



Description

The 7016 is a fully integrated pressure test and calibration system. It is suitable for field and laboratory calibration work of both regulated low pressure and electrical process loop signals. The instrument is available in pressure or vacuum regulated configuration, with the range specified on ordering. There are five available versions according to required output range, either vacuum, 0.2, 2, 5, or 10 bar.

The 7016 combines high accuracy with simple operation, and is the popular choice for test engineers performing pressure calibration applications under 10 bar. It is an easy to use instrument suitable for calibration and maintenance of pressure gauges, sensors, transmitters, transducers, indicators, switches, and more.

Features include a 4.5 digit LCD display, 4 pressure units plus mA, zeroing switch, and regulator for output control. Basic pressure accuracy is 0.04 % of full scale and line pressure is supplied via an input quick release port fitted on the side of the unit.

For process signal calibration the loop signal is displayed on the LCD display to 0.05 % accuracy. Loop drive supply (24 V or 36 V) is also provided. Both pressure and loop signal can be displayed at the same time to speed up the calibration of pressure transmitters. Additionally a continuity function is available for testing for open circuit loops.

Power is via internal rechargeable cells (24 hours typical use) with a built-in mains charger. The unit can be powered directly from the mains if required. The 7016 is housed in an impact resistant safety case that provides protection and increased durability. All pressure connections are on the side of the case. The instrument is supplied with a pressure hose, electrical test lead, 2 electrical probes and 2 crocodile clips.

Options

For the 7016, input pressure for regulation can be provided by a compressor or gas cylinder. When used as a measuring instrument in the field, pressure can be generated by pumps like the 7090 pneumatic hand pump (vacuum to 40 bar). The 7090 is compact with comfortable handles with grips moulded into the design make it easy to control the instrument whilst pumping up to pressure. Also available are a range of pumps suitable for workshop use, that feature an ergonomic mode of operation. These models include the 7193 (vacuum to 40 bar pneumatic) and 7192 (vacuum to 25 bar pneumatic).

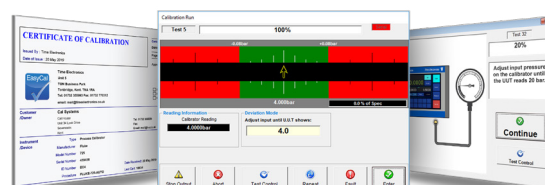
For process control signal simulation a practical tool like the Time Electronics handheld 7006 Loop-Mate is available as an option. It is a low cost, simple operation unit that provides 4 - 20 mA and 0 - 10 V signals at levels of 0 %, 10 %, 25 %, 50 %, 75 %, 90 %, 100 %. It can also step through these set points automatically to allow hands-free calibration. It is battery powered and compact, pocket sized and easy to carry in the field.

Features

- Vacuum to 10 bar versions available
- Accuracy 0.04 % of full scale
- Pneumatic
- 4 selectable pressure units plus mA
- Loop current measure
- 24/36 V loop power
- Over-pressure alarm
- RS-232 serial interface
- EasyCal software compatible
- Mains or battery powered

EasyCal Calibration Software

The 7016 can be controlled with readback via Time Electronics EasyCal software to automate the calibration process. This provides increased speed of calibration and consistency of results. Produce traceable calibration certificates and test reports for quality standards with additional uncertainty information for ISO 17025 conformance.





Technical Specifications

Pressure - Regulator on all ranges

Range (bar)	-0.95 to 0	0 to 0.2	0 to 2	0 to 5	0 to 10
Accuracy (% FS)	0.04	0.1	0.04	0.04	0.04
Resolution (bar)	.0001	0.01 mbar	.0001	0.001	0.001

Units.....0.2bar version: mbar, PSI, kg/cm2, cmWg and mA.
Vac, 2, 5, and 10 bar versions: bar, PSI, kg/cm2, cmWg and mA.

Maximum pressure.....10 bar for 0.2, 2, 5 bar versions / 12 bar for 10 bar version.

Sensor.....Piezo-resistive - stainless steel diaphragm.

Over pressure warning.....1.2 x range full scale - audio and visual (on LCD) warning.

Fittings.....Quick Release.

Electrical

Range.....Loop current measurement 0 to 200 mA.

Resolution.....10 μ A.

Resistance.....Loop load 5 Ω .

Accuracy.....0.05 % of reading \pm 1 digit.

Loop drive.....24 V or 36 V switch selectable, 50 mA max - isolated and with short circuit protection.

Continuity.....Threshold: 100 Ω with audio and visual warning.

Terminals.....4 mm industry standard terminal posts.

General Specifications

Power source.....Internal rechargeable NiMH batteries, or mains supply (230 V or 110 V 50/60 Hz).

Battery life.....24 hrs of typical usage between charges.

Display.....7 segment LCD display with 'Low Battery' warning indicator.

Interfaces.....RS-232 for readback and re-calibration (software not supplied).

Case.....Structural resin which is weather-proof to IP66 standard.

Dimensions.....W 270 x H 175 x D 250 mm.

Weight.....3 kg.

Supplied with.....1 pressure hose: Quick release fitting.
Electrical Test Lead: Twin flexible lead, terminated with 4 off 4mm gold plated plugs.
Electrical probes: 2 off low voltage probes and 2 crocodile clips. Mains power lead.

Optional extras.....Pneumatic hand pumps, gauges, loop simulators, EasyCal calibration software, spare fuses, and calibration certificates.

Ordering Information

7016.....**Regulated Low Pressure Calibrator** (+ pressure range code a shown below).

Range (bar)	Vacuum	0.2	2	5	10
Option Code	7111	7100	7101	7102	7103

7090.....Pneumatic Hand Pump (vacuum to 40 bar). See separate datasheet for options.

7193.....Pneumatic Benchtop Pump (vacuum to 40 bar). See separate datasheet for options.

7198 and 7198-NPT.....Pressure calibration adaptors and fittings kit. See separate datasheet for options.

7006.....Loop-Mate 1: Loop Current Simulator

ECFLA.....EasyCal Calibration Software. See separate datasheet for further information.

C178.....Traceable calibration certificate (Factory)

C190.....Accredited calibration certificate (ISO 17025)

Due to continuous development Time Electronics reserves the right to change specifications without prior notice.