BMC800 UNIVERSAL TEST APPLICATION CONTROLLER

UTM, ITS SOFTWARE SUITE

The BMC800 is a multi-application controller used to easily control in closed loop independent servo-actuators or complete test systems. It is designed for a wide range of durability and performance testing equipment from the simplest to the most complex application. Based on over thirty years of experience, it is a field-proven solution integrating advanced digital technology used to control all BIA test systems.

Each controlled channel is suitable for servo-hydraulic or servo-electric actuators, integrating servo-valve drivers, digital conditioners of main sensor signals, hydraulic service manifolds, hydraulic power unit and any other accessory controls.

As a single package, BMC800 is supplied with UTM software which provides powerful control functions in a user-friendly environment.

COMPONENTS FOR TEST SYSTEMS
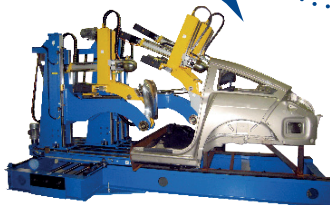
BMC800

ACTUATORS

COMPLETE TEST SYSTEMS

ETHERNET HUB

MULTIPLE PCs

MULTIPLE BMC800

BENEFITS AT A GLANCE

- Supports more than 20 control channels (hydraulic / electric actuators)
- Controls complete test systems for durability and performance evaluation
- Integrates digital conditioners of sensor signals
- Provides easy test set-up with UTM software
- Permits to customize operator control desk with UTM software
- Compatible with HIL

BMC800 HARDWARE

DIFFERENT CONFIGURATIONS

The BMC800 can control in closed loop any type of actuators : servo-hydraulic or servo-electric, linear or rotary actuators. Two inputs (measured feedback) and up to two outputs are dedicated to each control channel.

The BMC 800 integrates digital conditioners and data acquisition modules for AC/DC transducers, 2/3-stage servo-valves, power drives and any additional accessory. All of those are directly connected to the rear of the BMC800 through industrial type quick connections.

1. Remote control desk

2. Power supply: 115-230 V~ 50-60 Hz

3. 1 x 100 Mb Ethernet link,
   4 x CAN/CAN Open, 1 x RS 232,
   2 x RS 422 / RS 485, 2 x LIN,
   1 x 10 Mb FlexRay (dual channel)

4. Remote control

5. Optional measurements:
   digital/analog inputs/outputs (load cell, LVDT, encoder, accelerometer, Pt100...)

6. Control channels

7. 24 V output. External safety controls.
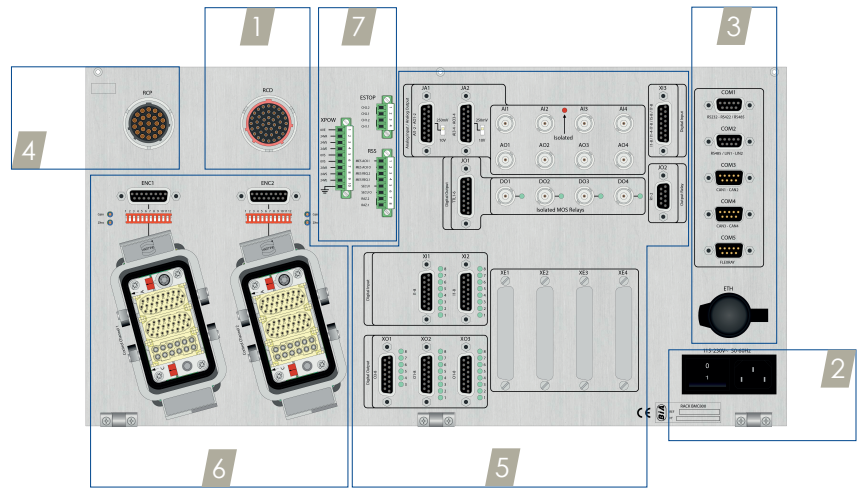
19" RACK CABINET VERSION

CONTROL CHANNELS
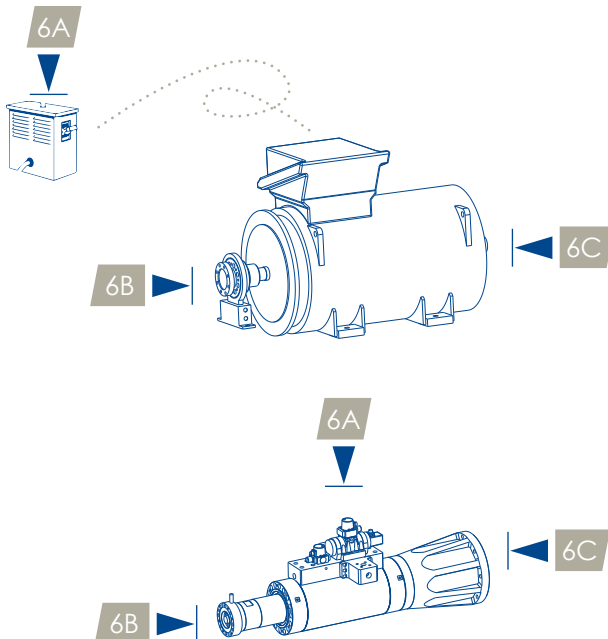
6A Controls

SERVO-VALVES / SERVO-DRIVES
- With or without on-board electronics
- ±10 V / ±100 mA control signals

6B Load Conditioning & Measurement

FORCE / TORQUE
- Strain gauges
- ±10 V preconditionned sensors
- Frequency modulated signals
  e.g. 10 ±5 kHz or 60 ±10 kHz

### 6C Position Conditioning & Measurement

DISPLACEMENT / ANGLE
- LVDT/RVDT transducer, half/full bridge
- Potentiometers
- ±10 V / ±20 mA control signals
- Magnetostrictive transducer
- Incremental encoder (5 V, 1 V)
- Absolute ENDAT / SSI / BiSS encoder

UTM TEST APPLICATION SOFTWARE

Delivered with BMC800, UTM is a powerful and flexible software developed to control any testing application.

Through user-friendly interface, the user can set up the hardware, define test procedure, run test on specimen and perform post-treatment.
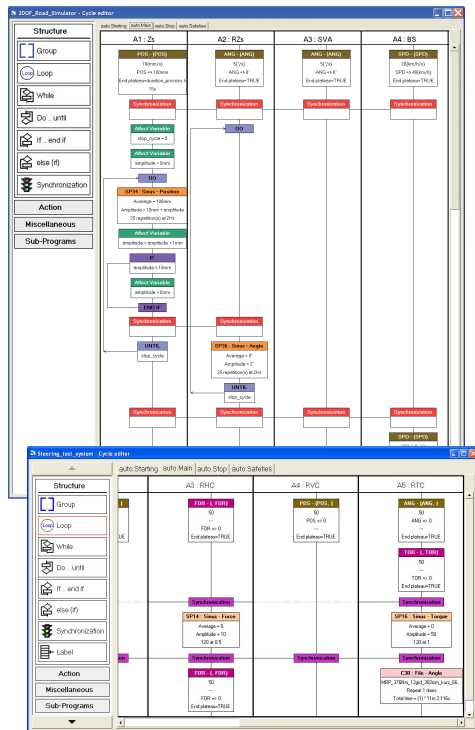
CYCLE EDITOR/ 3 DIFFERENT LEVELS OF USE

The UTM software provides an easy-to-use "drag and drop" environment for building standard and non-standard sequences.

In this environment, you can link basic processes, including function generation (sinus, square, triangle, pause, imported file, etc…), data acquisition, events, and triggers, to quickly and easily build complex test cycles.

Some logical functions, such as Loop, While or IF permit to easily create complex sequencing.

OPERATOR LEVEL

▪ Runs simple tests in manual mode
▪ Runs existing test cycles in automatic mode
▪ Displays scopes from Acquisition Module [see next page]
▪ Edits test reports / Post-treatment / Data storage
▪ Gets feedback messages from the control system

PROGRAMMING LEVEL

▪ Same functions as Operator Level
▪ Creates a new test configuration (actuator, I/O, etc…)
▪ Sets up control parameters (PID, compensations…)
▪ Calibrates acquisition channels
▪ Defines manual mode
▪ Creates a test cycle / sequence for automatic mode
▪ Defines test parameters as variables set by user
▪ Creates control screen for user [see next page]
▪ Creates sequencing with Ladder Graphical Editor to control accessories [see next page]
▪ Designs test reports

DESIGNER LEVEL

▪ Same functions as Programming Level
▪ Defines control channels in BMC800
▪ Defines measurement channels (I/O) in BMC800
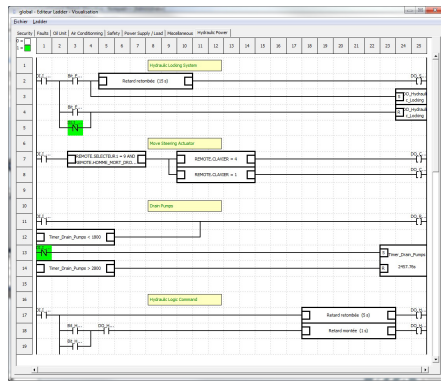
EXAMPLES OF ADDITIONAL MODULES

▪ Multi-station control mode
▪ Multi-axial mode
▪ THPC module (Time History Parameter Control) for iteration process
▪ Real time fatigue analysis
▪ Road signal editor
▪ Pilot manager
▪ Shifting robot
▪ Dumper
▪ Vibration
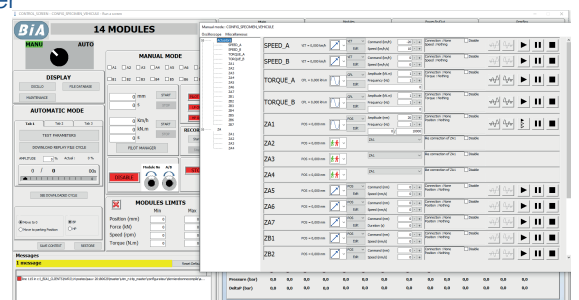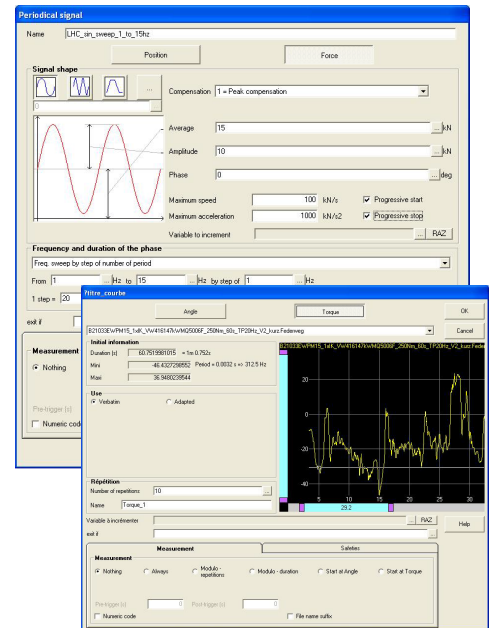
UTM TEST APPLICATION SOFTWARE

SCREEN EDITOR

This function provides the possibility to create customized control screens for test monitoring with graphical representation of any channel.
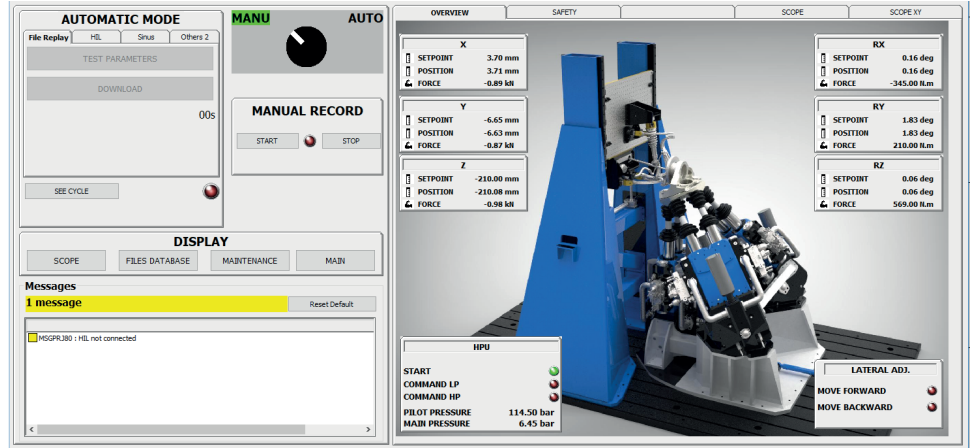

LADDER GRAPHICAL EDITOR

This programming language permits to control additional output channels. It can be useful for hydraulic power supply control, cooling system control, etc...

It is made of logical items which are assembled in a user-friendly environment (drag and drop function).

ACQUISITION MODULE

This module can run in parallel with the main application.
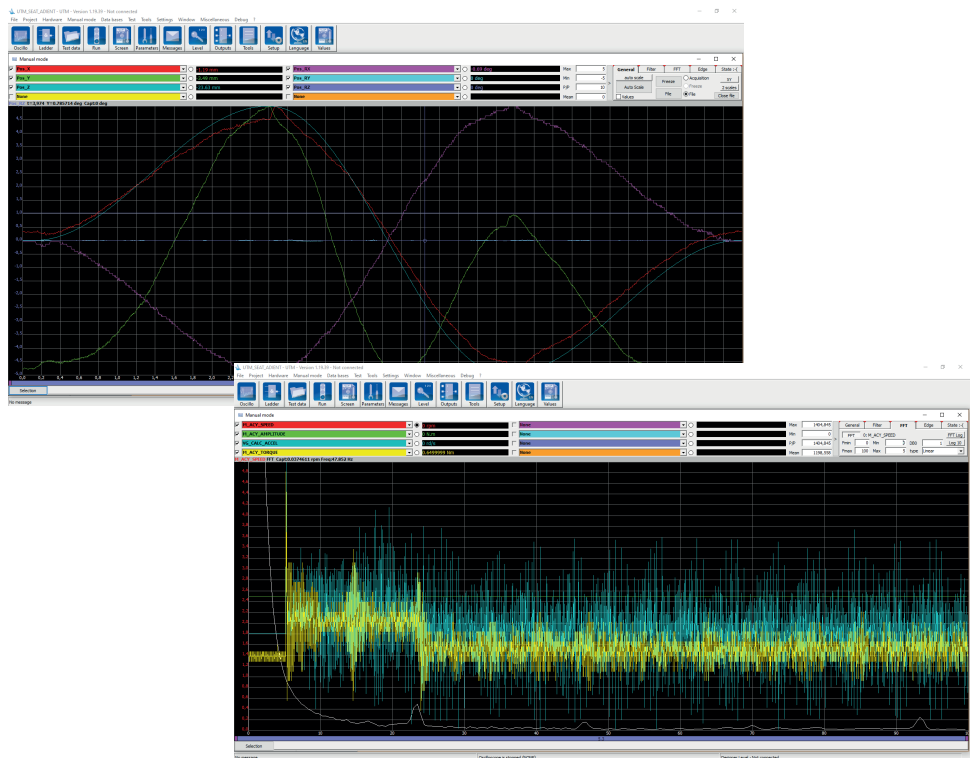
MAIN CHARACTERISTICS

- Real-time acquisition of unlimited number of signals up to 10 kHz/channel
- Real-time visualization of 8 simultaneous signals
- Real-time calculated channels
- Real-time signal filtering
- Real-time FFT analysis
- Real-time XY display
- Export files in several formats (e.g.: Text, Excel, RPC, ASAM, ISO, Track Report)