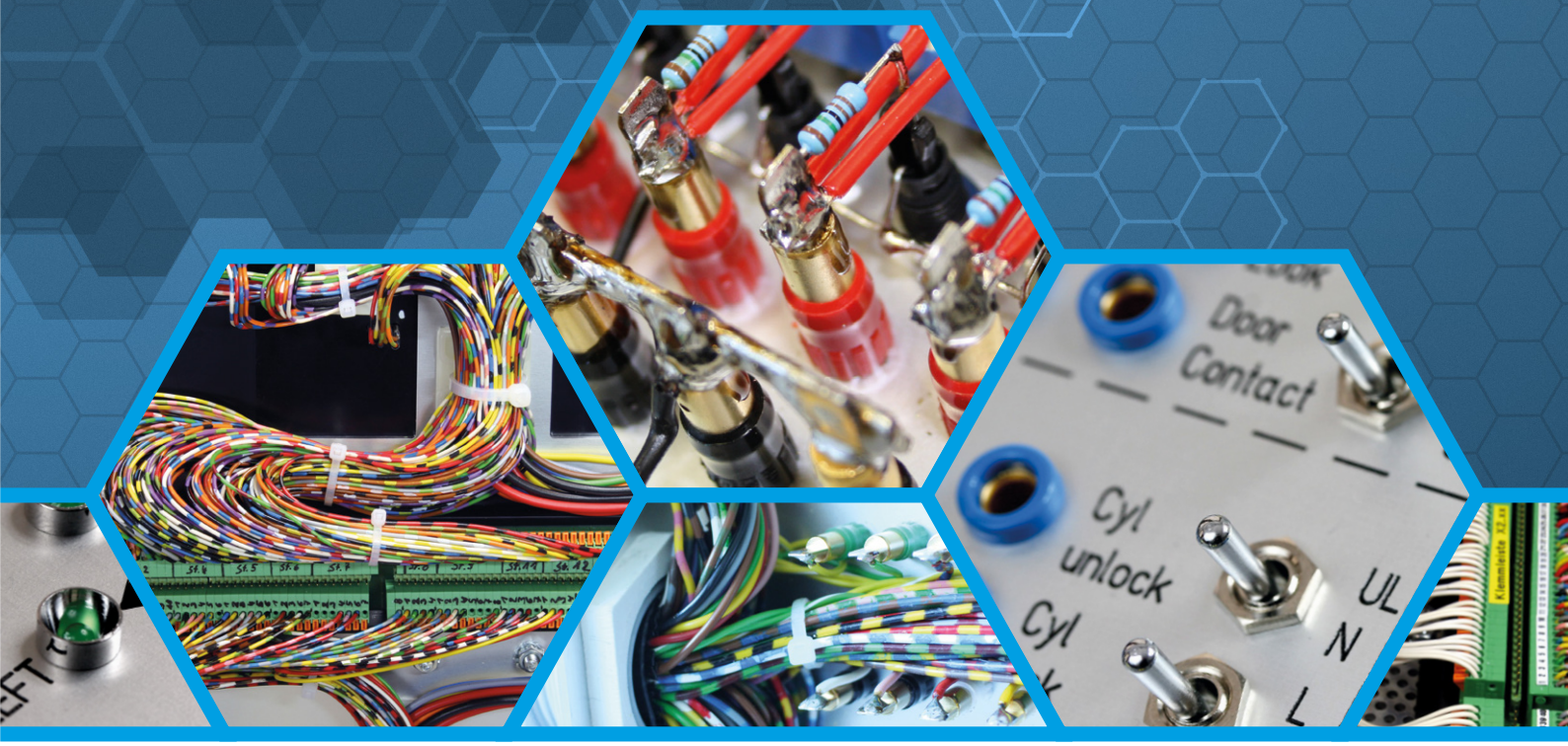
optimize! softing

TEST EQUIPMENT

CABLES – ADAPTERS – SIMULATORS YOU CAN RELY ON



SIMPLE CONNECTING CABLES – BREAKOUT BOXES – COMPLEX ECU ADAPTATIONS
INDIVIDUAL SOLUTIONS FOR MAXIMUM RELIABILITY IN ENGINEERING AND TESTS

A large number of different cables, adapters and peripheral simulations are used in the engineering of vehicle electronics, the testing of electronic and electrical components and in component integration into the complete vehicle.

The use of standard products is rarely possible here. Test equipment specially adapted to the control unit, vehicle series or test environment is nearly always required. Nevertheless, the modular system established and introduced at Softing makes it possible for cables, adapters and other test equipment to be realized extremely flexibly and at the same time cost-effectively – always tailored to the specific requirements and the concrete application.

Our many years of experience in engineering and setting up test equipment pays off. Our solutions are compelling thanks to their durability, quality and maximum reliability.

PORTFOLIO
- Connecting cables
- Contacts
- Breakout boxes
- Test adapters
- Connection distributors
- Lab cars
- IO simulations

AREAS OF APPLICATION
- ECU and component engineering
- Testing and validation (HiL testing, FMUs)
- Test benches
- Component testing and release
- Repair shop and manufacturing
- Quality assurance

BENEFITS
- Top quality thanks to comprehensive know-how and many years of experience
- Top-quality execution by qualified employees
- Fast, flexible realization and on-site support

TESTER ADAPTATIONS FOR QUALITY ASSURANCE

In the areas manufacturing and quality assurance, vehicle electronics and ECUs often have to be connected to test systems in a partially assembled state – without housing and connectors.

We design and realize suitable test adapters for this purpose. Our adapters guarantee safe contact between the electronics and the tester. On request, the adapters can also be designed for a very high number of contact cycles at any time.

- All-in-one solutions from one source
  - Construction
  - Mechanical manufacturing
  - Setup and wiring
  - Testing and commissioning
  - Support on site
- Needle-bed insert contacts
- Hand contacts
- Passive or active signal conditioning in the test adapter
- Realization for different test systems:
  VPC, ODU, Teradyne / GenRad, and others

▲ *Fig.: Test adapter for door control units*

▲ *Fig.: Test adapter for parktronic*

▲ *Fig.: OBD adapter cable*

▲ *Fig.: Hypertac ECU adapter cable with CAN FD Breakout*

▲ *Fig.: Needle bed contacting for circuit boards*

▲ *Fig.: Manual error simulation*

BOB – BREAK-OUT-BOXES

In the course of vehicle engineering it is often necessary to directly access IO signals, communication or supply lines of an ECU.

Breakout boxes make it possible to disconnect practically all cables connected to the control unit connector individually or to connect them to measuring systems for measuring purposes.

- Different variants for jumpers, grid or connection type possible
- Robust housing, modular setup
- Connectors and jacks with original parts from ECUs or cable harnesses – or individual manual contacts
- Exchangeable fronts for different connector labeling
- Variably modifiable thanks to magnetic labeling fields

▲ *Fig.: Universal adapter for Hypertac plug*

▲ *Fig.: BOB for pixel light ECUs*

▲ *Fig.: Measuring adapter for door control units*

▲ *Fig.: Universal BOB for signal connectors*

DISTRIBUTION-BOX – VARIABLE "ECU CONNECTORS" WITH LOTS OF POSSIBILITIES

In early engineering phases, direct and immediate access to IO signals or communication interfaces of an ECU is necessary. With a distribution box, individual IO signals as well as ECU data traffic can be reliably measured, recorded or connected to suitable remote stations.

Power supplies or displays can be flexibly integrated to suit the particular use.

- Different variants of jacks and connectors possible
- Robust housing, modular setup
- Switchable and fused power supplies
- Connectors and jacks for special signals (including HF, HV)
- Connections for control unit communication: LIN, CAN, CAN-FD, FlexRay, BroadR-Reach 100 Mbit/1 Gbit Ethernet
- Variably modifiable thanks to magnetic labeling fields

▲ *Fig.: Communication interface distributor*

▲ *Fig.: Measuring tap for 157 ZIF*

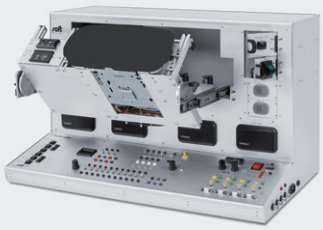
▲ *Fig.: OBD distribution box*

▲ *Fig.: Tapping for CAN, LIN, Ethernet*

LAB CARS – “ECU CONNECTORS” WITH INTEGRATED PERIPHERALS

Similar to the distribution box, lab cars offer direct access to IO signals and ECU communication – although extended by integrated load simulations, sensor or actuator equivalent circuits or communication counterparts. Optionally, load simulations or equivalent circuits can be manipulated by the operator and influenced directly on the lab car.

- Different variants of jacks, connectors, controllers and displays possible
- Robust housing, modular setup
- Switchable and fused power supplies
- Connectors and jacks for special signals (including HF, HV)
- Connections for control unit communication: LIN, CAN, CAN-FD, FlexRay, BroadR-Reach 100 Mbit/1 Gbit Ethernet
- Variably modifiable thanks to magnetic labeling fields



▲ *Fig.: LabCar for radio (HeadUnit)*

▲ *Fig.: Repair adapter for door control units*

▲ *Fig.: Adapter for on-board network control units*

▲ *Fig.: Lab car for airbag ECUs with ignition pills simulation*

TEST AND SIMULATION TECHNOLOGY – ALL COMPONENTS FROM ONE SOURCE

- Measuring adapters and breakout boxes
- Signal conditioning
- Simulation of electromechanical variables
- Error simulation
- Residual bus simulation
- HV adaptations and HV testing equipment for electric and hybrid vehicles
- Testing facilities for telematics and infotainment
- Accessories and aids for ECU engineering
- Diagnostic and test software

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