Webasto
Feel the Drive

Power Cycling & Battery Test Systems

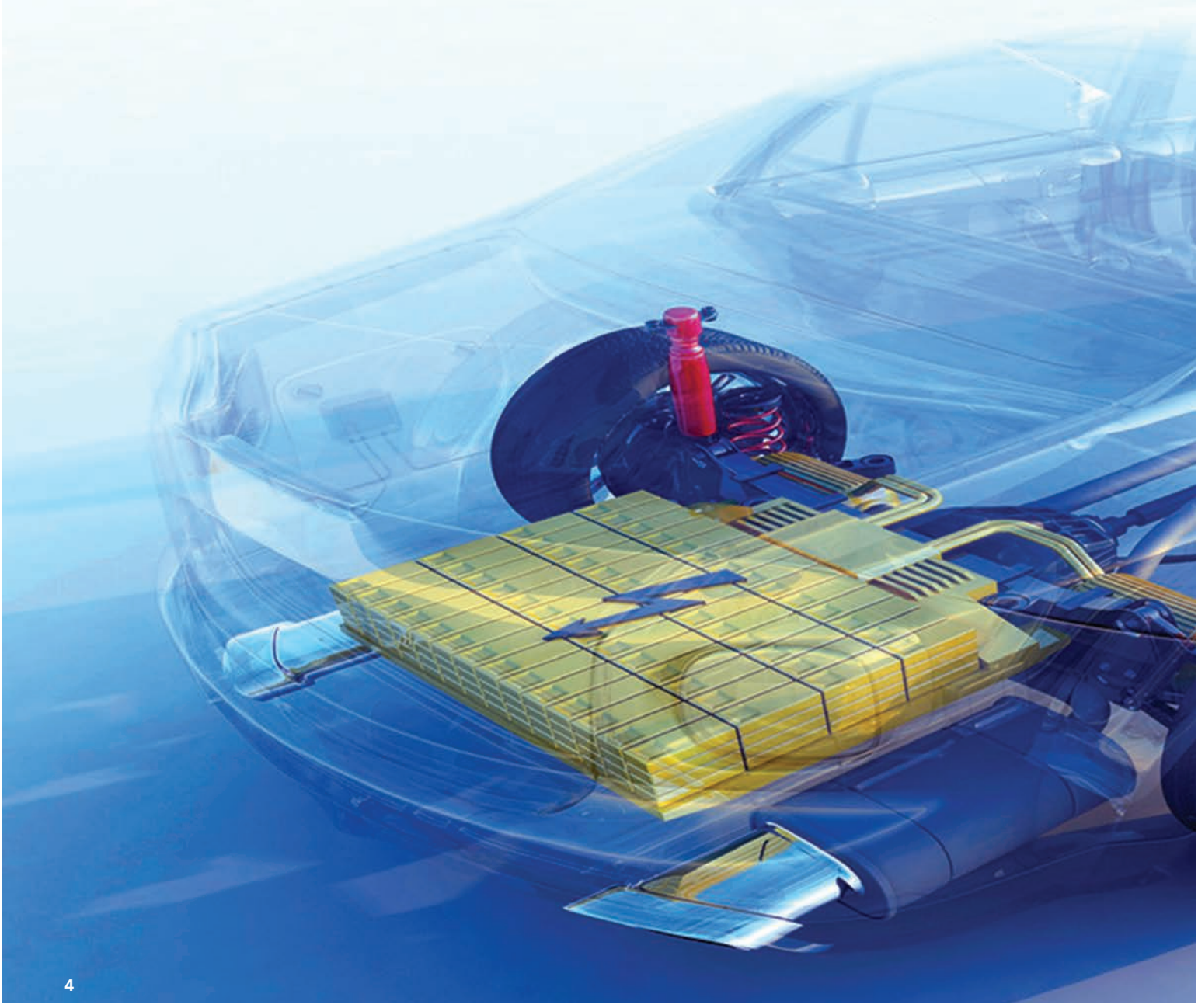
The Standard for Advanced Testing

Contents

The Standard For Advanced Energy Testing

Webasto Power Test Systems located in Fenton, MI is a pioneer of electric vehicle charging technology and battery test systems. Our power processing and battery testing equipment is a vital part of our product lineup and enables OEM vehicle manufacturers to develop, design, and test their advanced batteries and vehicles of tomorrow.

At Webasto, we are committed to developing advanced power, transportation, and energy storage solutions for a brighter, more sustainable tomorrow. Webasto can enable your success as a clean technology provider.



History of Innovation

Webasto has a tradition of progress that spans more than 100 years. Today, Webasto is one of the 100 leading suppliers to the automotive industry worldwide. From developing the first modern electric car to the energy systems of tomorrow, Webasto sets the standard.

The world's leading automotive, battery and fuel cell companies rely on Webasto's bidirectional, programmable power cycling and test systems – and for good reason. For more than three decades, Webasto's breakthroughs in the testing, charging and development of batteries have been setting the standard for high-power test equipment.

The Power Cycling and Test Systems were initially created in 1989 to support the development and testing of the GM Impact. These systems have supported the world's leading automotive OEMs, battery and fuel cell manufactures, utilities, defense contractors, and government agencies. Our customers recognize the high-current / high power capability, comprehensive operating envelope, and reliability of these Power Test Systems.

The Webasto Power Test Systems product line is an industry-leading family of grid-tied DC power processing hardware and software solutions (excluding cell testing), that are used to examine advanced power cycling and alternative energy storage systems. Our products have received a reputation for dependability, adaptability and convenience, and are therefore the choice of many top automotive OEMs and organizations.

1901
Wilhelm Baier founds a company that goes by the name of: "Esslinger Draht und Eisen-warenfabrik Wilhelm Baier, Esslingen/ Neckar".

1908
Wilhelm Baier Senior creates the new name **Webasto** out of his initials and the toponym Stockdorf

1987
Sunraycer wins 1,864-mile World Solar Challenge, with its small, but powerful electric motor

1990
GM Impact, electric concept car, debuts at the LA Auto Show

1996
EV1 becomes the first mass-produced modern electric car

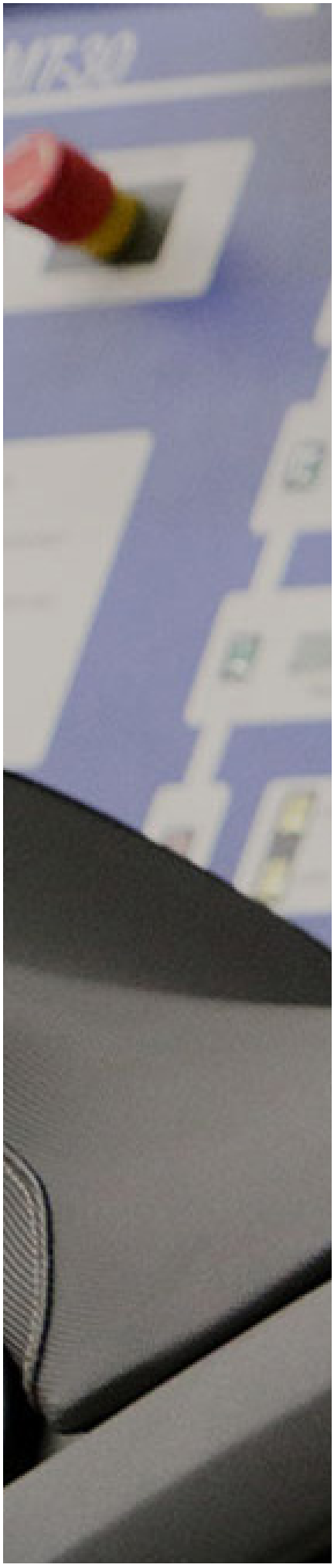
1999
Launch of 900, a high power battery cycler for Allison Transmission's E-Axle development team

Today
Webasto works with the world's most innovative companies to test their electric-mobility solutions

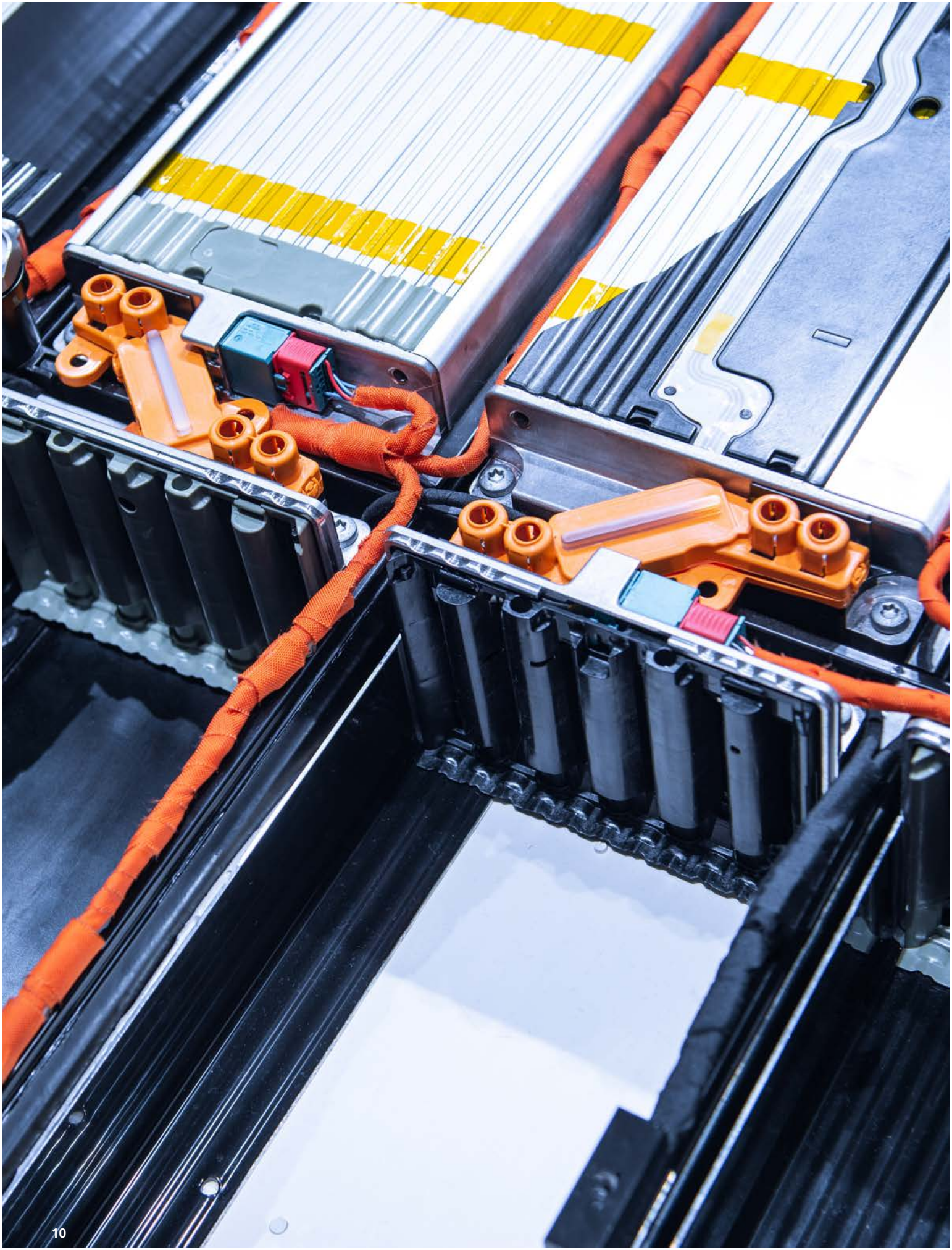
Put Your Concepts To The Test

With a full power range (+/-5kW to +/-1MW) of bi-directional DC equipment, our Power Cycling and Test Systems can handle virtually any DC supply or load requirement. In addition, Webasto systems can emulate any drivetrain component, enabling the testing of individual components or partial drivetrains accurately and realistically, allowing true hardware-in-the-loop testing.

Our Power Cycling and Test Systems are used for a wide range of testing, charging and development activities associated with advanced batteries, fuel cells, ultra capacitors, hybrid energy systems, motors, generators, uninterruptible power systems, and powertrain components. View our Application Guide to find the right solution for you.




ZERO
05



Application Guide

Webasto Power Cycling and Test Systems are used for a wide range of testing, charging and development activities associated with advanced batteries, fuel cells, ultra capacitors, hybrid energy systems, motors, generators, uninterruptible power systems, and powertrain components.






		Low	Medium			High	
		0-30kW	0-125kW		0-150kW	0-250kW	
Category	**Application**	**MT-30**	**ABC-150**	**ABC-170 (CE)**	**ABC-600**	**900**	**900EX**
Battery Testing & Cycling	Battery Cell	●					
	Battery Module	●					
	Battery Management Systems (BMS)	●	●	●			
	Battery Pack	●	●	●	●	●	●
	Production Testing	●	●	●	●	●	●
Simulation	Battery	●	●	●	●	●	●
	Powertrain	●	●	●	●	●	●
	Fuel Cell	●	●	●	●	●	●
	Hardware in the Loop	●	●	●	●	●	●
Energy Storage Charging & Testing	Fuel Cell	●	●	●	●	●	●
	Super & Ultra Capacitors	●	●	●	●	●	●
	Flywheels	●	●	●	●	●	●
Power Generation Equipment Testing	Electric Components	●	●	●	●	●	●
	Power Supplies	●	●	●	●	●	●
	Generators	●	●	●	●	●	●
	Stationary Power	●	●	●	●	●	●
	Inverters	●	●	●	●	●	●
	Military & Aerospace	●	●	●	●	●	●
	Life, Run-in, Burn-in	●	●	●	●	●	●
	Uninterruptable Power Supplies		●	●	●	●	●
Hybrid & Electric Vehicle Testing	Powertrain	●	●	●	●	●	●
	Production Testing	●	●	●	●	●	●
	Medium & Heavy-duty EVs (buses, trucks, military, locomotives)					●	●

Advanced High Power Test System

900 EX

Fast response times

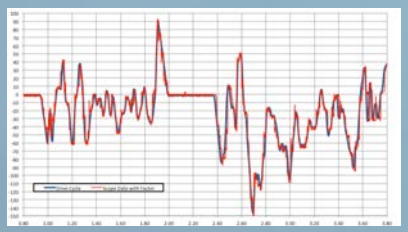
More accurately represent real world conditions

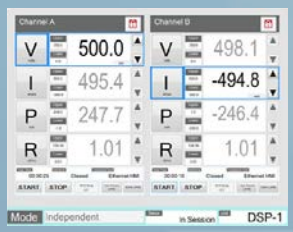
Enhanced error detection & fault correction

Control modes: voltage, current, power, resistance

Features:

- Industry standard for high performance testing
- Flexibly test virtually any DC source, load, or battery storage system
- Test faster and more efficiently > Save time & money
- Regenerative to the grid > Save energy and money
- More predictive results
- Two channels for flexibility in testing/simulating multiple devices with a single machine
- Open communication protocol allowing easy integration into any test set-up
- Self-contained cooling system requiring no external cooling system
- Voltage with Internal Resistence





Power Cycling and Measurement Solutions

900

ABC-150

Energy returned to the grid at 92+% efficiency

Dual independently controlled channels

Automatic shutdown on loss of power (anti islanding)

Multiple control interfaces/options

ABC-170

ABC-170 CE

MT-30

ABC-600

900 EX

The 900 EX is ideal for testing and emulating energy storage and drive train components. The increased performance (rise time/slew rate) and increased accuracy make the 900 EX ideal for applications like Heavy Industrial (ships, trains, trucks, and aircraft), Military (hybrid drives and aircraft launch systems), Power Electronics (solar panels, inverters), and Hardware in the loop testing. Digital controls protect critical systems and components, and the system can self-adjust to external environmental events like unstable power sources. The bi-directional system can operate at ± 250kW, or combined, it can scale to ±1MW.

The 900 EX, with new LCD touchscreen display, is an intelligent system that will give you the accuracy, speed, and control to add value to your tests.

Technical Specifications

	Independent	Parallel	Multi-unit
Voltage	900V	900V	900V
Current	500A	1000A	4000A
Power	250kW	250kW	1000kW
Command latency	250µs (Ethernet)		
Energy recovery efficiency	93%		
Measurement error-voltage	±0.05V or ±0.05% of reading		
Measurement error-current	±160mA or ±0.05% of reading		
Rise time voltage - step (0-500v)	3ms*	7ms*	7ms*
Rise time current - step (0-300a)	0.5ms*	0.6ms*	0.9ms*
Slew rate voltage	171V/ms	89V/ms	76V/ms
Slew rate current	769A/ms	1282A/ms	1935A/ms
Slew rate power	274kW/ms	500kW/ms	833kW/ms
Tracking bandwidth voltage	50Hz (500V) 75Hz (250V)	50Hz (500V)	50Hz (500V)
Tracking bandwidth current	175Hz (500A)	150Hz (700A)	50Hz (700A)
Tracking bandwidth power	100Hz (150kW)	150Hz (250kW)	50Hz (250kW)
Output data sampling	Fiber to Ethernet 10ms CAN 10ms RS-232 50ms		
Input voltage options (+10%/-15%)	3 Phase, 380, 400 and 480 VAC		
Current draw	410, 389 and 324 Amps respectively		
Weight	6063 lb (2750 kg)		
Dimensions	72" W x 76.5" H x 39" D (183cm W x 194cm H x 99cm D)		

Operating Range

Configuration	Voltage (Vdc)	Current (Adc)	Power (kW)
Independent	+8 to +750	-500 to +500	-250 to +250
	+751 to +825	-400 to +400	-225 to +225
	+826 to +900	-300 to +300	-200 to +200
Parallel	+8 to +750	-1000 to +1000	-250 to +250
	+751 to +825	-800 to +800	-225 to +225
	+826 to +900	-600 to +600	-200 to +200

900

The 900 is Webasto's heavy duty test solution. With greater voltage, current and power capability, this system is ideal for testing and emulating energy storage and drivetrain components of large electric and hybrid electric vehicles (HEV), such as buses, trucks and military vehicles. The 900 is used worldwide to support the development of fuel cell buses, hybrid locomotives and other HEVs.

All Webasto power cycling systems are equipped with a real-time clock on the system's control board that enables accurate measurement of Ah and kWh during cycling.

Technical Specifications

	900
Input Voltage Options	3 Phase, 380, 440 and 480 VAC
Currency Draw	410, 354, and 324 Amps respectively
Frequency	60Hz (50 Hz available)
Isolation transformer	Internal transformer
Power factor	> 99%
Harmonic distortion	< 3% THD; IEEE 519 Compliant
Multiple User Interfaces	Manual; Remote Operation System (ROS); DCOM Driver for LabVIEW; C++ and Visual Basic; CAN
Current Ripple - Indepdendent & parallel mode	< 65mArms and 130mArms, respectively
Current Ripple - Max ripple from load	< 15Arms
Operating Environment - Temperature	0-35°C
Operating Environment - Humidity	5-90% non-condensing
Weight	6063 lbs (2750 kg)
Dimensions	73" W x 76.5" H x 37" D (185cm W x 194cm H x 94cm D)

Operating Range

Configuration	Voltage (Vdc)	Current (Adc)	Power (kW)
Independent	+8 to +750	-500 to +500	-250 to +250
Optional Range	+751 to +825	-400 to +400	-225 to +225
	+826 to +900	-300 to +300	-200 to +200
Parallel	+8 to +750	-1000 to +1000	-250 to +250
Optional Range	+751 to +825	-800 to +800	-225 to +225
	+826 to +900	-600 to +600	-200 to +200

Accuracy & Resolution

Measurement	Accuracy (±)	Resolution
Voltage	250mV or 0.15% of the output voltage	50mV
Current Independent (2 channels)	250mA or 0.25% of the reading	40mA
Current External Parallel (1 channels)	350mA or 0.35% of the reading	80mA

ABC-600

Webasto's ABC-600 is a high voltage cycling station that was originally developed to meet specific customer requirements. This system is ideal for testing hybrid vehicles and high voltage drivetrains, motors and energy storage devices.

The ABC-600 offers power up to 150kW, with a voltage range of 8 to 600VDC and a current range of ±600ADC.

Technical Specifications

	ABC-600
Input Voltage Options	3 Phase, 380, 440 and 480 VAC
Currency Draw	254, 218 and 200 Amps respectively
Frequency	60Hz (50 Hz available)
Isolation transformer	Internal transformer
Power factor	> 99%
Harmonic distortion	< 3% THD; IEEE 519 Compliant
Multiple User Interfaces	Manual; Remote Operation System (ROS); DCOM Driver for LabVIEW; C++ and Visual Basic; CAN
Current Ripple - Indepdendent & parallel mode	< 65mArms and 130mArms, respectively
Current Ripple - Max ripple from load	< 15Arms
Operating Environment - Temperature	0-35°C
Operating Environment - Humidity	5-90% non-condensing
Weight	2-power stages 4055 lbs (1839 kg)
Dimensions	73" W x 76.5" H x 37" D (185cm W x 194cm H x 94cm D)

Operating Range

Configuration	Voltage (Vdc)	Current (Adc)	Power (kW)
Independent	+8 to +600	-300 to +300	-150 to +150
Parallel	+8 to +600	-600 to +600	-150 to +150

Accuracy & Resolution

Measurement	Accuracy (±)	Resolution
Voltage	250mV or 0.15% of the output voltage	50mV
Current Independent (2 channels)	250mA or 0.25% of the reading	20mA
Current External Parallel (1 channels)	450mA or 0.35% of the reading	40mA

ABC-170 / ABC-170 CE

The ABC-170/170CE power processing system is used to meet fuel cell testing and sinking power needs. Originally developed for fuel cell testing applications and for systems that require additional sinking power, Webasto customers have also used this versatile machine to cycle hybrids and batteries.

The ABC-170 offers power from +125kW to - 170kW, with a voltage range of 8 to 445 VDC and a current range of +530ADC to - 640ADC.

Technical Specifications

	ABC-170	ABC-170 CE
Input Voltage Options	3 Phase, 240VAC	3 Phase, 400, 415 and 480 VAC
Currency Draw	340Amps	203, 195, and 170 Amps respectively
Frequency	60Hz (50 Hz available)	50Hz (60 Hz optional)
Isolation transformer	Requires external isolation transformer with 225KVA, 240Vrms secondary	Internal transformer
Power factor	> 99%	> 99%
Harmonic distortion	< 3% THD; IEEE 519 Compliant	< 3% THD; IEEE 519 Compliant
Multiple User Interfaces	Manual; Remote Operation System (ROS); DCOM Driver for LabVIEW; C++ and Visual Basic; CAN	Manual; Remote Operation System (ROS); DCOM Driver for LabVIEW; C++ and Visual Basic; CAN
Current Ripple - Indepdendent & parallel mode	< 0.5Arms	< 0.5Arms
Current Ripple - Max ripple from load	< 15Arms	< 15Arms
Operating Environment - Temperature	0-35°C	0-35°C
Operating Environment - Humidity	5-90% non-condensing	5-90% non-condensing
Weight	1334 lbs (605 kg)	3925 lbs (1780 kg)
Dimensions	46" W x 55" H x 26" D (117cm W x 140cm H x 65cm D)	73"W x 71"H x 30"D (183cm W x 180cm H x 76cm D)

CE

Operating Range

Configuration	Voltage (Vdc)	Current (Adc)	Power (kW)
Independent	+8 to +420	-320 to +265	-170 to +125
Optional Range	+420 to +435	-160 to +160	-70 to +70
	+435 to +445	-90 to +90	-40 to +40
Parallel	+8 to +420	-640 to +530	-170 to +125
Optional Range	+420 to +435	-160 to +160	-70 to +70
	+435 to +445	-90 to +90	-40 to +40

Accuracy & Resolution

Measurement	Accuracy (±)	Resolution
Voltage	250mV or 0.15% of the output voltage	20mV
Current Independent (2 channels)	100mA or 0.25% of the reading	20mA
Current External Parallel (1 channels)	200mA or 0.35% of the reading	40mA

ABC-150

The ABC-150 was originally developed to support the design and development of the drivetrain and subsystems of the GM Impact, the first modern electric car. All Webasto power cycling systems are equipped with a real-time clock on the system's control board that enables measurement of Ah and kWh during cycling. The ABC-150 offers power up to 125kW, with a voltage range of 8 to 445VDC and a current range of ±530ADC.

The ABC-150 is now the worldwide standard for the testing of advanced batteries, fuel cells, capacitors and other alternative energy technologies in the automotive, aerospace, stationary power and defense industries.

Technical Specifications

	ABC-150
Input Voltage Options	3 Phase, 240Vrms, +10%/-15%, <5% imbalance
Currency Draw	325Amps
Frequency	60Hz (50 Hz available)
Isolation transformer	Requires 150KVA external isolation transformer
Power factor	> 99%
Harmonic distortion	< 3% THD; IEEE 519 Compliant
Multiple User Interfaces	Manual; Remote Operation System (ROS); DCOM Driv er for LabVIEW; C++ and Visual Basic; CAN
Current Ripple - Indepdendent & parallel mode	< 0.5Arms
Current Ripple - Max ripple from load	< 15Arms
Operating Environment - Temperature	0-35°C
Operating Environment - Humidity	5-90% non-condensing
Weight	1334 lbs (605 kg)
Dimensions	46" W x 55" H x 26" D (117cm W x 140cm H x 65cm D)

Operating Range

Configuration	Voltage (Vdc)	Current (Amps)	Power (kW)
Independent	+8 to +420	-265 to +265	-125 to +125
Optional Range	+420 to +435	-160 to +160	-70 to +70
	+435 to +445	-90 to +90	-40 to +40
Parallel	+8 to +420	-530 to +530	-125 to +125
Optional Range	+420 to +435	-160 to +160	-70 to +70
	+435 to +445	-90 to +90	-40 to +40

Accuracy & Resolution

Measurement	Accuracy (±)	Resolution
Voltage	250mV or 0.15% of the output voltage	20mV
Current Independent (2 channels)	100mA or 0.25% of the reading	20mA
Current External Parallel (1 channels)	200mA or 0.35% of the reading	40mA

MT-30

Webasto's MT-30 is ideal for testing smaller applications such as battery modules, fuel stacks, partial modules and smaller components. This system provides an economical solution for a variety of testing needs while occupying a small footprint in the laboratory.

All Webasto power cycling systems are equipped with a real-time clock on the system's control board that enables measurement of Ah and kWh during cycling.

Technical Specifications

	MT-30
Input Voltage Options	3 Phase, 240, 380, 440 and 480 VAC
Currency Draw	130, 83, 71 and 66 Amps
Frequency	60Hz (50 Hz available)
Isolation transformer	Internal transformer
Power factor	> 99%
Harmonic distortion	< 3% THD; IEEE 519 Compliant
Multiple User Interfaces	Manual; Remote Operation System (ROS); DCOM Driver for LabVIEW; C++ and Visual Basic; CAN
Current Ripple - Indepdendent & parallel mode	< 0.5Arms
Current Ripple - Max ripple from load	< 15Arms
Operating Environment - Temperature	0-35°C
Operating Environment - Humidity	5-90% non-condensing
Weight	1320 lbs (599 kg)
Dimensions	34" W x 55" H x 40" D (87cm W x 140cm H x 102cm D)

Operating Range

Configuration	Voltage (Vdc)	Current (Adc)	Power (kW)
Channel A	+5 to +120	-330 to +330	-30 to +30
Channel B	+5 to +120	-170 to +170	-20 to +20
Parallel	+5 to +120	-500 to +500	-30 to +30

Accuracy & Resolution

Measurement	Accuracy (±)	Resolution
Voltage	125mV or 0.15% of the reading	20mV
Current Channel A	125mA or 0.25% of the reading	20mA
Current Channel B	50mA or 0.25% of the reading	20mA
Current Parallel	135mA or 0.25% of the reading	40mA

Infeed Test System

I-TS & MI-TS

Power single system up to 650 kW

Total power parallel system up to 1.3 MW

Output current single system up to 1,000 A

Output voltage single system 1,000 V

Features:

- Highly dynamic inverter
- Short circuit proof < 3 kA, < 8 kA at 1,000 A systems
- Electrical isolation to grid
- Control accuracy 0.05% fs
- Voltage ripple 0.1% fs
- DC current measurement with 0.05% fs accuracy
- Current rise time < 1 msec (300 - 800 V), < 1.3 msec (1,000 V)
- Seamless transition source/sink
- Main switch (switch disconnector with fuses in the AC input; lockable in off-position)
- TFT display with touch operation
- Emergency stop button in cabinet door
- Voltmeter and ready indicator light in cabinet door
- DC output contactor
- Connection terminals for DC voltage measurement (0.05% fs accuracy with sense lines)
- Connection terminals for external Emergency Stop
- Connection terminals for external Stop
- Connection terminals for calibrating case
- Operating mode battery/simulator switchable
- Interface MOD-bus / TCP-IP

GUSTAV KLEIN
Reliable Power Solutions.

Product Features

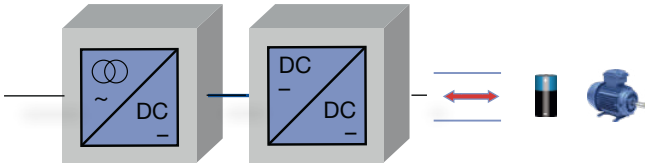
- Highly dynamic inverter
- Short circuit proof < 3 kA, < 8 kA at 1,000 A systems
- Electrical isolation to grid
- Control accuracy 0.05% fs
- Voltage ripple 0.1% fs
- DC current measurement with 0.05% fs accuracy
- Current rise time < 1 msec (300 - 800 V), < 1.3 msec (1,000 V)
- Seamless transition source/sink
- Main switch (switch disconnector with fuses in the AC input; lockable in off-position)
- TFT display with touch operation
- Emergency stop button in cabinet door
- Voltmeter and ready indicator light in cabinet door
- DC output contactor
- Connection terminals for DC voltage measurement (0.05% fs accuracy with sense lines)
- Connection terminals for external Emergency Stop
- Connection terminals for external Stop
- Connection terminals for calibrating case
- Operating mode battery/simulator switchable
- Interface MOD-bus / TCP-IP
- Interface CAN-bus (100 Hz with dbc file)
- Interface VNC over Ethernet
- Protection type IP20
- Air cooled
- High efficiency
- Noise-reduced version (rubber buffer, fan control)

I-TS Product

Product Type	I-TS		
Power Rating (kW)*	250	320	400
DC-Voltage (V)	1,000	1,000	1,000
DC-Current [A]	1,000	1,000	1,000
No. of channels	1	1	1

**500 kW and 650 kW options available upon request*

Infeed Test System – Type I-TS-3870

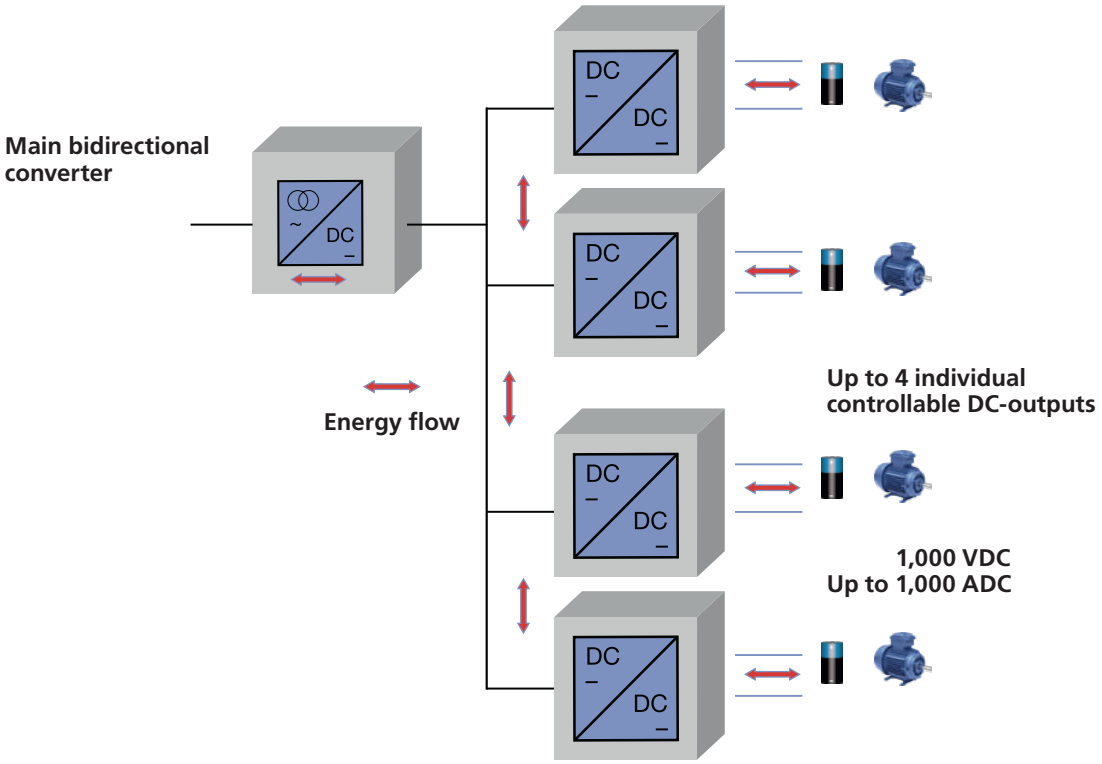


MI-TS Product

Product Type	MI-TS		
Power Rating (kW)*	250	320	400
DC-Voltage (V)	1,000	1,000	1,000
DC-Current (per channel) [A]	1,000	600 or 1,000	600 or 1,000
No. of channel(s)	2	2 or 4	2 or 4

**500 kW and 650 kW options available upon request*

Multi-Channel Infeed Test System – Type MI-TS-3871



Technical Data of I-TS & MI-TS Products

	IT-S and MI-TS
AC - Input voltage / AC – Input frequency	480 V ± 10%, 3-phase, PE, 60 Hz ± 5% *Other voltages available upon request
Measuring resolution	voltage: 16 Bit ADC current: 16 Bit ADC
Control accuracy	voltage 0.05% fs current 0.05% fs
Voltage tolerance dynamic (0 – 100 % INom in 3 ms)	< 3% fs
Voltage ripple	≤ 0.1% eff. fs
Current ripple	≤ 0.1% eff. fs
Short circuit behavior	Short circuit proof (Icw < 3 kA)
Permissible ambient temperature	+5 to +40 °C
Climate class	1K21/1M11 according to EN60721 (85% relative humidity non condensing with cabinet heating up to 95% relative humidity without condensing)
Distance from ceiling min.	300 (standard, IP20)
Installation	Operating area with restricted access installation on non-flammable floor
Protection class	IP20 according to IEC 60529 others on request
Safety	EN ISO 13849-1
Basic standard	EN 62040
EMC	EN 61000-2-4 grid disturbances EN 61000-6-2 interference immunity EN 61000-6-4 interference emission EN 61800-3 Kat C2 (A1) variable – speed electrical drives

Subject to change without notice (tech)

Options

1. Adaptation to test application

- Insulation monitoring device
- Operating mode battery simulator
- Protective diode for sink mode (for fuel cell testing)
- Parallel control device
- PDSB (cabinet for additional options)
- PDU (cabinet for DUT connection)

2. Adaptation to customer specification

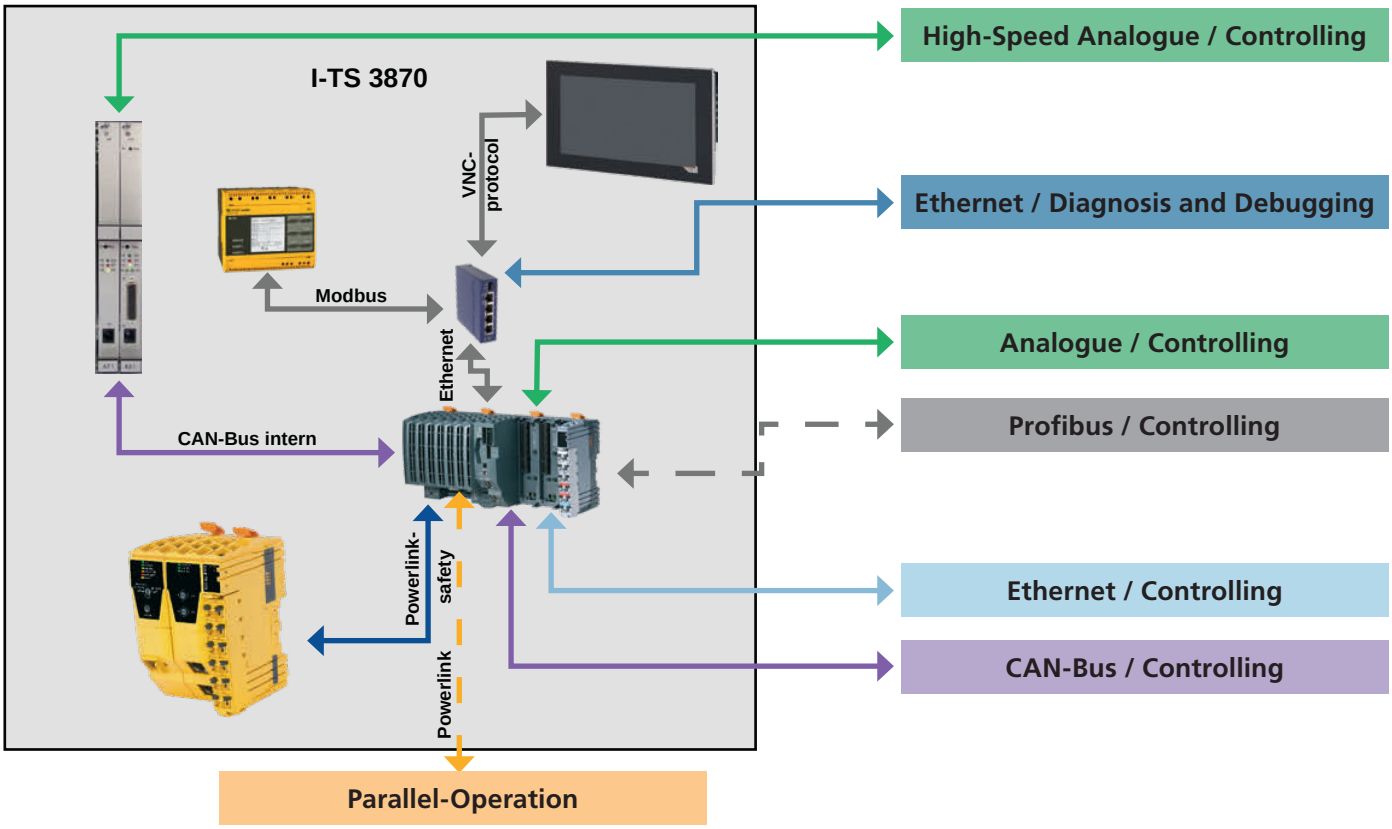
- Special input voltage of 600VAC for CAN market

3. Interfaces

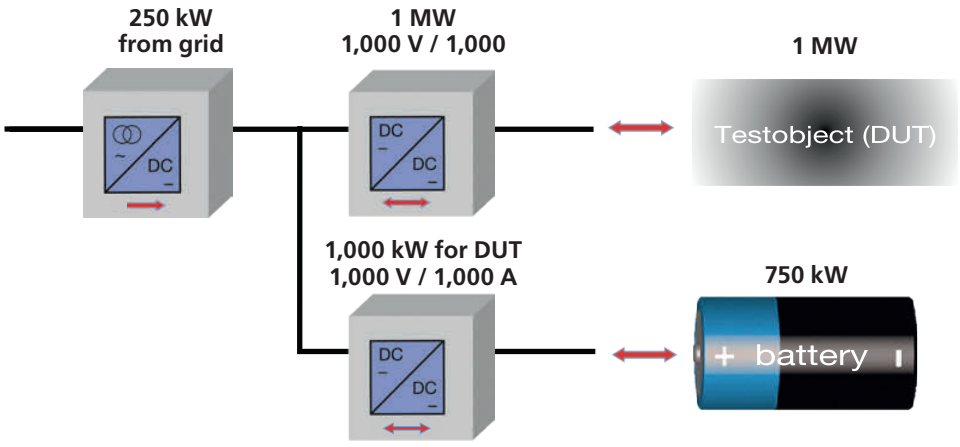
- Remote control
- Matlab-Simulink
- Labview

Insulation monitoring device at DC output

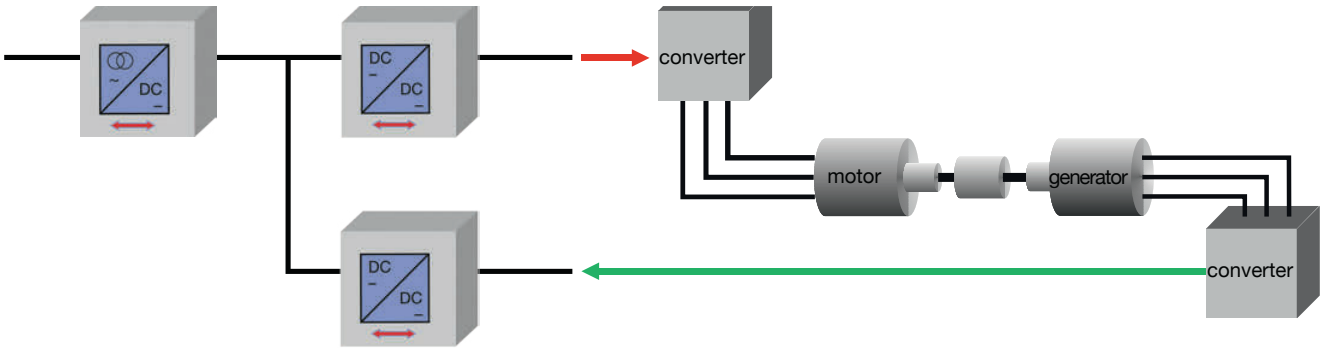
Interfaces



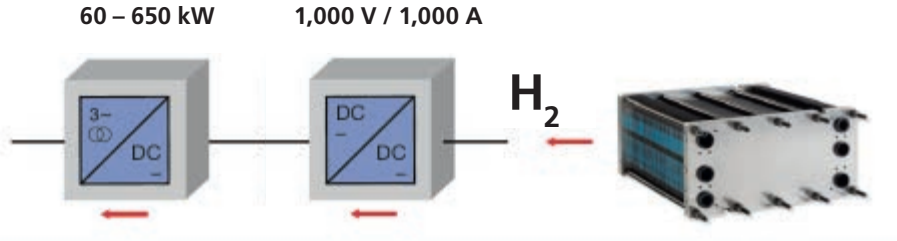
Applications



Power supply with internal energy recovery for development and testing of e-powertrain

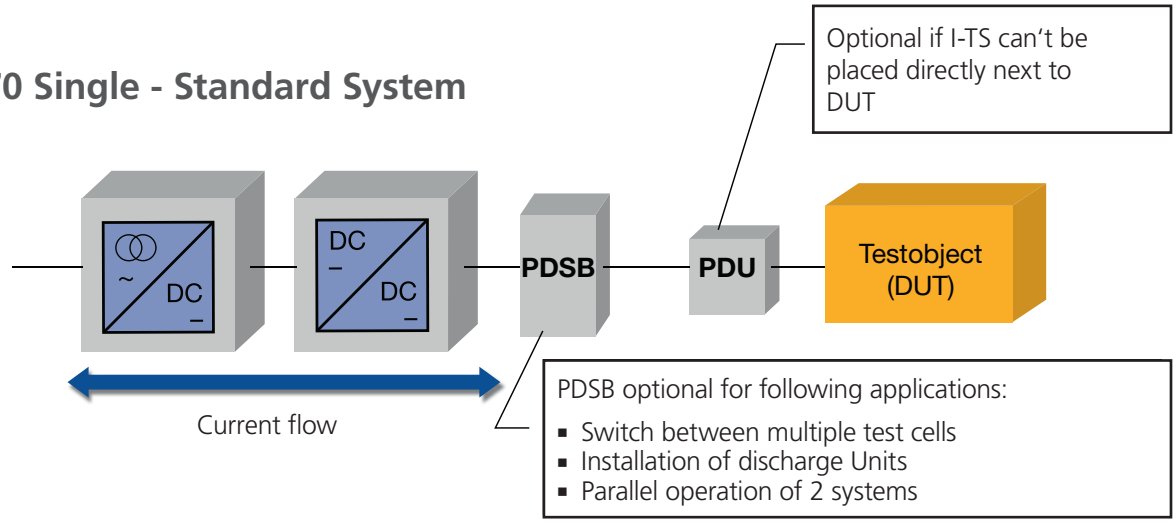


Fuel cell testing

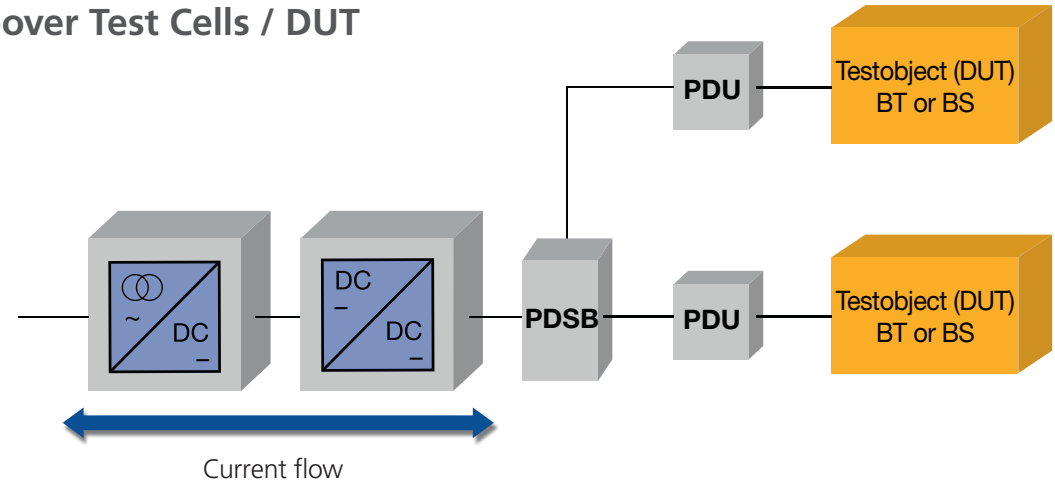


Applications

I-TS-3870 Single - Standard System

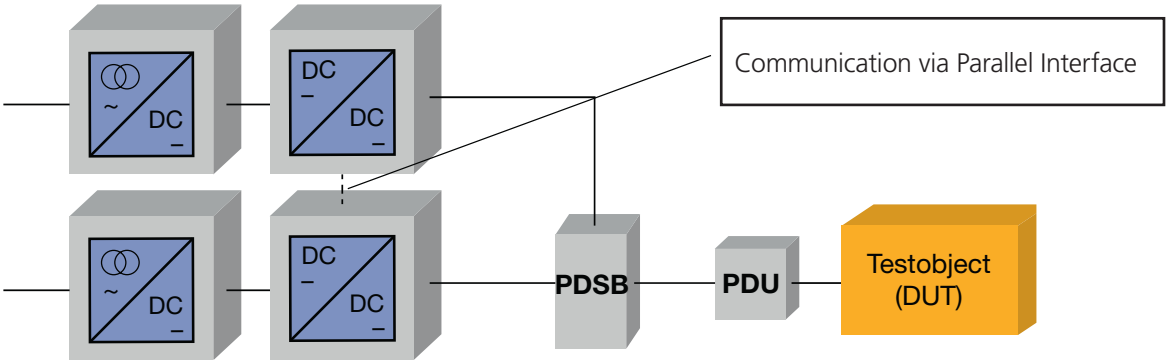


Changeover Test Cells / DUT



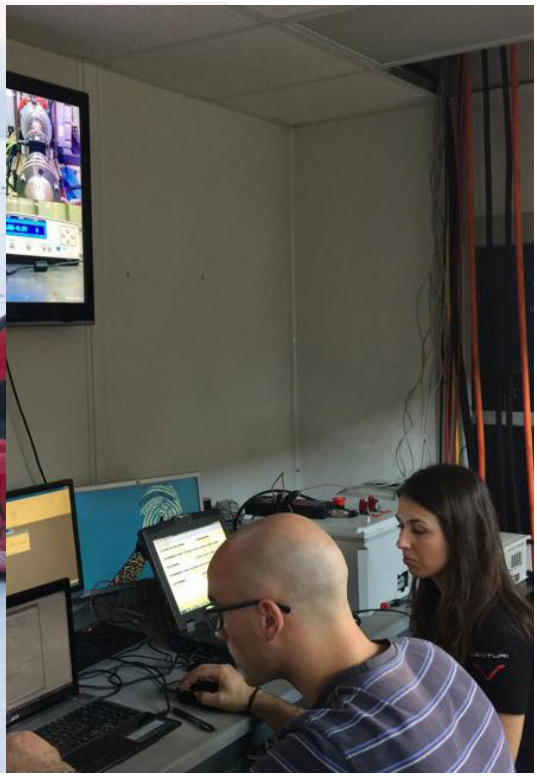
Testing one DUT and connecting simultaneously the second one

I-TS-3870 Single - Parallel System



Enlargement of output current and power


WORLD'S FASTEST
VENTU
ATS
GOODRICH
ETAS
TIMKEN
DASSAULT SYSTEMES
THE OHIO STATE UNIVERSITY



Setting a World Land Speed Record

The Ohio State University's Center for Automotive Research (CAR), in conjunction with Venturi Automobiles, were able to set this record in 2010 – and then again in 2016. The third generation of the student-built Venturi Buckeye Bullet (VBB3) held the record of being the world's fastest electric car, with an average speed of 341.4 mph and a top speed of 358 mph.

A 38-foot long, 8,000 pound vehicle with 1.5 megawatts of power divided into two traction axles and a primary braking system consisting of a parachute, the VBB3 represents a truly unique electric automotive project.Built to be rugged and resilient, the 900 was able to handle the long trip, rough terrain and salty environment it encounters at the Bonneville Salt Flats for the team to go seamlessly from lab to speedway.

"The 900 enables us to push EV technology to its limit – and beyond – without risking the Venturi Buckeye Bullet's systems. With help from Webasto...we are able to accomplish things that we never even dreamed possible, and are empowering the movement for EV adoption."

Matile D'arpino, Research Associate
Center for Automotive Research, Ohio State University

Webasto 900

Heavy Duty Dual Channel Cycling Station

The Webasto 900 is a heavy duty test solution. With greater voltage, current, and power capability, this system is ideal for testing and emulating energy storage and drivetrain components of large electric and hybrid electric vehicles (HEV), such as buses, trucks and military vehicles. The 900 is deployed worldwide to support the development of fuel cell buses, hybrid locomotives and other HEVs.

Eco-Minded Zero Motorcycles Reaps Design Engineering, Manufacturing Benefits from MT-30

Electric-powered vehicles live and die by their batteries. Electric motorcycle manufacturer Zero Motorcycles represents the next step in the evolution of the motorcycle. By combining the best aspects of a traditional motorcycle with today's most advanced technology, Zero makes high-performance electric motorcycles that are lightweight, efficient, fast, and fun to ride.

Zero Motorcycles turned to the MT-30 for managing their battery and battery management system, enabling them to conduct battery lifecycle testing. Their investment in the MT-30 allowed them to make a lower cost, better performing e-motorcycle.

"The better we can test our bikes before they get on the road, the better they will perform once they're there. The MT-30 ensures that our batteries can and will do what they are supposed to do for a superior riding experience."

Raakesh Bhat, Production Engineer at Zero Motorcycles

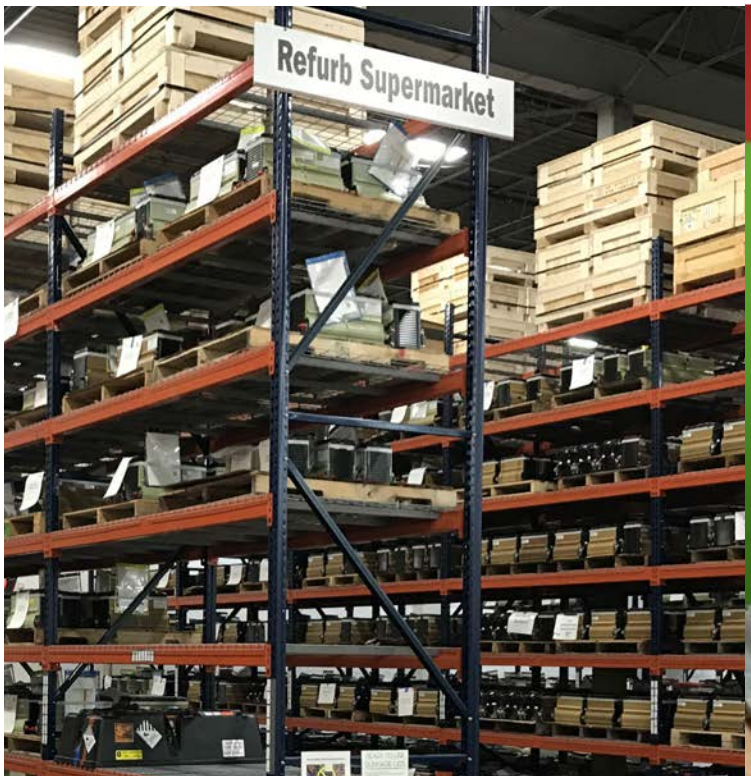
Webasto MT-30

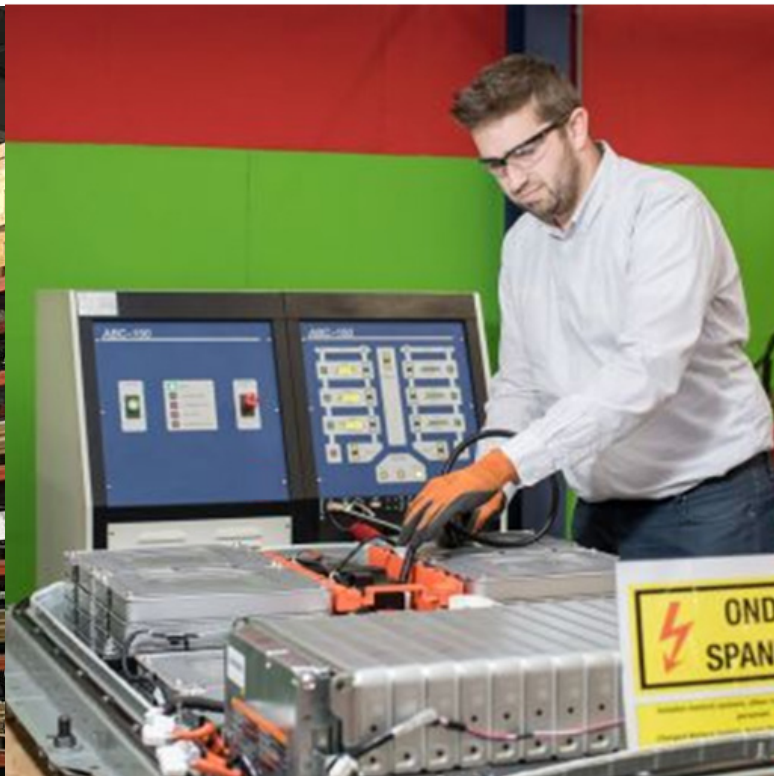
Dual Channel Cycling Station for Modules

Ideal for testing smaller applications such as battery modules, fuel stacks, partial modules and smaller components. This system provides an economical solution for a variety of testing needs while occupying a small footprint in the laboratory.


ZERO S

Webasto





Spiers New Technology Maximizes The Value Of Used Advanced Batteries

Dirk Spiers, a problem solver with a passion for renewable energy, saw the popularity of EVs rise, but noticed a problem that wasn't getting a lot of attention. Used EV batteries were being cast aside, their useful lives cut short because they weren't being repaired or refurbished. Tossing aside used batteries can cause numerous negative effects, including the lost value that could have been drawn from the discarded units and environmental harm.

The ABC-150 became an essential component to the Spiers New Technology 4R system of repairing, remanufacturing, refurbishing and repurposing advanced batteries. Compatible with different battery chemistries, SNT was able to reliably test approximately 10,000 battery modules on a weekly basis, making the ABC-150 ideal for their unique operations.

Working with a versatile and reliable test system is key for Spiers New Technology's 4R operations.

Webasto ABC-150

Dual Channel Cycling Station

The ABC-150 was originally developed to support the design and development of the drivetrain and subsystems of the GM Impact, the first modern electric car. The ABC-150 offers power up to 125kW, with a voltage range of 8 to 445VDC and a current range of ±530ADC. The ABC-150 is now the worldwide standard for the testing of advanced batteries, fuel cells, capacitors and other alternative energy technologies in the automotive, aerospace, stationary power and defense industries.

Notes

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We're here for you!

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emobility@webasto.com

The Webasto Group is a global innovative systems partner to the mobility industry and one of the 100 largest suppliers to the automotive sector worldwide. The company's offering includes in-house developed roof, heating and cooling systems for various types of vehicles, batteries, battery testing and charging solutions for hybrid and electric vehicles, and additional services related to thermal management and electromobility. Among the customers of Webasto are manufacturers of passenger cars, commercial vehicles and boats, as well as dealers and end customers. In 2021, the Group generated sales of 3.7 billion euros and employed around 15,700 people at over 50 locations. The headquarters of the company, which was founded in 1901, is located in Stockdorf near Munich (Germany).
For more information please visit www.webasto-electrified.com

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