Mono + Mono = Multi

Brief description

The combination of different types of signals determines the simulator type and its specific features. Whereas monofunction simulators can only process one type of signal, multifunction simulators can process different types of signals.

Available are resistance thermometers (RTD) and thermocouples (TC) with varying linearisation and corresponding resistance (Ω) and voltage signals (mV). Analogue current (mA) and voltage signals (V) as well as frequency (Hz) and pulse signals (O / C) and pressure signals (bar) round off the spectrum.

Monofunction simulators

SIKA monofunction simulators offer exceptional performance, durability and reliability. Our temperature or current loop calibrators are compact, lightweight and easy to transport. These instruments feature rubber keys for ease of use and are insensitive to dust and splashing water. The tough plastic housing is resistant to shocks and impacts and offers additional protection against vibrations in harsh environments. Screened 4 mm sockets allow quick and easy connection of equipment to be tested.

Multifunction simulators

SIKA multifunction simulators combine the functions of several devices in one instrument. These simulators are designed for easy generation and measurement of temperature, pressure, frequency and electrical signals. These documenting instruments have been developed for testing and calibration of numerous process signals as well as their generation and measurement with high accuracy. Operation is intuitive via keypad or pull-down menus.

# Features

Multifunction display

The back-lit multifunction display ensures clear indication of input and output values as well as all adjustments.

Operating concepts

Features include a rubber keypad, convenient interactive menu control via function keys, navigator and numeric keypad. These features allow easy selection and display of numerous functions.

Connection options

A large, switchable double display shows the connection options in graphic form. The 4 mm safety sockets ensure quick and easy connection of equipment to be tested. Connection takes place via laboratory connectors. Alternatively, bare cable ends can be connected without further adaptation via a Push & Lock function. Separate channels allow parallel system processing. This obviates the need for reconnecting the leads, which saves time and increases efficiency.

Push & Lock function
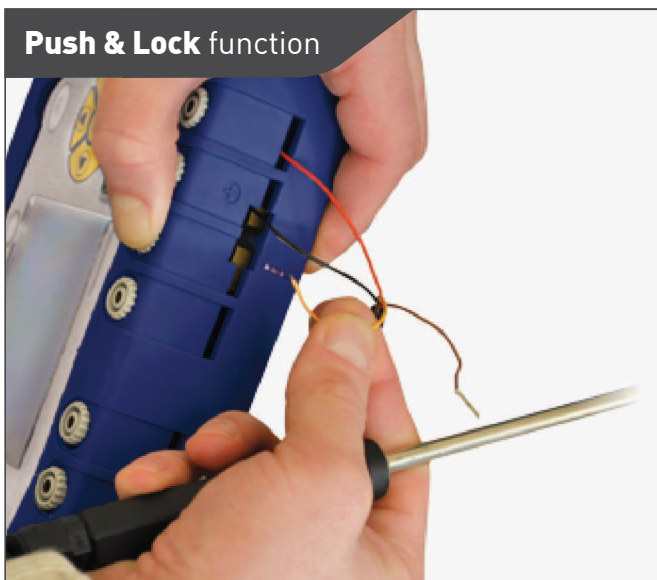
Wide range of functions

Manual call

Signals can be adjusted manually for different output levels for testing and calibration as required. The required value is output after configuration.

High-speed call

Signal values needed time and again are permanently or flexibly stored in the simulator and can be recalled quickly at the push of a button.

Steps and ramps

An automatic program is generated for periodic calls. The type of signal, duration and value are defined. Start delay, number of repetitions and a continuous linear increasing or decreasing characteristic can be individually programmed.
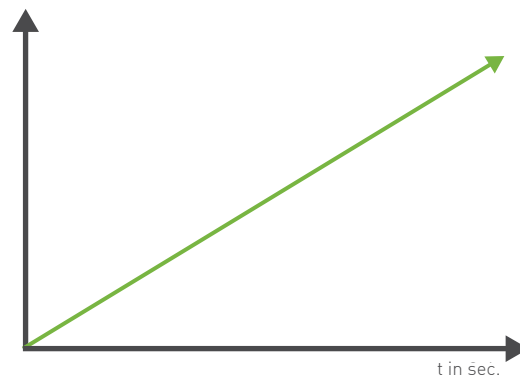
Synthesizer

The synthesiser function can be used for the generation of a discontinuous characteristic with changing signal values. Previously programmed changing signal levels are displayed on the simulator.
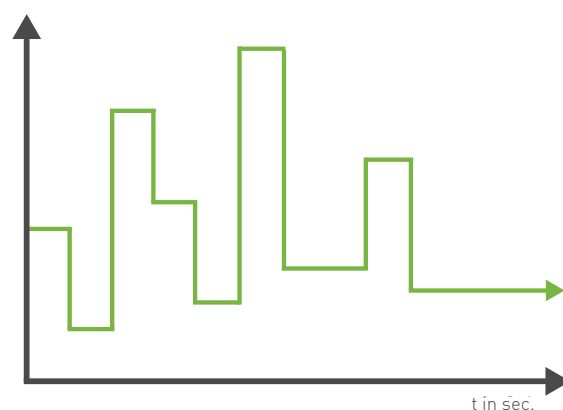
This function allows the simple definition and successive call of different steps, ramps or synthesiser values for easier testing.

t in sec.

Steps function

t in sec.

Ramp function

t in sec.
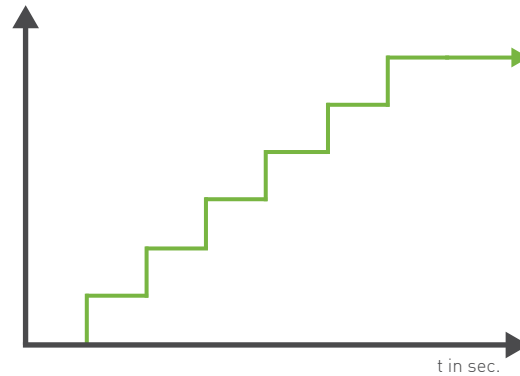
Synthesiser function

User-defined characteristics

Measurement is often based on ideal linear characteristics. In normal practice, sensors, transmitters, transducers, etc., are often subject to non-linear characteristics due to various offset, gradient, linearity or hysteresis errors.

For the faultless measurement or generation of such non-linear characteristics, the measuring input or signal output can be configured with up to ten points by the user. The unit relating to the value is freely editable.
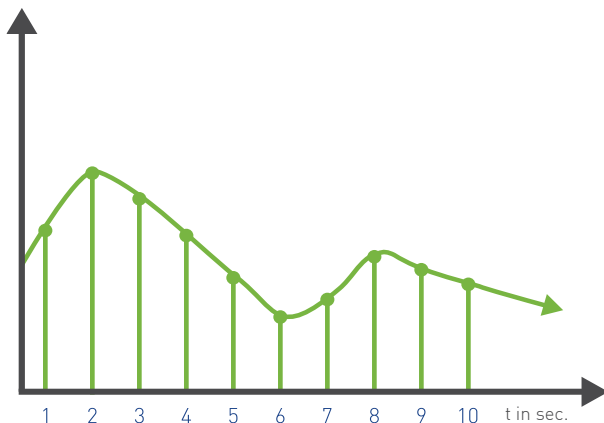
User defined characteristics with 10 points

Calibration and linearisation points

If the measuring characteristics and deviations of a sensor are known and these are available in the form of a calibration certificate, they should be taken into account in measurement to obtain accurate measuring results.

The simulator input can be shifted linearly by offset programming to approach the measuring characteristics of the sensor. This single-point calibration is the simplest and most popular method for improving measuring results.

Multipoint calibration can be used for greater measuring accuracy. The input is configured by means of four linearisation points to the real sensor characteristics to compensate for linearity errors. Up to five different calibration data files can be directly stored and easily recalled as required.

PC connection and memory

A remote control can be connected and all programming carried out via a USB port and PC software. The internal configuration memory of the simulator stores diverse testing and calibration data. These configuration files can easily be retrieved locally and preset functions selected at the push of a button.

Measured values can be stored as required. The data memory allows direct display of tables or graphs on the multifunction display. This enables complete test reports to be stored in the simulator and uploaded to a PC as required.

Software package	
Function	**DataCal**
Memory management	
→ PC download / delete / export	✓
→ Real time data recording	✓
→ Value tables / graphics function	✓
Configuration management	
→ Adjust signals / function	✓
→ PC-Upload	✓
Calibration management	
→ Set up calibration routines	✓
→ Set up calibration certificates	✓
Display management	
→ Remote indication	✓
→ Start / Stop of simulation	✓
Types	
	UC RTD / UC TC / MC 75

Monofunction simulators

EC RTD and UC RTD.2

Type EC RTD

Type UC RTD.2

Signals	EC RTD	UC RTD.2
Resistance thermometer (RTD)		
Generation and measurement of RTD signals	Pt100, Cu50	Pt50, Pt100, Pt200, Pt500, Pt1000, Cu10, Cu50, Ni100, Ni120, Ni1000
Ω-generator function	0...400 Ω	0...3500 Ω
Ω-measurement function	0...450 Ω	0...3600 Ω
Accuracy (of rdg. + const.)	±0.05 %	±0.0012 %
Selectable temperature unit	°C / °F	°C / °F
Measurement of multi-wire connections	2	2 / 3 / 4