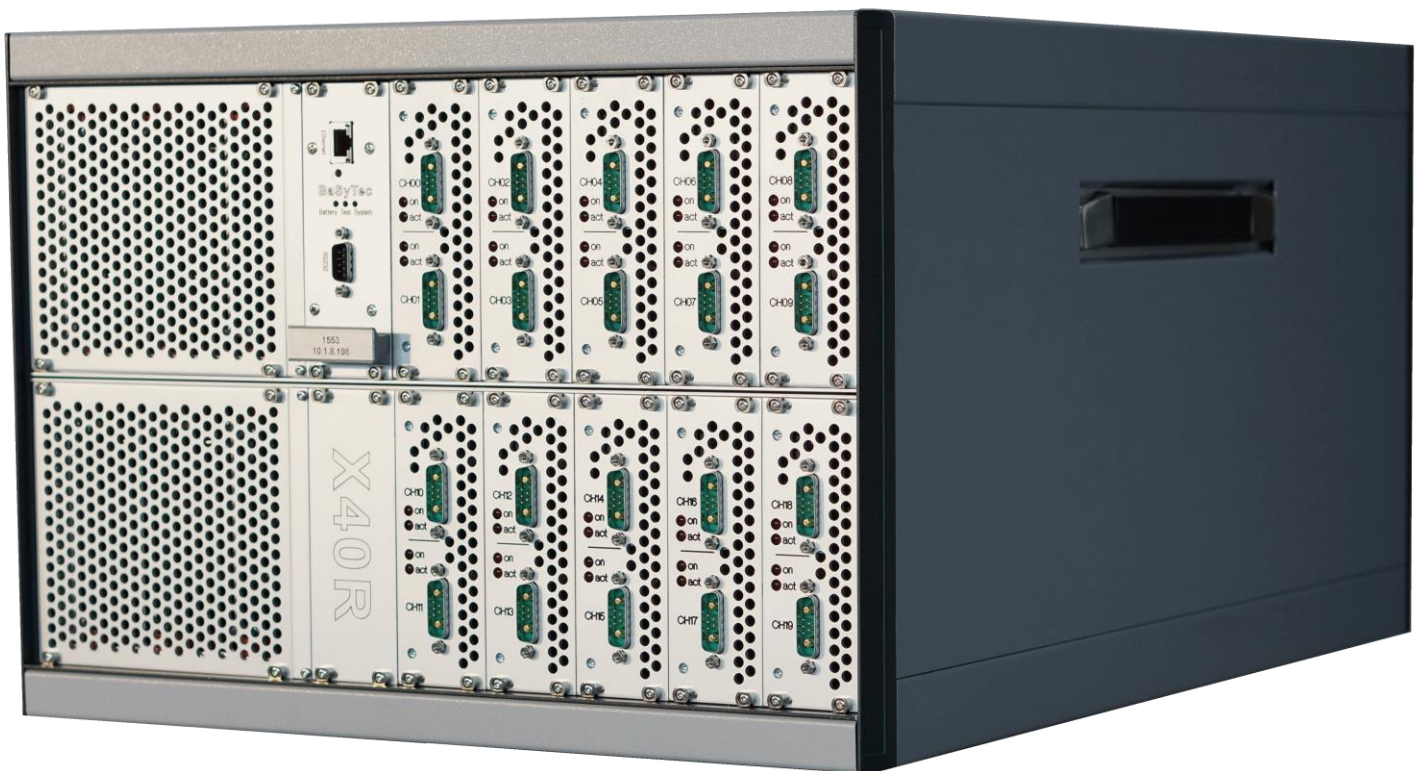# BaSyTec XCTS Mk II

Battery Test and Formation System

1-6V

40A / 60A / 80A per channel

Parallel operation up to 400A

Energy Feedback

BaSyTec XCTS Mk II
Battery Test and Formation system

The second generation BaSyTec XCTS Mk II Battery Test and Formation system is the replacement of our successful XCTS with 25A or 50A channels.

It is made for test and formation of single cell batteries up to 6V and 400A.

The new XCTS has **more power** and much **better precision** than before.

Of course also the XCTS MK II is controlled by our comfortable and powerful BaSyTec Battery Test Software.

Advantages:

- 40A, 60A or 80A output
- Parallel operation for up to 400A
- High precision
- Gold plated connectors
- Small size (19" form factor)
- High energy density
- Up to 3 automatically dynamically switching current ranges for up to 1mA precision
- Energy feedback for high energy efficiency
- Powerful and comfortable BaSyTec software

Software Features:

Common features:
- Comfortable, user-friendly system
- Network operation
- Multiple window user interface

- Local database system (Paradox, MySQL or SQLite)
- **Genuine MS Windows software**, works with Windows XP, Vista or Windows 10
- BaSyTec Software license included in system price, no extra fee for features, updates and additional installations
- Tests run independent of the PC within the test system
- User management includes password protection and rights management
- User defined user specific user interfaces
- **Central data storage** on **central SQL Server**
- **Central battery management** on central SQL Server
- Battery database including nominal and limit values
- Unlimited battery parameters can be added to the battery database
- Battery parameters can be set and created within a test
- Battery parameters can be passed from test to test (also via central SQL server)
- Automatic firmware updates without user interference

Test plan definition
- Tab oriented test plan editor
- Wizzards or direct entry for all data fields
- Test plan length max. 256MB
- Loops, can be nested without limit
- Macro's, also with parameters, can be nested without limits
- Cut+Paste for single fields or blocks, also between different test plans
- Multiple test plans can be opened at the same time
- **Integrated formula editor** to create user specific parameters for registration and control
- Includes first and second derivations

BaSyTec Battery Test Systems

Worldwide more than 1500 BaSyTec Battery Test Systems in operation to support research, development, and production of different battery technologies

BaSyTec XCTS Mk II
Battery Test and Formation system

- All variables known in the system can be used in the formula editor
- Same test plan editor is used also for short pulses
- Dynamic Sampling
- Global and block oriented termination criterias
- Multiple termination criterias for a single line, a block or the whole test plan
- Voltage, current and power can be limited within a block (also dynamically – use BMS limits)
- Battery data can be used within the test procedure
- Conditional jumps
- Import of current, power and voltage profiles in ASCII format (up to 1 000 000 lines)
- Linear ramps in current and voltage
- Cyclic voltammetry
- Differential voltage analyses
- Inputs of other channels can be used

Running tests

- Shutdown and restart of the PC during tests without data loss
- Test plans can be changed during run time
- All analyzes also possible during run time
- State of a test color-coded, colors can be defined by the user
- Online-graphs of running tests, user-defineable, also multiple tests at the same time

Data Analysis

- Script language
- Direct export of diagrams and tables via DDE to MS excel (diagrams as diagrams, not as pictures!)

- Direct export of diagrams and tables via cut+paste to MS Windows applications
- Automatic report generation with MS Word
- Export of tables in ASCII format (also automatic at end of test)
- Unlimited lines within 1 diagram, also from multiple tests
- Diagram templates can be saved, also with reference data
- Diagrams with background pictures
- Archive function
- Import+Export of data and archives
- Diagram for navigation in data, bidirectional (click on diagram ➔ get data line, click on data line ➔ get position in diagram)

Interfaces

- Climate chamber interface (drivers for many chambers available)
- Open software interface
  - To integrate any device which can be connected to a PC
  - Open (everybody may write his own device driver – drivers are Windows dll's)
  - Bidirectional
  - Fast and powerful
- Remote control interface
  - To integrate the BaSyTec system into a higher level control
  - ASCII interface via TCP/IP or RS232
- CAN interface
  - Cheap and powerful
  - Send and receive
- SMBus Smart Battery Interface
- BaSyTec CMU data logger (for up to 4800 additional inputs)

BaSyTec Battery Test Systems

Our test systems are controlled by the powerful and comfortable BaSyTec software.

Complete product range from from small laboratory cells to large MW batteries

BaSyTec XCTS Mk II
Battery Test and Formation system

Technical data:

Type	40A	60A	80A
Max. curr/chan	40A	60A	80A
Max. P/chan	200W	300W	400W
Parallel operation.	Yes, 80A	Optional, 300A	Optional, 400A
Range switching	automatic and dynamic		
Chans/Unit	8 or 20	5 or 12	4 or 10
Voltage range	0-6V		
Min. disch. volt	1V		
Resolution	0.1mV / 1mA	0.1mV / 0.05mA	0.1mV / 1mA
Precision	1mV 10mA +0.1% up to 20A 20mA +0.1% up to 40A	1mV 1mA +0.1% up to 1.5A 10mA +0.1% up to 20A 30mA +0.1% up to 60A	1mV 10mA +0.1% up to 20A 20mA +0.1% up to 40A 40mA +0.1% up to 80A
Measurement	Voltage (4W), current, temperature		
Temp. input type	NTC 5k (precision +/-2K) Epcos B57861S0502 or GE TK95		
Time res./rise time	1µs / 1ms		
Min. pulse length	10ms		
Current/voltage ripple	< 0.01%FS / < 0.5mV		
Control mode	Current, voltage, power, resistance and combinations		
Energy feedback to the grid	Optional, total efficiency up to 70% (charge) / 60% (discharge)		
Software	BaSyTest		
Interface	Ethernet		
Connector	D-SUB 7W2	D-SUB 9W4	
Noise	70 - 85dB(A) (without energy feedback) 60 - 83dB(A) (with energy feedback)		
Size/weight/Supply No feedback	450mm*310 (180)mm*500mm 40kg (25kg), 400VAC / 50Hz / 3 phases+N (230VAC / 16A)		
Size/weight/Supply Energy feedback	450*310*620mm 70kg, 400VAC / 50Hz / 3 phases+N		

BaSyTec Battery Test Systems

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