

# CalBench™

The complete calibration  
laboratory in one test bench







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*An overview of the sections in the Time Electronics CalBench catalogue*



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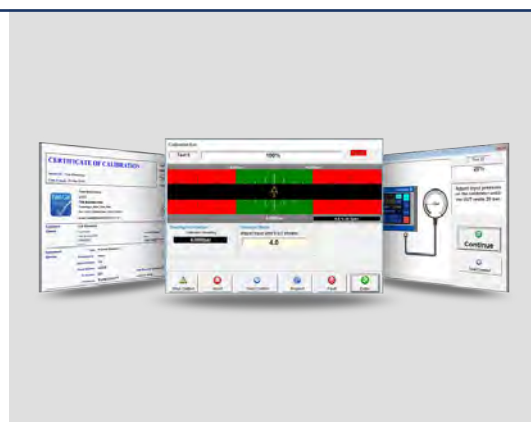
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## Driven by Innovation

Time Electronics has been manufacturing test and measurement solutions for over 55 years.

Innovation and continuous improvement has enabled us to create a diverse range of products and services that help solve the problems our customers have today and prepare them for the challenges of tomorrow.



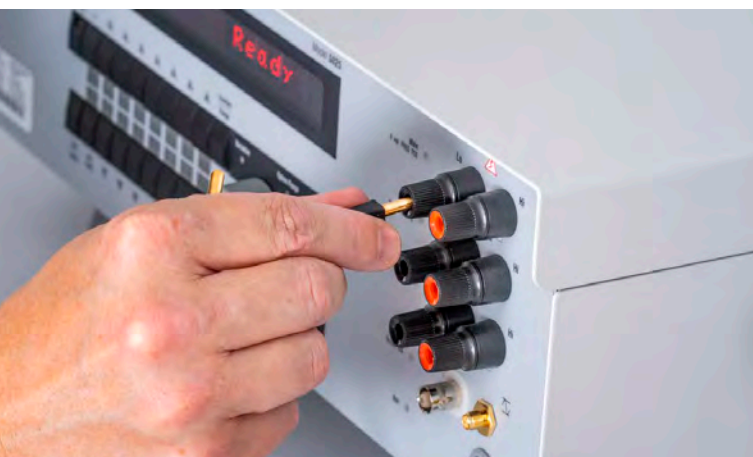


# Over 55 years of manufacturing precision instruments for test and measurement.

Established in 1967 Time Electronics Ltd is an UK based company that designs and manufactures calibration and metrology instruments. Our comprehensive range of products provides users with solutions for test and measurement applications within their respective industries.

Models include decade boxes, electrical calibrators, digital multimeters, process calibrators, pressure testing instruments and calibration software. In addition we manufacture customised multifunction test benches, and design and supply turnkey calibration labs, electrical and instrument workshops, and engineer training centres.

During our 55 years of continuous development we have used innovative engineering to develop performance products for automated calibration applications. Our software driven solutions enable users to manage, automate, and optimise the calibration process. They increase efficiency and productivity, reduce testing times and provide customers with the features and capabilities to achieve compliance with quality standards.









## Providing Solutions to Industries Worldwide

Quality is an integral part of our company philosophy. In addition to building accurate and durable test instruments we provide extensive technical support.

We focus on establishing strong business relationships based on customer satisfaction and commitment to providing quality products and services. Our approach is to prioritise consultancy to ensure solutions cover applications.

This has given us a valuable reputation with organisations worldwide, and is one reason for our continued success in international markets. We have a global distribution network and are represented by companies with strong technical capabilities and skilled engineers. Time Electronics Ltd is accredited to ISO 9001:2015.

# Calibration Benches



CalBenches provide an ergonomic workstation for a comprehensive calibration program. They are designed for flexibility and wide workload. The modules deliver precision and performance for their dedicated use, and accompanying products complete the solution to ensure coverage of all end user requirements.

Automating test applications is a core benefit of CalBench. Control & readback functionality enables rapid calibration work to be performed. Software driven calibration allows users to control the process from start to finish, from scheduling to certificate issuance.





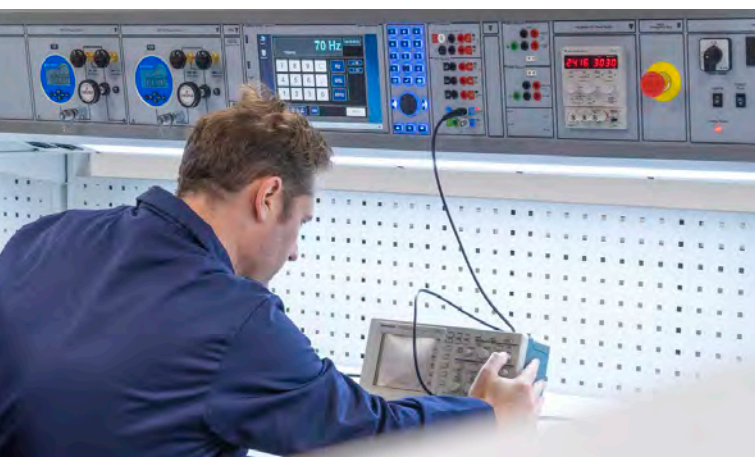
# CalBench

## The Ultimate Calibration Workstation

CalBench is a system that provides users with a compact working environment to cover multiple applications in test and measurement. It is ideal for companies looking to implement an ergonomic and organised calibration process, with a primary workstation covering the bulk of the testing workload. When utilised in workshops within industrial plants, CalBench provides a turnkey solution to enable users to achieve compliance with quality standards.

CalBench provides an integrated approach to housing master instruments as modules into a console mounted above the work bench. The system is a unified solution that replaces the requirement for multiple benchtop and portable test instruments. CalBenches are built to cover the parameters common to industrial sectors, primarily electrical, pressure, temperature, process and frequency.

Modules are the key components of CalBench, they fit into the consoles to cover required applications. Time Electronics have a comprehensive module range that features electrical and process calibrators, pressure controllers and digital gauges, power supplies, oscilloscopes and more. They are designed to optimise calibration work and increase output. This is possible by seamless integration of hardware and software to enable users to automate testing. With CalBench automation users can perform rapid calibration runs and achieve fast turnarounds of instruments and devices coming through the lab. To complement CalBench, a wide range of accompanying instruments and equipment is available.





## CalBench Calibration Capabilities

### Pressure

Gauges, calibrators, transducers, transmitters, indicators, switches, valves, controllers, manometers, chart recorders.

### Temperature

Sensors, transmitters, indicators, RTDs, thermocouples, recorders, controllers, thermometers, process calibrators, PRTs, thermistors.

### Electrical and Electronic

Multimeters, AC/DC signal sources, clamp meters, data loggers, tachometers, continuity testers, decade boxes, RCL meters, power meters, conductance meters, insulation testers, installation testers, micro ohm meters, portable appliance testers, power supplies.

### Frequency

Oscilloscopes, frequency meters, frequency counters, timer counters, current probes.

### Dimensional and Mechanical

Torque wrenches, pulse tools, power tools, verniers, calipers, micrometers, depth gauges, plug gauges, analytical balances, scales.





## Providing a Complete Solution

CalBench utilises the modules for the main calibration and testing workload. Accompanying products are used to supplement applications or perform specific tasks. Software compatibility of both modules and test instruments ensures a unified system, enabling users to automate calibration on CalBench or externally.

### Modules

- Process Calibrators
- Electrical Calibrators
- Pressure Controllers
- Digital Pressure Gauges
- Digital Multimeters
- Function Generators
- Decade Boxes
- Frequency Counters
- Oscilloscopes
- Power Supplies

### Accompanying Products

- Dry Block Calibrators
- Compressors
- Pressure Pumps
- UUT stands
- Soldering Stations
- Workshop Furniture
- Tools and Service Kits
- Adaptors, Accessories
- Field Calibrators
- Calibration Software



## CalBench Packages

Pre-configured packages for industrial applications



### Process Instrumentation CalBenches

The CBP-PROC series of CalBench packages are our most popular solutions used in instrument workshops in oil & gas, mining, power and processing industries. They provide users with a single workstation for the testing, commissioning and periodic calibration of plant devices and instrumentation. They are also used for fault-finding, troubleshooting and diagnostics, as well as engineer and technician training.

- CBP-PROC1, CBP-PROC2, CBP-PROC3 packages
- Dedicated process instrumentation calibration benches
- Process calibrator module with multimeter & PC control centre
- Source & measure voltage, current, resistance, frequency and more
- RTD & thermocouple simulation/measurement, HART communication
- Pressure calibration modules for pneumatic and hydraulic work
- Fixed and variable DC power supply modules
- Dry block calibrators, pressure pumps, adaptors, test stands
- Automated calibration using EasyCal software, peripherals included
- Bench fittings and storage solutions included



### Pressure Calibration CalBenches

Our pressure CalBench packages feature modules and accompanying products for testing and verifying instrumentation such as transmitters, gauges and switches. These packages are similar to the CBP-PROC process CalBench packages but have more focus on pressure work than temperature calibration coverage. Additionally, the pressure modules and extras in each package can be customised to end user requirements, meaning we can modify the ranges to match your instrumentation at site.

- CBP-PRES1, CBP-PRES2, CBP-PRES3 packages
- Pneumatic and hydraulic pressure calibration modules
- Automatic pressure controllers (CBP-PRES1 & 2)
- Process calibrator module with multimeter & PC control centre
- Electrical vacuum and pressure pumps, manual hand pumps
- Complete with adaptors, fittings, manifolds, test stands
- Fixed and variable DC power supply modules
- Automated calibration using EasyCal software, peripherals included
- Bench fittings and storage solutions included



### Wide Workload CalBenches

The wide workload CalBench packages have been designed for companies requiring a single workstation to cover multiple calibration disciplines and functions. Each package features modules and extras for electrical, electronic, pressure and temperature calibration. These multi-parameter systems all run EasyCal calibration software on PC control centre modules situated centrally in their consoles.

- CBP-WW1, CBP-WW2, CBP-WW3 packages
- Multi-instrument calibration for electrical, temperature, pressure
- Multifunction electrical calibrator and control centre modules
- Source/measure voltage, current, resistance, frequency and more
- RTD & thermocouple simulation and measurement
- Automatic pressure controllers (CBP-WW1 & 2)
- Precision pressure measurement modules
- Benchtop pumps, adaptor kit and electrical vacuum pumps
- Fixed and variable DC power supply modules
- Oscilloscopes, function generator and frequency counter modules
- Dry block calibrators and various accessories supplied





## Electrical Calibration CalBenches

Our electrical calibration bench packages are multifunction systems for calibrating engineers test tools and electronic devices. They incorporate modules and accompanying products that enable users to perform electrical calibration of products like multimeters, clamp meters, insulation and installation testers. Each package has precision electrical source and measurement capabilities to perform the necessary calibration applications.

- CBP-ELEC1, CBP-ELEC2, CBP-ELEC3 packages
- Calibrate electrical & electronic test tools
- Source/measure V, I,  $\Omega$ , frequency & more
- Electrical multifunction calibrator module
- Simulate & measure RTDs, thermocouples
- Electrical test modules, scopes, function generators
- Variable AC and DC power supply modules
- Products for service work like soldering and repairs
- Antistatic workstation kit with matting included



## Repair & Maintenance CalBenches

Repair and maintenance CalBench packages are systems for service work in labs and workshops. They are also popular in educational environments where students need to learn the usage of various types of test equipment. The CBP-RM packages are configured based on commonly performed R&M applications, including electrical fault finding and component repairs.

- CBP-RM1, CBP-RM2, CBP-RM3 packages
- CalBenches for R&M, diagnostics, fault finding and analysis
- Suitable for E&I workshops in process and power plants
- Oscilloscope and digital multimeter modules
- Variable AC and DC power supply modules
- Function generator and frequency counter modules
- Solder and re-work module with accompanying benchtop extras
- Antistatic mats included, with bonding plugs, wrist strap & leads
- Comprehensive kits with electronics service tools



## Instrumentation Trainer CalBenches

CalBenches designed for training purposes in the process and oil & gas industries. These packages contain a selection of modules and extras to enable different methods of running testing applications, making them ideal for teaching the practicals of calibration and instrumentation. Additionally the CalBench is the optimal workspace to teach engineers about the importance of calibration, quality control and management.

- CBP-TRN1, CBP-TRN2, CBP-TRN3 packages
- For educational facilities teaching process instrumentation courses
- Process calibrator module with multimeter & PC control centre
- RTD & thermocouple simulation and measurement
- Regulated low pressure pneumatic modules
- Dual user CalBench for 2 students (CBP-TRN2)
- Fixed and variable DC power supply modules
- Accessories including adaptors, fittings, manifolds, test stands
- Storage solutions, document holders and tool kits





## Custom Build CalBenches

*A step by step guide to configure a CalBench for your applications*



### Step 1: Preliminary Consultation

Get in contact with us to discuss your requirements. We have a team of experts who will be able to run through the available options and explain the features and functions available.

1. Email or call Time Electronics, or an authorised distributor.
2. Let us know your location, industry, and any relevant background information regarding your site operations.
3. Tell us about your existing setup and what you want to achieve with your CalBench.
4. Look at the example CalBench packages for a quick guide to common configurations.
5. If applicable to your requirement we can base the configuration on an example CalBench and modify if needed.
6. Provide the information based on steps 2 to 4.

### Step 2: The CalBench Type, Fittings and Extras

Review the various options available. The sales team can advise on suitable solutions based on your industry and type of work you will be using the CalBench to perform.

1. Choose the type of CalBench required, based on size, workspace and applications to cover.
2. If it is a multiple CalBench requirement then decide if the 7080-CNR or TL20 corner bench is an option to bridge the two main CalBenches. This forms an L-shaped workstation.
3. Select the under worktop fittings that are appropriate based on your storage needs.
4. Choose the perforated panel options best suited, for your quick access storage.
5. If a complete workshop or lab design requirement, then send us the dimensions of the area, window locations etc.





### Step 3: Module Requirements

Selecting the correct modules for your applications is the most critical part of the process. There are various available modules, or we will advise you based on the criteria below.

1. What are the general requirements for the CalBench, i.e. calibration, training, R&M etc.
2. Do you want to automate calibration and testing applications.
3. What are the parameters you want to cover, i.e. electrical, temperature, pressure etc.
4. What instruments and devices do you want to calibrate.
5. Range coverage: For parameters like pressure and temperature what are the minimum & maximum ranges, plus the most common range. For pressure what types are required.
6. If available, the models or detailed information on the UUTs you plan to calibrate.

### Step 4: Accompanying Products Requirements

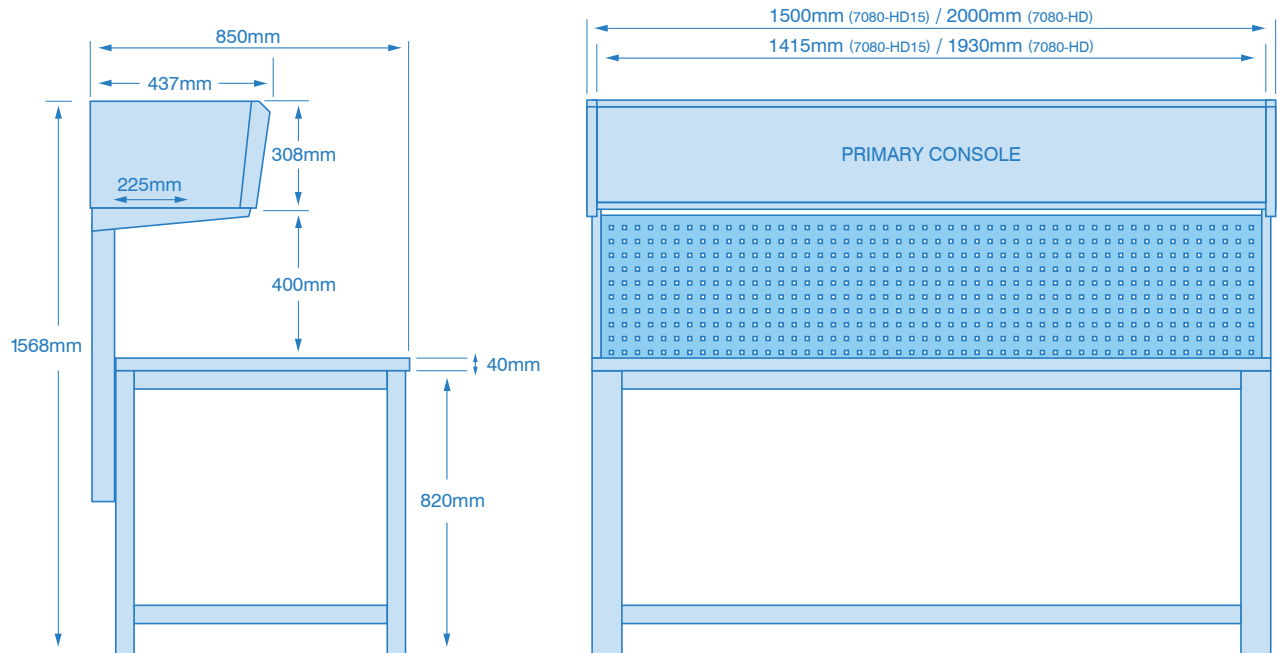
Accompanying products are required to supplement applications. Typically these would be for pressure and temperature, or items used for service work in the laboratory/workshop, and for field applications.

1. Line pressure: What is required and what is readily available on-site.
2. Manual pressure generation: Pumps and extras for inputting pressure to modules.
3. Dry block calibrators: A typical requirement, selecting the models needed based on temperature range coverage, commonly for RTDs and thermocouples.
4. Repair and maintenance products such as soldering stations and extras that may be needed.
5. Determine what other products and equipment is needed for lab and/or field applications, storage etc.



## CalBench Furniture and Fittings





## CalBench Types, Fittings and Furniture

This section shows the various types of CalBenches for industrial and technical workspaces. When designing a customised system we start with the base workstation, then select the fittings based on your preferences.

Once this is configured we assess your technical requirements to make the module selection, and additional supporting instruments.

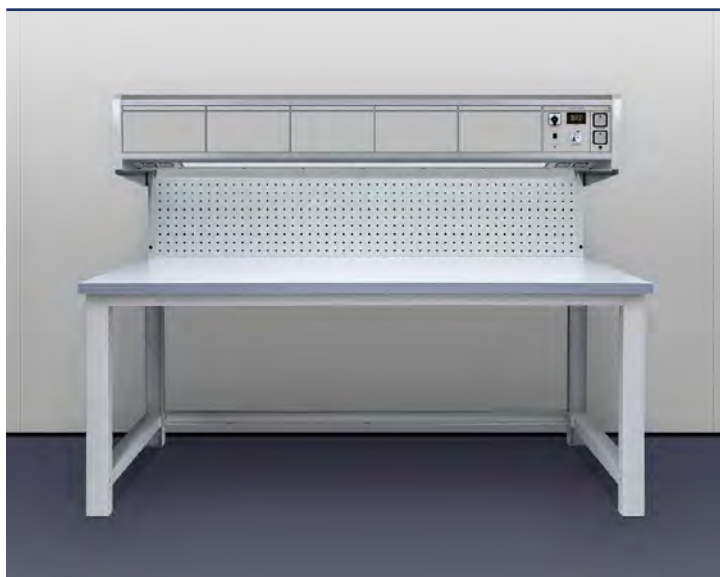
CalBench types feature frameworks and consoles that form the basis of the system. Under worktop options include drawers, cabinets, and mobile units. Also available are ergonomic foot rests and articulating keyboard trays.

The perforated panel options include hooks, holders, shelves and storage bins. Additional fittings include overhead lighting and worktop options.



## CalBench Types and Consoles

The various types of CalBench, their frameworks and consoles



### 7080-HD Heavy Duty CalBench

The 2000 mm wide heavy duty CalBench system. Made from a robust, steel braced framework, ideal for industrial workshops. Each bench has the console for module housing, with mains controller module and under side power and lighting as standard. Perforated rear panel, console mounting arms and premium grade worktop also included.

- 2000 mm wide heavy duty CalBench
- Bench made from reinforced, steel section framework
- Heavy load bearing (up to 800 kg U.D.L. capacity)
- Bench frame finished with RAL 7035 light grey
- Hard wearing light grey laminate worktop with shock proof edging
- Console height can be set at 1568 mm or 1413 mm
- Supplied with perforated panel and console support arms
- Primary console with 7082 mains controller module fitted
- Two front panel sockets on 7082 module (type selectable)
- Four under console sockets (type selectable)
- Under console LED lighting with on/off switch on 7082 module



### 7080-HD15 Heavy Duty CalBench

The 1500 mm wide heavy duty CalBench system. Made from a robust, steel braced framework, ideal for industrial workshops. Each bench has the console for module housing, with mains controller module and under side power and lighting as standard. Perforated rear panel, console mounting arms and premium grade worktop also included.

- 1500 mm wide heavy duty CalBench
- Bench made from reinforced, steel section framework
- Heavy load bearing (up to 800 kg U.D.L. capacity)
- Bench frame finished with RAL 7035 light grey
- Hard wearing light grey laminate worktop with shock proof edging
- Console height can be set at 1568 mm or 1413 mm
- Supplied with perforated panel and console support arms
- Primary console with 7082 mains controller module fitted
- Two front panel sockets on 7082 module (type selectable)
- Four under console sockets (type selectable)
- Under console LED lighting with on/off switch on 7082 module



### 7080-CNR Corner CalBench

A corner CalBench that can be used to create an L-shaped work station by bridging two 7080-HD CalBenches. The bench is heavy duty style with an angled corner console for housing modules.

The corner console positions between two standard consoles situated on either side. It creates a seamless, continuous system that provides an organised and ergonomic layout for applications.

- Corner CalBench for bridging two 7080-HD benches
- 1200 x 1200 mm with 800 mm side edges, 530 mm front edge
- Heavy duty steel section legs with rear reinforcement leg
- Bench frame finished with RAL 7035 light grey
- Hard wearing light grey laminate worktop with shock proof edging
- Console height can be set at 1568 mm or 1413 mm
- Supplied with perforated panel section
- Console support arms and corner primary console included
- 7082 mains controller module fitted as standard
- Two front panel sockets on 7082 module (type selectable)
- Four under console sockets and under console LED lighting





## 7081 and 7081-XD Secondary Consoles

The 7081 and 7081-XD are optional expansions to the CalBench system. They provide additional housing for modules, situated below the primary console.

The 7081 is 225 mm deep and can be fitted with a select range of modules. The 7081-XD is 300 mm deep and can house all modules.

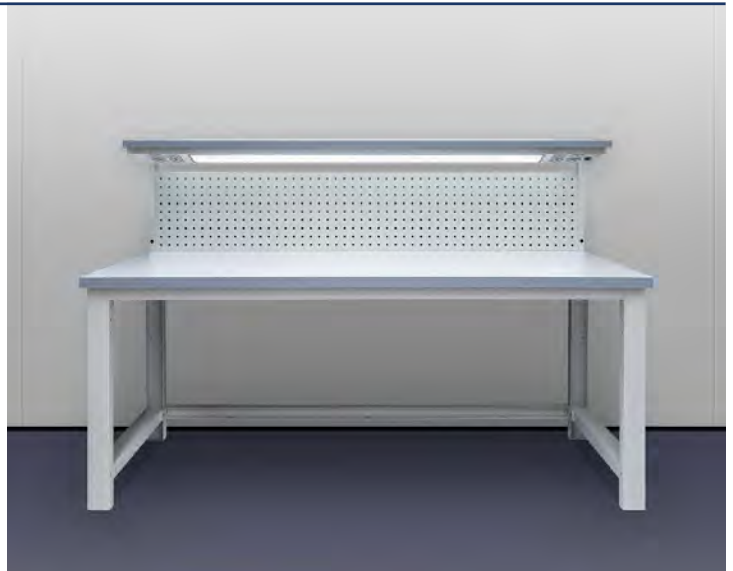
- Consoles that position below the primary console
- Provides users with additional space for modules
- 2000 mm wide with 1925 mm of module space available
- 7081: 225 mm deep to house select modules
- 7081-XD: 300 mm deep to house all modules
- Reinforced steel design with braced mounting legs
- Can be made into full or part shelf versions
- Powered from the primary console
- Perforated panel is removed when secondary console is fitted



## 7080-HD-MFS Work Bench with Multifunction Shelf

The heavy duty version of the CalBench, with a multifunction shelf featuring lighting and power sockets. It can also be customised to incorporate communication ports under the shelf, making an ergonomic solution for situating test instruments and standards.

- Heavy duty style, reinforced, steel framework, width 2000 mm
- Shelf for positioning of large instruments, 450 mm deep
- Bench frame finished with RAL 7035 light grey
- Durable light grey laminate worktop with shock proof edging
- Supplied with perforated panel and console support arms
- Drawer units, cupboards, PC holders, available as options
- Customisable with bypass communication ports
- Up to 8 under console sockets (type selectable)
- Under shelf lighting with on/off switch on right under side



## TL20 Multi Purpose Corner Bench

A multi-purpose industrial grade corner bench with mounted rear frame section, providing an ergonomic workspace and storage area in workshops and laboratories. The unit has been specifically designed for use in TE labs where engineers utilise dedicated areas for their respective applications.

- Corner bench for suitable for bridging two CalBenches
- 1200 x 1200 mm with 800 mm side edges, 530 mm front edge
- Heavy duty steel section legs and one rear reinforcement leg
- Hard wearing light grey laminate worktop with shock proof edging
- Benchtop rear mounting frame with perforated panels and 2 shelves
- Table mounted sloping steel power duct with 8 sockets
- 20 piece tool hook kit for perfo panels supplied
- Bench frame finished with RAL 7035 light grey





## Under Worktop Fittings and Storage

*Drawers, cabinets and mobile units for under bench storage*



### 7122: 3 Drawer Unit

A suspended multi drawer unit with three drawers for storage and safe keeping of equipment, documents, and tools commonly used on the CalBench.

- Includes 3 x 125 mm drawers - 75 kg UDL per drawer
- Reinforced, welded steel housing
- Finished with RAL 7035 light grey housing / RAL 5010 blue drawer fronts
- Central locking system
- Each drawer has recessed handles for flush finish
- Each drawer unit comes inlay matting as standard
- Dimensions: W 525 x D 550 x H 450 mm



### 7124: 4 Drawer Unit

A suspended four drawer unit for use on CalBench systems, with three different drawer heights making it suitable for storage of equipment, documents and tools.

- Includes 1 x 100 mm, 2 x 125 mm, 1 x 175 mm drawers - 75 kg UDL per drawer
- Reinforced, welded steel housing
- Finished with RAL 7035 light grey housing / RAL 5010 blue drawer fronts
- Central locking system
- Each drawer has recessed handles for flush finish
- Each drawer unit comes inlay matting as standard
- Dimensions: W 525 x D 550 x H 600 mm



### 7132: 5 Drawer Unit

A suspended five drawer unit made from reinforced, welded steel that provides optimal storage capacity for tools, accessories and documents.

- Includes 4 x 100 mm, 1 x 125 mm drawers - 75 kg UDL per drawer
- Reinforced, welded steel housing
- Finished with RAL 7035 light grey housing / RAL 5010 blue drawer fronts
- Central locking system
- Each drawer has recessed handles for flush finish
- Each drawer unit comes inlay matting as standard
- Dimensions: W 525 x D 550 x H 600 mm



### 7131: Combination Drawer and Cabinet Unit

A premium grade combination drawer and cabinet unit built for industrial use. The drawer is ideal for small tools and document storage, the cabinet section for larger equipment.

- 1 x 125 mm drawer, 1 x 375 mm door with 1 internal shelf.
- Reinforced, welded steel housing
- 75 kg UDL drawer, inlay matting as standard
- Finished with RAL 7035 light grey housing / RAL 5010 blue cabinet/drawer fronts
- Cabinet section includes 50 kg UDL galvanised shelf adjustable on 25 mm pitch
- Drawer has recessed handles for flush finish
- Dimensions: W 525 x D 550 x H 600 mm





## Divider Kits for Drawer Units

Kits that enable users to partition the inside of drawers of the 7122, 7124, 7131 and 7132 units. Sets are available for 100 mm and 125 mm height drawers, enabling sectioning into 3, 6 or 9 compartments.

- Partitions drawer unit into sections
- Users can configure 3, 6 or 9 compartments depending on space requirement
- Suitable for storing components, tools and spare parts
- For use with 7122, 7124, 7131, 7132 drawer units



## 7123: Under Worktop Holder

An under worktop fitting that provides a convenient housing for computers or dry block calibrators. It can also be used as a storage section for tool kits.

- For situating dry block calibrators like models 8070, 8072
- For holding cases including 7198 pressure adaptor kits
- For situating computers, with open rear for power and peripheral connectivity
- Robust steel design with RAL 7035 light grey finish
- Fixes to leg and table frame of CalBench for reinforcement
- Dimensions: W 220 x D 580 x H 460 mm



## 8134: 4 Drawer Mobile Unit

An ESD 4 drawer mobile drawer unit that provides quality, functionality and storage. It can situate under the bench or re-position for increased leg space to have multiple bench operators. It can also be used around the workshop as required.

- Drawers (height): 2 x 100 mm, 2 x 150 mm
- Overall size: W 450 x D 520 x H 700 mm
- Industrial grade castors for mobility around lab/workshop
- ESD, RAL 7035 light grey paint finish, matches CalBench
- Frame material: Epoxy powder-coated steel
- Central locking feature
- Top tray and in-laid mat
- Optional drawer divider kits available
- For positioning under 7080-HD type CalBenches



## 8133: 3 Drawer Mobile Unit

An ESD 3 drawer mobile drawer unit that provides quality, functionality and storage. It can situate under the bench or re-position for increased leg space to have multiple bench operators. It can also be used around the workshop as required.

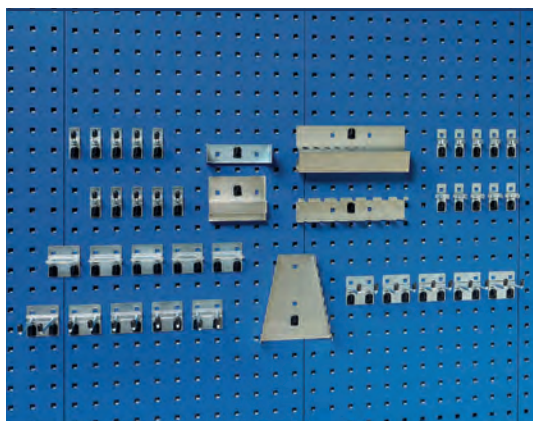
- Drawers (height): 2 x 150 mm, 1 x 200 mm
- Overall size: W 450 x D 520 x H 700 mm
- Industrial grade castors for mobility around lab/workshop
- ESD, RAL 7035 light grey paint finish, matches CalBench
- Frame material: Epoxy powder-coated steel
- Central locking feature
- Top tray and in-laid mat
- Optional drawer divider kits available
- For positioning under 7080-HD type CalBenches





## Perforated Back Panel Fittings

Quick-access storage and extras for the CalBench perforated panel



### 7125, 7137, and 7138 Tool Hook/Holder Sets

Kits that feature a selection of hooks and holders for placing tools and extras on the perforated panel, supplied with fitting tool for easy fixing.

- 7125: 20 piece tool hook/holder kit
- 7137: 40 piece tool hook/holder kit
- 7138: 60 piece tool hook/holder kit
- Each kit contains single hooks, double hooks, and spring clips
- Includes spanner holder, saw holder, screwdriver holder, allen key holder, and drill holder
- Supplied with fitting tool for easy fixing to perfo
- Quick fix perfo lock for easy re-positioning



### 7139 and 7140 Shelves

Shelves that mount on the perforated panel to provide convenient storage area for tools and parts. Available in two widths depending upon user requirements.

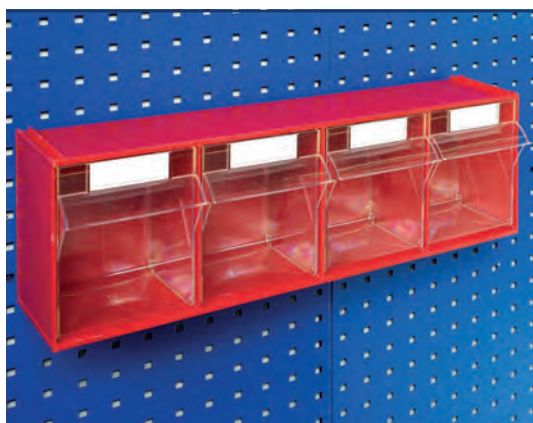
- 7139: Perfo shelf (W 450 x D 250 x H 130 mm)
- 7140: Perfo shelf (W 900 x D 250 x H 130 mm)
- RAL7035 light grey colour matches perfo panel
- Quick fix perfo lock for easy re-positioning
- Suitable for placing handheld test tools like meters, gauges, decade boxes
- Ideal for positioning EasyCal software accessories like label printer and bar code reader



### 7141 and 7142 Storage Bin Strips

A steel mounting strip for parts bins allowing access to tools and components on the perfo panel. Each unit is supplied with accompanying bins.

- 7141: Storage bin strip (W 450 x H 75 mm) with 4 x 1 L bins (103 x 165 x 83 mm each)
- 7142: Storage bin strip (W 900 x H 75 mm) with 6 x 3.5 L bins (145 x 240 x 125 mm each)
- Bin strip RAL7035 light grey colour matches perfo panel, red colour bins
- Quick fix perfo lock for easy re-positioning
- Quality rigid bins with reinforced sides, manufactured from high density polyethylene
- Label supplied with each bin
- Additional bins sizes available upon request.



### P149 - P153 Transparent Tilt Boxes

A range of transparent tilt boxes that fix to the perforated panel of CalBench, for storage and access to small parts and components. Ideal for R&M and R&D type workstations.

- P149: Transparent tilt box unit with 9 compartments (W 600 x D 68 x H 78 mm)
- P150: Transparent tilt box unit with 6 compartments (W 600 x D 96 x H 112 mm)
- P151: Transparent tilt box unit with 5 compartments (W 600 x D 142 x H 168 mm)
- P152: Transparent tilt box unit with 4 compartments (W 600 x D 178 x H 206 mm)
- P153: Transparent tilt box unit with 3 compartments (W 600 x D 210 x H 242 mm)
- Supplied complete with labels, to allow users to identify the contents

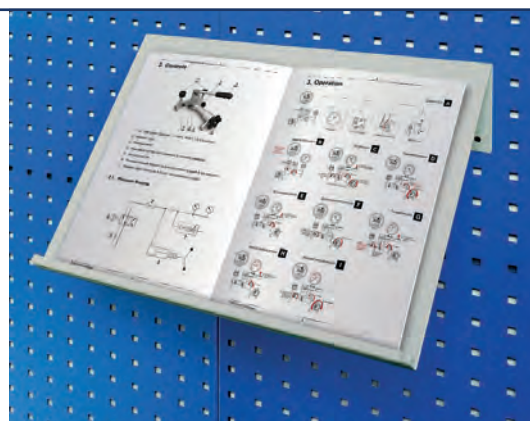




## 7143 A3 Document Holder

A document holder that is ideal for placing user manuals of devices under test on the CalBench. A3 size and angled structure means that the literature is ergonomically positioned. The user has a clear and easily visible solution for reading and reference.

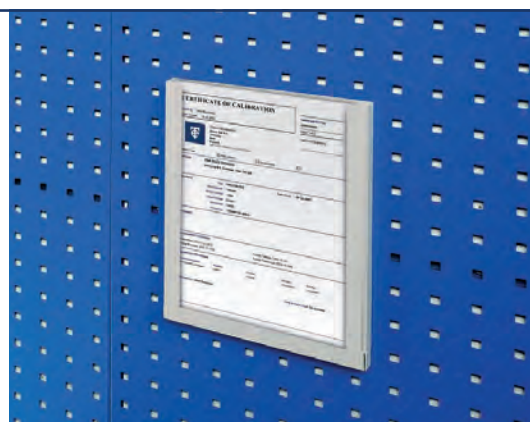
- Steel angled document holder
- W 450 x H 360 mm
- Holds manuals, books, catalogues, certificates and documents
- RAL 7035 light grey colour matches perfo panel
- Quick fix perfo lock for easy re-positioning



## P148 A4 Document Holder

A holder that is ideal for placing signs, certificates and other documents relevant to the CalBench workspace. The unit is A4 portrait size and positions flat to the perforated panel with 2.5 cm thickness making it non-intrusive to the table top area.

- Steel portrait A4 document holder
- Holds certificates, signs and documents
- RAL 7035 light grey colour matches perfo panel
- Quick fix perfo lock for easy re-positioning
- A4 landscape version available upon request



## 7133 Magnet Set

A specially designed magnet set for use with the CalBench perfo panel, providing a solution to positioning documents and small tools. The set includes a selection of dual use round magnets that can be used to pin or hold as required. The hook magnets allow users to hang items easily and discreetly.

- 10 off 35 mm diameter round magnets
- 10 off 12 mm diameter hook type magnets
- Used for quick fixing documents and small tools



## TL100 - TL103 Monitor Arms

Premium quality mounting arms that can be used on CalBenches. Each arm offers a solution to ergonomic positioning of monitors and displays, with adjustment to move the unit away from the workspace when not in use.

- Four available mounting arms, based on extension length requirement
- TL100 (XS): 105 mm / TL103 (SL): 450 mm / TL101 (M): 505 mm / TL102 (XL): 705 mm
- Includes QuickFix feature for monitor mounting
- Suitable for use with touch screen monitor TL70
- Sturdy aluminum/ABS construction, supports loads up to 15 kg (10 kg on TL02)
- Swivel head with 105° horizontal range





## Additional CalBench Fittings and Extras

*Fittings and extras to enhance the CalBench workspace*



### OHL-2000 Overhead Light Kit

A framework kit that connects to the CalBench frame to bring a light rail across the worktop. A convenient addition to the system, ideal for customers that want to maximise visibility to the applications performed on the CalBench.

- Rear frame with mounting kit (1350 mm wide)
- Top fix premium LED luminaire, 43 W
- Luminaire features CDP screen, glare and flicker free
- Extra durable LED luminaire life of 50,000 hours
- Features a perforated panel for rigidity and additional storage use
- Light switch added to 7082 module when ordered



### 7157 Articulating Keyboard Tray for CalBench

The 7157 is an ergonomic under worktop tray system that allows users to take their keyboard and mouse off the work surface. It is a suitable addition for end users that operate the CalBench in standing positions, with potentially bulky equipment being tested and placed on the worktop.

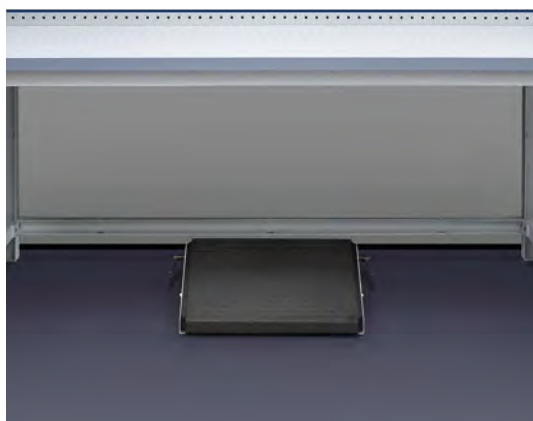
- Industrial grade articulating keyboard tray with easy-adjust arm and tilt knob
- Easy angle adjustment and locking mechanism
- Padded tray for situating keyboard and mouse
- Ergonomic positioning with slide away feature



### 7129 CalBench Operator Chair

A premium grade operator chair suitable for use with CalBench. The 7129 has a height adjustment of 505 to 630 mm to enable comfortable working on both a primary or secondary console. These robust chairs provide quality and durability in a laboratory or workshop setting, making them ideal for industrial, technical or office users.

- 7129: CalBench operator chair - ESD (conforms to EN 61340-5-1:2001)
- Gas lift adjustable height 505 to 630 mm
- Castors for mobility
- Blue fabric as standard, other colours upon request
- Extra padded seat and backrest
- Backrest adjustment, locked position or free floating
- Under bench foot rests available (model 7130)
- 7129-M: High version, adjustable 570 to 770 mm seat height



### 7130 Foot Rest for CalBench Operators

The 7130 is an ergonomic ESD foot support that positions under the CalBench work station. It provides users with additional comfort when operating modules and working at the bench. The unit features an angle adjustment of the padded platform.

- Ergonomic foot support that situates under the CalBench work station, ESD type
- Dimensions: W 550 x D 350 x H 100 mm
- Adjustable tilt adjustment with from 5° to 30°
- With antislip ribbed rubber mat, black polyurethane material
- Frame material: Epoxy powder-coated steel
- Colour: Metal parts: Light grey (RAL 7035) / Rubber Mat: Black

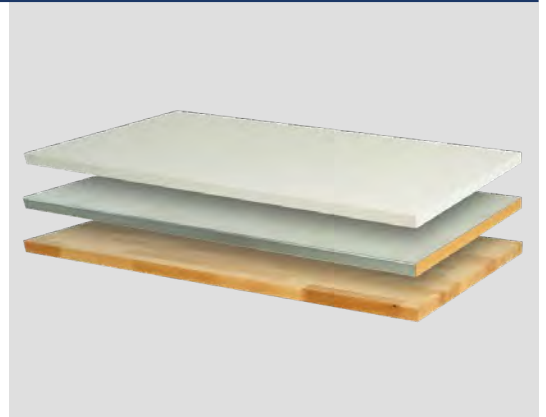




### Worktop Options

A variety of worktop options are available for the CalBench system. The standard top is a quality hard wearing light grey laminate with shock proof edging and chipboard core. Each top offers high load bearing and surface resistance to water, oils and chemicals.

- Standard worktop: Light grey laminate with 2 mm grey PVC shock proof edging
- Standard top thickness of 38 mm with chipboard core
- ESD laminate version (option 7185) or integrated ESD resin bonded mat version
- Multiplex option: Resin bonded, hardwood beech ply with cross laminated construction
- Phenol option: Hardwood core impregnated with phenol resin and edges in hardwood
- Stainless Steel option: Particle board core with 1.2 mm zinc coated steel cladding
- Beech option: Solid beech with polyurethane varnished surface
- Custom worktops available upon request



### 7186 ESD Workstation Kit for CalBench

The 7186 is a practical, easy to install ESD safe workstation kit. It has the equipment needed to build a static controlled workspace on the CalBench. Featuring high quality ESD items, this kit enables users to prevent any unnecessary damage to delicate electronic components or devices. It is suitable for repairs on electrical items such as PCBs, computer parts and other components.

- ESD workstation kit for CalBench
- ESD matting (800 x 2000 mm) with 10 mm stud in each corner
- 1 x earth bonding plug, 3 x 10 mm studs, 1 x 10 mm fabric adjustable wrist strap
- 1 x 10 mm coiled earth lead, 1 x 10 mm straight lead, 1 x crocodile clip
- ESD protected area vinyl sign included



### TL09 CalBench Extension Trolley

A heavy duty mobile bench designed to attach to the CalBench system, providing extra worktop and storage capacity. It features a clamp mechanism for secure connection to the accompanying CalBench, making it suitable for temporary or permanent installation.

- CalBench mobile extension bench for added worktop and storage space
- Base shelf for instrument storage, suitable for dry block calibrators, pressure pumps etc.
- Durable grey laminate worktop (matches supplied CalBench top)
- Heavy duty, reinforced, steel section framework finished in RAL 7035 light grey
- Lockable castor wheels and clamping mechanism for securing to CalBench
- Dimensions: W 750 x D 800 x H 855 mm



### Benchtop Power Ducts

Table mounted sloping steel power ducts with multiple sockets, shrouded mains on/off switch and grounding cable. Industrial grade units for ergonomic mounting on CalBenches or work benches, with rubber feet for firm positioning. Each unit provides additional power to workspaces, commonly situated at the rear of the worktop.

- TL28: Table mounted sloping steel power duct with 4 sockets (W410 x H95 x D95 mm)
- TL27: Table mounted sloping steel power duct with 6 sockets (W586 x H95 x D95 mm)
- TL26: Table mounted sloping steel power duct with 8 sockets (W762 x H95 x D95 mm)
- TL29: Sloping steel power duct with 10 sockets (W938 x H95 x D95 mm)
- UK type 220-250VAC/13A standard models, regional socket versions upon request
- Robust mild steel construction, industrial grade
- Light grey RAL 7035 paint finish, matches CalBenches and TL work benches
- 2 m cable, PVC (1.5 mm<sup>2</sup> 3 core) with a 13 A fused plug (UK versions)





## Modules





## Modules for calibration, testing & repair work

CalBenches can be fitted with a selection of modules for various applications. These modules integrate in the consoles to enable the optimal workflow for users on the bench.

Part of the configuration process is to work with each customer to choose the best modules for the CalBench workload coverage. We assess your requirements and explain how each module can be utilised within the system.

Modules include precision multifunction calibrators that feature PC control centres. They provide dedicated interfaces for manual and automated calibration, with a 12.1" touch screen display that situates centrally in the console.

Additionally we have a wide range of power supplies, pressure and process calibrator modules. Digital multimeters, oscilloscopes, function generators, solder stations and various other modules are also available.



## 8060 Precision Process Calibrator and Control Centre

For comprehensive calibration of process instrumentation



### Intelligent Process Instrumentation Calibration

The 8060 is a multifunction process calibrator module that offers excellent workload coverage on the Time Electronics CalBench. The module has source and measure capabilities for mV, mA, ohms, frequency, and pulses. It also simulates and measures 13 thermocouples and 11 RTDs to enable calibration of transmitters and other temperature devices commonly used in the process industry. Further features include the integrated 24 V loop power supply, pulse frequency output, cold junction compensation and HART communication for device readback and configuration.

**Control Centre:** The control centre is a PC with a 64 bit dual core processor, running Windows 10 Pro, with a 12.1" capacitive touch screen display. The calibrator control software allows the 8060 functions to be easily selected using mouse, keyboard, or touch screen.

**Advanced Measurement Option (AVM65):** This option integrates a 6.5 digit multimeter into the module, that measures DC voltage to 1000 V, AC voltage to 750 V, resistance to 100 MΩ, and frequency to 300 kHz. Operation is via the control centre, using the manual control application or EasyCal software (optional).

**EasyCal Software:** Enables automatic calibration to increase speed and efficiency of work. It has features to manage and administrate both inventory and quality control. Produce traceable calibration certificates and test reports for quality standards. Using EasyCal the operator can also read back and control compatible modules and external instruments such as dry block calibrators and portable test instruments.

**8060Plus:** A package that includes various options to enhance the 8060. It incorporates the AVM65 advanced measurement option, upgraded control centre, EasyCal software, printer kit, label printer, bar code reader, premium test lead set and factory calibration certificate. The package is designed to provide the optimal platform for both calibration work and management. For enhanced usability the CCPAD control centre numeric keypad module is available.

### Features

- Source mV, mA, resistance & frequency
- Measure mV, mA, resistance & frequency
- Thermocouple simulate and measure (13 types)
- RTD simulate and measure (11 types)
- Touch screen PC control centre with 12.1" display
- Integral 24 V loop power supply
- Optional integral 6.5 digit multimeter
- HART communicator
- Optional EasyCal software for automated calibration
- Communicate with EasyCal compatible modules

### Calibration Capabilities

- Temperature sensors, transmitters, indicators
- Thermocouples, RTDs
- Thermometers, PRTs, thermistors
- Recorders and controllers
- Loop and process calibrators
- Temperature switches
- Flow totalisers
- Pressure instruments using additional modules





## Electrical Source

Range	Resolution	Accuracy
<b>Voltage DC</b>		
-10.000 to 75.000 mV	1 $\mu$ V	0.02 % RDG + 8.5 $\mu$ V
0 to 12.0000 V	0.1 mV	0.02 % RDG + 1.2 mV
<b>Current DC</b>		
0 to 22.000mA	1 $\mu$ A	0.02% RDG + 2.2 $\mu$ A
<b>Resistance</b>		
1 to 400.00 $\Omega$	10 m $\Omega$	0.02 % RDG + 0.04 $\Omega$
1 to 4000.0 $\Omega$	100 m $\Omega$	0.03 % RDG + 0.4 $\Omega$
<b>Frequency</b>		
0 to 50000.0 Hz	0.1 Hz	0.005 % RDG + 1 Hz
<b>Pulse</b>		
0 to 999999	1	–
<b>24V DC Supply</b>		
24 V	–	0.5 V

## Thermocouple Simulation and Measurement

Type	Range (°C)	Accuracy (°C)	
		Measure	Simulate
<b>S</b> IEC 584 (-50 to 1758 °C)	-50 to 400	1.0	1.1
	400 to 1000	0.6	0.6
	1000 to 1768	0.7	0.8
<b>R</b> IEC 584 (-50 to 1758 °C)	-50 to 200	1.4	1.4
	200 to 500	0.6	0.6
	500 to 1768	0.6	0.7
<b>B</b> IEC 584 (0 to 1820 °C)	50 to 450	3.8	3.8
	450 to 800	0.9	0.9
	800 to 1820	0.6	0.7
<b>K</b> IEC 584 (-270 to 1372 °C)	-250 to -200	1.0	1.1
	-200 to -100	0.4	0.5
	-100 to 600	0.3	0.3
	600 to 1372	0.4	0.5
<b>N</b> IEC 584 (-270 to 1300 °C)	-250 to -200	1.5	1.6
	-200 to -100	0.5	0.6
	-100 to 1300	0.4	0.5
<b>E</b> IEC 584 (-270 to 1000 °C)	-250 to -200	0.6	0.7
	-200 to -100	0.3	0.3
	-100 to 0	0.2	0.2
	0 to 700	0.2	0.3
	7000 to 1000	0.2	0.4
<b>J</b> IEC 584 (-270 to 1200 °C)	-210 to -100	0.3	0.3
	-100 to 1200	0.3	0.4
<b>T</b> IEC 584 (-270 to 400 °C)	-250 to -200	0.8	0.9
	-200 to 0	0.4	0.4
	0 to 400	0.2	0.2
<b>C</b> ASTM E988 (0 to 2315 °C)	0 to 1000	0.5	0.5
	1000 to 1800	0.7	0.9
	1800 to 2315	1.0	1.4
<b>D</b> ASTM E988 (0 to 2320 °C)	0 to 100	0.5	0.5
	100 to 1100	0.4	0.5
	1100 to 2000	0.6	0.9
	2000 to 2320	0.9	1.3
<b>G</b> ASTM E1751 (0 to 2315 °C)	0 to 200	2.4	2.4
	200 to 400	0.5	0.5
	400 to 1400	0.4	0.5
	1400 to 2315	0.7	1.0
<b>L</b> DIN 43710 (-200 to 900 °C)	-200 to -100	0.2	0.3
	-100 to 400	0.2	0.2
	400 to 900	0.2	0.3
<b>U</b> DIN 43710 (-200 to 600 °C)	-200 to 0	0.4	0.4
	0 to 600	0.2	0.3

Internal cold junction accuracy  $\pm 0.2$  °C.

## Electrical Measurement

Range	Resolution	Accuracy
<b>Voltage DC</b>		
$\pm 75.0000$ mV	0.1 $\mu$ V	0.015 % RDG + 7.5 $\mu$ V
$\pm 30.0000$ V	0.1 mV	0.01 % RDG + 3 mV
<b>Current DC</b>		
$\pm 30.0000$ mA	0.1 $\mu$ A	0.015 % RDG + 3 $\mu$ A
<b>Resistance</b>		
0 to 400.000 $\Omega$	1 m $\Omega$	2 wire/3 wire: 0.02 % RDG + 0.02 $\Omega$ 4 wire: 0.01 % RDG + 0.02 $\Omega$
0 to 4000.00 $\Omega$	10 m $\Omega$	2 wire/3 wire: 0.02 % RDG + 0.2 $\Omega$ 4 wire: 0.01 % RDG + 0.2 $\Omega$
<b>Frequency</b>		
0 to 50000.0 Hz	0.1 Hz	0.005 % RDG + 1 Hz
<b>Pulse</b>		
0 to 999999	1	–

## RTD Simulation and Measurement

Type	Range (°C)	Accuracy (°C)		
		Measure		Simulate
		2W/3W	4W	
<b>Pt110 (385)</b> IEC 751 (-200 to 850 °C)	-200 to 200	0.65	0.60	0.65
	200 to 600	0.82	0.72	0.82
	600 to 850	0.96	0.82	0.96
<b>Pt100 (385)</b> IEC 751 (-200 to 850 °C)	-200 to 200	0.15	0.1	0.15
	200 to 600	0.26	0.16	0.26
	600 to 850	0.34	0.20	0.34
<b>Pt100 (3916)</b> JIS 1604 (-200 to 850 °C)	-200 to 200	0.15	0.1	0.15
	200 to 600	0.26	0.16	0.26
	600 to 850	0.33	0.20	0.33
<b>Pt200 (385)</b> IEC 751 (-200 to 850 °C)	-200 to 200	0.37	0.32	0.69
	200 to 600	0.51	0.41	0.92
	600 to 850	0.61	0.48	1.08
<b>Pt500 (385)</b> IEC 751 (-200 to 850 °C)	-200 to 200	0.20	0.16	0.36
	200 to 600	0.32	0.22	0.54
	600 to 850	0.40	0.27	0.67
<b>Pt1000 (385)</b> IEC 751 (-200 to 850 °C)	-200 to 200	0.1	0.05	0.25
	200 to 600	0.2	0.10	0.42
	600 to 850	0.27	0.14	0.54
<b>Cu10 (427)</b> Minco Application Aid #18 (-100 to 260 °C)	-100 to 260	0.61	0.56	0.61
<b>Cu50 (428)</b> GOST 6651-94 (-50 to 150 °C)	-50 to 150	0.17	0.13	0.17
<b>Cu100 (428)</b> GOST 6651-94 (-50 to 150 °C)	-50 to 150	0.12	0.09	0.12
<b>Ni120 (672)</b> Edison curve #7 (-100 to 260 °C)	-100 to 260	0.07	0.05	0.07
<b>Ni100 (618)</b> DIN 43760 (-100 to 260 °C)	-100 to 260	0.08	0.06	0.08



## 8060 Options and Extras

Control centre specifications, general specifications and options for the 8060 module

### Option AVM65: Integral 6.5 Digit Multimeter (included with 8060Plus version as standard)

Function	Range / Values	Best 1 Year Specification
Voltage DC	0 to 1000 V	35 ppm of rdg + 6 ppm of rng
Current DC	0 to 3 A	500 ppm of rdg + 50 ppm of rng
Voltage AC	0 to 750 V	0.06 % of rdg + 0.04 % of rng
Current AC	0 to 3 A	0.1 % of rdg + 0.04 % of rng
Resistance	0 to 100 MΩ	100 ppm of rdg + 50 ppm of rng
Frequency	3 Hz to 300 kHz	0.01 % of rdg
Thermocouple	-270 to 1800 °C (Type J, K, R, T, S, B, E, N)	± 0.5 °C
PT100	-180 to 850 °C	± 0.08 °C

### Control Centre Specifications and Software Options

Feature	Specification
Processor	64 bit, dual core (or equivalent).
RAM	16 GB.
Hard Drive	240 GB solid state.
Ports	Front of module: 4 x USB / Under console (LPAC section): 3 x USB, 2 x RS-232, 1 x HDMI.
Display	12.1" touch screen LCD.
Operating System	Windows 10 Pro.
Pre loaded Software Programs	8060: Manual control applications. 8060Plus: Manual control applications and EasyCal calibration software.
Keypad Module Option	CCPAD: Control Centre numeric keypad module with jog dial. For input/control of manual calibration applications and EasyCal software on the control centre.
Supplied Peripherals/Accessories	8060: USB wireless keyboard and mouse. USB port blocker kit. 8060Plus: USB wireless keyboard and mouse, printer, label printer, DVD-RW, 4 port USB hub, numeric keypad, USB memory stick, bar code reader, USB port blocker kit, back up drive.
Control Centre Operated Module Options	Pressure: 8030B, XTEG, RMTEG, MTEG modules (Pressure control apps & EasyCal software compatible). Signal analysis: CC-SCOPE oscilloscopes / CC-FRQC frequency counter / CC-AFG function generator. Environmental monitoring: 8002 data logger (logging software application).
Modules with EasyCal Communication	Pressure: 8030B and 8030B-H controller / 8020B indicator / MTEG and RMTEG calibrators. Process: 7085A temperature distribution module / 7002, 7003 & 7004 process communicators. Electrical: 5065B and 5075B multimeters / 5030B electrical tester calibrator / 8029 electronic load.
External Products with EasyCal Communication	TEG digital pressure gauges, dry block calibrators, benchtop calibrators, multimeters, torque analysers.
EasyCal Software Add-ons and Options	9779: Job and address label printer / EC2FL/EC2WL: Additional EasyCal user licenses for separate PCs EAD: EasyAdmin add-on / CREP: Crystal Reports software

### Additional and General Specifications

Functions/Options/Environmental	Specifications/Details
HART Communication	Integral communicator to support HART devices for readback and configuration.
9796 Test Lead Set Option (supplied as standard with 8060Plus version)	General purpose 4mm test leads / 4-wire screened, 4mm test leads / BNC test lead / BNC to 4mm plug 4mm test lead couplers / Low thermal 4mm test leads & clips / 4mm to mini thermocouple / 4mm to spade adaptors Thermocouple male to male CU / Pair of 4mm test clips / Wall mount/perfo panel lead holder / Carry case
Warm up	30 minutes to full accuracy.
Settling Time	Less than 5 seconds.
Temperature Performance	Operating: 5 to 45 °C. Full Spec: 22 °C +/- 3 °C. Storage: -10 °C to 50 °C
Operating Humidity/Altitude	< 80 % non condensing. Altitude: 0 to 3 km. Non operating: 3 km to 12 km.
Line Power	100 to 230 V AC 50/60 Hz. 200 W maximum.
Dimensions	W 410 mm (492 mm with CCPAD option), H 201mm (primary or secondary console fitting).



## Benefits of the 8060 and 8060Plus Modules

A quick guide to the benefits of using the 8060 modules in a CalBench



### Control and Communication

The control centre provides users with a touch screen interface for manual operation or EasyCal driven calibration work. The CCPAD option enables a convenient method of data entry, deviation and navigation when using EasyCal. Operators can also use the supplied wireless keyboard and mouse on the desktop.

- 12.1" touch screen control centre central in console
- Manually operate the 8060 via control centre user interface
- EasyCal software for automation and management
- Control and readback from compatible modules
- Software applications for control centre operated modules like process communicators, oscilloscopes and others
- CCPAD keypad & jog dial module for EasyCal input and operation

### Electrical and Temperature

The 8060 provides precision measurement and generation for process calibration work with electrical, temperature and frequency functions. The 8060Plus version integrates a 6.5 digit multimeter for advanced measurement capabilities. EasyCal communicates with the 7085A module and dry block calibrators to automate temperature calibration.

- 8060 generates, simulates & measures electrical & process signals
- 8060Plus features integral 6.5 digit multimeter
- EasyCal driven calibration and communication
- HART communication via 8060 and EasyCal software
- 7085A interfaces with EasyCal for batch testing of thermocouples
- DC power supply modules like 7052 & 7087 provide loop power

### Pressure

The control centre section of the 8060 communicates with pressure modules. EasyCal can drive pressure controllers and read back from regulated calibrators. XTEG modules are integrated pressure sensors, solely operated by the control centre via a virtual control software application or EasyCal software.

- EasyCal software drives pressure controller modules like 8030B
- Read back from RMTEG and MTEG pressure gauge modules
- XTEG sensor only modules with control centre user interface
- The 8060 provides precision mA measure for transmitters etc
- Read back and control external instruments like digital pressure gauges, via RS-232 communication with the control centre

### About the 8060Plus

The 8060Plus is an advanced version of the module inclusive of options to provide an optimal solution. It features the integral multimeter and upgraded control centre. EasyCal software is included for automation and management, plus a selection of peripherals including printer kits for certificate printing and administration.

- Optimised 8060 with options for increased functionality and usability
- Includes advanced measurement (integral 6.5 digit multimeter)
- EasyCal calibration software supplied pre-loaded on control centre
- EasyCal extras include printer kit, label printer and bar code reader
- Premium test lead set supplied (option 9796)



## 7051Plus Multifunction Calibrator and Control Centre

Universal calibration and system control



### Calibrator / Multimeter / Touch Screen PC

A module that combines a high accuracy calibration source with a precision digital multimeter. It incorporates a wide range of internally fitted functions to provide users with a multi product calibration solution. It is suitable for rapid calibration with automated test runs using EasyCal software, covering electrical test tools, process instrumentation, oscilloscopes and more. Adaptors and accessories are included for specific applications such as clamp meter and optical tachometer calibration. Supplied test leads enable the necessary connections for nearly all applications.

**Calibrator:** Provides a wide range of calibrated outputs for AC/DC voltage and current, resistance, capacitance, inductance, RTD and thermocouple simulation.

**Multimeter:** The integral 6½ digit multimeter measures DC voltage to 1000 V, AC voltage to 750 V, resistance to 100 MΩ, and frequency to 300 kHz.

**Control Centre:** A intuitive user interface with large 12.1" touch screen display. The control centre is a PC with a 64 bit dual core processor, running Windows 10. As standard it features the calibrator and multimeter control applications, with the wide range of functions easily selectable using mouse, keyboard or touch screen.

**EasyCal Software:** Enables automatic calibration to increase speed and efficiency of work. In addition EasyCal has features to manage and administrate both inventory and quality control. To complement the system a printer and connectivity kit is supplied as standard, for generation of certificates and reports. Further supplied accessories include a bar code reader for quick identification of devices in EasyCal, and label printer for creating stickers and labels to be placed on instruments.

**Communication:** Using EasyCal the operator can read back from compatible electrical, temperature, pressure, and loop modules within the bench. EasyCal can also be used with external instruments such as dry block calibrators and portable test instruments.

### Features

- Integral multifunction calibrator and 6.5 digit multimeter
- Touch screen PC control centre with 12.1" display
- Source up to 1050 V AC/DC voltage
- Source up to 22 A AC/DC current
- Source resistance (up to 1 GΩ), capacitance and inductance
- Oscilloscope calibration and optional power calibration
- Measure voltage, current, resistance, frequency
- Thermocouple and Pt100 simulation and measurement
- EasyCal software, adaptors and accessories included
- Communicate with EasyCal compatible modules

### Calibration Capabilities

- Multimeters, clamp meters, ohmmeters, AC/DC signal sources
- Decade boxes, data loggers, RCL meters
- Tachometers, oscilloscopes, frequency counters, timer counters
- Frequency meters, watt meters, power meters, current probes
- Thermocouples, RTDs, Thermometers, PRTs, thermistors
- Temperature indicators, recorders, controllers, switches
- Loop and process calibrators
- Pressure instruments using additional modules





## Calibrator (Source)

Function	Range / Values	Best 1 Year Specification
Voltage DC	0 to $\pm 1050$ V	$\pm 15$ ppm of setting
Current DC	0 to $\pm 22$ A	$\pm 80$ ppm of setting
Voltage AC	1 mV to 1050 V (10 Hz to 1 MHz, sine-wave)	$\pm 300$ ppm of setting
Current AC	10 $\mu$ A to 22 A (20 Hz to 1 kHz, sine-wave)	$\pm 0.05$ %
Clamp Meter Adaptor x50 turn	AC/DC Current up to 1100 A (DC, 45 to 90 Hz)	$\pm 0.5$ %
Capacitance	1 nF, 10 nF, 100 nF, 1 $\mu$ F, 10 $\mu$ F, 100 $\mu$ F (100 V max)	$\pm 0.25$ %
Inductance	1 mH, 1.9 mH, 5 mH, 10 mH, 19 mH, 50 mH, 100 mH, 190 mH, 500 mH, 1 H, 10 H	$\pm 0.1$ %
Decade Resistance	1 $\Omega$ to 1 G $\Omega$ (decade values)	$\pm 20$ ppm of setting
Full Range Resistance	1 $\Omega$ to 120 M $\Omega$ (variable)	$\pm 100$ ppm of setting
Conductance	1 s to 1 ns (fixed values, decade steps)	$\pm 20$ ppm of setting
Thermocouple Simulation	-270 to 1820 °C (type J, K, R, T, S, B, E, N)	$\pm 0.15$ °C
Pt100 Simulation	-180 to 850 °C	$\pm 0.07$ °C

## Oscilloscope Calibration

Amplitude	6 mV to 200 V and 6 mV to 2 V 50 $\Omega$ (Square-wave or DC)	$\pm 0.05$ %
Frequency/Period	0.1 Hz to 100 MHz / 10 ns to 10 s (fixed values 1, 2, 5 sequence)	$\pm 0.1$ ppm (0.1 Hz to 10MHz / 100 ns to 10 s) $\pm 20$ ppm (20, 50, 100 MHz / 50, 20, & 10 ns)
Duty Cycle	3 frequencies: 100 Hz, 1 kHz, 10 kHz, settable from 0 to 100 %	–
Fast-Rise	< 400 ps. Bandwidth checking up to 400 MHz	–
Option 9769: Scope 2.2 GHz Sweep	100 MHz to 2.2 GHz levelled sine-wave (0.5, 1, 1.5 V pk-pk)	Amplitude $\pm 1$ % Frequency $\pm 20$ ppm

## Option 9797: Power Calibration

Power	22 A, 1050 V, 23 kW, 45 to 400 Hz	ACV: 0.03 %, DCV: 0.01 %. ACI: 0.1 %, DCI: 0.03 %
Phase/Power Factor	$\pm 90^\circ$ / 0.00 to 1.00 PF	$\pm 0.3^\circ$

## 6.5 Digit Multimeter (measure)

Function	Range / Values	Best 1 Year Specification
Voltage DC	0 to 1000 V	35 ppm of rdg + 6 ppm of rng
Current DC	0 to 3 A	500 ppm of rdg + 50 ppm of rng
Voltage AC	0 to 750 V	0.06 % of rdg + 0.04 % of rng
Current AC	0 to 3 A	0.1 % of rdg + 0.04 % of rng
Resistance	0 to 100 M $\Omega$	100 ppm of rdg + 50 ppm of rng
Frequency	3 Hz to 300 kHz	0.01 % of rdg
Thermocouple	-270 to 1800 °C (Type J, K, R, T, S, B, E, N)	$\pm 0.5$ °C
Pt100	-180 to 850 °C	$\pm 0.08$ °C



## 7051Plus Specifications and Options

Control centre specifications, general specifications and options for the 7051Plus module

### Control Centre Specifications and Details

Feature	Specifications
Processor	64 bit, dual core (or equivalent).
RAM	16 GB.
Hard Drive	240 GB solid state.
Ports	Front of module: 4 x USB / Under console (LPAC section): 3 x USB, 2 x RS-232, 1 x HDMI.
Display	12.1" touch screen LCD.
Operating System	Windows 10 Pro.
Pre loaded Software Programs	7051 manual control applications (calibrator and multimeter), EasyCal software.
Keypad Module Option	CCPAD: Control centre numeric keypad module with jog dial. For input/control of manual calibration applications and EasyCal software on the control centre.
Supplied Hardware/Accessories	USB wireless keyboard and mouse, printer, label printer, DVD-RW, 4 port USB hub, numeric keypad, USB memory stick, bar code reader, USB port blocker kit, back up drive.
Control Centre Operated Module Options	Pressure: 8030B, XTEG, RMTEG, MTEG modules (Pressure control apps and EasyCal software compatible). Signal analysis: CCSCOPE oscilloscopes / CC-FRQC frequency counter / CC-AFG function generators. Environmental monitoring: 8002 data logger (logging software application).
Modules with EasyCal Communication	Pressure: 8030B and 8030B-H controller / 8020B indicator / MTEG and RMTEG calibrators. Process: 7085A temperature distribution module / 7002, 7003 & 7004 process communicators. Electrical: 5065B and 5075B multimeters / 5030B electrical tester calibrator / 8029 electronic load.
External Products with EasyCal Communication	TEG digital pressure gauges, dry block calibrators, benchtop calibrators, multimeters, torque analysers.
EasyCal Software Add-ons and Options	9779: Job and address label printer / EC2FL/EC2WL: Additional EasyCal user licenses for separate PCs EAD: EasyAdmin add-on / CREP: Crystal Reports software

### General Specifications

Environmental	Specifications/Details
Warm up	30 minutes to full accuracy.
Settling Time	Less than 5 seconds.
Temperature Performance	Operating: 5 to 45 °C. Full Spec: 22 °C ± 3 °C. Storage: -10 °C to 50 °C.
Operating Humidity/Altitude	< 80 % non condensing. Altitude: 0 to 3km. Non operating: 3 km to 12 km.
Line Power	100 to 230 V AC 50/60 Hz. 200 W maximum.
Dimensions	W 425 mm (507 mm with CCPAD option), H 201 mm (primary console fitting only).

### Supplied Adaptors and Test leads

Model Code	Details
9780	Clamp meter adaptor x50 turn, AC/DC current up to 1100 A (DC, 45 to 90 Hz).
9773	Optical tacho adaptor – 6 rpm (0.1 Hz) - 600,000 rpm (10 kHz).
7112	Transducer patch box - Provides convenient connection for transducers under test, with 250 Ω resistor.
9796	Premium test lead set General purpose 4mm test leads / 4-wire screened, 4mm test leads / BNC test lead / BNC to 4mm plug 4mm test lead couplers / Low thermal 4mm test leads & clips / 4mm to mini thermocouple / 4mm to spade adaptors Thermocouple male to male CU / Pair of 4mm test clips / Wall mount/perfo panel lead holder / Carry case





## Control and Communication

The control centre provides users with a large 12.1" touch screen interface for manual operation or EasyCal driven calibration work. The CCPAD option enables a convenient method of data entry, deviation and navigation when using EasyCal. Operators can also use the supplied wireless keyboard and mouse on the desktop.

- 12.1" Touch screen control centre PC
- Manually operate the 7051 calibrator and multimeter functions
- EasyCal software for automation and management
- Control and readback from compatible modules
- Software applications for control centre operated modules like CCSCOPE oscilloscopes and CC-FRQ frequency counters
- CCPAD keypad & jog dial module for EasyCal input and operation

## Electrical and Temperature

The 7051Plus provides the source and measure capabilities for electrical, electronic, temperature and frequency calibration work. EasyCal software communicates with the 7085A module to enable multi-channel measurement applications, allowing users to batch test temperature devices like thermocouples.

- 7051Plus used to source/measure electrical and process signals
- EasyCal driven calibration and communication
- 7085A interfaces with EasyCal for batch testing of thermocouples
- Power supply modules like 7052 supplement testing applications
- Control centre operated modules like CCSCOPE oscilloscopes come with dedicated software applications on the control centre
- Adaptors and accessories supplied for use with 7051Plus

## Pressure

The control centre section of the 7051Plus communicates with pressure modules. EasyCal can drive pressure controllers and read back from regulated calibrators. XTEG modules are integrated pressure sensors, solely operated by the control centre via a virtual control software application or EasyCal software.

- EasyCal software drives pressure controller modules like 8030B
- Read back from RMTEG and MTEG pressure gauge modules
- XTEG sensor only modules with control centre user interface
- The 7051Plus provides precision mA measure for transmitters etc.
- Read back and control external instruments like digital pressure gauges, via RS-232 communication with the control centre

## Adaptors and Accompanying Instruments

The 7051Plus is supplied with a selection of adaptors and accessories to aid usability and enable operators to perform specific applications. EasyCal peripherals such as printer kits are supplied for certificate printing and administration. Accompanying products include dry block calibrators that communicate with EasyCal on the control centre.

- 9780 clamp meter calibration adaptor (shown) supplied
- 9773 optical tacho adaptor included
- 7112 patch box for simple connection to transmitters under test
- EasyCal extras include printer kit, label printer and bar code reader
- Read back and control TE dry block calibrators using EasyCal, via RS-232 or USB communication with the control centre



## Pressure Modules

Pressure controllers, calibrators and digital gauges



### 8030B Automatic Pressure Controller

A high performance pressure calibration module that is internally configured with up to three precision sensors to from vacuum to 225 bar. EasyCal software compatible for automated control and readback.

- Ranges from vacuum to 225 bar (3250 psi)
- Multi sensor module for wide range coverage, configured as per customer requirements
- Gauge, compound or absolute pressure
- Up to 3 integral precision sensors plus barometric reference
- Control stability: 0.003 % full scale (of active sensor)
- Precision: 0.005 % full scale
- Accuracy: 0.01 % full scale of active sensor (0.03 % full scale on ranges below 300 mbar)
- Barometric reference option for absolute pressure emulation
- Touch screen user interface or EasyCal software compatible for control centre operation



### 8030B-H Automatic Hydraulic Pressure Controller

A comprehensive solution for automatic hydraulic pressure calibration, consisting of a module that provides the user control interface, and a hydraulic pressure generation system that integrates under the rear of the CalBench. The output of the generation unit is connected to a manifold positioned on the benchtop, with a precision sensor providing 0.01% full scale accuracy for testing applications.

- 400 bar, 600 bar, 700 bar and 1000 bar versions
- Complete system with hydraulic pressure generator fitted under bench
- Pressure Media: Water as standard, oil optional
- Control stability: 0.003 % full scale
- Precision: 0.005 % full scale
- Accuracy: 0.01 % full scale
- Touch screen user interface or EasyCal software compatible for control centre operation



### 8020B Precision Pressure Indicator

An indicator module that can be used with benchtop pressure pumps. Available as a pneumatic or hydraulic version with up to four precision sensors internally fitted to cover a wide range, with 0.01% full scale accuracy per sensor.

- Pressure ranges from vacuum up to 5000 bar (70,000 psi)
- Multi sensor module for wide range coverage, configured as per customer requirements
- Up to 4 integral precision sensors plus barometric reference
- Pneumatic or hydraulic versions, or combination unit for both
- Gauge, Absolute or Compound versions available
- Accuracy: 0.01 % FS per sensor (0.03 % FS below 300 mbar, 0.05 % FS above 1000 bar)
- Barometric reference option for absolute pressure emulation
- Touch screen user interface or EasyCal software compatible for control centre operation



### RMTEG Digital Pressure Gauge with Regulator

Regulated pressure modules that feature a precision digital gauge for workload pneumatic calibration with ranges up to 300 bar. They are ideal for calibration and maintenance of pressure gauges, sensors, transmitters, transducers, switches, and more.

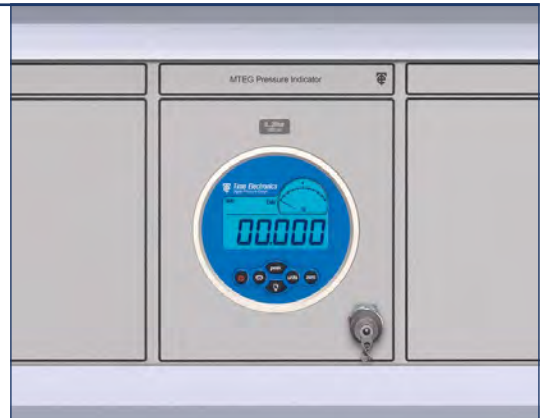
- Pressure ranges from vacuum up to 300 bar (4350 psi)
- 0.02 % or 0.05 % full scale accuracy available
- Pneumatic with regulator
- Gauge, Absolute or Compound versions available
- Dual function front panel pressure port for precision output or measurement
- 5 digit resolution
- 3 times per second measure speed
- Fully temperature compensated accuracy
- EasyCal software compatible



## MTEG Digital Pressure Gauge

Digital pressure gauge modules that offer a high accuracy solution to pressure calibration with excellent resolution, stability and features to aid the testing process. Suitable for pneumatic and hydraulic calibration applications with an accompanying pump for input.

- Pressure ranges up to 700 bar (10,000 psi)
- 0.02 % or 0.05 % full scale accuracy available
- Gauge, Absolute or Compound versions
- 5 digit resolution
- 3 times per second measure speed
- Fully temperature compensated accuracy
- EasyCal software compatible
- Suitable for use with pneumatic and hydraulic benchtop pumps



## XTEG Control Centre Pressure Gauges

Pressure measurement modules that are operated via a control centre application or EasyCal software. The internal sensors are high performance, providing accuracy, stability and excellent resolution for testing applications.

- Pressure ranges up to 700 bar (10,000 psi)
- 0.02 % full scale accuracy
- Gauge, Absolute, Compound or Differential versions
- Supplied with pressure control centre application
- Up to 5 digit resolution
- Up to 3 ranges per module with individual measure ports
- Fully temperature compensated accuracy
- EasyCal software compatible
- Suitable for use with pneumatic and hydraulic benchtop pumps



## 7066 Differential Pressure Calibrator

The 7066 is a precision module designed for very stable measurement of differential pressures between its two output ports, enabling the calibration of differential pressure gauges, transducers, and transmitters.

- 0.2, 2, 5 and 10 bar versions available
- Best accuracy 0.04 % of full scale
- Pneumatic
- Calibrate differential transmitters, gauges and more
- 4.5 digit display
- 5 selectable pressure units
- Over-pressure alarm
- EasyCal software compatible



## 7084 Regulated Output with Analogue Gauge

A regulated pressure output via a basic operation module. It can connect to accurate measurement modules to supplement a pressure source to an application. Or it is suitable for general purpose use with items like blow guns for instrument or device cleaning.

- Ranges available from vacuum to 200 bar (2900 psi)
- Pneumatic self-relieving regulator
- 63 mm anti-shock analogue gauge
- Front panel output connection
- Needle isolation valve
- Simple operation
- Pneumatic input connection from rear of console

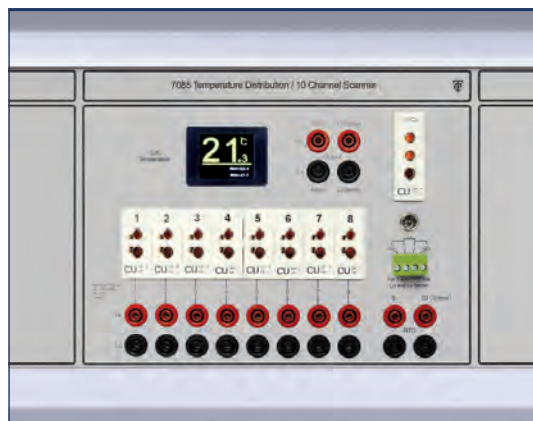






## Process Modules

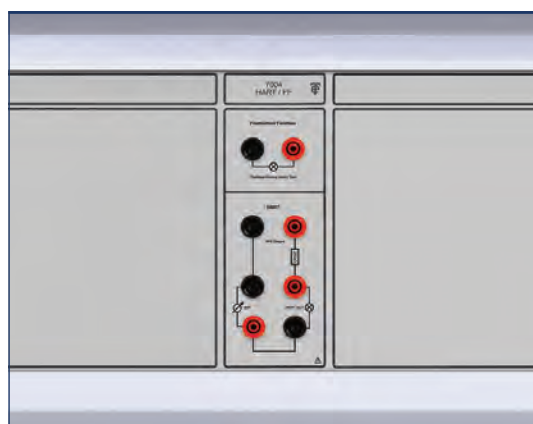
Modules for process loop and temperature applications



### 7085A Temperature Distribution and 10 Channel Scanner

A temperature distribution module that allows users to quickly create multi-channel measurement applications. It is designed to switch 8 thermocouple inputs and 1 RTD reference to a common output. The module interfaces with EasyCal software and the multimeter section of the 7051Plus, 8060 or 5065B modules.

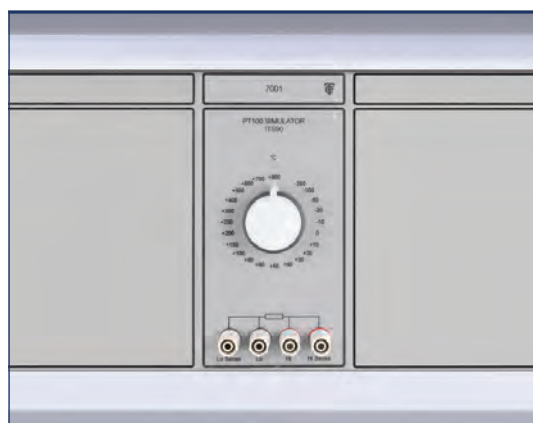
- Cold junction temperature display
- Records min/max ambient temperatures
- Interfaces with 8060 or 7051 module and EasyCal software
- Can be used with the 5065B multimeter module and EasyCal software
- Clear visual display of temperature (LCD)
- Suitable for use with dry block calibrators
- Integral 10 channel scanner
- Benchtop version available (7085P)



### 7002, 7003, 7004 HART and Foundation Fieldbus Modules

Available as two independent modules or a combined Hart and Fieldbus unit as shown. Enables communication with Hart and Fieldbus devices, with an intuitive interface via EasyCal software. The 7002 module and HART section of the 7004 features an integrated 24 V DC supply.

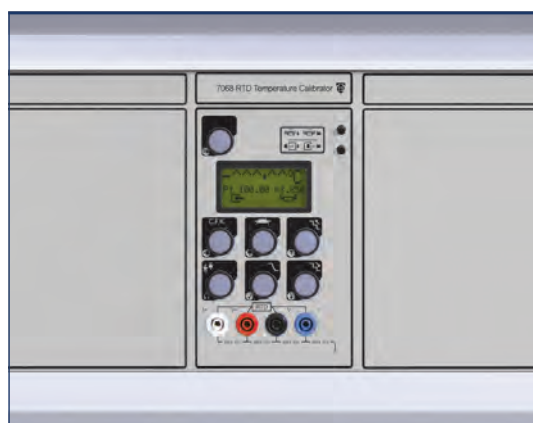
- EasyCal software communication programs for Hart and Foundation Fieldbus
- Provides monitoring of primary values and sensor outputs
- Integrated 24 V DC supply on 7002 and HART section of 7004
- Provides conditioned power and network termination
- Device configuration and read back
- Combined module available with Hart and Fieldbus communication (7004)
- Suitable for use with 7051 and 8060 modules (8060 has HART as standard)



### 7001 Pt100 Simulator

A precision simulator for Pt100 0.3850 platinum resistance elements used for accurate temperature measurement. High performance metal film resistors are used throughout to ensure a good temperature coefficient and long term stability.

- -200 °C to +800 °C with 23 set points
- Accuracy  $\pm 0.3$  °C
- Less than 30 ppm/°C temperature coefficient
- ITS-90 IEC60751
- Exceeds class A
- Passive resistance source
- °F version available (-100 °F to 1000 °F,  $\pm 0.5$  °F accuracy)



### 7068 RTD Temperature Calibrator

A calibrator for accurately simulating and measuring the most commonly used RTD probes. The 7068 is specifically designed to automate and to speed up the task of calibrating instrumentation used in the process control industry. It can also be used as a temperature reference for dry block and other precision temperature baths.

- Temperature: Accuracy 0.05 °C (0.09 °F) / Resolution 0.01 °C (0.02 °F)
- Resistance: Accuracy 0.03  $\Omega$  / Resolution 0.01  $\Omega$
- 2, 3, and 4 wire connections
- Measure and simulate °C, °F, °K, and ohms
- Ramp and step
- PT100 plus 7 other RTD types
- User programmable



## Decade Boxes

A selection of decade box modules can be fitted to the CalBench. These are based on the Time Electronics popular range of resistance, capacitance and inductance models. Resistance modules are suitable for RTD and PT100 applications. Each module features colour coded digits and universal 4 mm safety terminals that can accept fixed shroud 4 mm plugs, standard 4 mm plugs, fork terminals and bare wires.

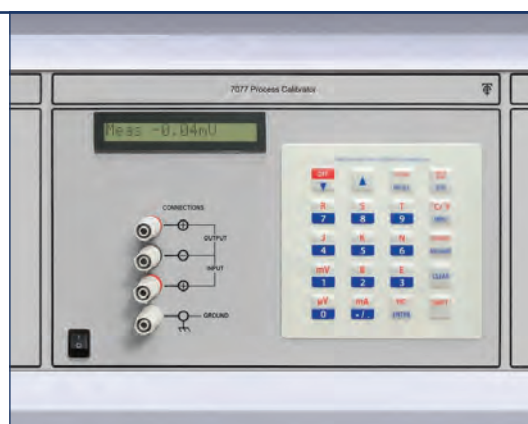
- 1040B: 8 Decade Wide Range Resistance Box (0 to 100 M $\Omega$  / 1  $\Omega$  steps)
- 1051B: 8 Decade Low Ohm Resistance Box (0 to 1 M $\Omega$  / 0.01  $\Omega$  steps)
- 1041B: 5 Decade Low Ohm Resistance Box (0 to 1 k $\Omega$  / 0.01  $\Omega$  steps)
- 1070B: 5 Decade Capacitance Box (0 to 10  $\mu$ F / 100 pF steps)
- 1071B: 7 Decade Capacitance Box (0 to 100  $\mu$ F / 10 pF steps)
- 1053B: 4 Decade Inductance Box (0 to 10 H / 1 mH steps)



## 7077 Process Calibrator

A key-press operation module that combines source and measurement functions for thermocouples, RTDs, mV and mA. The 7077 features a memory storage function that holds frequently used values.

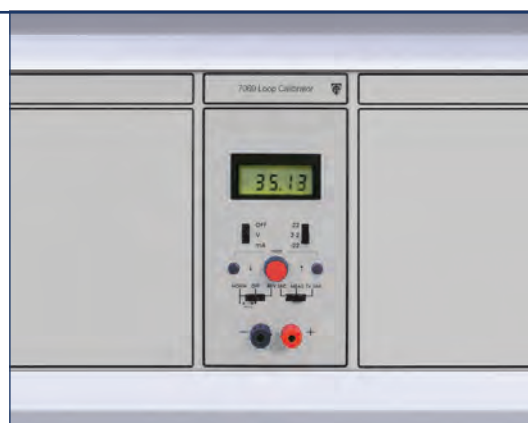
- Measures/simulates 8 thermocouple types, PT100-RTD, mV and mA
- Displays units in  $^{\circ}$ C,  $^{\circ}$ F,  $\mu$ V/mV, or mA
- Accuracy: Source 0.02 % of range, 0.5  $^{\circ}$ C. Measure 0.05 % of range, 0.7  $^{\circ}$ C
- Automatic or manual cold junction compensation
- 10 point memory recall feature
- Inching and step functions with time configurable steps
- Process loops 4 to 20 mA and 0 to 50 mA
- 24 V loop drive voltage



## 7069 Voltage/Current/Loop Calibrator

A voltage, current, and process loop calibrator for ideal for process control applications. The 7069 combines digital accuracy with simple analogue control and is well suited to plant operations such as powering control loops.

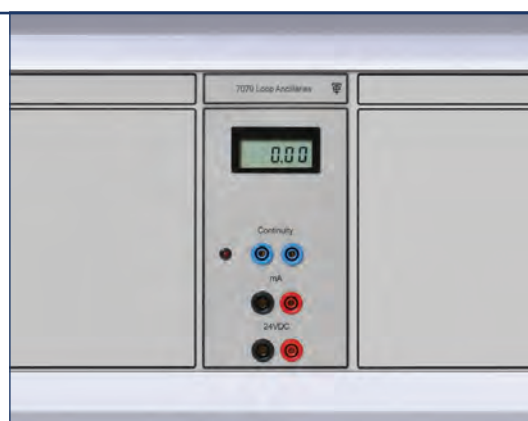
- Source/measure voltage and current
- 3 source ranges: 0 to 22 mA and 0 to 22 V
- 3 measure ranges: 0 to 70 mA and 0 to 50 V
- Accuracy 0.02 % of range
- Transmitter simulator/sink loop control
- Output steps and ramps
- Fine adjustment (inching)



## 7079 Loop Ancillaries Calibrator

A simple operation module suitable for powering process instrumentation such as pressure transmitters that require an external loop supply (4-20mA). An RS-232 connection is available at the rear of the console enabling communication for data read back using EasyCal calibration software.

- Loop measure 0 to 199.99 mA
- Continuity test (100  $\Omega$  threshold or below - audible/visual indication is given)
- 24 V output for powering 4 to 20 mA loops
- 4.5 digit display
- Overload protection to loop
- Supply line protection by F250 mA fuse
- RS-232 connection - Allows read back with EasyCal software





## AC Power Supply Modules

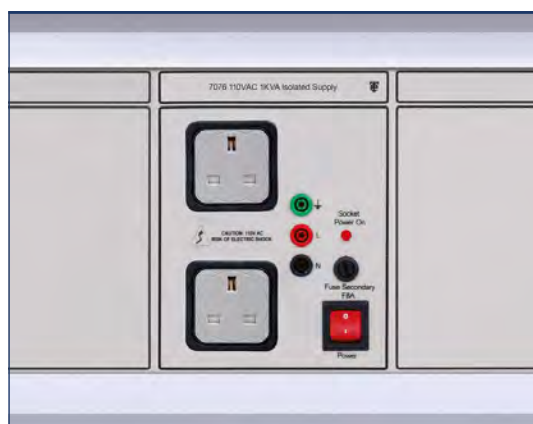
Fixed and adjustable AC power modules



### 7082 Mains Power Controller

Fitted as standard in the top right section of every CalBench primary console, the 7082 is a single-phase unit equipped with 2 sockets and digital voltage meter.

- Mains power on/off switch to provide isolation for the entire bench
- Lighting switch to provide separate control of the worktop lighting
- 16 A overload protection for bench. Residual current protection 0.03 A
- 2 front panel earthed sockets (4 under console earthed sockets)
- Digital mains voltage meter (0 to 300 V)
- 2 filters (mains and lighting) fitted to attenuate mains spikes
- Cooling via 2 mains powered 80 mm extraction fans fitted internally
- PE socket is provided for wrist bands, mats, etc
- All metallic parts of the bench are connected to mains earth
- User selectable socket types: UK, Euro Schuko, Indian Round Pin, US, etc



### 7076 Fixed 110 V AC Power Supply

A 110 V AC fixed power supply module that provides an isolated supply from the mains input of the CalBench. It offers a solution to users with 220 V AC systems that require a separate 110 V AC supply. Output is via two mains sockets or 4mm shrouded safety sockets, and socket types are user selectable.

- Isolated supply: 110 V AC up to 8 A
- Output connection via 2 mains output sockets or 4mm shrouded sockets
- Separate grounding socket
- Internal transformer rated at 1 kV
- Overload protected by accessible fuses
- RCB protected via main 7082 console supply
- Independent power switch
- User selectable socket types: UK, Euro Schuko, Indian Round Pin, US, etc



### 7088D Adjustable AC Power Supply

The 7088D provides variable 50 Hz AC power up to 10 A. The module is simple operation and features two digital meters to monitor the output voltage and current that is available from the front panel socket.

- Variable output voltage from 0 to 110 % above line input
- 0 to 265 V 50 Hz, 10 A at 240 V input or 0 to 121 V 50 Hz, 10 A at 110 V input
- Simple front panel analogue deviation control
- 0 to 10 A output current
- Input fuse 10 A slow blow
- Output circuit breaker: 10 A (medium response time)
- Digital meters with 4 digit resolution and bar graph display
- Socket types selectable, includes 4 mm shrouded sockets & PE socket



### 7046 and 7047 Variable AC/DC Power Supplies

The 7046 and 7047 are primarily variable AC power supply modules with the capability to provide DC power also. Both modules are highly versatile and incorporate various functions and features for increased usability.

- 7046: AC 500 VA, DC 400 W
- 7047: AC 1000 VA, DC 800 W
- 1 to 270 V AC output
- Output ACI: 7046 = 5 A, 7047 = 10 A
- 1.4 to  $\pm$  380 V DC output
- Output DCI: 7046 = 4 A, 7047 = 8 A
- Frequency 40 to 500 Hz
- Measurement and memory functions

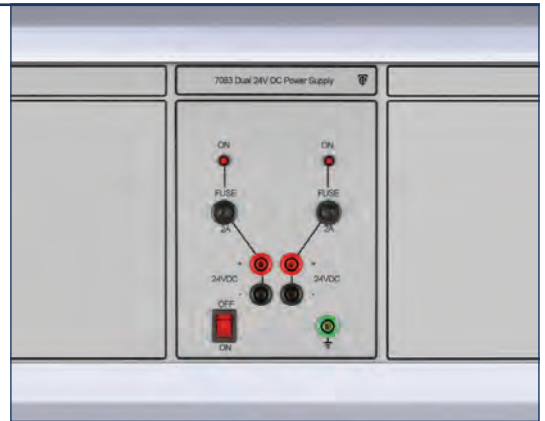




### 7083 Dual 24 V DC Power Supply

A dual 24 V DC power supply provides two independent 24 V (2A) supplies. Both are floating with respect to each other, and ground. It is suitable for powering loop signal instrumentation and other equipment requiring 24 V DC.

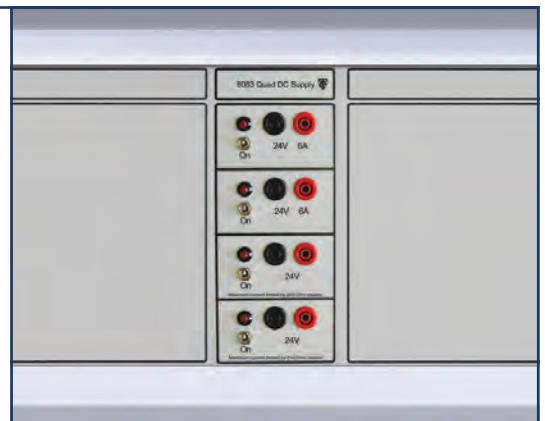
- 2 independent 24 V (2A) floating supplies
- 4mm shrouded output sockets
- Suitable for powering loop instrumentation
- Voltage overload protection
- Current overload protection
- Ripple: Typically 240 mV
- Regulation: Typically 2 %
- Separate mains earth socket provided



### 8083 Quad 24 V DC Power Supply

A quad DC power supply that provides four fixed independent floating supplies. The module has 2 x 24 V DC supplies at 6 A each, then 2 x 24 V DC supplies with a 250  $\Omega$  resistor on each for powering HART devices. Operation is simple with each supply having a dedicated control switch and power LED indicator. Output connections are industry standard 4mm shrouded sockets spaced at 19 mm.

- 4 fixed independent floating supplies: 2 x 24 V (6 A), 2 x 24 V with 250  $\Omega$  resistor
- 4 mm shrouded output sockets
- Suitable for powering loop instrumentation
- Suitable for powering HART devices
- Current overload protection
- Voltage overload protection
- Ripple and Noise: 50 mV or 1 % pk-pk



### 7087 Quad DC Power Supply

A quad DC power supply with four fixed independent floating supplies in one compact module, suitable for powering loop instrumentation under test. Operation is simple with each supply having a dedicated control switch and power LED indicator. Output connections are industry standard 4 mm shrouded sockets spaced at 19 mm.

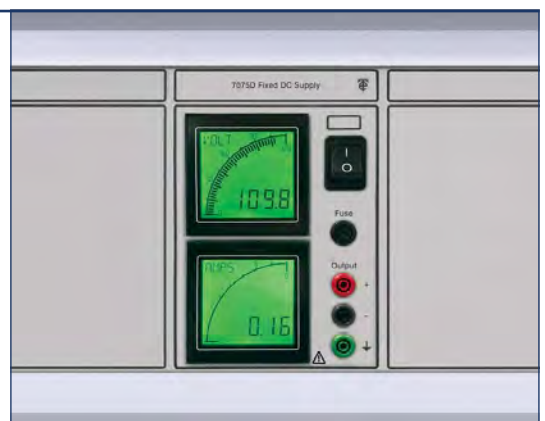
- 4 fixed independent floating supplies: 6 V (20 A), 12 V (10 A), 24 V (6 A), 48 V (3 A)
- 4mm shrouded output sockets
- Suitable for powering loop instrumentation
- Ripple and Noise: 50 mV or 1 % pk-pk of VNOM, whichever is greater
- Current overload protection
- Voltage overload protection
- Supplies can be connected in series to obtain an alternative output voltage



### 7075D Fixed DC Power Supply

The 7075D provides an isolated DC supply. Output can be pre-specified between 96 and 144 volts with a current capacity up to 7.5 A. Output voltage and current are monitored on two digital meters, with output from two 4 mm shrouded sockets. Common versions are presets of 110 V DC, 115 V DC and 125 V DC.

- 96 V to 144 V preset single fixed output with digital displays of V and I
- Output Current 7.5 A max (limit to 800 watts)
- 4mm shrouded output sockets
- Line regulation:  $\pm 0.1$  %
- Load regulation:  $\pm 0.5$  %
- Output accuracy:  $\pm 1.5$  % of reading
- Output ripple (> 50 Hz): < 50 mV rms
- Hold up time: > 5 mS





## Variable DC Power Supply Modules

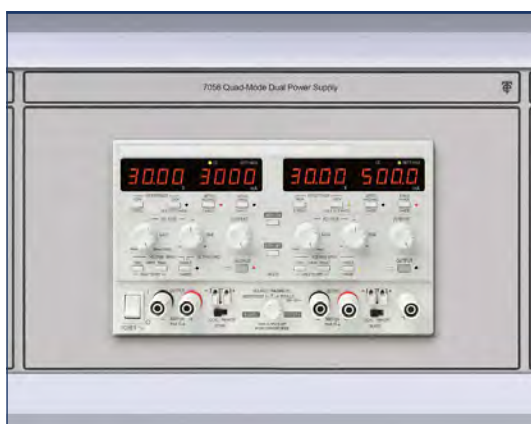
Adjustable DC supplies for supplementary power to applications



### 7052 Adjustable DC Power Supply

A high performance linear regulated DC power supply with true analog controls and digital functionality. The 7052 is a simple operation module, ideal for process CalBenches requiring variable DC voltages for powering instrumentation.

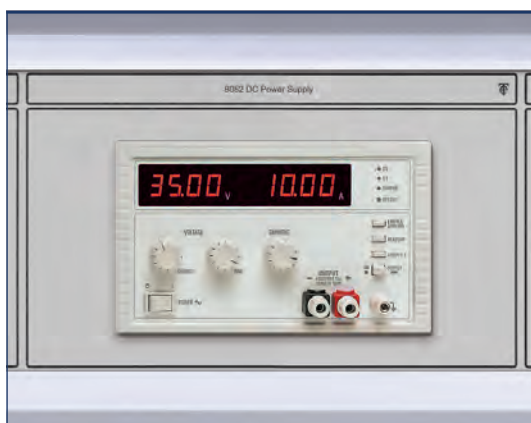
- 0 to 30 V, 0.1 mA to 3 A (90 W maximum)
- High accuracy four digit meters have a fixed resolution for consistent readings
- Low current range gives 0.1 mA meter resolution and finer low current setting
- S-Lock function - instantly lock settings
- V-Span function - customise the voltage range
- Independent, isolated tracking, ratio tracking
- DC output switches and "view limits" button
- Safety binding post terminals
- Programmable version available (USB or RS-232) - 7052P



### 7056 Dual Adjustable DC Power Supply

A quad-mode dual output power supply with two identical outputs as per the 7052, with tracking and parallel modes. The module is simple operation, with comprehensive features and functionality that make it well suited to both process and electrical CalBenches.

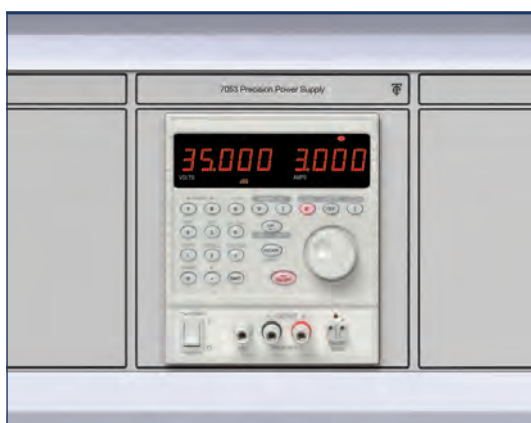
- Dual outputs of 0 to 30 V, 0.1 mA to 3 A (90 W maximum)
- Single output of 0 to 30 V, 0.2 mA to 6 A (180 W maximum)
- 4 modes: Independent, isolated tracking, isolated ratio tracking, & true parallel
- In parallel mode power is channelled to the Master output for supply up to 6 A
- In tracking mode the outputs can be wired in series to generate 0 to 60 V
- High accuracy four digit meters have a fixed resolution for consistent readings
- Low current range gives 0.1mA meter resolution and finer low current setting
- Safety binding post terminals
- Programmable version available (USB or RS-232) - 7056P



### 8052 High Power Adjustable DC Power Supply

A high power variable DC power supply module with conventional analogue controls for precision with simplicity. The coarse and fine voltage controls provide users with fast adjustment with high setting resolution at all levels.

- 0 to 35 V, 0 to 10 A (350 W maximum)
- CV & CI operation with automatic crossover
- Very low noise, excellent transient response
- Comprehensive protection including variable OVP trip
- High setting resolution, remote sense terminals
- High accuracy digital meters, current meter damping
- Coarse and fine voltage controls provide fast setting with high setting resolution
- Safety binding post terminals
- Programmable version available (USB or RS-232) - 8052P



### 7053 Precision Adjustable DC Power Supply

A DC linear power supply with high accuracy, resolution, stability and noise. Multiple output ranges provide increased current capability at lower voltages. An advanced user interface enables rapid control and precise setting of ranges.

- Single Output, 3 ranges: 0 to 56 V, 0 to 2 A. 0 to 25 V, 0 to 4 A. 0 to 56 V, 0 to 500 mA
- 112 W maximum output power
- 1 mV setting resolution at all output voltages
- Setting by direct numeric entry or spin wheel
- Multiple non-volatile setting memories with preview
- OVP and OCP trips with alarm output
- Selectable remote sense terminals
- Programmable version available (USB, RS-232 or GPIB) - 7053P



### 7057 Adjustable DC Power Supply

An advanced linear regulated DC power supply with true analog controls for quick and intuitive adjustment of voltage and current. High resolution controls enable precise setting whilst accurate digital meters provide a clear display of readings.

- 0 to 60 V, 0.1 mA to 1.5 A (90 W maximum)
- High accuracy four digit meters have a fixed resolution for consistent readings
- Low current range gives 0.1 mA meter resolution and finer low current setting
- S-Lock function - instantly lock settings
- V-Span function - customise the voltage range
- Independent, isolated tracking, ratio tracking
- DC output switches and "view limits" button
- Safety binding post terminals
- Programmable version available (USB or RS-232) - 7057P



### 7054 High Voltage Adjustable DC Power Supply

A high voltage linear regulated DC power supply for up to 120 V. The 7054 combines smart analog controls with digitally based convenience features, higher power density, and superior performance.

- 7054: 0 to 120 V / 0.01 mA to 750 mA (90 W maximum)
- High accuracy four digit meters have a fixed resolution for consistent readings
- Low current range gives 0.1 mA meter resolution and finer low current setting
- S-Lock function - instantly lock settings
- V-Span function - customise the voltage range
- Isolated analog remote control of voltage and current
- Low current range and current meter averaging
- Programmable version available (USB or RS-232) - 7054P



### 7055 High Voltage Adjustable DC Power Supply

A DC power supply with high power density and smart analog controls for voltage up to 250 V. The 7055 is a simple operation module with precise setting via coarse and fine adjustment controls.

- 0 to 250 V / 0.01 mA to 375 mA (94 W maximum)
- High accuracy four digit meters have a fixed resolution for consistent readings
- Low current range gives 0.1 mA meter resolution and finer low current setting
- S-Lock function - instantly lock settings
- V-Span function - customise the voltage range
- Isolated analog remote control of voltage and current
- Low current range and current meter averaging
- Programmable version available (USB or RS-232) - 7055P



### M-PSW Multi Range DC Power Supplies

M-PSW modules are single output multi-range programmable switching DC power supplies covering a power range up to 1080 W. There are 15 available modules with the combination of 30 V, 80 V, 160 V, 250 V and 800 V rated voltages, with 360 W, 720 W and 1080 W maximum output powers.

- Voltage Ranges: 30 V / 80 V / 160 V / 250 V / 800 V
- Output Power Rating: 360 W / 720 W / 1080 W
- Constant Power Output
- C.V / C.C Priority
- Adjustable Slew Rate
- High Efficiency and High Power Density
- LAN, USB, Analog Control Interface







## Function Generator and Frequency Counter Modules

Modules for frequency generation and measurement for R&M on the CalBench



### 7028 Function Generator

A simple operation DDS function generator that can generate waveforms between 0.001 Hz and 10 MHz with a resolution of six digits and accuracy better than 10 ppm. Amplitude is variable between 5 mV and 20 V pk-pk from a source impedance of 50  $\Omega$  or 600  $\Omega$ . Waveform quality remains excellent over the full amplitude range.

- 0.001 Hz to 10 MHz frequency range
- 6 digits or 1 mHz resolution
- 1 ppm stability and 10 ppm one year accuracy
- Storage for multiple instrument set-ups
- Internal phase continuous sweep, lin or log
- AM, FSK, gated and tone switching modes
- 5 mV to 20 V pk-pk from 50  $\Omega$  or 600  $\Omega$
- Low distortion, high spectral purity sine waves



### 7029 and 7031 Function Generators

High performance DDS arbitrary/function generators that offer high quality standard waveforms, high speed arbitrary waveforms, and full pulse generator facilities.

- 1  $\mu$ Hz to 50 MHz (7031) or 25 MHz (7029); 14 digits or 1  $\mu$ Hz resolution
- 7029A and 7031A dual channel versions
- Sine, square, ramp, pulse, sin(x)/x, noise, exponential logarithmic rise waveforms
- True pulse generator with variable delay and variable rise/fall
- Arbitrary waveforms of up to 128K points at up to 125 MS/s
- Waveform storage using USB flash drives
- Large graphic LCD with simultaneous text and waveform display
- Internal and external digital modulations including AM, FM, PM, PWM, and FSK
- 20 mV to 20 V pk-pk output from 50  $\Omega$ ; plus multifunction aux. out
- Programmable via USB interface



### 8023 Function Generator with Frequency Counter

A combined module including a precision DDS function generator that can generate waveforms between 0.001 Hz and 10 MHz, with six digit resolution and accuracy better than 10 ppm. The frequency counter range is from 3 Hz up to 120 MHz with seven digit resolution, and the input sensitivity is better than 50 mV rms.

- 0.001 Hz to 10 MHz frequency range using DDS
- 6 digits or 1 mHz setting resolution
- 1 ppm stability and < 10 ppm absolute accuracy for one year
- Sine, square and triangle waveforms
- Low distortion, high spectral purity sine waves
- Simultaneous display of frequency and amplitude/offset
- Seven digit 120 MHz frequency counter
- Internal full range phase continuous sweep, linear or log



### 8026 and 8027 Function Generators with Frequency Counter

DDS function generators that provide a signal source for the output of sine, square (pulse), ramp (triangle), noise and arbitrary waveforms. Additionally both modules feature AM/FM/FSK modulation, sweep, and frequency counter functions, making them a comprehensive solution for repair and maintenance work.

- 8026: 0.1 Hz to 12 MHz / 8027: 25 MHz
- Frequency Resolution : 0.1 Hz in total range
- 1 % ~ 99 % adjustable duty cycle for Square Waveform
- Waveform parameter setting through numeric keypad entry & knob selection
- 3.5" LCD display
- AM/FM/FSK Modulation, Sweep, and Frequency Counter (150 MHz) functions
- USB interface for remote control and waveform editing



## CC-AFG20 Control Centre Function Generator

A 20 MHz function/arbitrary waveform generator module that has a control interface via the CalBench control centre. It offers 10 standard waveforms plus pulse and arbitrary waveform generation capabilities.

- Function/Arbitrary Waveform Generator module
- Operated via CalBench control centre application
- Frequency range: 1  $\mu$ Hz to 20 MHz (1  $\mu$ Hz resolution)
- Sine, Square, Ramp, Triangle, Pulse, DC waveforms
- 14-bit, 50 MSa/s Arbitrary Waveforms customisable through the arbitrary waveform editor
- Built-in modulation: AM, FM, PM, ASK, FSK and PSK
- Pulse generation from 500  $\mu$ Hz to 5 MHz (1  $\mu$ Hz resolution)
- 40 mVpp to 5 Vpp amplitude range (into 50 ohm load)
- Suitable for electronic test and R&M applications



## CC-FRQC Control Centre Frequency Counter

A frequency counter and power meter module that has a control interface via the CalBench control centre. It simplifies test setups by enabling synchronized frequency and power measurements, making it suitable for product and device evaluation and repair work.

- Frequency counter and power meter module
- Operated via CalBench control centre application
- Frequency range: 1 to 6000 MHz
- Power measurement: -30 dBm to +20 dBm
- Suitable for electronic test and R&M applications
- Frequency aging:  $\pm 1.0$  ppm/year (internal reference)
- Sample time: 0.1 to 3 secs
- Input impedance: 50  $\Omega$



## 7027 and 7027A Universal Frequency Counters

High performance, versatile universal frequency counter modules that offer period measurement, frequency ratio, pulse width and event counting.

- 7027: 0.001 Hz to 3000 MHz / 7027A: 0.001 Hz to 6000 MHz
- TCXO timebase with better than 1 ppm stability
- Frequency, period, pulse width and totalise modes
- Reciprocal counting measurements
- High impedance measurement up to 125 MHz
- Low pass filter, attenuator and trigger level control
- AC or DC coupling, 1 M $\Omega$  / 50  $\Omega$  selection, polarity invert
- Large 10 digit LCD display with annunciators
- Remote control and readback via USB interface



## 7058 RF Signal Generator

A precision RF signal generator with a maximum frequency of 6 GHz. It is intended for CW (carrier wave) applications where modulation is not required. Low phase noise is matched by low leakage, low residual FM and spuri. The internal timebase has a 1 ppm stability, and an external frequency reference can be used for higher precision.

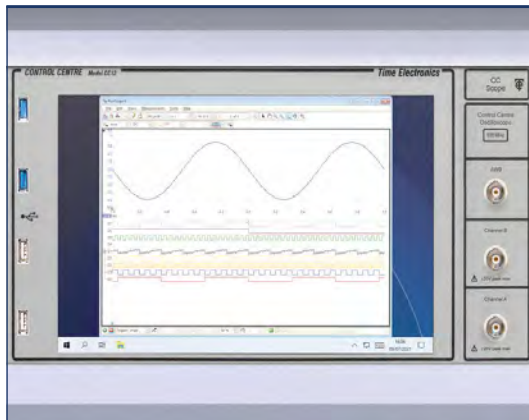
- 10 MHz to 6000 MHz frequency range
- 10 Hz setability,  $\pm 1$  ppm frequency stability
- Locking to external frequency standard
- -110 dBm to +7 dBm amplitude, 0.1 dB steps
- Custom level trim of up to 100 points
- 20 character x 4 row back-lit LCD display
- Fast full-range sweep using step or list modes
- Full remote control via RS-232 or USB





## Oscilloscope and Digital Multimeter Modules

Scopes and DMMs for precision measurement applications and diagnostics

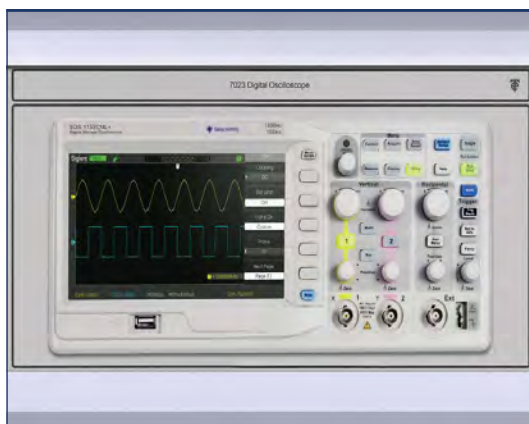


### CC-SCOPE Modules

The CC-SCOPE range provides a convenient solution to housing oscilloscopes within the Time Electronics CalBench. The scope is housed internally and operated through dedicated software on the control centre PC. Input terminals are positioned on a separate module.

- Integrally fitted, operated via the control centre
- Internal arbitrary waveform generator
- Supplied with software
- Advanced digital triggers

Model	Bandwidth (-3 dB)	Channels	Sample Rate	Function Generator
CC-SCOPE-2205A	25 MHz	2	200 MS/s	100 kHz
CC-SCOPE-2206B	50 MHz	2	500 MS/s	1 MHz
CC-SCOPE-2207B	70 MHz	2	1 GS/s	1 MHz
CC-SCOPE-2208B	100 MHz	2	1 GS/s	1 MHz

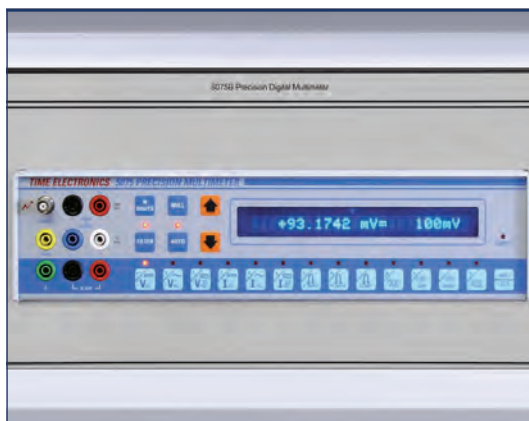


### 7020 - 7024 Oscilloscopes

Oscilloscope modules that provide excellent accuracy and high performance, they are ideal for maintenance of electronic equipment and general purpose laboratory work.

- 7" TFT-LCD colour display (800x400)
- External trigger output
- Autoset and signal auto-ranging
- Probe check wizard

Model	Bandwidth	Channels	Sample Rate/Ch	Record Length
7020	50 MHz	2	500 MSa/s	32 k points
7021	70 MHz	2	1.0 GSa/s	2 M points
7022	100 MHz	2	1.0 GSa/s	2 M points
7023	150 MHz	2	1.0 GSa/s	2 M points
7024	200 MHz	4	1.0 GSa/s	14 M points



### 5075B Digital Multimeter

A digital multimeter that combines high performance with simple operation. The 5075B easily measures from nanovolts to 10 kV, from picoamps to 30 amps, from micro-ohms up to 1 GΩ, from picofarads to 300 μF, with up to 7.5 digit accuracy.

- 7 digit resolution
- 10 nV to 10 kV, 10 pA to 30 A
- Resistance, capacitance, frequency
- 18 ppm accuracy / best 1 year
- 10 channel low thermal emf scanner option
- EasyCal software compatible
- GPIB interface (USB adaptor available)



### 5065B Digital Multimeter

A versatile 6.5 digit multimeter module with 19 measurement functions. Simple operation, stability, and high accuracy make the 5065B an ideal DMM for a variety of applications.

- 6.5 digit resolution
- Accuracy 0.005 % DC voltage
- RS-232 and USB interface
- Temperature measurements
- SCPI command set
- High sample rate
- EasyCal software compatible





### 5030B Electrical Tester Calibrator

A precision module designed to calibrate RCD, loop, insulation, earth testers and multifunction installation testers. The 5030B accurately simulates RCD trip times and measures currents produced by RCD testers. It replicates loop impedance and auto adjusts for local line impedance. It also provides insulation resistances and measures test voltages and currents.

- RCD 3 mA to 2500 mA, 10 ms to 2000 ms
- Loop 50 mΩ to 1.8 kΩ
- Insulation up to 2 GΩ / 1 kV
- Continuity 0.1 Ω to 10 kΩ
- Fast and intuitive user interface
- Control via EasyCal software on control centre modules or external PC



### 5068B Insulation Tester/Megohmmeter Calibrator

A precision module suitable for calibrating general purpose insulation testers and megohmmeters with test voltages up to 2.5 kV.

- Insulation resistance from 100 KΩ to 10 GΩ
- Low ohm verification at 1 Ω, 10 Ω, 100 Ω, 1 KΩ
- Accuracy: Resistance 1 % of setting. Voltage and Current to 1 % of reading
- Up to 2.5 kV operation
- Continuous connection – no arcing
- Fully shrouded safety connectors
- Display of open circuit voltage (0 to 1.999 kV or 0 to 2.50 kV)
- Display of short circuit current (0 to 2 mA or 0 to 20 mA)
- For higher range up to 10 kV the 5069 benchtop unit is available



### 8029 DC Electronic Load

The 8029 electronic load works by putting a required DC load across a power source under test. It can be also be used to investigate the behaviour of many different types of power source such as batteries, solar cells, fuel cells or wind generators, as well as electronic power supply units.

- Constant current, resistance, conductance, voltage and power modes
- Wide voltage and current range, 0 to 80 volts and 0 to 80 amps
- 400 W continuous dissipation at 28 °C / 360 W continuous dissipation at 40 °C
- High resolution and accuracy for level setting
- Built-in transient generator with variable slew
- Current monitor output for waveform viewing
- Variable drop-out voltage for battery testing
- Programmable via EasyCal software for automation



### 7033 Precision LCR Meter

An LCR Meter with a basic measurement accuracy of 0.05 %, for use in applications that need both high stability and high accuracy test criteria. Frequency coverage from 10 Hz to 200 kHz provides versatile parameter-to-frequency measurements to the device under test.

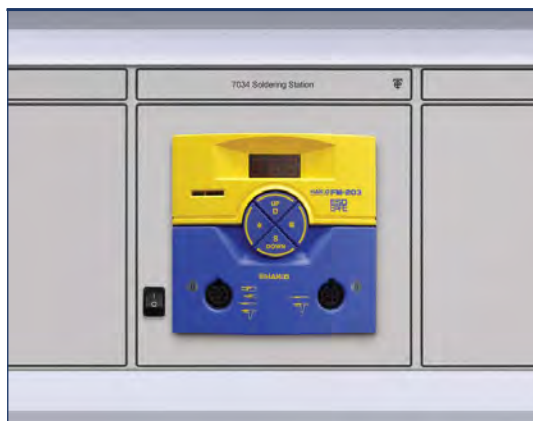
- Test Frequency: 10 Hz to 200 kHz
- 3.5 " colour LCD display
- Consecutive Test Frequency
- Basic accuracy 0.05 %
- Measuring speed up to maximum 25 ms
- Full frequency range or spot OPEN/SHORT
- 16 parameter measurement combinations
- DCR measurement and internal DC bias voltage
- Auto Level Control (ALC) function





## Solder Stations, Power Sockets and Shelf Modules

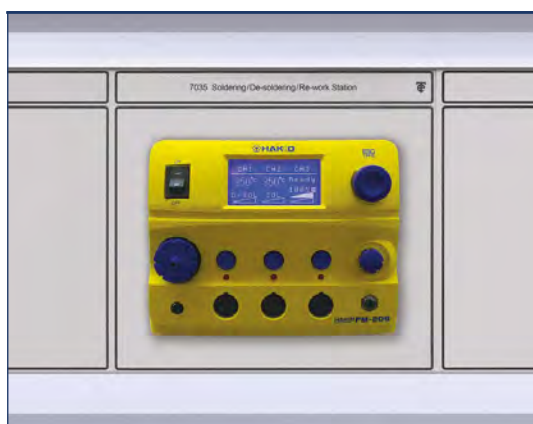
Modules for soldering and re-work applications, additional sockets and storage



### 7034 High Performance Soldering Station

A high performance industrial station with features that provide quality and process control across a wide range of soldering applications. The station features a programmable sleep mode of 0 to 29 minutes or auto-power shut off at 30 minutes.

- 2 ports (additional hand pieces can be supplied)
- Digital Display for set up and operation
- °C or °F configuration
- LED in hand piece signals the operator when iron is hot
- Programmable sleep mode, from 0 to 29 minutes, extends tips life
- Temperature lock-out key
- ESD safe
- Auto shut off function
- Supplied complete with iron, tip, tip stand, iron holder with sponge



### 7035 Soldering, De-Soldering and Re-Work Station

An all-in-one industrial station module with features to improve quality and process control across a wide range of applications. The 7035 has three simultaneously powered ports for soldering, de-soldering and hot air re-work.

- Soldering, de-soldering and hot air rework system
- 3 simultaneous powered ports
- LCD display for set up and operation
- °C or °F configuration
- Manual or auto modes
- Built-in pump for vacuum and air flow (no external pressure source needed)
- Digital airflow indicator
- ESD safe
- Supplied complete with hand pieces, tip, nozzles and workstands



### Socket Modules

Socket modules that provide users with extra outputs from the CalBench consoles. Various socket types can be fitted depending on end user location and preference. Additionally perforated power strips and tabletop mounted angled power ducts can be ordered as part of the CalBench system.

- Dual and quad socket modules
- Various types: UK 13 A, Euro Schuko 16 A, Indian Round Pin 15 A, US 15 A and others
- Available with on/off switches
- IP66 rated sockets with splash-proof plastic covers upon request
- Perforated panel mounted socket strips
- Tabletop mounted power ducts fitted at the base of perforated panel



### Shelf Modules

Shelf modules can be utilised when there is available space in the primary or secondary consoles. A steel frame partitions the shelf from operational modules, and the available space can be used for pick up bins, tools and component storage.

- Shelf modules with steel frame section
- Built to size depending on space availability
- Suitable for housing storage bins
- Shelves are RAL 7035 light grey colour matching CalBench consoles



## VT Torque Calibrator Module

A torque calibration module that offers a solution for torque measurement applications. The module provides an easy to use interface that connects to bench mounted torque transducers, to perform the calibration of a wide range of torque tools.

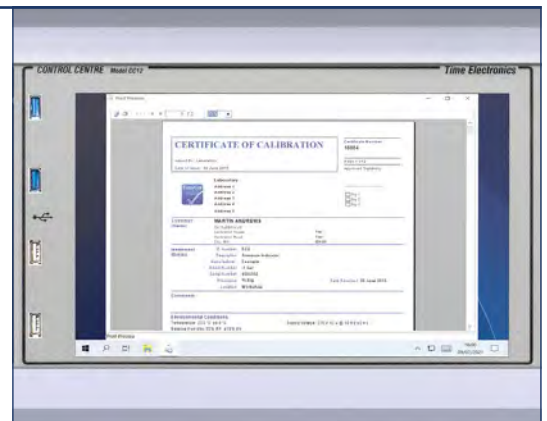
- Calibrate torque wrenches, pulse tools, hand screwdrivers, and power tools
- For use with bench mounted torque transducers and EasyCal software
- System Accuracy  $\pm 0.25\%$  of reading with accompanying transducers
- Units of measure: Ft. lb., in. lb., in. oz., Nm, dNm, cNm, mkg, cmkg
- Measurement Modes: Track, Peak Hold, First Peak, Power Tool.
- Simple operation with easy to use menus and set up prompts
- Data Storage/Recall: 3,000 measurements (with date and time stamp)
- Large easy to read back lit LCD display
- RS-232 interface and EasyCal calibration software compatible



## CC12 Control Centre Module

A control centre is available for CalBenches without 7051 or 8060 modules. Each module is an integrated PC with capacitive touch screen that can connect internally to the compatible modules, or be used independently.

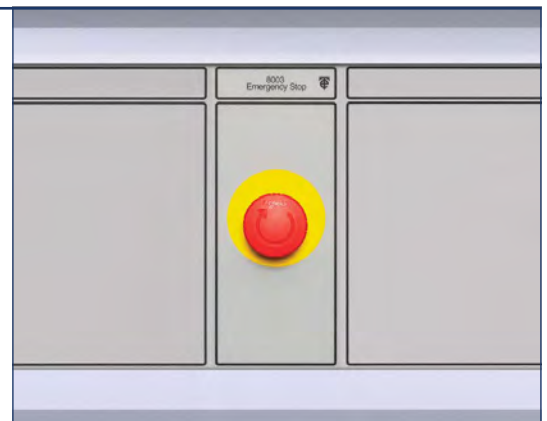
- Control Centre Module with integral PC and 12.1" touch screen
- 64 bit dual core processor, 16 GB RAM, 240 GB hard drive
- Windows 10 operating system
- Ports: Front panel: 4 x USB / Under console (LPAC): 3 x USB, 2 x RS-232, 1 x HDMI
- Connects internally to programmable CalBench modules
- EasyCal software and PC accessories optional



## 8003 Emergency Stop Push Button Module

For additional safety, emergency stop switches and push buttons can be added to the CalBench consoles. A fast and simple method of shutting off the bench when required. The 8003 is the standard module, but customer specific types can be fitted upon request.

- Large push button switches with red/yellow colour for visibility
- Resetting design in off position for convenient usage
- High actuation force to prevent accidental activation
- Illuminated and non illuminated versions available
- Benchtop mounted version available



## 8006 and 8007 Power Supplies with Solenoid Test

Power supplies with solenoid test functions that are simple operation, providing either momentary or continuous voltage output. The modules are used by connecting the solenoid to the terminals and using the push button momentary switch for pulse output to the solenoid. The rocker switch provided enables the module to act as a permanent power supply, with continuous voltage when set to always on.

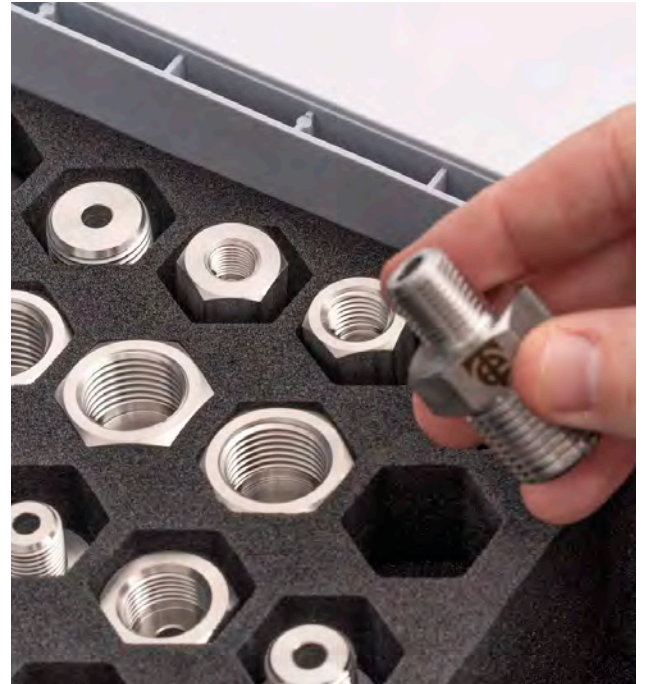
- 8006: 24 V DC (2 A) / 8007: 115 V AC (2 A)
- Simple operation using momentary switch
- Continuous output switch
- Easy to read bright LED display voltage meter
- 2 A fuse accessible via front panel
- Universal 4 mm safety binding terminals
- Other Voltages available upon request







## Accompanying Products



## Test equipment, tools and extras for use with CalBenches

CalBenches can be accompanied by various external instruments, tools, and add-ons that enhance the system and provide solutions to additional user requirements. These products can also be specified for field service work, dedicated applications, or workshop general use.

Items include supplementary products like pumps and compressors that provide line pressure to modules. For temperature we have a range of calibrators commonly used with process modules for testing RTDs and thermocouples. R&M tools include solder stations and service kits.





## Line Pressure Tools and Equipment

Vacuum pumps and compressors for CalBench pneumatic pressure supply



### 7149 Electrical Vacuum Pump

An electrical pump that pulls 950 mbar vacuum for use with regulated pressure modules in testing applications. A housing and connectivity option fits the 7149 in a sound proofed casing that ergonomically positions under the CalBench. With this option an on/off switch for the pump is added to the 7082 mains control module.

- Max vacuum: 950 mbar (28.0 inHg)
- Free-air capacity: 0.85 cfm (24.0 L/min)
- Shaded-pole fan-cooled motor
- Thermal overload switch
- Heads connected in series for greater vacuum
- Wetted parts made of aluminum stainless steel
- Dimensions: L 305 x W 140 x H260 mm
- 7149-HCO: Housing & connectivity option for the 7149 and CalBench (shown)



### 7165 CalBench Compressor

A compact high pressure compressor pump designed for supplementing calibration benches and pressure instruments. The unit integrates into the CalBench system and removes the requirement for nitrogen cylinders. It is primarily designed for use with the 8030B pneumatic pressure controller modules.

- Compact pressure system for use with 8030B controller modules
- Units available to generate up to 70 bar pressure
- Provides clean air to the CalBench, no need for external filters
- Oil-less system
- Setting display for modifying the pressure output and maintenance
- Dimensions/Weight: L 280 x H 330 x W 210 mm / 12 kg
- Integrates into the CalBench system, preset for operation with all connections and hoses



### XREG Pressure Regulator Kit

A piston sensed pressure single stage reducing regulator for use in providing a stable pressure to precision pressure control devices. Suitable for controlling pressures up to 210 bar (3045 psi), the regulator covers the range needed for the majority of line pressure requirements in calibration applications.

- Suitable for user with compressed air or nitrogen cylinders
- Used for regulation up to 210 bar (3045 psi)
- Smooth pressure adjustment with bronze bearing
- Inlet and outlet gauges supplied, 250 bar (3500 psi)
- Pressure media: Pneumatic only, air or inert gas
- Materials: Anodized Aluminum, Stainless Steel
- Seal Materials: Buna-N, Delrin, Teflon



### COMP24B Compressor

A high pressure compressor for supplying up to 26 bar (400 psi) to calibration benches and pressure instruments. It is ideal for the supply of regulated 20bar modules and the 8030B automatic pressure calibrator modules.

- Output Power: 2.5 hp
- Tank Capacity: 6.2 litres
- Max Pressure: 26 bar (400 psi)
- Oil-less system
- Equipped with 4 discharge ports, for high and normal levels of pressure
- Dimensions / Weight: L 476 x H 375 x W 507 mm / 36 kg
- Can be mounted in low noise pressure cabinet, see model 7162A





## 8100 Instrumentation Test Stand

A multi-purpose test stand for mounting transmitters, gauges and other instrumentation under test. It features clamping sections that hold the supplied poles for mounting transmitters with u-bolt brackets. Angle brackets can be direct mounted. Supplied as a kit with manifold, compression vice, retort pole with clamp, tools and fixtures.

- Multi-purpose instrument stand for mounting of transmitters and gauges under test
- Configurable solution with slotted track base that situates on rubber mat
- 2 transmitter fixing poles for U-bolt connections, vertical or horizontal, height adjustable
- Manifold for gauges under test, with hand-tight quick connection
- Clamping section can also be used for direct mounting of UUTs, angle brackets.
- Tools supplied include electric screwdriver, 3 adjustable spanners, allen keys, cable ties.
- Compression clamp vice useful for holding items in place
- Retort pole with 3 prong clamp for holding temperature sensors, RTDs, thermocouples



## 7161 Pneumatic Manifold

A pneumatic manifold that provides two output ports with hand-tight connectors for pressure instrumentation under test. It is a compact solution used for pressure calibration from vacuum to 200 bar (3000 psi). Features include an anodized aluminium manifold block and a bleed valve to vent pressure when required.

- Dual port benchtop pressure manifold for vacuum to 200 bar (3000 psi) use
- Hand-tight quick connectors
- Vent valve to bleed pressure when required
- Connection type: 1/4" BSP, 1/4" NPT, 1/2" NPT and M20 available
- Ideal for use with CalBench modules
- Dimensions / Weight: W 275 x D 140 x H 130 mm / 1.7 kg
- Can be fitted to the 8100 instrumentation test stand



## 7161P and 7161H Quad Port Pressure Calibration Manifolds

Benchtop pressure manifolds that provide four additional test ports during pressure calibration. The 7161P can be used for pneumatic pressure up to 200 bar (3000 psi), and the 7161H for hydraulic pressure up to 700 bar (10,000 psi). They provide an ergonomic and simple set up for positioning pressure gauges, transmitters and other pressure devices for testing on the CalBench.

- 7161P: Pneumatic, for use from -1 to 200 bar (-15 psi to 3000 psi)
- 7161H: Hydraulic, for use from -1 to 700 bar (-15 psi to 10,000 psi)
- Finger-tight connectors on top and minimess type on base for input
- Connection type: 1/4" BSP, 1/4" NPT, 1/2" NPT and M20 available
- Distance between quad ports: 205 mm
- Dimensions: W 265 x H 163 x D 335 mm (including feet and ports)
- Weight: 5.88 kg



## 7115 Contamination Trap

The 7115 is a contamination trap designed for use with pressure equipment, such as controllers, calibrators and pressure generators. It protects against impurities, liquids (water, oil etc.) and residues released by manifolds, gauges, transmitters and other pressure instrumentation under test.

- Contamination trap to protect pressure calibrators and controllers
- Supplied as standard with 8030B pressure controller modules
- Pressure range: -1 to 210 bar (3000 psi)
- Pressure media: Pneumatic only, gas or air
- Material: Stainless steel, polycarbonate and nitrile rubber seals
- Connections: 2 x adaptors – minimess type with hoses supplied
- Dimensions: W 120 x D 120 x H 120 mm
- Weight: 1 kg





## Benchtop Pressure Calibration Pumps

Pressure pumps for input to calibrator and gauge modules



### 7190 and 7191 Low Range Pneumatic Calibration Pumps

Low range pressure pumps that provide precision and stability during low pressure applications. Adjustment resolution is up to 0.0001 mbar (0.01 Pa) and excellent stability is achieved by an isothermal bellows chamber that reduces the possible heat effects such as environmental temperature change.

- 7190: 0.4 bar vacuum to 0.4 bar pressure (6 psi vacuum to 6 psi pressure)
- 7191: 0.95 bar vacuum to 4 bar pressure (14 psi vacuum to 60 psi pressure)
- Fine Adjustment control: 0.0001 mbar (0.01 Pa)
- Easy to use with smooth pressure generation and high pressure stability
- Dual pressure source (double output manifold)
- 7190 Dimensions / Weight: W 165 x H 145 x D 245 mm / 1.6 kg
- 7191 Dimensions / Weight: W 275 x H 145 x D 260 mm / 2.8 kg



### 7193, 7193A and 7193B Pneumatic Calibration Pumps

Compact and easy to use pressure pumps that provide a highly stable dual pressure source ideal for reference calibration with accompanying precision modules or digital pressure gauges.

- 7193 Pneumatic Pump: 0.95 bar vacuum to 40 bar pressure (600 psi)
- 7193A Pneumatic Pump: 0.95 bar vacuum to 70 bar pressure (1000 psi)
- 7193B Pneumatic Pump: 0.95 bar vacuum to 100 bar pressure (1500 psi)
- Easy to use with smooth pressure generation and high pressure stability
- Dual pressure source (double output manifold)
- High pressure resolution (0.1 mbar)
- Fine pressure adjustment
- Dimensions / Weight: W 198 x H 140 x D 315 mm / 2.7 kg



### 7194 and 7194A High Range Pneumatic Calibration Pumps

Benchtop pressure pumps that achieve high pressures with minimal effort. The long pump lever with ergonomic grip enables smooth generation to high output pressures. A high quality screw press is incorporated to allow fine adjustment settings within 0.1 mbar (10 Pa). The integrated dual manifold design enables simple and fast connections to both the CalBench module and device under test.

- 7194 Pneumatic Pump: 0.95 bar vacuum to 140 bar pressure (2000 psi)
- 7194A Pneumatic Pump: 0.95 bar vacuum to 200 bar pressure (3000 psi)
- Easy to use with smooth pressure generation and high pressure stability
- Dual pressure source (double output manifold)
- Fine pressure adjustment, resolution 0.1 mbar
- Dimensions / Weight: W 270 x H 178 x D 450 mm / 7.5 kg



### 7195 and 7195A Hydraulic Pressure Calibration Pumps

Compact hydraulic pumps that generate vacuum to highly stable pressures with 0.001 bar adjustment fineness. Two output ports enable simple connection to the UUT and pressure module during calibration.

- 7195: 0.85 bar vacuum to 700 bar (10,000 psi)
- 7195A: 0 to 1,000 bar (15,000 psi)
- For use with oil or deionized water
- High pressure can be generated easily, increased and decreased smoothly
- Dual pressure source (double output manifold) with hand-tight quick connectors
- Ideal for use as gauge comparator with pressure module as reference
- Built-in isolation valve provides increased protection for the pump
- 7195 Dimensions / Weight: W 198 x H 140 x D 290 mm / 3.2 kg
- 7195A Dimensions / Weight: W 215 x H 162 x D 345 mm / 3.2 kg



## 7090 Pneumatic Calibration Pump

A pneumatic pressure calibration hand pump that combines performance with rugged design. It is built for arduous use in the field or as a pressure and vacuum source in test facilities. It is ideal for checking the calibration of gauges, pressure switches, transmitters, recorders and other pressure equipment.

- Pressure to 40 bar (600 psi)
- Vacuum to 950 mbar
- Oversized check valve for smooth operation
- Non-oil based lubricant on all moving parts
- Contoured cushioned handles
- Protective caging for vent valve
- Hoses, fittings, and carry case included



## 7095 Hydraulic Calibration Pump

The 7095 is a hydraulic calibration hand pump commonly used for field testing applications. It is designed for ease of use with a fully adjustable stroke control providing quick priming, easy pumping and a fast pressure generation up to 700 bar (10,000 psi).

- Hydraulic pressure to 700 bar (10,000 psi)
- Priming feature for fast air purge
- Oversized check valve – smooth operation
- Triple filtration (prevents failure caused by dirt)
- Non-oil based lubricant on all moving parts
- Contoured cushioned handles
- Built-in pressure relief valve
- Hoses, fittings, and carry case included



## 7118 Compact Pressure Pump

A pocket-sized pressure pump that provides a simple and compact solution to field pressure generation. It combines a smooth and controlled operation with rugged design, making it an ideal tool for site pressure testing work. The pump is constructed of anodized aluminium with a durable plastic handle that prevents body heat transfer from interfering with readings. An oversized check valve enables smooth operation, and dual o-rings on all pistons to ensure zero leakage.

- 0 to 7 bar (100 psi)
- Non-oil based lubricant used on all moving parts
- Dual o-rings on all pistons ensure no leakage
- Oversized check valve for smooth operation
- Dimensions: H 220 x W 40 mm / Weight: 0.70 kg
- Digital pressure gauges available



## 7117 Compact Vacuum Pump

A compact vacuum pump suitable for instrumentation engineers performing vacuum testing applications in the field. The pump is constructed of anodized aluminium with a durable plastic handle that prevents body heat transfer from interfering with readings. An oversized check valve enables smooth operation, and dual o-rings on all pistons to ensure zero leakage.

- 0 to 950 mbar (28 inHg) vacuum
- Non-oil based lubricant used on all moving parts
- Dual o-rings on all pistons ensure no leakage
- Oversized check valve for smooth operation
- Made from anodized aluminium with a durable plastic handle
- Dimensions: H 220 x W 40 mm / Weight: 0.70 kg
- Digital pressure gauges available







## Pressure Adaptors, Service and Tool Kits

Pressure fittings, adaptors, repair kits and multi-piece tool kits



### 7198 Pressure Calibration Accessories Kit

A comprehensive set of pressure accessories to accompany pumps, gauges, and calibrators. The 7198 kit includes adaptors, fittings, connectors, and hoses to provide a quick solution to pressure component requirement in both the field and laboratory.

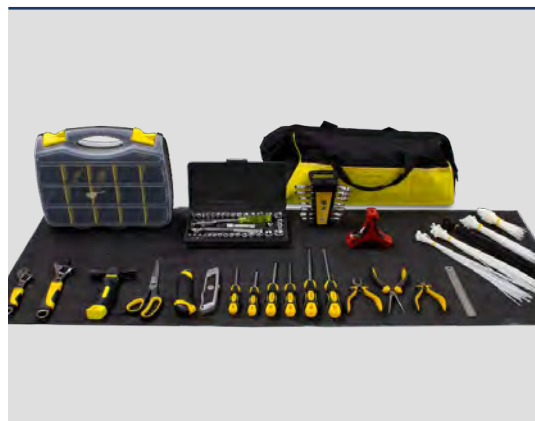
- Adaptors for metric, BSP parallel, taper threads, and NPT (male and female)
- Coupling connectors included allow any two adaptors to be connected together
- ¼ BSP hose fittings for pushfit 4 mm and 6 mm external diameter hose
- Nylon hose set with quick release connectors for low pressure connections
- Additional 4 mm and 6 mm nylon hoses to build up custom lengths as required
- Minimes 1620 test point adaptors and micro bore hose for high pressure
- 10" adjustable spanner and PTFE tape
- Kit supplied in adaptor case with partitioned top section for hoses and extras
- Available as BSP version (7198) or NPT version (7198-NPT)



### GTK1105 Gauge Repair Tool Kit

A practical selection of tools for gauge repair and maintenance. The GTK1105 includes a hand jack set, screw driver, five reamers, pin vise holder, wiggler and tweezer. Housed inside a compact, folding carry case that makes it easily transportable for both workshop or field service work. The kit is an ideal accompanying product for pressure calibration benches, when gauge repair or maintenance is required before or after calibration.

- Practical, compact gauge repair tool kit
- Hand jack set, screw driver, five reamers, pin vise holder, wiggler and tweezer
- Supplied in carrying case
- Suitable accessory for process and pressure CalBenches



### CB-TK1 CalBench Tool Kit

A tool kit that is supplied as standard with CalBench orders. It contains tools and extras that can be used for installation, and then general use after that. The kit helps maintain organisation on the bench and provides users with a selection of tools for various service applications.

- Supplied as standard with CalBenches
- Tool bag and double sided parts organiser
- Rubber mat for worktop
- Screwdriver sets, triangle hex key set
- Spanner set and 2 adjustable spanners
- Socket set, pliers, hammer, ruler
- For CalBench installation and general use
- Tools fit to CalBench perfo panel hooks



### Multi-Piece Tool Kits

Service kits and tools are fundamental requirements in the workshop and lab. We offer a range of comprehensive kits to accompany CalBenches to ensure users have the tools they need when required. Each kit is premium grade with carry case for mobility and storage. In addition to kits shown we can make customised versions.

- TK40-ENG: 40 pc engineers tool kit
- TK84-ENG: 84 pc engineers tool kit
- TK48-EM: 48 pc electro-mechanical tool kit
- TK150-EM: 150 pc electro-mechanical tool kit
- 7183: 76 pc electronics service case
- Cases made from impact resistant material
- Various tools for service, repairs and maintenance work



## 7078 Auto-Ranging Digital Pressure Gauge

A high performance durable digital pressure gauge that has the ability to auto-range from vacuum to 200 bar. The 7078 eliminates the need for multiple gauges to span many different ranges, solving the problem of over ranging errors.

- Vacuum to 200 bar (3000 psi)
- Accuracy 0.1 % of reading
- 9 engineering units
- High accuracy silicone piezo resistive sensors
- Reads both gauge and absolute pressure
- Easy to read backlit display
- Robust with protective rubber housing
- Dimensions / Weight: H 165 x W 115 x D 55 mm, 0.88 kg



## TE Gauge: Digital Pressure Gauges

A range of digital pressure gauges are available to accompany the CalBench system. Each gauge is robust design with simple controls and various features for excellent usability. Suitable for use in the lab or with handheld pumps in the field.

- Pressure ranges up to 2500 bar (37500 psi)
- Gauge/Absolute/Differential/Compound models
- 0.02 %, 0.05 %, 0.1 % or 0.2 % FS accuracy
- Easy-to-read backlit display with 5 digit resolution
- Unique self-protection capability technology
- 3 times per second measure speed
- Fully temperature compensated accuracy
- RS-232 connection, EasyCal compatible for readback on control centre modules
- Dimensions / Weight: H 178 x W 112 x D 45 mm / 0.6 kg



## Portable Pressure Calibrators

A range of portable pressure calibrators for use in the field or workshop. Models are available for low range differential pressure calibration work, to high range hydraulic testing applications.

- 7010 single channel pressure indicator (ranges from vacuum to 600 bar)
- 7015 dual channel pressure indicator (ranges from vacuum to 600 bar)
- 7016 regulated low pressure calibrator (ranges from vacuum to 10 bar)
- 7018 differential pressure calibrator (ranges from 0.2 to 10 bar)
- Each model housed in robust impact resistant safety case
- Loop current measure and isolated 24/36 V loop power
- Both pressure and loop signal can be displayed at the same time
- RS-232 connection, EasyCal compatible for readback on control centre modules



## Additional Pressure Instruments: Dead Weight Testers

High accuracy and robust dead weight testers that are the primary standard for pressure calibration. Each model is supplied with software that allows the users to correct for the effects of environmental factors such as gravity and temperature and to determine the precise pressure generated by the dead weight testers.

Model	Type	Range	Standard Accuracy	Class 'A' Accuracy
7890	Hydraulic	1 to 700 bar	0.015 %	0.007 %
7891	Hydraulic	1 to 1200 bar	0.015 %	0.007 %
7892	Hydraulic	1 to 2600 bar	0.02 %	0.008 %
7893	Pneumatic	1 to 120 bar	0.015 %	0.006 %





## Dry Block Calibrators and Accessories

For automated calibration of temperature devices when used with CalBench modules



### 8070, 8071, 8072, 7073 Dry Block Calibrators

Precision compact dry block calibrators for calibration of RTDs, thermocouples, thermoswitches, thermistors, and other common temperature sensing devices.

- Interchangeable inserts
- Multi-hole insertion tubes
- MVI Mains Variance Immunity
- Multi information display
- Auto stepping
- EasyCal software compatible

Model	Temp Range	Accuracy	Stability	Immersion depth	Insert diameter
8070	-25 to 155 °C	0.3 °C	0.04 °C	120 mm	26 mm
8071	28 to 350 °C	0.45 °C	0.05 °C	115 mm	26 mm
8072	28 to 660 °C	0.85 °C	0.08 °C	115 mm	26 mm
8073	100 to 1205 °C	2.0 °C	0.1 °C	110 mm	27 mm



### 7861 and 7871 Dry Block Calibrators

The 7861 and 7871 offer enhanced specifications with the ease of operation and functionality. Models can be controlled via EasyCal for automated testing applications.

- Interchangeable inserts
- Multi-hole insertion tubes
- MVI Mains Variance Immunity
- Multi information display
- Auto stepping
- EasyCal software compatible

Model	Temp Range	Accuracy	Stability	Immersion depth	Insert diameter
7861	-30 to 155 °C	0.10 °C	0.005 °C	160 mm	30 mm
7871	-45 to 155 °C	0.10 °C	0.005 °C	160 mm	30 mm



### 7870 and 7872 Dry Block Calibrators

This combination of models give coverage of a wide temperature range from -90 to 660 °C. The 7870 is an efficient and stable unit with dual zone technology for fast and secure cooling and heating temperature changes.

- Interchangeable inserts
- Multi-hole insertion tubes
- MVI Mains Variance Immunity
- Stability indicator
- Auto stepping
- EasyCal software compatible

Model	Temp Range	Accuracy	Stability	Immersion depth	Insert diameter
7870	-90 to 125 °C	0.30 °C	0.03 °C	190 mm	30 mm
7872	33 to 660 °C	0.30 °C	0.015 °C	200 mm	25 mm



### 7880 and 7882 Dry Block Calibrators

The 7880 and 7882 are high performance dry block calibrators that offer users a range of functions and features combined with excellent specification. The 7880 is an ultra cooler model for applications down to -100°C.

- Interchangeable inserts
- Multi-hole insertion tubes
- MVI Mains Variance Immunity
- Stability indicator
- Auto stepping
- EasyCal software compatible

Model	Temp Range	Accuracy	Stability	Immersion depth	Insert diameter
7880	-100 to 155 °C	0.30 °C	0.03 °C	190 mm	30 mm
7882	33 to 700 °C	0.29 °C	0.015 °C	200 mm	30 mm





## Dry Block Calibrator Inserts and Extras

Each dry block calibrator is supplied as standard with a pre-drilled multi hole insert and a blank insert. In addition to these Time Electronics offer a range of insert packs with various hole sizes.

- Each dry block calibrator supplied with a multi hole and blank insert as standard
- Insert pack options available for each model
- Metric and imperial types
- Custom hole size inserts
- Insulation plugs, cleaning brushes, thermal protection shields available upon request



## 8085 Advanced Signal Scanners

The 8085 series are advanced signal scanners that offer a unique time-saving and automatic solution to calibrate multiple temperature sensors simultaneously. Each model is an 8-channel scanner that can be used on CalBench systems with control centre modules and dry block calibrators.

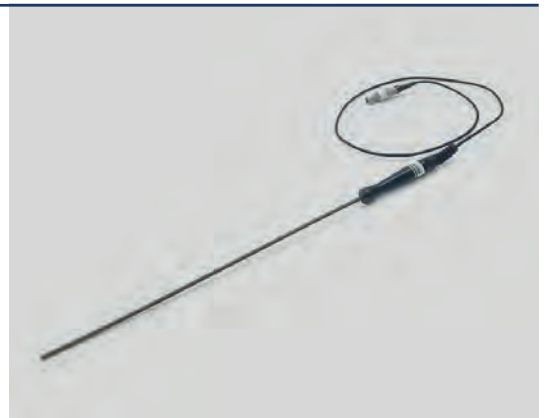
- 8 channel scanners for use on CalBench
- Calibrate multiple 2-, 3-, 4-wire RTDs, TCs
- Reference sensor input (TERS models)
- Internal measurement capabilities
- Measure up to 10 V / 4 k $\Omega$  / 24 mA
- Use with control centre modules and dry block calibrators
- EasyCal software compatible



## TERS Pt100 Reference Sensors

Precision Pt100 reference sensors suitable for use with dry block calibrators and measurement systems for reference calibration of common industrial temperature sensing devices. Each sensor is designed to deliver accuracy and maintain stability, ensuring minimal uncertainty and drift between calibration intervals.

- Precision Pt100 sensors, suitable for use with dry block calibrators
- TERS400/4/250: -50 to 400 °C / -58 to 752 °F, diameter 4 mm, straight, length 250 mm
- TERS400/4/350: -50 to 400 °C / -58 to 752 °F, diameter 4 mm, straight, length 350 mm
- TERS650/4/250: -150 to 650 °C / -238 to 1207 °F, diameter 4 mm, length 250mm
- TERS650/4/350: -150 to 650 °C / -238 to 1207 °F, diameter 4 mm, length 350 mm
- Readback via 7051, 8060, 5065, or can connect via the 7085A temperature module
- Supplied with ISO 17025 certificate and carry case



## TERS-TC Type K and Type N Thermocouples

Calibrated thermocouples that can be used as a reference for temperature calibration. They are semi-rigid and features include insulated junction to prevent earth loops and a pot seal that allows the transition to 1 metre PVC insulated leads that are supplied as standard.

- Calibrated thermocouples, suitable for use with dry block calibrators
- TERS-TC-K-3-500: Class 2 K type (1100 °C), L 500 mm / Dia 3 mm / Iconel 600
- TERS-TC-K-6-300: Class 2 K type (1100 °C), L 300 mm / Dia 6 mm / 310 stainless steel
- TERS-TC-N-6-300: Class 1 N type (1250 °C), L 300 mm / Dia 6 mm / Niobell
- Insulated Junctions
- 1 metre PVC insulated leads
- Semi rigid type, industrial grade
- Supplied with ISO 17025 certificate with 3 point calibration





## Process Calibration Instruments

Benchtop and portable test instruments for process calibration applications



### 7074 Infrared Temperature Calibrator

A compact instrument designed for rapid calibration of infrared thermometers. The unit features a 36 mm black body target that provides the optimum reference point size for reliable calibration and verification applications. The target has an emissivity of 0.96 and a special coating that ensures the unit maintains secure and long term performance when used across temperatures.

- For calibrating IR thermometers
- 28 to 400 °C (82 to 752 °F)
- Simple operation and intuitive display
- 36 mm black body target
- Accuracy  $\pm 0.4\%$  rdg  $\pm 1\text{ }^{\circ}\text{C}$  incl. emissivity
- Feature include stability indicator and programmable auto stepping
- EasyCal software compatible



### 7085P Benchtop Temperature Distribution Unit

A temperature distribution unit that allows users to quickly create multi-channel measurement applications. It is designed to switch 8 thermocouple inputs and 1 RTD reference to a common output. The 7085P interfaces with EasyCal software and the multimeter section of the 7051, 8060 or 5065B modules.

- Cold junction temperature display
- Records min/max ambient temperatures
- Integrates with 8060+ or 7051 module and EasyCal software
- Can be used with the 5065B multimeter module and EasyCal software
- Clear visual display of temperature (LCD)
- Suitable for use with dry block calibrators
- Also available: Module version 7085A



### HC-5150 Intrinsically Safe HART Communicator

A HART communicator with excellent functionality covering the requirements for a wide range of HART devices. The package includes docking station with universal power adaptor, HART lead kit, 250 ohm resistor, rechargeable battery pack, USB cable and SD card, soft carrying case, hand strap, user manual, and CD.

- Reads manufacturers' DDs in their native format, no translations needed
- HART modem communicates with any registered or unregistered HART device
- Enhanced 4.3" diagonal anti-glare touchscreen with color graphic display
- Full QWERTY keyboard for commissioning new transmitters
- On demand help menus and teachable device-specific short cuts
- More than twice the battery capacity of any handheld communicator
- Manage device information through PC connection
- Integrated multi-language support



### TEG-223 Documenting Process Calibrator

A documenting process calibrator that offers excellent workload coverage in a compact handheld unit that is rugged and easily portable. The unit has source and measure capabilities for mV, mA, ohms, frequency, and pulses. It also simulates and measures 13 thermocouples and 11 RTDs and has HART communication.

- Source and measure mV, mA, resistance & frequency
- Thermocouple simulate & measure (13 types), RTD simulate & measure (11 types)
- Pressure measurement via modules, vacuum to 700bar
- 24V loop power supply and HART communication
- Simultaneous dual reading display
- RS-232 communication
- EasyCal software compatible
- H 192 x W 100 x D 52 mm, weight 0.7 kg



## 8002 CalBench Environmental Monitoring System

The 8002 is a dedicated environmental monitoring system for use in workshops and laboratories where CalBenches are utilised. It is designed to measure temperature, relative humidity and barometric pressure. The unit is supplied as a mountable system for the CalBench perforated panel, but acts as an integrated solution with communication to the control centre module or external PC to obtain readings.

- Environmental monitoring system for CalBench
- Measures temperature, humidity and barometric pressure
- Mounts on the CalBench perforated panel
- Connects to Control Centre module for data logging
- Supplied with logging software
- Allows users to place environmental information on calibration certificates



## 7151 Vernier and Micrometer Calibration Kit

A comprehensive kit for dimensional calibration applications including verniers, calipers, micrometers, and depth gauges. The kit is supplied in two compact carry cases for storage and transport.

- 47 piece grade 1 block set comprising of:
  - 21 pcs - 1 mm to 1.19 mm x .01 mm, (plus 1.005 mm)
  - 8 pcs - 1.2 mm to 1.9 mm x .1 mm
  - 8 pcs - 2 mm to 9 mm x 1 mm
  - 10 pcs - 10 mm to 100 mm x 10 mm
- 300 mm gauge block holder and cylindrical jaws for internal measurements
- 4 optical parallels (0 - 25 mm, grade 1)
- Compact granite surface plate for precision depth measurements
- Supplied with gloves, oil, wipes, 2 carry cases and calibration certificate



## 7179A and 7179B Test Weight Sets

Stainless steel F1 standard test weights for calibrating scales and balances. Each kit is supplied in a plastic carrying case with special gloves, tweezers and a dusting brush for care and maintenance.

- 7179A: F1 weight set 1 g to 2000 g (total weight: 6110 g)
- 7179A weights:
  - 1x1, 2x2, 1x5, 1x10, 2x20, 1x50, 1x100, 2x200, 1x500, 1x1000, 2x2000 g
- 7179B: F1 weight set 1 g to 5000 g (total weight: 11110 g)
- 7179B weights:
  - 1x1, 2x2, 1x5, 1x10, 2x20, 1x50, 1x100, 2x200, 1x500, 1x1000, 2x2000, 1x5000 g
- Housed in plastic carry case
- Supplied with gloves, tweezers and dusting brush



## VT-600 Torque Wrench Calibration System

A torque calibration system that provides a combined package for testing torque wrench and torque screwdriver levels between 4 In Lbs and 600 Ft Lbs. The VT-600 features a mechanical loading bench that works with precision transducers and a display monitor base unit that captures torque measurements with a user-friendly interface.

- Complete package solution for torque wrench calibration to 600 ft-lb
- 4 in 1 transducer 4-50 in-lb (min) to 20 - 250 ft-lb (max), plus a 600 ft-lb transducer
- Mechanical loader with mounting brackets for transducers (600 ft-lb unit)
- base unit analyser with large LCD graphical display
- Dual RS-232 ports, EasyCal software compatible for transducer readback
- Accuracy: +/- 0.25 % of indicated value, CW & CCW, from 10 % to 100 % of full scale
- Optional test bench, with PC running EasyCal software on mounted monitor







## Soldering Equipment and Accessories

Soldering stations, circuit board holders, magnifying lamps and extras



### 7144 Benchtop Soldering Station

A lead free, ESD safe soldering station for laboratory and workshop use. The unit features superior heat transfer and thermal recovery, and both station and supplied iron have a temperature range from 200 to 450 °C. The included 70 W hand piece uses quick-change composite tips, with a 1.6mm tip supplied as standard.

- Lead free ESD safe soldering station
- Lockout key card prevents accidental temperature settings
- 70 W soldering iron with soft ergonomic grip
- Programmable sleep mode, from 0 to 29 minutes, extends tips life
- Supplied with standard solder tip, soldering tip holder, sponge, heat resistant pad
- Auto shut off function
- Supplied complete with iron, tip, tip stand, iron holder with sponge



### 7145 Soldering, De-Soldering and Re-Work Station

An all-in-one industrial station equivalent to the 7035 module, with features to improve quality and process control across a wide range of applications. The 7145 has three simultaneously powered ports for soldering, de-soldering and hot air re-work.

- Soldering, de-soldering and hot air rework system
- 3 simultaneous powered ports
- LCD display for set up and operation
- °C or °F configuration
- Manual or auto modes
- Built-in pump for vacuum and air flow (no external pressure source needed)
- Digital airflow indicator
- ESD safe
- Supplied complete with hand pieces, tip, nozzles and workstands



### 7147 Benchtop Fume Extraction Kit

A single user benchtop fume extractor for use with soldering station modules and stand alone solder stations that are supplied with the CalBench.

- Portable, single user fume extraction system
- Low noise unit
- No external ducting or compressor needed
- Unit easily fits on any bench-top or under-bench
- 12" wide (300 mm) plenum
- Innovative adaptor transforms the plenum into an arm
- Powerful 85 m3/hr airflow rate
- Immediate extraction of fumes, particles and vapors
- Two filtration configurations: Heavy duty and light duty
- LED indicates when the filters are blocked and require replacing



### 7180 and 7180WC Circuit Board Holders/Work Centres

Circuit board holders that provide a solution to securing and positioning boards during soldering or inspection. The 7180WC is a combination unit with a circuit board holder and base, parts tray, base mount, soldering iron holder, controlled feed, solder/wire holder, and two nib sponges with self-purging slits.

- 7180: Circuit Board Holder (shown)
- 7180WC: Circuit Board Holder and Electronic Work Centre
- Features rotating adjustment positions at the head
- Six lock positions in the vertical plane, and variable height adjustment
- Hold circuit boards up to 12" (304.8 mm) wide and up to 0.156" (4 mm) thick
- Arms move independently and feature "V" shaped grooves.
- Notches positioned laterally to enable small electronic parts to be held
- 7180WC includes parts tray, iron holder, controlled-feed, wire holder, & 2 nib sponges



## TL90 and TL91 Magnifying Lamps

The TL90 and TL91 are high performance magnifying lights that utilise 48 premium LEDs to illuminate a 6 inch wide-angle, distortion-free lens. Innovative balanced-arm technology allows for easy adjustment and precise positioning.

- 48 premium LEDs
- 6" diameter wide-angle, scratch-resistant glass lens
- Spring-balanced arm for easy adjustments
- 3.5d+8d magnification (add-on lens included with both models)
- TL90: 31" arm length / TL91: 39" arm length
- 40 % energy savings compared to fluorescents
- 50,000 hours maintenance-free LED life
- 100 % to 10 % dimming by touch
- ETL/cETL approved



## 7181 Magnifying Lamp

A versatile magnifying lamp with ultra-slim styling, high light output, and extra large lens. The standard model is supplied with a 7"/ 175mm diameter lens providing 1.75x magnification. The 7181 is ideal for electronic circuitry and soldering work, and can accompany the 7180 and 7180WC circuit board holders.

- 175 mm diameter, 1.75x magnifying lens
- 28 W natural daylight colour matching tube (120W equivalent)
- Table clamp as standard
- Optional table base
- Additional lenses available (2.25x Lens, 125 mm / 5" and 4.75x, 40 mm / 1½")
- Optional floor stand



## 7186 ESD Workstation Kit for CalBench

The 7186 is a practical, easy to install ESD safe workstation kit. It has the equipment needed to build a static controlled workspace on the CalBench. Featuring high quality ESD items, this kit enables users to prevent any unnecessary damage to delicate electronic components or devices. It is suitable for repairs on electrical items such as PCBs, computer parts and other components.

- ESD workstation kit for CalBench
- ESD matting (800 x 2000 mm) with 10 mm stud in each corner
- 1 x earth bonding plug, 3 x 10 mm studs, 1 x 10 mm fabric adjustable wrist strap
- 1 x 10 mm coiled earth lead, 1 x 10 mm straight lead, 1 x crocodile clip
- ESD protected area vinyl sign included



## 7183 Electronics Service Case

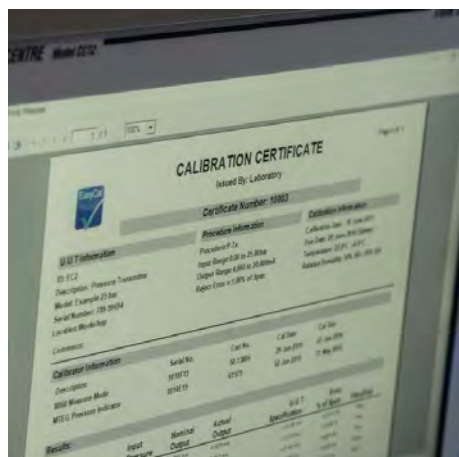
A comprehensive selection of tools for electrical and electronic service work. Including 76 tools and supplied in a rugged case it is an excellent solution for use in the workshop, lab or field.

- Dust and rain proof
- Souiring, scratch-and-slip proof
- Deep drawn housing
- Shock resistant
- Sturdy aluminum frame
- 76 special tools
- 3 removable tool boards
- Double bag on the back
- Trunk floor equipped with sturdy removable partitions





## Calibration Software



EasyCal is a complete software package with features covering all aspects of calibration work and management. It is designed to reduce workload, improve efficiency, and provide the essential platform for companies looking to create and sustain an effective calibration program.

The comprehensive features simplify the administration process from reminder reports through to despatch. With a familiar and intuitive user interface all operators can quickly learn and navigate through the applications. This allows fast, straightforward implementation and integration of the software.

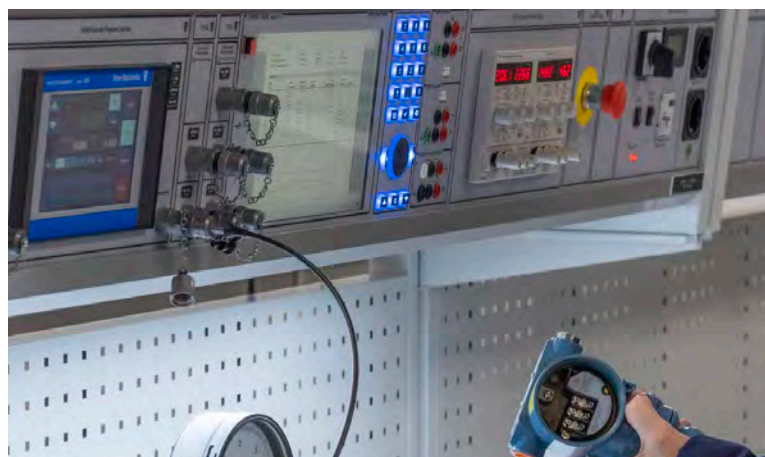
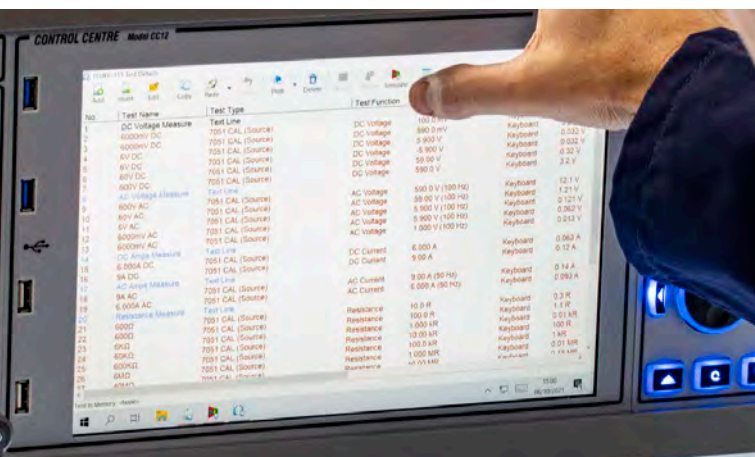




## Communication and Control

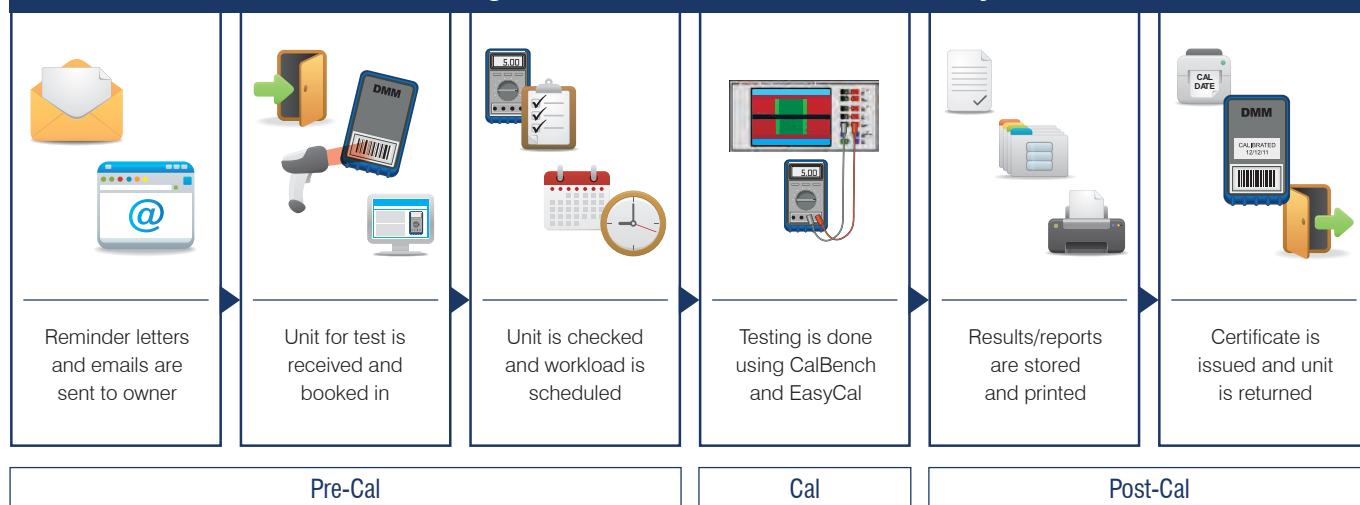
## For Multiple Industries and Disciplines

EasyCal is also designed for universal testing applications and can cover a wide range of disciplines. Users can calibrate and verify various instruments and devices: electrical and electronic; level, pressure, and flow; temperature and loop; mechanical and dimensional.





## Automating the Calibration Process with EasyCal



### EasyCal: For the Calibration Process

Automating the calibration process brings important benefits and provides increased speed of calibration and consistency of results.

#### Pre-Calibration

The calibration management features of EasyCal make the planning and organization of instrumentation calibration simple. A recall/reminder system informs the user of upcoming jobs, and search functions allow the user to quickly identify a unit for test.

#### Calibration

EasyCal controlled calibration significantly decreases testing times, meaning less instrument downtime and faster turnaround. This improves throughput meaning greater return on investment. EasyCal optimises the process by allowing the user to create procedures quickly and easily with the help of the included design wizards and pre-written templates.

#### Post Calibration

Produce traceable calibration certificates and test reports for quality standards. These can be printed, stored, or emailed as PDFs. EasyCal has a selection of pre-formatted certificate templates that are suitable for displaying typical calibration results.

## The Core Benefits of using EasyCal

### Achieve compliance with quality standards

- Automated document control ensures conformity and quality
- Establish procedures to maintain repeatability and monitor quality
- Schedule and maintain calibration intervals.
- Evidence of traceability to national standards
- Record calibration environmental conditions
- Produce calibration labels, maintain calibration history
- Reduce possibilities for errors or omissions
- Electronic record retention ensures integrity for successful audits

### Create an efficient control and management system

- Reduce testing times
- Eliminate continual outsourcing calibration costs
- Full control over the calibration process
- Improve turnaround
- Quick and easy solution to instrument analysis when needed
- Internal scheduling for calibrations. No external factors
- Centralised document management
- On demand networked review of certificates and reports



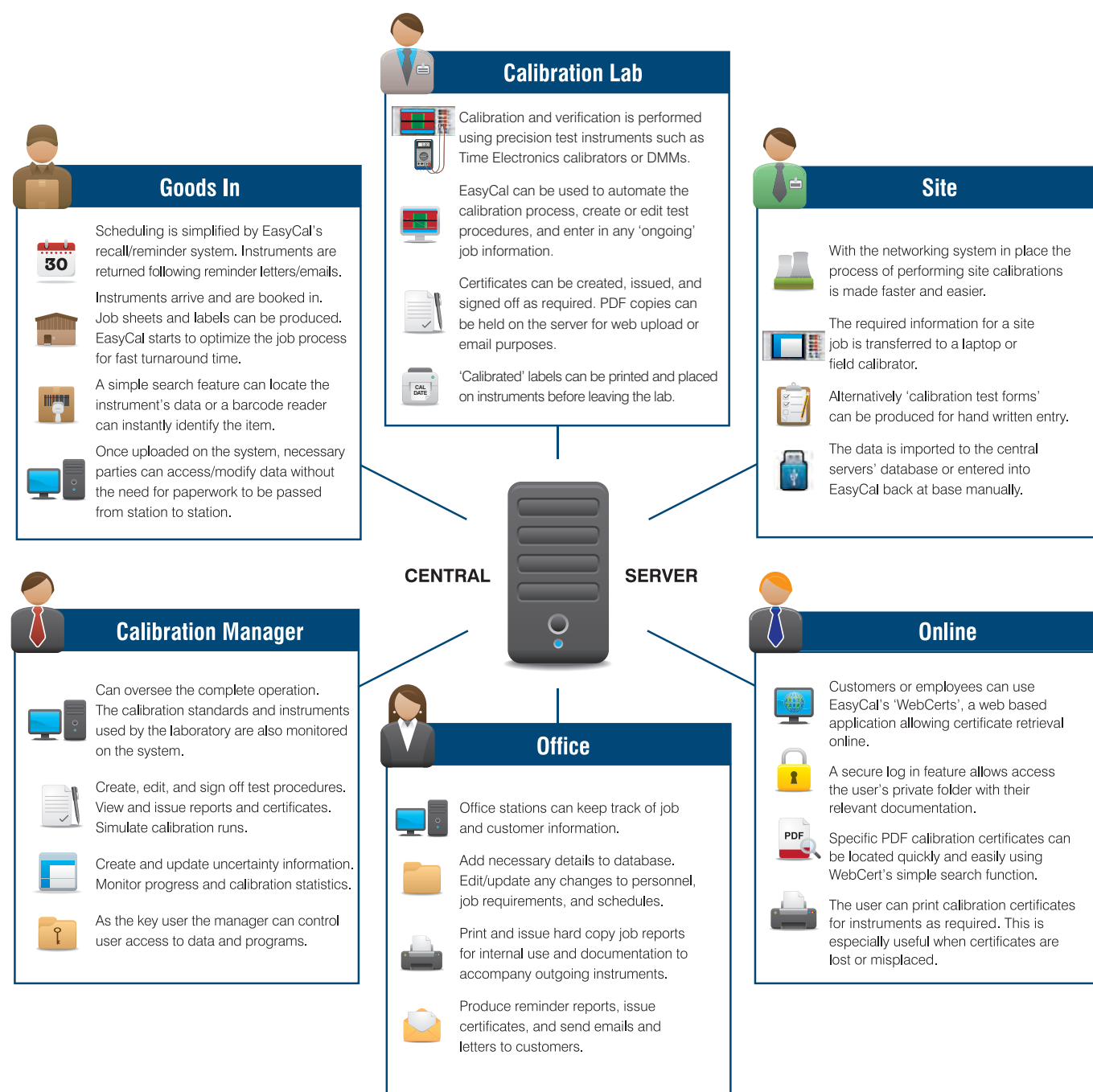
## Networking with EasyCal

For multi-user systems EasyCal can be implemented as the universal software for administration, management, and control. With designated features for use in different workstations, EasyCal can provide a solution to calibration businesses with customers as well calibration departments within industrial plants.

Data can be shared and accessed on a central server, creating an organised and efficient networking set-up. EasyCal's pre-calibration features enable automated scheduling and also speed up the booking in process with quick instrument identification.

Calibration runs can be automated by using a compatible Time Electronics calibrator with EasyCal. Once calibration has been performed the data can be made available on the server to the necessary parties. Hard copy certificates and reports can be issued by authorised staff.

Enhanced security features can be added for increased protection, allowing a master user to control access rights to data and applications. Also available is an online application enabling users to upload and retrieve certificates.

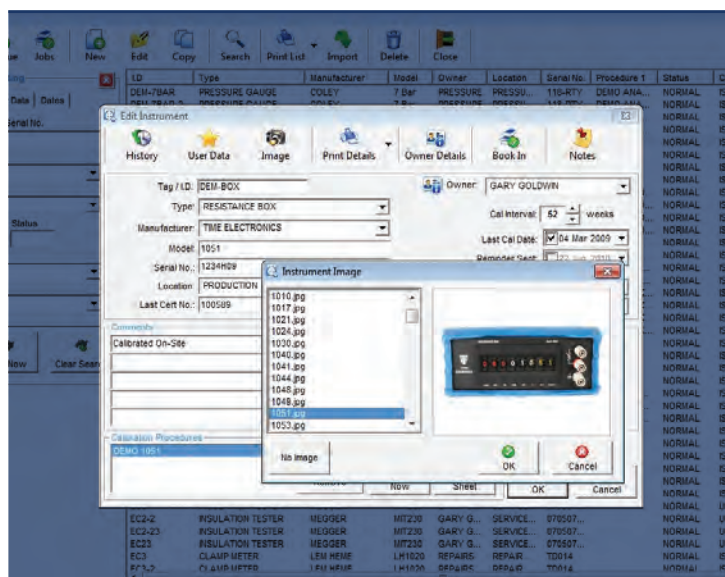






# EasyCal Calibration Software

Overview of applications and features



## Inventory, Reminders, and Jobs

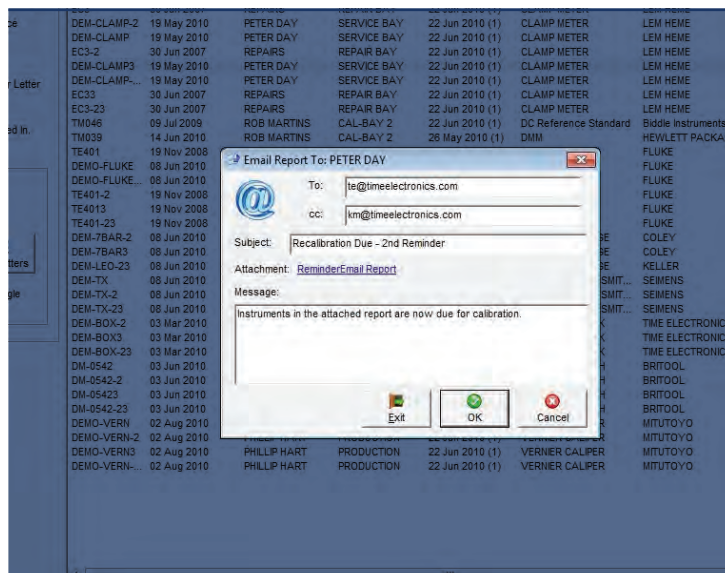
A comprehensive inventory database can be created and customised to company requirements. For internal calibration and quality management, departments and users can be specified. Alternatively EasyCal can be used as the controlling system for a calibration business based around customers and owners.

## Search

A powerful search feature enables the user to enter specific criteria to quickly find the required data. When adding details the user is aided by drop-down lists, which automatically update when new information is added.

## Input Fields

Used to add details such as ID and serial number, manufacturer and model, instrument status and service notes. In addition custom fields can be created to integrate with a company system. Images can be uploaded to provide further reference.

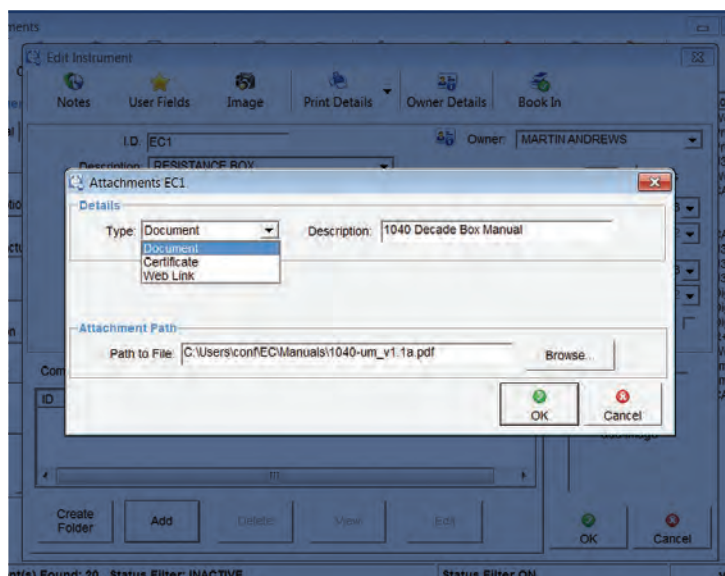


## Instrument Recall and Reminder System

Instruments which are due for calibration are listed on screen. Reminder letters and lists can be printed or emailed directly to the customer or department. An advanced notice period can be set to bring forward the recall date allowing for response time.

## Job Management

When a unit for test is booked in the job process starts. Specific information about the job is entered; such as 'service required', 'sub contracted' and 'accessories supplied'. A job sheet and label can be produced at this stage to accompany the instrument. As the job is put through the system these parameters can be updated, for example 'quote price', 'job status' and 'invoiced'.



## Document Links and Attachments

Create links to technical files, specifications, web pages, word documents, videos, and more. These can be set to automatically display prior to the calibration run.

## Devices and Standards used for Calibration

Traceability information for instruments and standards that perform the calibration work is stored and maintained by EasyCal.

## Uncertainties

Uncertainty tables for laboratory and site can be created for each calibrating instrument. These are then automatically processed and applied to certificates as required.



## Procedure Writing and Editing

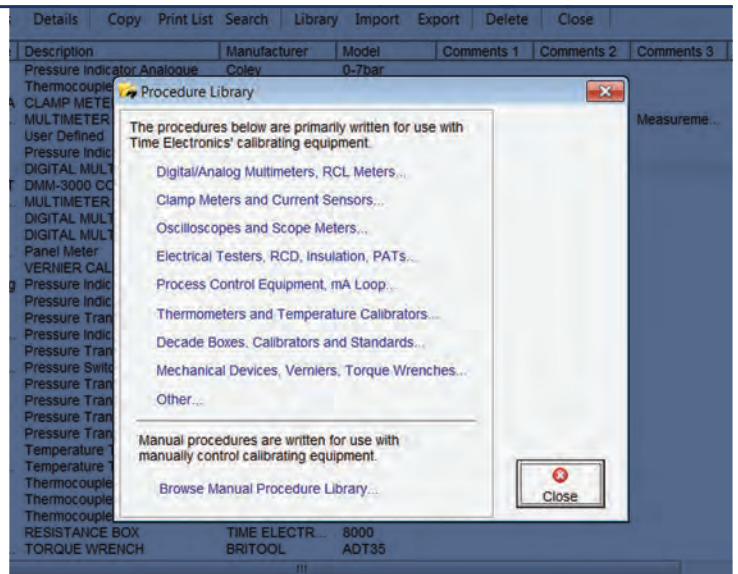
Creating and editing test procedures is made simple with an intuitive, user-friendly interface. Editing test information can be done by adding, inserting, or copy and pasting. EasyCal keeps track of each time a procedure is edited.

### Procedure Library

A calibration library comprising of over 1200 procedures covering a wide variety of instruments and devices is included as standard.

### Procedure Templates

Procedure templates for multimeters, clamp meters, decade boxes, insulation testers, and more can be used for creating any new procedures as required.



## Fast Procedure Creation and Editing

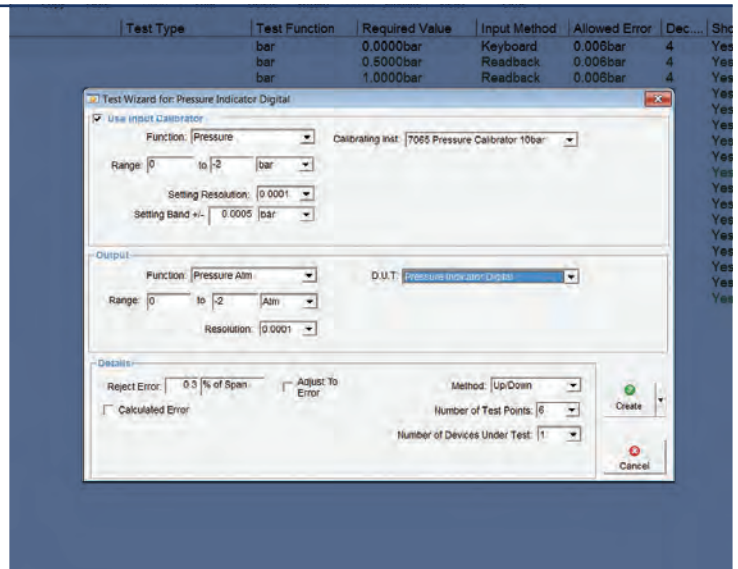
Copy and paste multiple tests. Globally edit a group of tests. Colour coded listing helps sort and identify different test types.

### Test Wizards

EasyCal features intuitive wizards for calibrating typical process devices such as transmitters, sensors, and pressure gauges. They provide users with a fast method to create procedures. Basic criteria about a device is entered, then the wizard creates a set of tests based on this information.

### Procedure Simulation

The Calibration Run Simulator enables a procedure to be tested without the need for a controlling instrument. To further assist with development of procedures a test can also be edited during the actual calibration run.



## Format Certificates

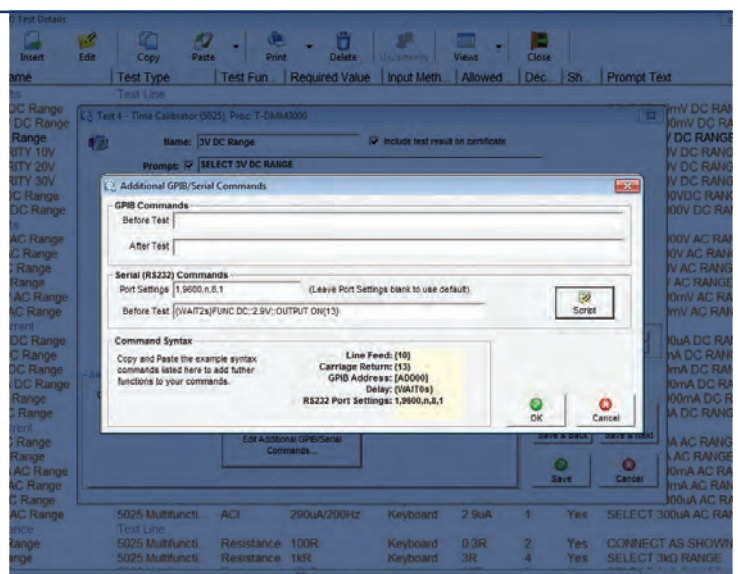
Colour code and add borders to test group titles. Add column headers where a change of layout is required. A preview feature allows the user to check the certificate layout to determine if formatting is correct.

### Conversion Tables

Conversion tables for thermocouples, RTDs, current transformers, and clamp meter adaptors are included. Alternatively user-defined tables can be created.

### Remote Commands

For more complex instrument control, commands can be sent on a test-by-test basis or run as a script. Closed loop calibration is also achievable using the universal readback feature. This allows EasyCal to control third party calibration equipment and communicate with devices under test.

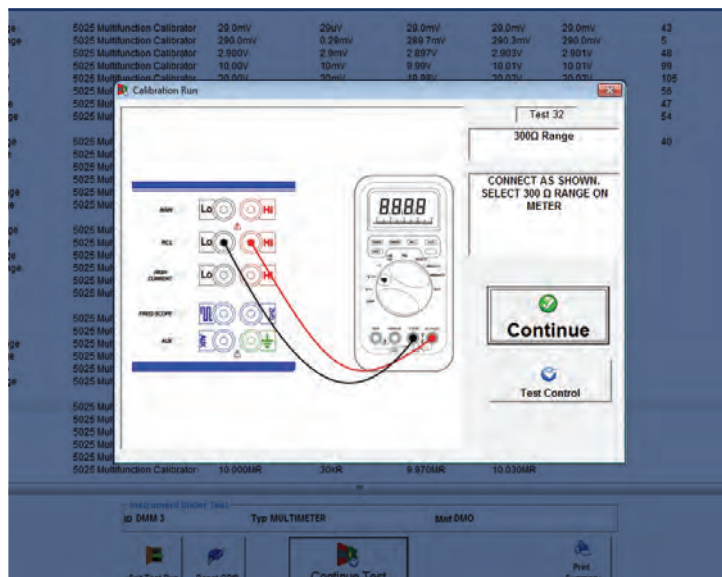






# EasyCal Calibration Software

Overview of applications and features



## Instrument and Device Calibration

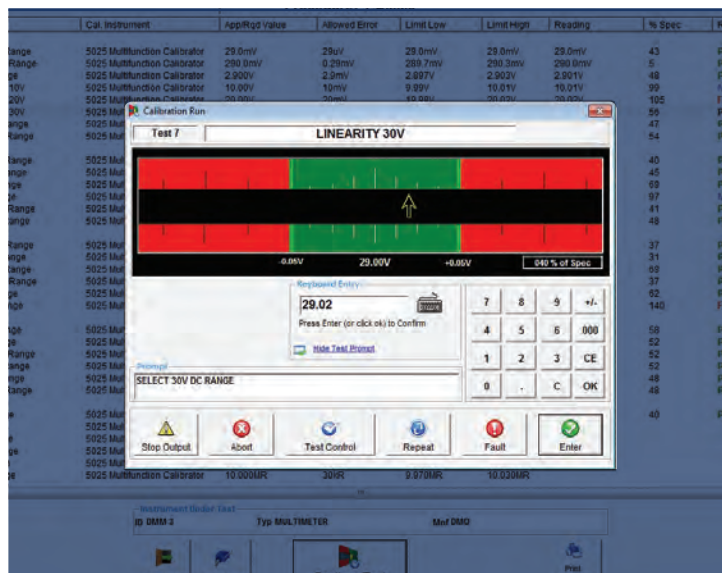
Automated calibration run provides fast and accurate collection of data, whether using direct instrument control or manual entry. EasyCal guides the operator through the procedure using graphical test screens and user prompts.

### Search

Selection of the device under test is quick and easy. With the use of a barcode scanner this selection becomes automatic.

### Calibration Prompts

Text and graphical prompts aid the user with instrument range selection and connection. So even the most complex calibrations can be performed with relative ease.

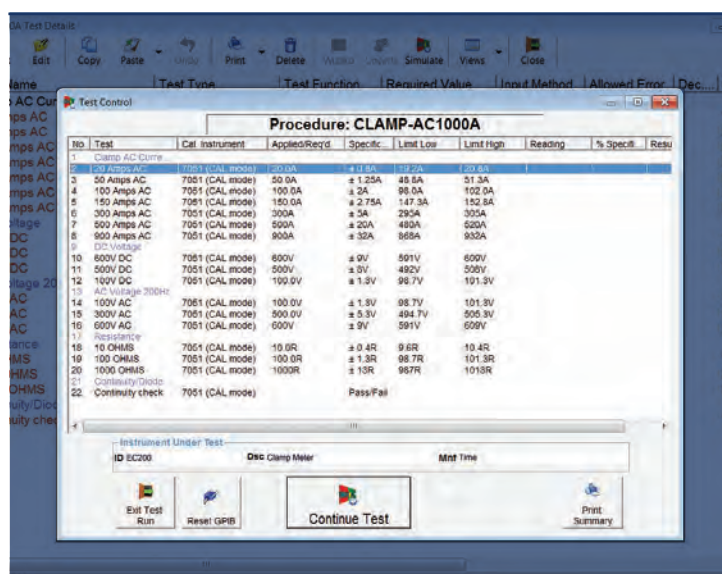


## Graphical Test Screen

The calibration run is made simple and efficient by a graphical user-interface, which increases speed of data entry. The colour coded indication bar displays the test limits. This allows the operator to easily identify out of tolerance results.

### Test Control

At any stage during the calibration run a summary can be displayed, this includes both completed and remaining tests. Colour coding indicates tests passed or failed. The operator is able to move forward or backward through the procedure as required.



## End of Calibration Run

Data for every test is stored, including a snap shot of the procedure used. If required calibration comments and service history can be updated. The operator is able to print the certificate, produce a calibration label and/or store the results to be issued as required.

### Recovery Mode

If for any reason a calibration run is interrupted, EasyCal's recovery mode feature allows the user resume the test run from the point of termination.

### Calibration Test Forms

Alternatively 'calibration test forms' for hand written results are available. This data is then entered manually into EasyCal at a later date.





## Certificates/Reports/Data Management

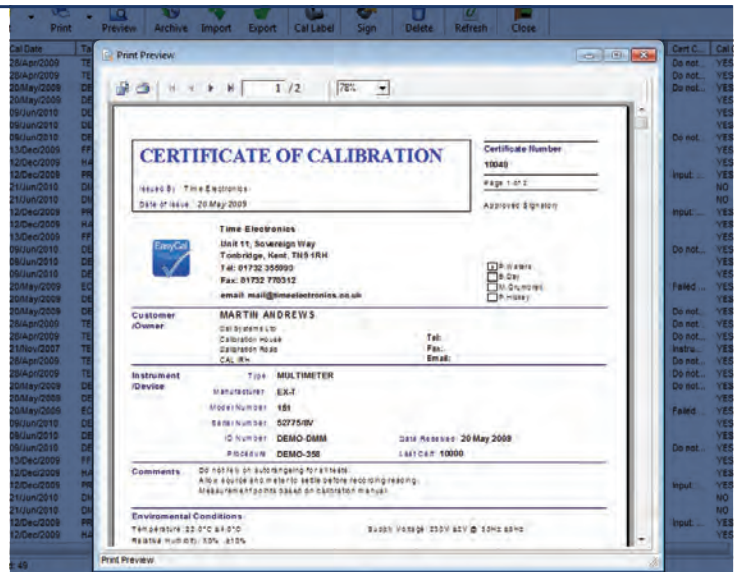
Produce, print, and store calibration certificates, reports, and labels. Simple search facilities enable the user to locate any data on demand. Keeping track of instrument history and servicing is made easy.

### Certificate Templates

A range of pre-formatted templates are available for immediate use. A company logo can be added without the need for 3rd party software.

### Electronic Signatures

Password protected electronic signatures allow management to approve certificates. In addition a scanned image of the signature can automatically be inserted, eliminating the need to print certificates.



## Built-in PDF Engine

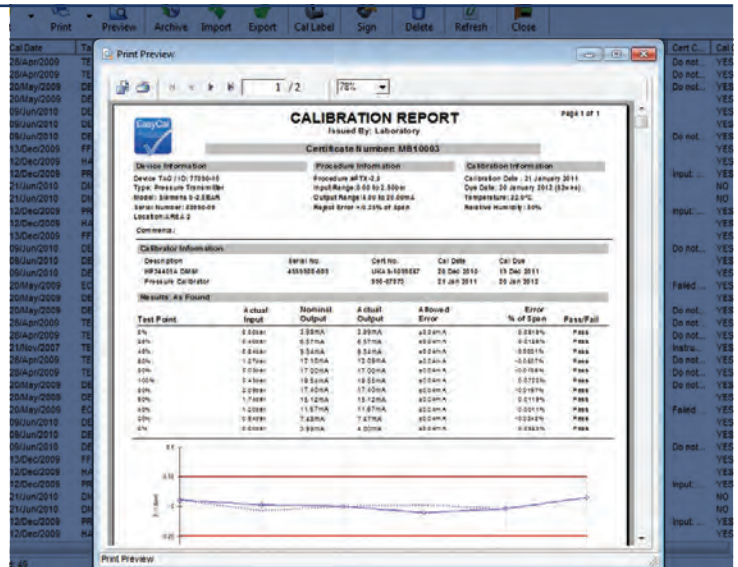
Generate PDF reports and certificates ready for emailing and universal review.

## Calibration Reports

Documented traceability provides a recorded audit trail. Reports showing calibration duration times can assist with costing and assessments.

## Archive

The results database can be streamlined by using the archive feature. This improves data organisation and management. Archives are quickly retrieved, giving instant access to historical certificate data.



## Import and Export

Exchange data from one system to another using the import/export feature. This method is ideal for site and field calibration work, where data is recorded externally then uploaded to the main database upon return.

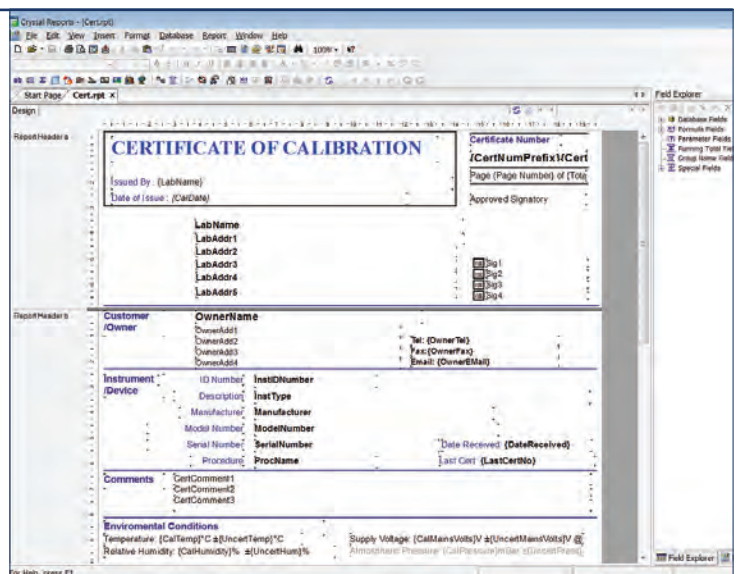
## Customise

Crystal Reports (optional) allows full modification of certificate, label, and report layouts. Design custom reports using queries, formulas, and running totals.

## Add-Ons

EasyAdmin: An optional add-on that enables advanced security for EasyCal via user rights and access levels. It provides a central administration point for calibration instruments, certificate information and user fields.

WebCerts: A web based application that enables users to upload & retrieve certificates and reports online. A secure log in feature allows access the user's private folder, storing their relevant documentation.



# Lab & Workshop Design and Supply



Time Electronics provide a turnkey design and supply service for customers requiring an efficient and ergonomic on-site calibration laboratory. Each solution is configured and created virtually, then supplied complete including all specified test instruments, tools, and furniture.

CalBenches typically feature as the primary workstations of the laboratory or workshop. They cover the main testing and verification workload, R&M and service applications.





# Turnkey laboratories and workshops for industrial calibration and maintenance

When designing a facility the process starts by understanding end user requirements and applications. From this information the design team will firstly configure the suitable CalBench package including supporting instruments for customer specific needs. Once the technical details are finalised we look at the optimal layout for performing the required workload. We consider all aspects, including workflow, types of applications, number of engineers, and storage requirements.

Following this we take the workspace dimensions and the virtual design stage begins. Using custom software we create a detailed overview of the laboratory or workshop. This includes the necessary calibration equipment, work benches, storage units, and extras. We then generate 3D images and videos to allow the end users to visualise the concept and experience their new working environment.

Each facility we design has a core focus on optimising the calibration process. This is accomplished by a dual approach using hardware and software. CalBench modules and accompanying test instruments provide the functions to perform calibration, whilst EasyCal software is the controlling platform for all work and management.







## Workshops, Labs, Training Centres & Mobile Solutions

Complete design, supply, installation and implementation of professional workspaces



### Workshops and Laboratories

State-of-the-art, premium grade instrument and electrical workshops for industrial plants and facilities. Design layouts are fully customised to end user requirements and incorporate high performance CalBenches for calibration, testing, R&M and other applications. Each workshop is designed to be a durable, long lasting solution, built to withstand arduous use in demanding environments.

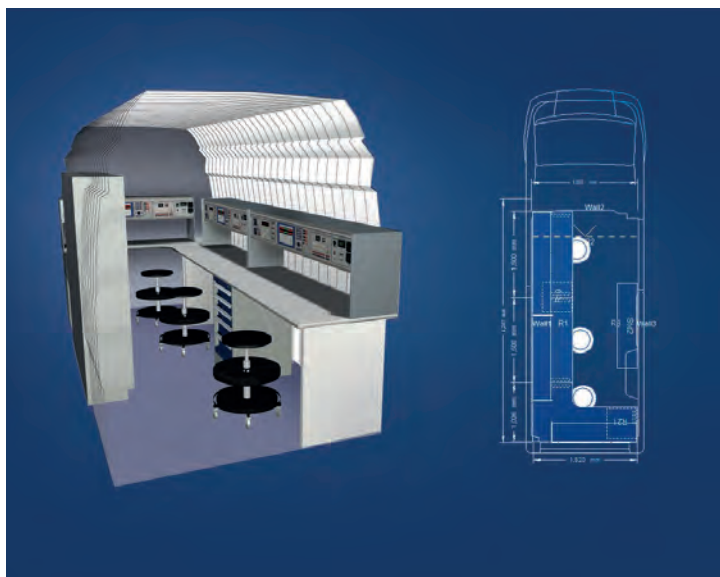
- Instrument and electrical workshops for industrial plants
- CalBenches provide the focal point for test and measurement
- Turnkey design to optimise workflow and streamline applications
- Heavy duty solutions and workshop furniture, built to last
- Fully customisable based on end user requirements
- Incorporate task specific furniture, tools and machinery
- Smart storage solutions for tools and equipment
- Versatile and flexible for various applications
- Installation, commissioning and training available



### Classrooms and Training Institutes

Time Electronics work with educational institutes worldwide to provide multi purpose calibration benches and classrooms for engineer training. CalBenches are the optimal solution for teaching environments where students can learn about calibration methods and principles. They are also utilised in schools and universities for electronics and electrical engineering.

- Design and supply of classrooms for engineer training
- Integration of technical and educational solutions
- Multi CalBench layouts, custom consoles and work benches
- CalBenches for process training, electrical engineering & more
- Teach the practicals and principles of calibration
- Teach the importance of calibration, quality control & management
- Practice different methods of calibration, manual & software driven
- Teach the processes involved in both lab and field calibration
- CalBench modules provide a simple user interface, with easy to use controls and functions



### Mobile Calibration Solutions

Time Electronics provide innovative solutions for mobile calibration. The concept is a turnkey approach that enables users to perform on-site calibration services in a fully equipped mobile laboratory, featuring automated master calibration systems. The interior of each vehicle is designed as a comprehensive workspace, utilising custom built consoles, accompanying instruments and smart storage units.

- Mobile calibration in vans and expanding trailers
- Complete design and supply of vehicles, or interior solutions supplied for customer fitting
- Full in-vehicle calibration capabilities for electrical, temperature, pressure, torque etc
- Custom consoles for van fitting with reinforcement features and fixings for transport
- Large scale expanding trailers with up to eight 2m CalBenches
- Vehicles fully equipped, including professional storage solutions

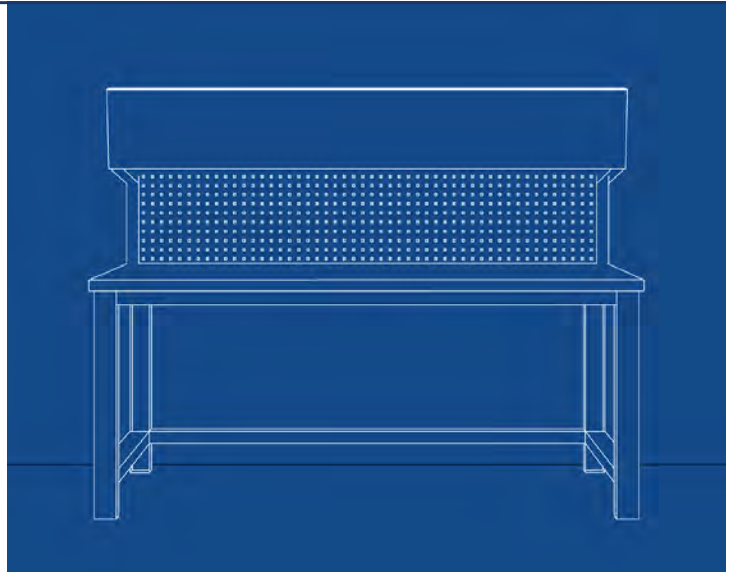


## CalBench Systems

CalBenches are commonly the initial requirement for industrial and technical workspaces. They provide a focal point for the test and measurement applications, as well as service work.

We assess your calibration coverage plus other applications to be performed. From this we establish the systems to incorporate in the design, from modules in CalBenches to equipment required for use in the field. We look at how the facility will be used, to configure the most efficient and ergonomic layout and maximum functionality.

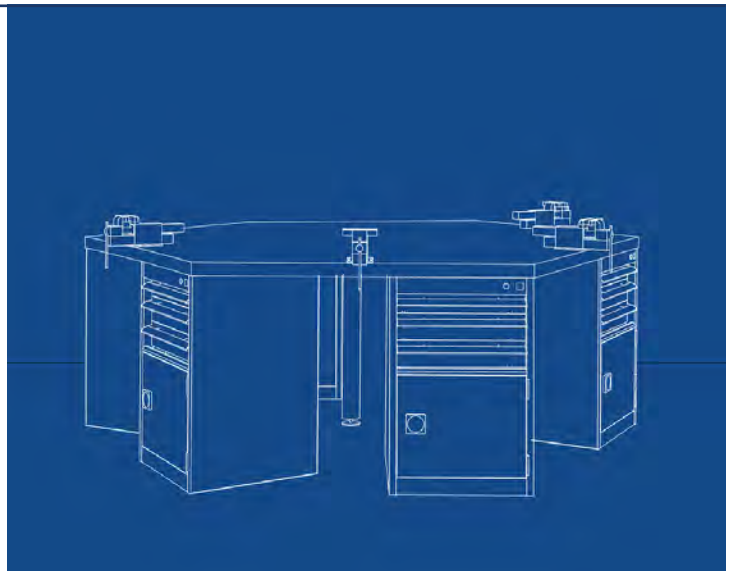
- Fully customised solutions for end user requirements
- Wide selection of modules and extras to choose from
- Instant organisation of master instruments as modules
- Creates a compact working environment
- Calibrate and maintain a wide range of instruments and devices
- High performance system offering versatility and precision
- Automated calibration and testing



## Industrial Work Benches and Options

A range of industrial grade work benches for additional applications in the workshop and laboratory. They can be used to accompany CalBenches and create an organised workspace as per user requirements. When we consult on CalBench systems we consider the full workload coverage and offer these extra benches if necessary. They can be used for service work or calibration that is not performed on the CalBench. For example these benches can situate mechanical loaders used for torque calibration.

- 7080-HD-MFS heavy duty shelf CalBenches
- Framework benches, corner benches
- Under bench suspended drawers, cabinets and holders
- Adjustable height benchtop shelves
- Multi-socket power ducts, regional socket types
- Various seating options, chairs, stools, foot rests
- Hexagonal communal workstations (TL250)
- ESD options, worktops and matting kits



## Storage Solutions

Storage solutions that include cupboards, cabinets, racking, mobile units, and wall mount perforated panels. They are industrial grade for use in workshops and engineering environments. This range is ideal to accompany CalBenches to provide both long-term and quick access storage of tools, equipment, parts and accessories.

- Storage cupboards, various sizes and internal configurations
- Heavy duty racking systems, various widths, shelves
- Mobile storage units, drawers, cabinets and shelf trolleys
- Floor standing cabinets and drawers
- Wall mount perfo and louvre panels for quick access storage
- Storage bin kits for inside cupboards, wall mounting
- Custom built storage systems
- Tool cases, kits and holders

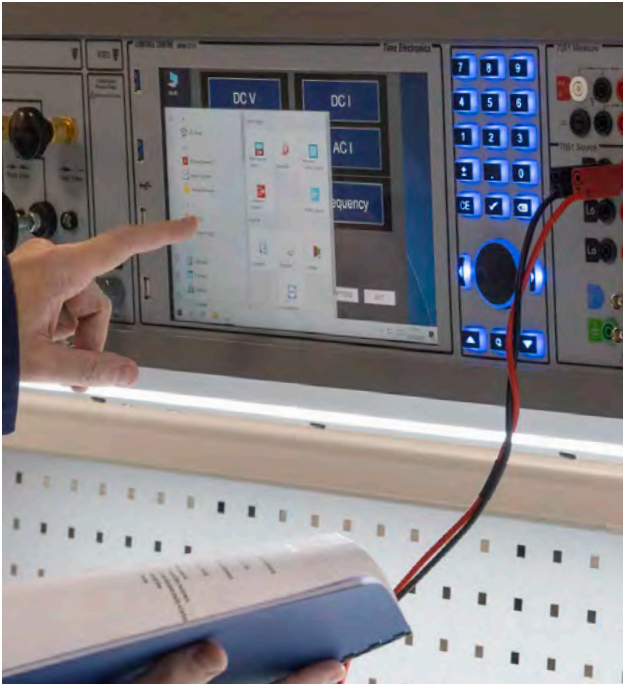






## CalBench Services





## Professional Services for CalBench Customers

For CalBench projects we offer a range of professional services for our customers worldwide. We have designed and supplied systems and complete workshops as part of contracts requiring a high level of supplier and vendor communication and interaction.

We support end users with dedicated technical consultancy in the pre-sale stage, to determine the optimal configurations and product selection. We then work with various departments and teams to ensure all budgeting, scheduling and contractual requirements are met.

After sales services include project data creation and compilation. We work with engineering teams and document controllers to provide the necessary information, drawings, inspection reports and more.

We offer factory based services including acceptance tests, pre-shipment inspections and comprehensive training programs. We also mobilise our engineers to perform site installations, commissioning and training. Further services include routine scheduled site calibration of CalBenches, and remote support via desktop sharing on CalBench control centre modules.



## CalBench Services

Consultation, Project Management, Acceptance Testing, Training



### Technical Consultation

We provide technical consultation for CalBench customers to explain the available systems and options. We work with each client to gain an understanding of their applications and requirements.

We help clients with calibration workload analysis, cost justification, product selection and training requirements.

From this communication we configure and design the CalBench, lab or turnkey workshop, including all extras and services for a successful project.

- Consultation for implementation of a CalBench, test lab or workshop
- Analysis of calibration workload, required test instruments
- Integration of automated calibration, EasyCal software
- Service requirements such as installation, training, re-calibration
- Lab and workshop design and supply



### Project Management

We work with EPC contractors as part of large-scale turnkey projects, to provide necessary data for products, systems and services within our scope of supply.

#### Documentation and Drawings

Depending on the project we can issue the various documentation required under the contract. These include schedules, general arrangement drawings, diagrams, utilities information, inspection test plans/reports, packing and storage procedures.

#### Project Services

To ensure successful completion of projects we provide a range of services including FAT, SAT, commissioning, and training on-site or in the UK. We also work with client's third party inspection companies when required.



### Factory Acceptance Testing & Training in UK

#### Factory Acceptance Testing

Factory acceptance testing can be undertaken by the end user or their designated inspection company. A full program is provided to cover the visual and functional checks of the CalBench and other equipment for supply.

#### UK Based Training

Customers can visit Time Electronics UK and receive training on their ordered system prior to shipment. We will schedule and arrange all aspects of the visit, including local transport and accommodation. The factory is based in Tonbridge, situated in the south east of England, approximately thirty miles from London.





## Remote Training and Support

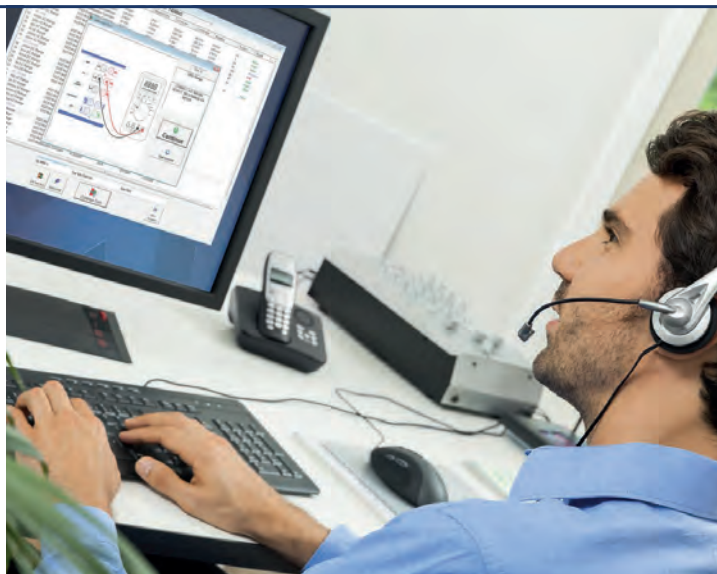
### Online EasyCal Training

Using remote desktop sharing we can help customers understand and utilise EasyCal software for calibration work and management. We can provide basic tutorials or troubleshoot specific applications relative to end user requirements.

### EasySupport for CalBench

CalBenches that feature a control centre modules come supplied with the Time Electronics EasySupport program. This application enables users to communicate directly with the factory, allowing the CalBench technical support team to log in and control the customer's system remotely.

This is an extremely useful tool for both support and training. The UK based team can run diagnostics and functional checks as required, and help customers resolve software issues. Customers can contact the support team by phone or via the Time Electronics website to schedule sessions.



## On-Site Services

### Installation, Commissioning, Training

A travelling engineer will visit the customer's facility to install and commission the CalBench, supporting instruments, and laboratory furniture. Our team can perform site visits worldwide and are qualified to work on offshore platforms, power and processing plants, and refineries.

Training is most often included with the CalBench or lab installation, or can be scheduled for a later date. A qualified CalBench engineer will educate users on how to set up their system, to operate modules and additional test instruments. They will also simulate the calibration process by demonstrating tests on actual devices at the site, as well as consulting on best practice calibration.

### On-site Calibration and Maintenance

A technician can visit the test facility annually to perform calibration of the CalBench and additional test equipment. This can be scheduled before or after installation and can include additional training if required.



## Factory Calibration and Repairs

We service, repair and calibrate all our manufactured instruments. Servicing your products in our UK factory provides various benefits of having our experienced team perform comprehensive inspections and diagnostics. We then service and calibrate to ensure optimal working condition and functional performance.

For CalBench customers outside of the UK it is not common to send complete systems back for calibration. Commonly performed service work includes console upgrades after several years, or any extensive repair work if damage has been sustained to a system.

Additionally, modules or benchtop and portable products can be returned for calibration if not possible to test them on-site. Instruments like pressure calibrators and controllers, dry block calibrators and test pumps can all be routinely serviced and calibrated.





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***Time Electronics***  
*Calibration, Test and Measurement*

*Time Electronics Ltd, Unit 5, TON Business Park, 2-8 Morley Road,  
Tonbridge, Kent, TN9 1RA. United Kingdom.*

**T:** +44 (0) 1732 355993    **F:** +44 (0) 1732 350198    **E:** [mail@timeelectronics.co.uk](mailto:mail@timeelectronics.co.uk)

***[www.timeelectronics.com](http://www.timeelectronics.com)***