TECHNICAL DATA

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

Fluke 754 Documenting Process Calibrator with HART communication does the work of many tools

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 so many different tasks, so quickly and so well, it's the only process calibrator you need to carry. This rugged, reliable integrated communicating calibrator is ideal for calibrating, maintaining, and troubleshooting HART and other instrumentation.

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 powerful built-in HART interface is capable of performing nearly all the day-to-day tasks you now perform with a separate communicator.

In fact, the 754 does the work of several tools. It sources, simulates and measures pressure, temperature, and electrical signals with one rugged, hand-held device. 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 new improved 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 for use with your Fluke 753 and 754 or even legacy Fluke 743 and 744 calibrators.

Other useful features:

- Handles fast pulsed RTD transmitters and PLCs, with pulses as short as 1 ms
- Measures/sources pressure using any of 29 Fluke 700Pxx Pressure Modules
- Creates and runs automated as-found/as-left procedures to satisfy quality programs or regulations, and records and documents results
- Holds up to a full week of downloaded procedures and calibration results
- Uses many features like autostep, custom units, user-entered values during test, one-point and two-point switch testing, square root DP flow testing, programmable measurement delay and more
- Provides easy-to-use multi-lingual interface
- Features a bright white dual display for reading both sourced and measured parameters simultaneously
- Includes rechargeable Li-Ion battery for 10 hour uninterrupted use
- Comes with three-year warranty and DPC/Track Sample software
- Offers compatibility with many asset management software packages

Related blog posts:

Calibrating a HART temperature transmitter

Specifications: Fluke 754 Documenting Process Calibrator-HART

Measurement Accuracy			
	Range/ Resolution	**1 Year**	**2 Years**
Voltage DC	100.000 mV	0.02% + 0.005 mV	0.03% + 0.005 mV
	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** □	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
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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