Fluke 754 Documenting Process Calibrator-HART

Key features

- Complete pressure, temperature, and mA loop calibrator
- Troubleshoot and calibrate HART smart digital transmitters
- Create calibration procedures and automatically document results
- Connect to calibration management software

Product overview: Fluke 754 Documenting Process Calibrator-HART

Portable multi-function calibrator simplifies calibration work

Whether you're calibrating instruments, troubleshooting a problem, or running routine maintenance, the Fluke 754 with HART® communication can help you get the job done faster. It does many different tasks quickly and it's the only process calibrator you need to carry. This rugged, reliable, integrated communicating calibrator is ideal for calibrating, maintaining, and troubleshooting HART smart transmitters and other instrumentation.

Measurement and source capabilities:

- AC/DC voltage
- mA loop w/ 24V loop power
- Pressure
- Thermocouples & RTDs
- Frequency
- Resistance

Enhanced process calibrator operation

With the bright white dual display, you'll be able to read both sourced and measured parameters simultaneously. The rechargeable Li-Ion battery offers up to 10 hours uninterrupted usage allowing you to complete one task after another without needing to stop, and also includes direct AC power capabilities if needed. Finally, communicate with HART smart digital transmitters directly through the mA measurement jacks for seamless calibration with fewer connections.

Do more, with less

The 754 does the work of several tools. It sources, simulates and measures pressure, temperature, and electrical signals with one rugged, hand-held device. The powerful built-in HART interface can perform nearly all day-to-day tasks you now perform with a separate digital communicator. It can handle fast-pulsed RTD transmitters and PLCs, with pulses as short as 1 ms. The 754 also measures/sources pressure using any of the Fluke 750P Series Pressure Modules as a reference and boasts many additional features like:

- Custom auto-step and ramping
- Custom units
- User-entered values during test
- One-point and two-point switch testing
- Square root DP flow testing
- Programmable measurement delay

Download procedures, lists, and instructions

The 754 is a power multifunction documenting calibrator that you can use to download procedures, lists, and instructions created with software, or upload data for printing, archiving, and analysis. The tool can hold up to a full week of downloaded procedures and calibration results and offers compatibility with many asset management software. Users can also create and run automated as-found or as-left procedures to satisfy quality programs or regulations, and records and documents results.

For documentation, the 754 automates calibration procedures and captures your data. And, of course, it helps you meet rigorous standards like ISO 9000, FDA, EPA, and OSHA regulations. Plus, the graphical screen, Li-Ion battery for longer life, USB port, and accessories help you work smarter and faster.

To create a seamless/paperless calibration management system consider adding Fluke DPCTrack2 Calibration Management software.

Related blog posts:

- Calibrating a HART temperature transmitter

Specifications: Fluke 754 Documenting Process Calibrator-HART

Measurement Accuracy			
	Range/ Resolution	**1 Year**	**2 Years**
	100.000 mV	0.02% + 0.005 mV	0.03% + 0.005 mV
Voltage DC	3.00000 V	0.02% + 0.00005 V	0.03% + 0.00005 V
	30.0000 V	0.02% + 0.0005 V	0.03% + 0.0005 V
	300.00 V	0.05% + 0.05 V	0.07% + 0.05 V

Voltage AC	**3.000 V (40 Hz to 500 Hz) / 0.001 V**	0.5% + 0.002 V	1.0% + 0.004 V
	30.00 V (40 Hz to 500 Hz) / 0.01 V	0.5% + 0.02 V	1.0% + 0.04 V
	300.0 V (40 Hz to 500 Hz) / 0.1 V	0.5% + 0.2 V	1.0% + 0.2 V
Current DC	**30.000 mA**	0.01% + 5 uA	0.015% + 7 uA
	110.00 mA	0.01% + 20 uA	0.015% + 30 uA
Resistance	**10.000 Ω**	0.05% + 50 mΩ	0.07% + 70 mΩ
	100.00 Ω	0.05% + 50 mΩ	0.07% + 70 mΩ
	1.0000 kΩ	0.05% + 500 mΩ	0.07% + 0.5 Ω
	10.000 kΩ	0.1% + 10 Ω	0.15% + 15 Ω
Frequency	**1.00 to 110.00 Hz / 0.01 Hz**		0.05 Hz
	110.1 to 1100.0 Hz / 0.1 Hz		0.5 Hz
	1.101 to 11.000 kHz / 0.001 kHz		0.005 kHz
	11.01 to 50.00 kHz / 0.01 kHz		0.05 kHz

Source Accuracy			
		1 Year	**2 Years**
Voltage DC	**100.000 mV**	0.01% + 0.005 mV	0.015% + 0.005 mV
	1.00000 V	0.01% + 0.00005 V	0.015% + 0.0005 V
	15.0000 V	0.01% + 0.0005 V	0.015% + 0.0005 V
Current DC	**22.000 mA (source)**	0.01% + 0.003 mA	0.02% + 0.003 mA
	Current sink (simulate)	0.02% + 0.007 mA	0.04% + 0.007 mA
Resistance	**10.000 Ω**	0.01% + 10 mΩ	0.015% + 15 mΩ
	100.00 Ω	0.01% + 20 mΩ	0.015% + 30 mΩ
	1.0000 kΩ	0.02% + 0.2 Ω	0.03% + 0.3 Ω
	10.000 kΩ	0.02% + 3 Ω	0.03% + 5 Ω
Frequency	**0.1 to 10.99 Hz**		0.01 Hz
	0.01 to 10.99 Hz		0.01 Hz
	11.00 to 109.99 Hz		0.1 Hz
	110.0 to 1099.9 Hz		0.1 Hz
	1.100 to 21.999 kHz		0.002 kHz
	22.000 to 50.000 kHz		0.005 kHz

Technical Data			

Data log functions	**Measure functions**	Voltage, current, resistance, frequency, temperature, pressure	
	Reading rate	1, 2, 5, 10, 20, 30, or 60 readings/minute	
	Maximum record length	8000 readings (7980 for 30 or 60 readings/minute)	
	Ramp functions	**Source functions**	Voltage, current, resistance, frequency, temperature
		Rate	4 steps/second
		Trip detect	Continuity or voltage (continuity detection not available when sourcing current)
Loop power function	**Voltage**	Selectable, 26 V	
	Accuracy	10%, 18 V minimum at 22 mA	
	Maximum current	25 mA, short circuit protected	
	Maximum input voltage	50 V DC	
Step functions	**Source functions**	Voltage, current, resistance, frequency, temperature	
	Manual step	Selectable step, change with arrow buttons	
	Autostep	Fully programmable for function, start delay, stepvalue, time per step, repeat	

Environmental Specifications

Operating temperature	-10°C to +50°C
Storage temperature	-20°C to +60°C
Dust/water resistance	Meets IP52, IEC 529
Operating altitude	3000 m above mean sea level (9842 ft)

Safety Specifications

Agency approvals	CAN/CSA C22.2 No 1010.1-92, ASNI/ISA S82.01-1994, UL3111, and EN610-1:1993

Mechanical and General Specifications

Size	136 x 245 x 63 mm (5.4 x 9.6 x 2.5 in)
Weight	1.2 kg (2.7 lb)
Batteries	Internal Battery Pack Li-ion: 7.2V,4400mAh, 30 Wh
Battery life	>8 hours typical
Battery replacement	Replace without opening calibrator; no tools required
Side port connections	Pressure module connector
	USB Connector to interface to your PC
	Digital instrument (HART) connector
	Connection for optional battery charger/eliminator
Data storage capacity	1 week of calibration procedures results

90 day specifications	The standard specification interval for the 750 Seriesare 1 and 2 years.
	Typical 90 day measurement and source accuracy can be estimated by dividing the one year "% of reading" or "% of output" specifications by 2.
	Floor specifications, expressed as "% of full scale" or "counts" or "ohms" remain constant.

Temperature, Resistance Temperature Detectors

Degrees or % of reading - Type (α)	Range °C	Measure °C[1]	
		1 year	**2 year**
100 Ω Pt (385)	-200 to 100 100 to 800	0.07°C 0.02% + 0.05°C	0.14°C 0.04% + 0.10°C
200 Ω Pt (385)	-200 to 100 100 to 630	0.07°C 0.02% + 0.05°C	0.14°C 0.04% + 0.10°C
500 Ω Pt (385)	-200 to 100 100 to 630	0.07°C 0.02% + 0.05°C	0.14°C 0.04% + 0.10°C
1000 Ω Pt (385)	-200 to 100 100 to 630	0.07°C 0.02% + 0.05°C	0.14°C 0.04% + 0.10°C
100 Ω Pt (3916)	-200 to 100 100 to 630	0.07°C 0.02% + 0.05°C	0.14°C 0.04% + 0.10°C
100 Ω Pt (3926)	-200 to 100 100 to 630	0.08°C 0.02% + 0.06°C	0.16°C 0.04% + 0.12°C
10 Ω Cu (427)	-100 to 260	0.2°C	0.4°C
120 Ω Ni (672)	-80 to 260	0.1°C	0.2°C

Source current	Source °C		Allowable current[2]
	1 year	**2 year**	
1 mA	0.05°C 0.0125% + 0.04°C	0.10°C 0.025% + 0.08°C	0.1 mA to 10 mA
500 µA	0.06°C 0.017% + 0.05°C	0.12°C 0.034% + 0.10°C	0.1 mA to 1 mA
250 µA	0.06°C 0.017% + 0.05°C	0.12°C 0.034% + 0.10°C	0.1 mA to 1 mA
150 µA	0.06 C 0.017% + 0.05°C	0.12 C 0.034% + 0.10°C	0.1 mA to 1 mA
1 mA	0.05°C 0.0125% + 0.04°C	0.10°C 0.025% + 0.08°C	0.1 mA to 10 mA
1 mA	0.05°C 0.0125% + 0.04°C	0.10°C 0.025% + 0.08°C	0.1 mA to 10 mA
3 mA	0.2°C	0.4°C	0.1 mA to 10 mA
1 mA	0.04°C	0.08°C	0.1 mA to 10 mA

1. For two and three-wire RTD measurements, add 0.4°C to the specifications.
2. Supports pulsed transmitters and PLCs with pulse times as short as 1 ms

Temperature, Thermocouples

Type	Source °C	Measure °C	Source °C

		1 year	2 years	1 year	2 years
E	**-250 to -200**	1.3	2.0	0.6	0.9
	-200 to -100	0.5	0.8	0.3	0.4
	-100 to 600	0.3	0.4	0.3	0.4
	600 to 1000	0.4	0.6	0.2	0.3
N	**-200 to -100**	1.0	1.5	0.6	0.9
	-100 to 900	0.5	0.8	0.5	0.8
	900 to 1300	0.6	0.9	0.3	0.4
J	**-210 to -100**	0.6	0.9	0.3	0.4
	-100 to 800	0.3	0.4	0.2	0.3
	800 to 1200	0.5	0.8	0.3	0.3
K	**-200 to -100**	0.7	1.0	0.4	0.6
	-100 to 400	0.3	0.4	0.3	0.4
	400 to 1200	0.5	0.8	0.3	0.4
	1200 to 1372	0.7	1.0	0.3	0.4
T	**-250 to -200**	1.7	2.5	0.9	1.4
	-200 to 0	0.6	0.9	0.4	0.6
	0 to 400	0.3	0.4	0.3	0.4
B	**600 to 800**	1.3	2.0	1.0	1.5
	800 to 1000	1.0	1.5	0.8	1.2
	1000 to 1820	0.9	1.3	0.8	1.2
R	**-20 to 0**	2.3	2.8	1.2	1.8
	0 to 100	1.5	2.2	1.1	1.7
	100 to 1767	1.0	1.5	0.9	1.4
S	**-20 to 0**	2.3	2.8	1.2	1.8
	0 to 200	1.5	2.1	1.1	1.7
	200 to 1400	0.9	1.4	0.9	1.4
	1400 to 1767	1.1	1.7	1.0	1.5
C	**0 to 800**	0.6	0.9	0.6	0.9
	800 to 1200	0.8	1.2	0.7	1.0
	1200 to 1800	1.1	1.6	0.9	1.4
	1800 to 2316	2.0	3.0	1.3	2.0
L	**-200 to -100**	0.6	0.9	0.3	0.4
	-100 to 800	0.3	0.4	0.2	0.3
	800 to 900	0.5	0.8	0.2	0.3

https://www.fluke.com/en-us/product/calibration-tools/multifunction-calibrators/fluke-754

U	**-200 to 0**	0.6	0.9	0.4	0.6
	0 to 600	0.3	0.4	0.3	0.4
BP	**0 to 1000**	1.0	1.5	0.4	0.6
	1000 to 2000	1.6	2.4	0.6	0.9
	2000 to 2500	2.0	3.0	0.8	1.2
XK	**-200 to 300**	0.2	0.3	0.2	0.5
	300 to 800	0.4	0.6	0.3	0.6

Ordering information

Fluke 754

Fluke 754 Documenting Process Calibrator-HART

Includes:

- BC7240 battery charger
- Li-on BP7240 battery pack
- DPCTrack 2™ Sample Software
- Instruction manual
- NIST-traceable calibration report and data
- Three sets of TP220 test probes with three sets of "extended tooth" alligator clips
- Two sets AC280 hook clips
- C799 Soft Field Case
- USB communication cable, Fluke 754HHC HART communications cable

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https://www.fluke.com/en-us/product/calibration-tools/multifunction-calibrators/fluke-754