



- Vacuum to 10bar versions available
- Accuracy 0.04% of full scale
- Pneumatic
- 4 selectable pressure units plus mA
- Loop current measure
- 24/36V loop power
- Over-pressure alarm
- RS232 serial interface
- EasyCal software compatible
- Mains or battery powered

### 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 10bar.

The 7016 combines high accuracy with simple operation, and is the popular choice for test engineers performing pressure calibration applications under 10bar. 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 (24V or 36V) 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 can be generated by the 7090 pneumatic hand pump (-950mbar to 40bar). Other pumps and digital pressure gauges are also available.

For process control signal simulation Time Electronics' handheld 7006 Loop-Mate is available as an option. It provides 4 - 20mA and 0 - 10V 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 can be stored in the 7016's supplied carry pouch. See separate datasheets for more information.

The 7016 is fitted with RS-232 connection as standard. Display readback can be performed using EasyCal calibration software. With comprehensive features EasyCal can simplify and speed up calibration procedures. Easily produce calibration certificates and reports to international quality standards.



# 7016 Specifications

## TECHNICAL SPECIFICATION

### PRESSURE - Regulator on all ranges

Specifications are for 1 year at 23°C ±5°C. Accuracy includes linearity and long term effects. All accuracies are ±1 digit. For operation outside specified temperature range, apply 70ppm per °C

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

Units ..... 0.2bar version: mbar, PSI, kg/cm2, cmWg and mA.  
 Vac, 2, 5, and 10bar versions: bar, PSI, kg/cm2, cmWg and mA.  
 Maximum Pressure ..... 10bar for 0.2, 2, 5bar versions / 12bar for 10bar 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 200mA  
 Resolution ..... 10µA  
 Resistance ..... Loop load 5Ω  
 Accuracy ..... 0.05% of reading ±1 digit  
 Loop Drive ..... 24V or 36V switch selectable, 50mA max - isolated and with short circuit protection  
 Continuity ..... Threshold: 100Ω with audio and visual warning  
 Terminals ..... 4 mm industry standard terminal posts

## GENERAL SPECIFICATION

Power Source ..... Internal rechargeable NiMH batteries, or mains supply (230V or 110V 50/60Hz)  
 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 ..... W270 x H175 x D250mm  
 Weight ..... 3kg  
 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 traceable to NPL and UKAS

## ORDERING INFORMATION

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

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

7090 ..... Pneumatic Hand Pump (-950mbar to 40bar). See separate datasheet for options.  
 7006 ..... Loop-Mate 1: Loop Current Simulator  
 ECFLA ..... EasyCal Calibration Software. See separate datasheet for further information.  
 C178 ..... Factory Calibration Certificate (NPL traceable)  
 C190 ..... UKAS Calibration Certificate (ISO 17025)

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

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