

TECHNICAL DATA

# Fluke 710 mA Loop Valve Tester



**KEY VALVE TESTING FUNCTIONS**

Valve signature test, speed test, step test, manual test, bump/partial stroke test

**KEY mA LOOP CALIBRATOR FUNCTIONS**

mA source, mA simulate, mA read, mA read/loop power, and volts read

**VALVETRACK™ SOFTWARE**

Enables upload to a PC for further in-depth analysis of valve measurements that are logged and recorded to memory

**Smart Control Valve Testing is now easier than ever**

The Fluke 710 Valve Testing Loop Calibrator is designed to enable users to perform quick, easy tests on HART smart control valves. Featuring built-in test procedures and an intuitive user interface, the 710 allows users to quickly and easily perform valve tests, while the valve test quick-check results provide at-a-glance diagnostics help you make maintenance decisions faster than ever. The valve health quick-check results let you know whether your valve is in good, marginal or in bad operating condition so you can quickly decide whether additional maintenance is necessary.

**Valve testing and HART communication in a precision loop calibrator**

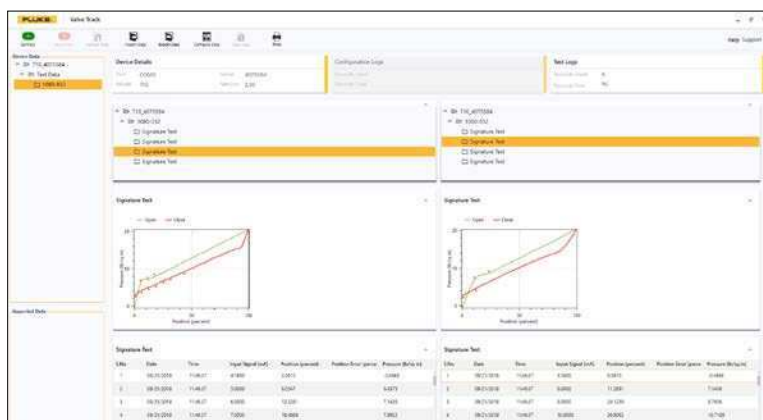
With the 710 Valve Testing Loop Calibrator's built in HART communication function, users can source a 4-20 mA signal to cause the smart control valve to move, while simultaneously interpreting the valve's HART feedback signal to determine whether the valve is moving to the expected position. In addition to positional information, the measured pressure delivered from the valve's internal I/P (which moves the valve) can be determined through the HART communication protocol.

The 710 has built-in test procedures that automatically increase and change the mA signal while monitoring the HART position and pressure feedback from the control valve, giving you a better overall picture of valve health at the simple push of a button.

**Pre-configured valve tests, at-a-glance answers**

Valve test routines built into the 710 include:

- Manual testing; manually change the mA signal and view the HART position and pressure variable information
- Full range ramping of the mA signal from 4 to 20 to 4 mA while recording the 0-100-0% position, or the pressures applied that move the valve from 0-100-0%
- Stepping the mA signal on the input to the valve in steps and evaluating the valves response to the mA input changes
- Speed tests to determine how fast the valve can open or close
- Bump and partial stroke tests that help test valves over a portion of their range so they can be tested in a live process



Performance test comparison in Fluke ValveTrack Software

**ValveTrack™ Software enables further analysis and trending**

Valve tests that are logged and recorded to memory in the 710 are available to upload to included ValveTrack™ analysis software.

ValveTrack™ software enables you to:

- Upload, print and plot logged valve tests taken in the field
- Compare previous uploaded tests to recent tests
- View valve test history by HART Tag ID
- Export valve test data to CSV for additional analysis in Microsoft Excel®

**Saving time, getting answers**

In addition, the 710 offers:

- Logging of HART data in the field. Once recorded by the 710 in the field, the ValveTrack™ software can upload the HART configuration of up to (20) HART devices in your plant and output data in either (.csv) or (.txt) format.
- Data logged mA loop measurements and HART data can be recorded from a particular transmitter for troubleshooting and loop tuning. The data log feature offers selectable capture with recording intervals of 1 to 60 seconds and a logging capacity of 4910 records or 99 individual sessions. Each record contains the mA measurement and all four process variables.

## Product Highlights

- Valve test procedures that deliver Good, Marginal or Bad assessment of a control valve
- Generic HART communication
- Best-in-class mA accuracy at 0.01 % measurement or source value
- Compact rugged design
- Intuitive user interface with Quick-Set knob for fast setup, easy to use
- 24 V DC loop power with mA measure mode (-25 % to 125 %)
- Resolution of 1  $\mu$ A on mA ranges and 1 mV on voltages ranges
- Built in selectable 250  $\Omega$  resistor for HART communications
- Simple two wire connection for all measurements
- Auto shutdown to conserve battery life
- Variable step and ramp time in seconds.

## Specifications

Features	
Functions	mA source, mA simulate, mA read, mA read/loop power, and volts read.
Ranges	mA (0 to 24 mA) and Volts (0 to 30 V dc)
Resolution	1 $\mu$ A on mA ranges and 1mV on voltage range
Accuracy	0.01 % $\pm$ 2 counts all ranges (@ 23 $^{\circ}$ C $\pm$ 5 $^{\circ}$ C [73.4 $^{\circ}$ F $\pm$ 41 $^{\circ}$ F])
Operating temperature range	-10 $^{\circ}$ C to 55 $^{\circ}$ C (14 $^{\circ}$ F to 131 $^{\circ}$ F)
Humidity range	10 to 95 % non-condensing
Stability	20 ppm of F.S./ $^{\circ}$ C from -10 $^{\circ}$ C to 18 $^{\circ}$ C and 28 $^{\circ}$ C to 55 $^{\circ}$ C
Display	128 x 64 pixels, LCD graphic w/backlight, .34 in high digits
Power	6 AAA alkaline
Battery Life	$\geq$ 40 hours continuous use (measure mode using alkaline)
Loop Compliance Voltage	24 V dc @ 20 mA
Voltage Protection	240 V ac
Overload Current Protection	28 mA dc
EMC	EN61326 Annex A (portable instruments)
Dimensions (L x W x D)	15 cm x 9 cm x 3 cm (6 in x 3.6 in x 1.3 in)
Weight	0.3 kg (9.5 ounces)
Included Accessories	Traceable calibration certificate with data, batteries, test leads, USB upload cable and safety manual
Warranty	Three year

## HART communication

The Fluke 710 offers a built-in HART modem to communicate the following HART commands:

- Read sensor PV information
- Read PV output information
- Read and write PV unit type, tag ID name, descriptor, and message
- Read and write PV ranges (upper and lower)
- Enter/exit fixed current mode
- Set zero offset
- Trim DAC zero (mA output 4 mA)
- Trim DAC gain (mA output 20 mA)

## HART Commands for Valves

The 710 includes these unique HART commands to support control valves:

- Autotrim of valve controller

In addition, the Fluke 710 offers:

- Logging of HART data in the field. Once recorded by the 710 in the field, the ValveTrack™ software can upload the HART configuration of up to 20 HART devices in your plant and output data in either .csv or .txt format
- Data-logged mA loop measurements and HART data can be recorded from a particular transmitter for troubleshooting and loop tuning. The data log feature offers selectable capture with recording intervals of 1 to 6 seconds and a logging capacity of 4910 records or 99 individual sessions. Each record contains the mA measurement and all four process variables.

## Standard equipment

- Stackable test lead set
- Extended tooth alligator clip set
- TP220 test probes
- AC280 SureGrip™ hook clips
- Lemo to USB upload/download cable
- ValveTrack™ software (free download)
- Softcase
- Six AAA batteries (installed)
- 709/709H/710 Product manual CD-ROM
- 709/709H/710 Quick reference guide
- 709/709H/710 Safety information

## Ordering information

**Fluke-710 Valve Testing Loop Calibrator with HART**

**Fluke.** *Keeping your world up and running.®*

### Fluke Corporation

PO Box 9090, Everett, WA 98206 U.S.A.

### Fluke Europe B.V.

PO Box 1186, 5602 BD  
Eindhoven, The Netherlands

### For more information call:

In the U.S.A. (800) 443-5853 or

Fax (425) 446-5116

In Europe/M-East/Africa +31 (0) 40 2675 200 or

Fax +31 (0) 40 2675 222

In Canada (800)-36-FLUKE or

Fax (905) 890-6866

From other countries +1 (425) 446-5500 or

Fax +1 (425) 446-5116

Web access: <http://www.fluke.com>

©2018 Fluke Corporation.

Specifications subject to change without notice.

Printed in U.S.A. 6/2018 6011198b-en

**Modification of this document is not permitted without written permission from Fluke Corporation.**