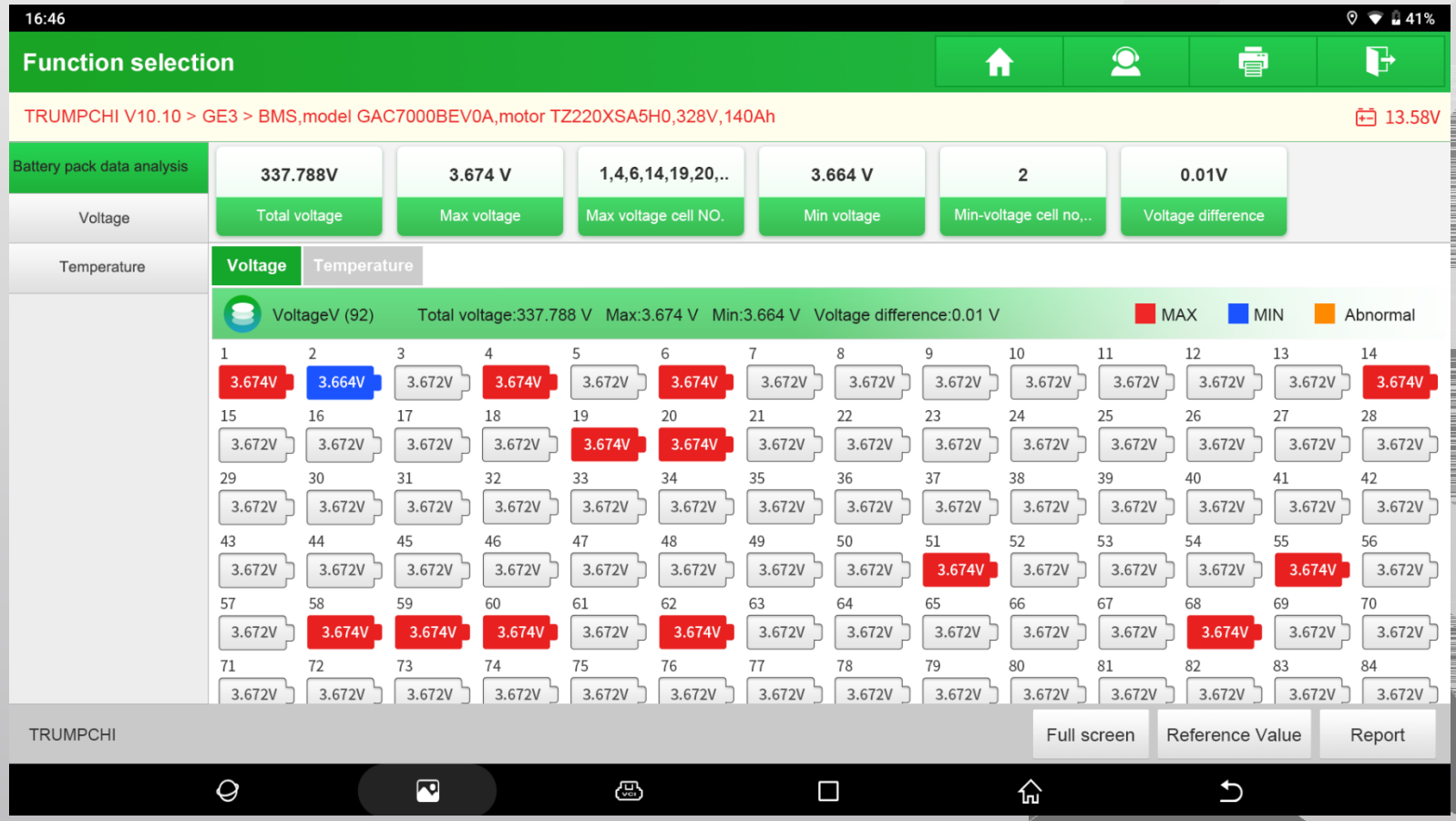


EV Diagnosis Add-On Kit

- In the scope of delivery are 25 non-standard battery connectors + jumper cables are available for more than 95% of EV models.
- With the EV Diagnosis Add-On Kit, HV batteries can be tested in a disconnected or even removed state. To do this, the diagnostic device is connected directly to the HV battery via the adapter cables. The voltages of all cells and the temperature of all cells can then be checked. In addition, the total voltage of the HV battery can be displayed.
- This means that even when the battery is removed, the defective battery cell can be quickly identified and then replaced without having to measure each individual battery cell. In addition, a diagnostic report of the EV battery can be created after the diagnosis.

EV Diagnosis Add-On Kit

EV Diagnostic Software



EM101N EV Oscilloscope & Multimeter

- 2-channel oscilloscope with multimeter function
- Brand-new diagnostic APP with friendly interface, convenient and easy use, which supports local saving and opening of waveforms.
- Supports both wired connection and wireless connection with supported X-431 diagnostic tools. The brand-new UI style design supports three display modes, which can be freely selected and switched at will.
- Rich accessories, pricker sets, multimeter pens, crocodile clips, oscilloscope channel test lines, etc.
- It is equipped with a 3.1 Ah battery and can also be used wirelessly.

LAUNCH
EUROPE GMBH

EM101N EV Oscilloscope & Multimeter Parameters

Multimeter

DC voltage	*Automatic range, test range: ±600V*
AC voltage	*Automatic range, test range: ±600V*
DC current	*Automatic range, test range: ±10A (it is necessary to connect an external sensor for large range current)*
AC current	*Automatic range, test range: ±10A. Average value measurement (it is necessary to connect an external sensor for large range current).*
Resistance	*Automatic range, test range: 0~6MΩ*
On and off	*Tweet when less than 30Ω*
Diode	*0.5V—2.0V*

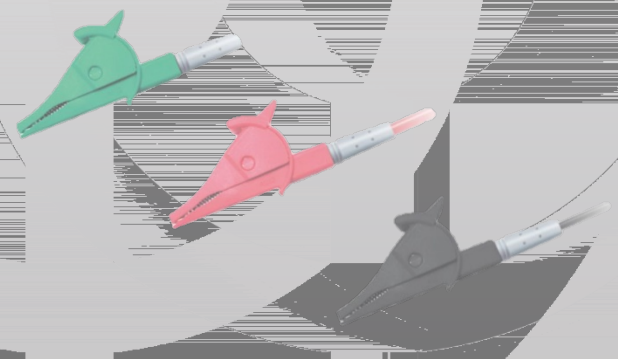
Oscilloscope

Channel	*Two analog channels*
Real-time sampling rate (Max)	*50MHz/s*
Time base range	*1us/div 10s/div, step by 1 2 5 times*
Sampling mode	*Normal sampling, peak detection, average*
Storage depth	*1M*
Input coupling	*DC, AC, grounded*
Input resistance	*1MΩ±2%, Parallel with 15pF±5pF*
Vertical sensitivity	*2mV/div 5V/div*
Vertical resolution	*8bits*
Maximum input voltage	*40V peak value DC + AC peak value*
Probe attenuation factor	*1X, 10X, 100X probe support required)*
Trigger type	*Edge trigger, pulse width trigger*
Trigger mode	*Auto, Normal, Single*
Automatic measurement	*Peak-to-peak value, Average value, Maximum value, Minimum value, Top value, Bottom value, Frequency, Period*

LAUNCH
EUROPE GMBH

ES200 EV Insulation Resistance Tester

- The ES 200 can be used to measure the insulation resistance of the HV lines to the vehicle body - for this, each HV line is simply tested against the vehicle body.
- The ES200 can be used as a stand-alone unit or connected to the TAB 3. With the TAB 3 it can be controlled via Bluetooth and a measurement protocol can be saved after the test.
- During the measurement, a very high test voltage is applied, the resulting current flow provides information about the insulation resistance.
- Voltage range between 500-5000V possible - The applied test voltage varies from manufacturer to manufacturer - The test voltage should be at least as high as the operating voltage of the vehicle.
- With its 5-inch colour screen, it is easy to read even in sunlight.
- It is equipped with three measuring modes: Time measurement, comparison and continuous measurement.



LAUNCH
EUROPE GMBH

ES200 EV Insulation Resistance Tester

Insulation tester test report:

Insulation tester test report

This report is元征 LAUNCH X-431 submitted by

Report information

Repair shop name:

Address:

Shop type:

Phone:

Diagnosis time: 2023-07-27 14:46:40

Business hours:

Customer name:

Tested by:

License plate:

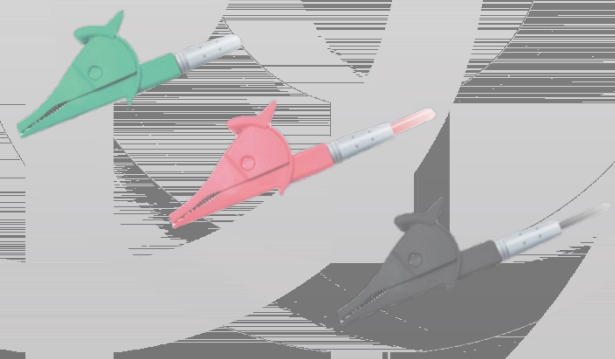
Car series: vw

Car model: test

Model year:

VIN:

Mileage:



LAUNCH EUROPE GMBH

ES200 EV Insulation Resistance Tester

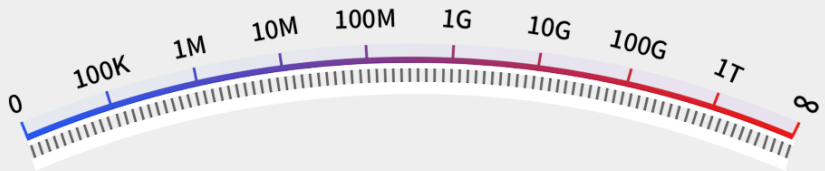
Insulation tester test report:

Insulation tester test results

Output voltage: 500V

Measurement duration: 00:09

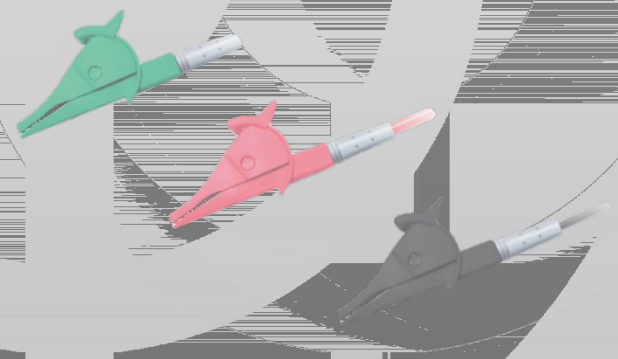
Measured insulation value: O.LMΩ



O.LMΩ

Measurement time — 00:09 +

Output — 500V +



LAUNCH EUROPE GMBH

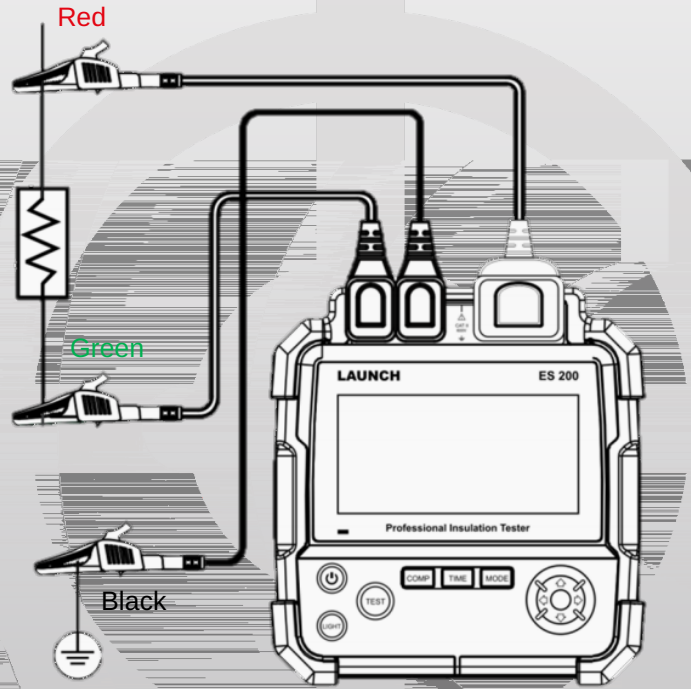
ES200 EV Insulation Resistance Tester

Specifications:

Battery	3150 mAH
Display	5“
Working Temperature	0°C – 50°C
Size	180x174x65mm
Weight	1,7kg

AC and DC voltage test performance parameters:

Voltage Type	DC Voltage	AC Voltage
Measuring Range	30 – 600V	30 – 600V (50/60Hz)
Resolution	1V	1V
Measurement Accuracy	+/- 3%	+/- 3%



ES200 EV Insulation Resistance Tester

Insulation resistance test performance parameters:

Test Voltage	500V	1000V	2000V	5000V
Measurement Range	0,0MΩ – 20GΩ	0,0MΩ – 40GΩ	0,0MΩ – 100GΩ	0,0MΩ – 1000GΩ
Open Circuit Voltage	DC 500V	DC 1000V	DC 2000V	DC 5000V
Measurement Accuracy	0,0MΩ – 99,9MΩ (+/- 3%+5) 100MΩ – 9,99GΩ (+/- 5%+5) 10,0GΩ – 20GΩ (+/- 10%+5)	0,0MΩ – 99,9MΩ (+/- 3%+5) 100MΩ – 9,99GΩ (+/- 5%+5) 10,0GΩ – 40GΩ (+/- 10%+5)	0,0MΩ – 99,9MΩ (+/- 3%+5) 100MΩ – 9,99GΩ (+/- 5%+5) 10,0GΩ – 100GΩ (+/- 10%+5)	0,0MΩ – 99,9MΩ (+/- 3%+5) 100MΩ – 9,99GΩ (+/- 5%+5) 10,0GΩ – 100GΩ (+/- 10%+5)
Short Circuit Current	<3,0mA			

ELA320 Intelligent Digital Power Supply

Intelligent Digital Power Supply

Article number:	LE-ELA320-307010263
Product name:	Intelligent Digital Power Supply

LAUNCH
EUROPE GMBH

ELA320 Intelligent Digital Power Supply

- ELA320 is an intelligent digital voltage supply unit for HV vehicle maintenance.
- It can be used for maintenance testing of high and low voltage electrical components such as:
  - Electric air conditioning compressor
  - DC/DC module
  - PCT heater
  - electronic fan
  - power steering pump

LAUNCH EUROPE GMBH

ELA320 Intelligent Digital Power Supply

- The high and low voltage circuits are separately fused and can be used separately. They can be managed, maintained and monitored separately.

- Independent protection mechanism: For the input circuit, the high-voltage output circuit and the low-voltage output circuit. This detects faults such as undervoltage, overvoltage, overcurrent and short-circuit and takes appropriate protective measures. In addition, an alarm sounds in the event of a fault.

- Wireless control of synchronous operation via Bluetooth with supported X-431 diagnostic devices. When the unit is connected, the current power supply mode, high/low voltage output conditions, setting parameters and other data are synchronised in real time.

ELA320 Intelligent Digital Power Supply

Supply voltage		**AC 110~240V@16A，50/60Hz**
Output parameters:	High-voltage voltage	DC 250~750V
	High-voltage current	0~5A
	Low-voltage voltage	DC 12, 24V
	Low-voltage current	1A
Output voltage precision		0.1V
Output current precision		0.1A
Control panel	High voltage	Voltage regulation, current regulation, output button switch
	Low voltage	Button switch DC 12, 24 V voltage, output button switch
Display method		Eight-segment white LED digital display
Communication method		Bluetooth (BLE4.2)
Dimensions		315X192X186mm
Weight		4.85Kg
Safety Test		
Insulation resistance	AC input-case	DC1000V，≥10MΩ(room temperature)
	DC output-case	DC1000V，≥10MΩ(room temperature)
	AC input-DC output	DC1000V，≥10MΩ(room temperature)
Withstand voltage test	AC input-case	AC2000V，50Hz，≤10mA，60S
	DC output-case	AC2000V，50Hz，≤10mA，60S
	AC input-DC output	AC2000V，50Hz，≤10mA，60S
Working Environment		
Working temperature		-10~+65℃
Working environment humidity		5~95% relative humidity(no condensation)
Storage temperature		-40~+70℃

LAUNCH
EUROPE GMBH

Battery Pack Diagnostic & Maintenance

- **ELB300** EV Battery Pack Cell Equalizer
- **ELP400** EV Battery Pack Module Charging and Discharging Device
- **ELT500** EV Battery Pack Airtightness Tester

LAUNCH
EUROPE GMBH

ELB300 EV Battery Pack Cell Equalizer

Battery Pack Cell Equalizer

Article number:	LE-ELB300-307010260
Product name:	Battery Pack Cell Equaliser

LAUNCH
EUROPE GMBH

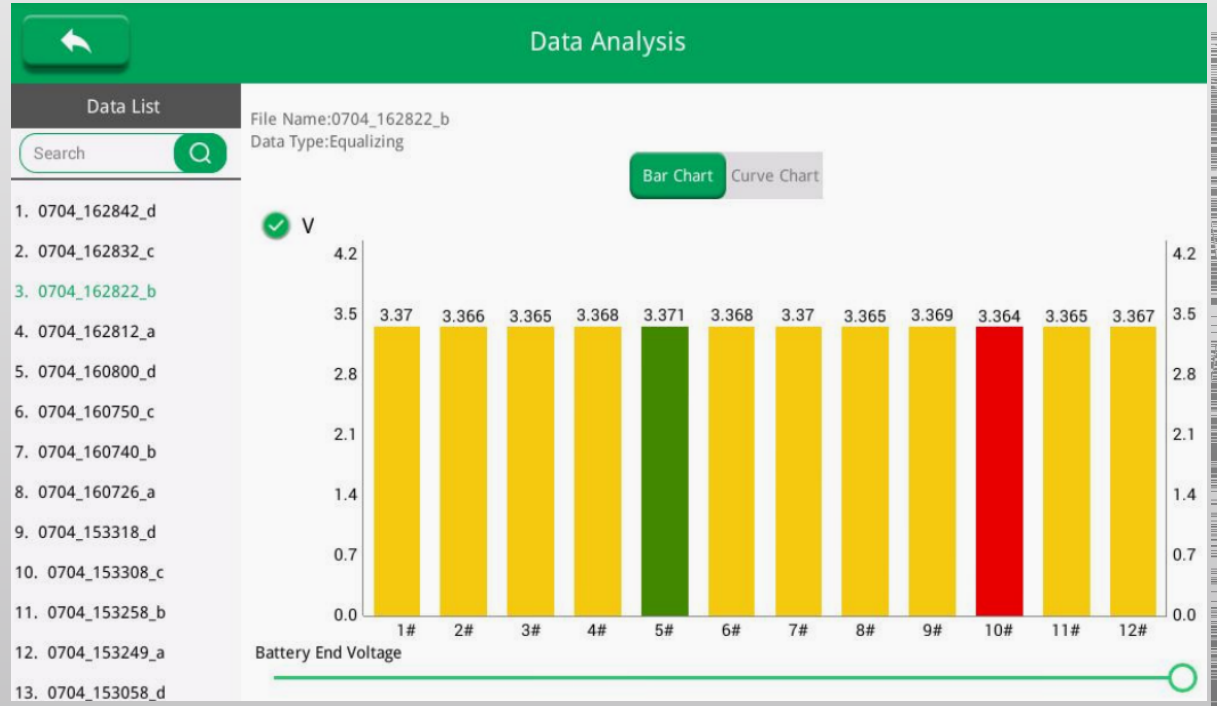
ELB300 EV Battery Pack Cell Equalizer

- With this HV battery cell equaliser, individual cells can be tested, charged and discharged. With this you can set the voltage of the cells to the same level.
- Features:
  - Intelligent recognition of the cells
  - Uniform charging or discharging of the cells
  - Effective prevention of overcharging or overdischarging of any cell in the HV module
  - Safety protection function against overvoltage, undervoltage, overcurrent, short circuit and reverse polarity protection
  - 7-inch LCD touch screen

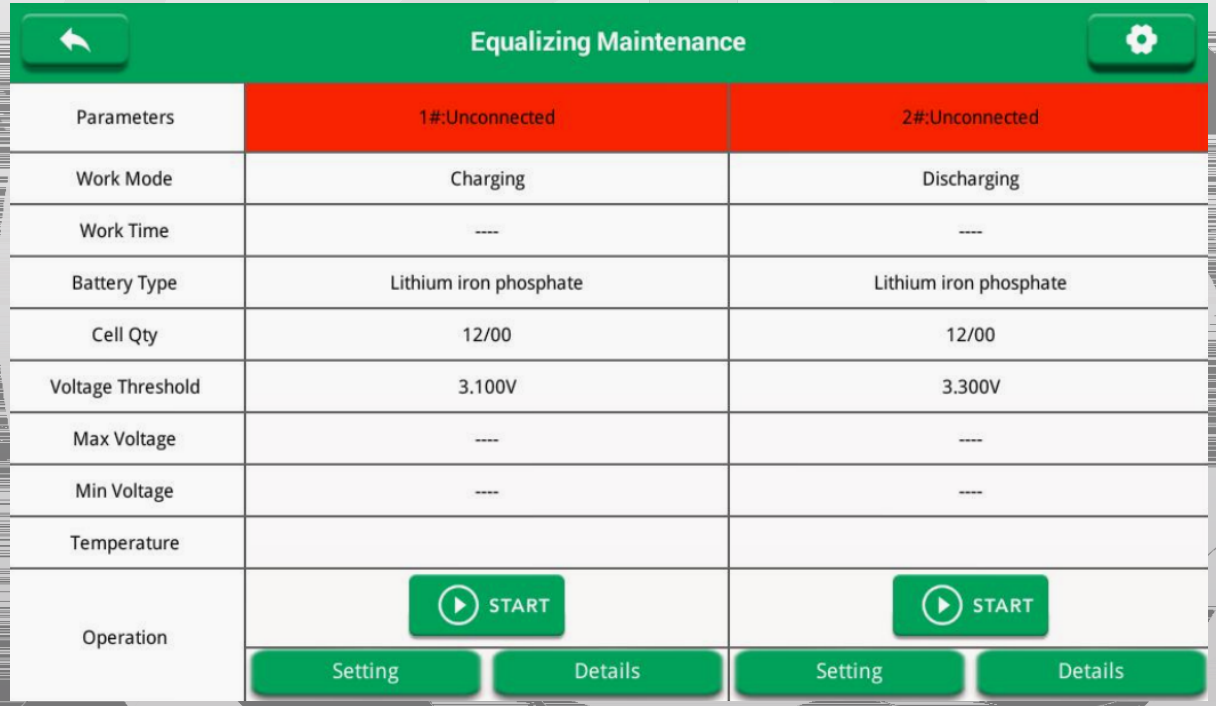
LAUNCH
EUROPE GMBH

ELB300 EV Battery Pack Cell Equalizer

“Data Analysis” Menu



“Balanced” Menu



ELB300 EV Battery Pack Cell Equalizer Parameters

Supply voltage	Single phase AC 90~264V，40~60Hz
Charge and discharge voltage range	DC 1.8~4.2V
Voltage detection precision	± 0.1%FS± 2mV (maximum measuring range 5V)
Charge and discharge current range	0.1~5A MAX
Current detection precision	± 1%FS± 0. 05A (maximum measuring range 5A)
Battery temperature detection precision	± 2℃(-25~+85℃)(Charge℃(-25~+85℃)(charge and discharge temperature range can be set)
The number of modules supported by a single device	2 modules at most, and each module has 12 a maximum of 12 strings of batteries
Number of channels	2X12
Charge and discharge power	600W MAX
Battery interface	16Pin, 24Pin
Host operation method	7-Inch capacitive LCD touch screen with resolution of 800X480
PC data communication	TCP/IP, USB-Device
Wireless communication	WIFI and BT(WIFI external antenna)
Data transfer	USB flash disk(USB-Host)
Charging mode	Constant current + constant voltage charge
Discharging mode	Constant current + constant voltage discharge
Protection function	Input overcurrent protection, overvoltage protection, output overcurrent protection, overtemperature protection.
Dimensions	380X275X460mm
Weight	17kg
Safety test	
Withstand voltage test	AC input-case: 2200Vdc 1min AC input-case
	DC input-output: 2200Vdc 1min DC input-case
Working environment	
Radiation method	Forced air cooling
Temperature	Working temperature range: -5~+40℃; storage temperature: -20~+70℃
Humidity	Relative humidity 0~90%(40± 2℃)
Altitude height	Rated altitude 2000m

LAUNCH
EUROPE GMBH

ELP400 EV Battery Pack Module Charger and Discharger

Battery Pack Module Charging and Discharging Device

Article number:	LE-ELP400-307010261
Product name:	Battery Pack Module Charger and Discharger

LAUNCH EUROPE GMBH

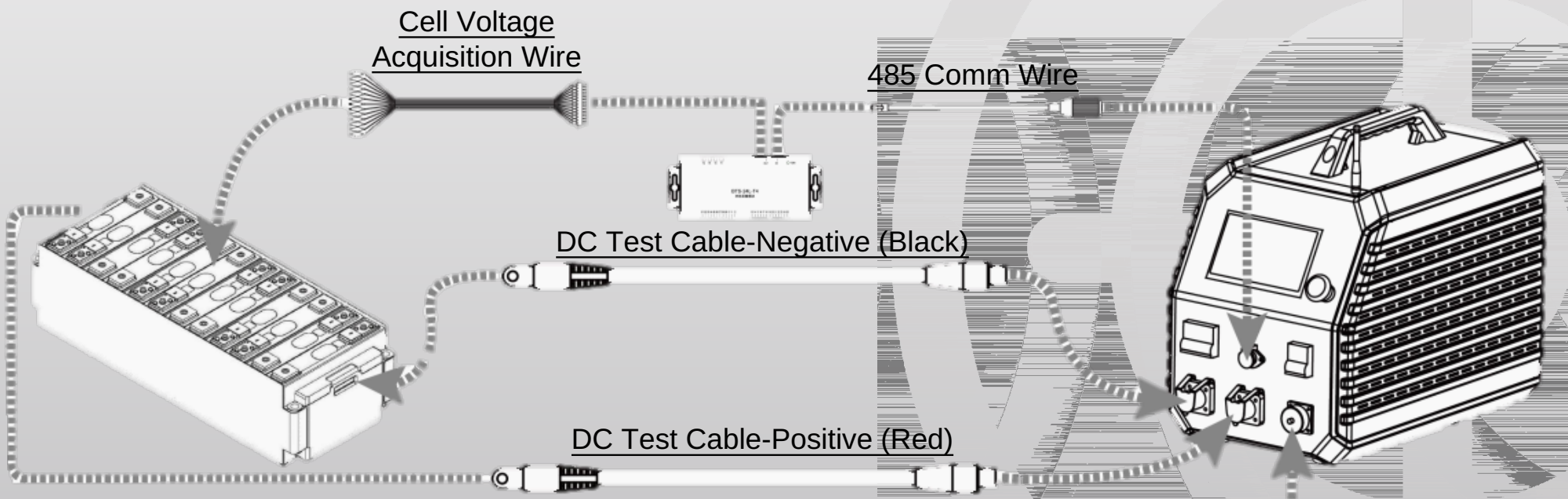
ELP400 EV Battery Pack Module Charging and Discharging Device

- This high-voltage charger and discharger can be used to charge and discharge the individual battery modules. As standard, several battery cells are grouped together in one module. The entire module can be charged and discharged with this device. During the charging process, the individual battery cells can be monitored with the ELP400.
- Features:
  - The wide voltage range is suitable for charging and discharging a wide variety of EV batteries
  - Various setting options such as: Total charging time, constant voltage time, charging capacity and charging current
  - Safety protection function against overvoltage, undervoltage, overcurrent, short-circuit and reverse polarity protection
  - Automatic storage of the operating record

LAUNCH
EUROPE GMBH

ELP400 EV Battery Pack Module Charging and Discharging Device

Working Diagram



ELP400 EV Battery Pack Module Charging and Discharging Device

Supply voltage	**Single phase three-wire AC 220V，40~60Hz**
Display Screen	7-Inch TFT LCD touch screen with resolution of 800X480
Data communication	CAN, RS485
Data transfer	USB disk
Internal data storage	16GB
Data search	Preview of data in memory is supported
Battery box data acquisition communication mode	CAN data bus
Module data acquisition communication	Wiring harness sampling
Terminal voltage precision	±0.5%FS+0.3V，resolution: 0.1V
Monomer voltage precision	±0.1%FS+5mV，resolution: 0.001V
Test current precision	±1%FS+0.2V，resolution: 0.1V
Charge voltage range	DC 2~260V
Discharge voltage range	DC 2~260V
Charge current range	Maximum current 100 A, maximum power 4.4 kW
Discharge current range	Maximum current 150A, maximum power 7.2kW
Charging mode	Constant current + constant voltage charge
Discharging mode	Constant current discharge
Charge and discharge data acquisition	Active equipment measurement + external CAN communication data acquisition

LAUNCH
EUROPE GMBH

ELP400 EV Battery Pack Module Charging and Discharging Device

Charge and discharge protection	**Battery string overcharge, over discharge and overtemperature protection**
Host protection	Overtemperature, overcurrent or current out of control trigger shutdown protection
Shutdown actuation mechanism	DC air circuit breaker + releaser
Reverse connection protection	Supported
Abnormal protection	Power cord and main cable are powered off
Over temperature protection	Resistance box overtemperature 85℃; radiator overtemperature 100℃
Alarm prompt	LCD display + buzzer sound
Dimensions	445X329X540mm
Weight	25.6kg
Safety test	
Withstand voltage test	AC input-case: 2200Vdc 1min AC input -case
	DC input-output: 2200Vdc 1min DC input-case
Working environment	
Radiation method	Forced air cooling
Temperature	Working temperature range: -5~+40℃; storage temperature: -20~+70℃
Humidity	Relative humidity 0~90%(40± 2℃)
Attitude height	Rated altitude 2000m

LAUNCH
EUROPE GMBH

ELT500 EV Battery Pack Airtightness Tester

Battery Pack Airtightness Tester

Article number:	LE-ELT500-307010262
Product name:	EV Battery Pack Airtightness Tester

LAUNCH
EUROPE GMBH

ELT500 EV Battery Pack Airtightness Tester

- After repairing HV batteries, an airtightness test of the HV battery must be carried out - this checks that the battery is leakproof.
- Features dual display functions of the pressure value such as real time display of the pressure scale and process pressure curve display
- Pressure range of 2.0-500 kPa possible

LAUNCH
EUROPE GMBH

ELT500 EV Battery Pack Airtightness Tester

Working Diagram

⌀ 6mm Air Inlet Pipe

⌀ 6mm Air Oultet Pipe

ELT500 EV Battery Pack Airtightness Tester

Supply voltage	**AC 220V，50Hz**
Power	20W MAX
Air source requirements	0.1~1.0 Mpa dry compressed air
Air inlet interface	Φ6mm air tube
Test interface	Φ6mm air tube
Test pressure range	0~30Kpa
Sensor resolution	1Pa
Test precision	± 5Pa
Communication interface	RS232, USB
Data storage method	Internal storage, USB disk data download
Dimensions	280X276X360mm
Weight	4.5Kg
Working environment	
Temperature	Working temperature range: -10~+55℃; storage temperature: -20~+70℃
Humidity	Relative humidity 10~90%, 25℃ no condensation

LAUNCH
EUROPE GMBH

Thank you!

LAUNCH Europe GmbH
Heinrich-Hertz-Str. 10
50170 Kerpen

Phone +49 (0) 22 73 / 98 75-0
Fax +49 (0) 22 73 / 98 75-33

info@launch-europe.de
www.launch-europe.de


LAUNCH
EUROPE GMBH