

- Current measure: 125mA, source: 50mA
- Voltage measure: 25V, source: 21V
- Loop Current Sink
- Resolution 1µA or 1mV
- Accuracy 0.01%
- Transmitter and square root functions
- Auto-ranging feature
- Programmable steps and ramp
- Supplied with battery charger & case

# **DESCRIPTION**

A precision handheld instrument primarily used for the calibration and simulation of voltage and current loops. The 7005 is a high accuracy calibrator incorporating source and measure capabilities. The compact and lightweight design make it easily portable and ideal for plant operations and field use. Combined with user friendly controls and simple operation the 7005 is an excellent model for both process engineers and calibration technicians.

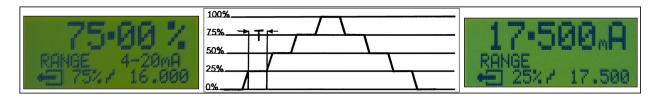
The three operating modes provide a fast and easy solution to process applications; Loop current/voltage source for simulating a transmitter and the loop supply, sink of loop current for simulating a transmitter, and measurement of loop current/voltage for simulating a loop indicator.

Manual step of the output is possible at five calibration points; 0%, 25%, 50%, 75% and 100% of span. Automatic stepping of the output is also available, both up and down with programmable dwell times.

Continuous up/down ramping can also be performed, with user programmable ramp rates and dwell time (top and bottom).

In source mode the range can be user programmed to any value between 0mA and 50mA, or 0V and 21V. For example a low point of 10mA and a high point of 50mA could be set giving a span of 40mA.

Measure mode provides both voltage and current measuring capability with 5 digit resolution. Ranges are 0 to  $\pm 5$ V and  $\pm 5$  to  $\pm 25$ V, 0 to  $\pm 25$ mA and  $\pm 25$  to  $\pm 125$ mA. Alternatively the signal can be measured as a % of span for the following ranges; 4 to 20mA, 0 to 20mA, square root 4 to 20mA, or square root 0 to 20mA. For all measurements a Min/Max recording function is available on demand.



An internal NiMH battery powers the unit for typically 9 hours continuous use and an external mains charger is supplied as standard. An automatic power-down feature is incorporated to conserve battery life, which can easily be disabled if not required. The unit is constructed in an impact resistant ABS case and connections are made via 4 off 4mm binding terminal posts.

# 7005 Specifications

# **TECHNICAL SPECIFICATION**

specifications a temperature range

# **DC VOLTAGE SOURCE**

Range	Resolution	Accuracy	Output Current	Output Resistance
0 to 21V	1mV	±0.01% of setting ±4mV	50mA	< 1Ω

#### **DC VOLTAGE MEASURE** (0 to ±25V, Auto-ranging)

Range	Resolution	Accuracy	Measure Load
0 to 5V	0.1mV	±0.01% of reading ±0.4mV	10ΜΩ
5 to 25V	1mV	±0.01% of reading ±2mV	10ΜΩ

# **DC CURRENT SOURCE**

Range	Resolution	Accuracy	Output Voltage	Loop Resistance
0 to 50mA	1μΑ	±0.01% of setting ±2μA	22V Max	1100Ω @ 20mA max

#### DC CURRENT MEASURE (0 to ±125mA, Auto-ranging)

	Range	Resolution	Accuracy	Measure Load
Γ	0 to 25mA	1 <i>μ</i> Α	$\pm 0.01\%$ of reading $\pm 2\mu$ A	24.5Ω
Γ	25 to 125mA	10μA	$\pm 0.01\%$ of reading $\pm 20\mu$ A	24.5Ω

#### **DC CURRENT SINK**

Range	Resolution	Accuracy	Min external drive	Max external drive
0 to 50mA	1μΑ	$\pm 0.01\%$ of setting $\pm 2\mu$ A	4V	40V

# **SUMMARY OF FUNCTIONS**

#### **SOURCE MODE**

- User programmable ranges any values between 0 and 50mA or 0 and 21V.
- Fixed ranges are available: 4 to 20mA, 0 to 20mA, sqrt 4 to 20mA, sqrt 0 to 20mA.
- Fine adjustment (inching) is available for precise deviation from the calibration point.
- Manual step output five calibration points 0%, 25%, 50%, 75%, and 100%
- Automatic step output (up/down) five cal points with programmable dwell period.
- Ramp output programmable ramp rate (0 to 20mA/sec or 0 to 20V/sec). Programmable dwell period (0 to 1000 seconds)

### **MEASURE MODE**

- Voltage and current measuring capability with 5 digit resolution.
- Ranges: 0 to  $\pm$ 5V and  $\pm$ 5 to  $\pm$ 25V, 0 to  $\pm$ 25mA and  $\pm$ 25 to  $\pm$ 125mA.
- Signal can also be measured as a % of span on ranges: 4 to 20mA, 0 to 20mA, square root 4 to 20mA, square root 0 to 20mA.
- For all measurements a Min/Max recording function is available on demand.

# **GENERAL SPECIFICATION**

Operating Humidity ......0 to 90% non-condensing at 25°C

Full recharge from being exhausted will take approximately 16 hours with the unit switched off.

Optional Extras......Calibration certificates – traceable to NPL and UKAS

# **ORDERING INFORMATION**

7005	Voltage/Current/Loop Calibrator	
C184	Factory Calibration Certificate (NPL traceable)	
C105	LIKAS Calibration Certificate (ISO 17025)	

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

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