

GE
Sensing & Inspection Technologies

Druck UPS-II

Loop Calibrator

User manual - K0434



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Symbols



This equipment meets the requirements of all relevant European safety directives. The equipment carries the CE mark.



Do not dispose of this product as household waste. Use an approved organisation that collects and/or recycles waste electrical and electronic equipment. For more information:

Contact us at www.gesensinginspection.com

Battery Safety

This instrument is fitted with four size AA batteries either rechargeable (nickel cadmium) or non-rechargeable (alkaline).

Before storing this instrument remove the batteries.

When fitting batteries make sure the electrical contacts are clean and observe the correct polarity.

The battery compartment should be inspected for corrosion caused by leaking batteries. Corrosion must be removed using approved methods*.

When storing and transporting batteries make sure that they cannot be short circuited. A short-circuited battery can become very hot and can, in certain circumstances, explode. It is recommended that a suitable container is used for storing and transporting batteries.

Dispose of old batteries using a safe, approved method.*

*Refer to the manufacturer for this information:

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Introduction

The Druck UPS-II Loop Calibrator can supply power (source mode) and produce readings (measure mode) to perform field calibrations on 2-wire devices.

Operation

For different applications place switches in position as indicated below:

MODE	OUT	READ	EXT.	INT.
Milliamp. source	•			•
Transmitter sim.	•		•	
Milliamp measure		•	•	
Transmitter cal.		•		•

(transmitters are 4-20mA 2 wire)

The UPS-II has special functions for fixed steps and readings in %. To open menu press * for 2 seconds. Scroll menu contents with ↓ key and make your choice. Press * again to confirm your choice.

MENU CHOICE	SWITCH	DISPLAY READING IN:
4-20mA lin #	out	0 to 22mA or % span
0-20mA lin	out	0 to 22mA or % span
4-20mA flow	out	0 to 22mA or % span
0-20mA flow	out	0 to 22mA or % span
4-20mA valve	out	0 to 22mA
4-20mA lin #	read	0 to 22mA or % span
0-20mA lin	read	0 to 22mA or % span
4-20mA flow	read	0 to 22mA or % span
0-20mA flow	read	0 to 22mA or % span

Note: Functions marked with # are directly available after out or read selection. Flow = SQ. RT in %.

Press mA/% key to read in mA or %. Press * to select "continuous" or "fixed steps" in output mode.

Fixed Steps

To output fixed calibration currents in series as indicated below: choose range from the menu and select "fixed steps".

Press ↑ or ↓ to advance one step

4-20mA lin#	4 - 8 - 12 - 16 - 20mA
0-20mA lin	0 - 5 - 10 - 15 - 20mA
4-20mA flow	4 - 5 - 8 - 13 - 20mA
0-20mA flow	0 - 1,25 - 5 - 11,25 - 20mA
4-20mA valve	3,8-4-4,2 - 12 - 19 - 20 - 21mA

To output these currents automatically select "fixed steps" and press $\uparrow \downarrow$ keys simultaneously. Time between steps is 10 seconds. Stepping starts at the low end of span.

To return to manual press \uparrow or \downarrow .

Valve mode

In the valve mode, stepping will be 3,8 - 4 - 4,2 or 19 - 20 - 21 mA. Select appropriate current to start auto-stepping.

Ramp mode

To output a continuous up/down ramp cycle press $\uparrow \downarrow$ keys simultaneously. Ramp travel time between range limits is 60 seconds cycle starts at displayed value. Press \uparrow or \downarrow first to select start direction. To return to manual press \uparrow or \downarrow .

Batteries

Use alkaline or rechargeable NiCad batteries only. The display shows **LOBAT** when battery capacity goes low.

CAUTION

DO NOT LEAVE DISCHARGED BATTERIES IN THE INSTRUMENT. OLD BATTERIES CAN LEAK AND CAUSE CORROSION.

WHEN FITTING THE BATTERIES MAKE SURE THE ELECTRICAL CONTACTS ARE CLEAN AND OBSERVE THE CORRECT POLARITY

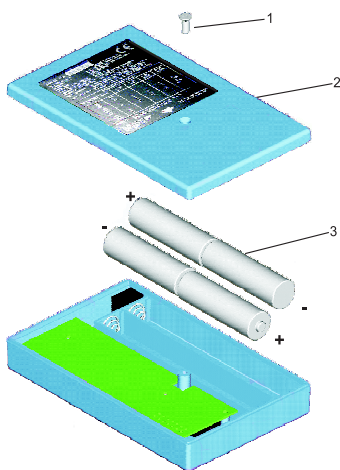
- 1 Centre screw.
- 2 Battery compartment cover.
- 3 Batteries size AA x4.

Replacement

Unscrew the centre screw (1).

Remove the cover (2).

Make sure the polarity of the new batteries (3) is correct.



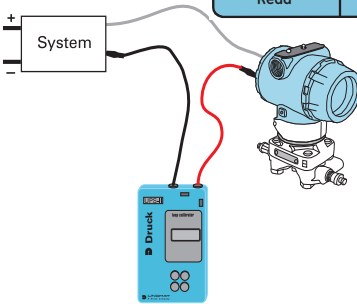
K0434 Issue No. 2

2

UPS-II Loop Calibrator Technical Notes

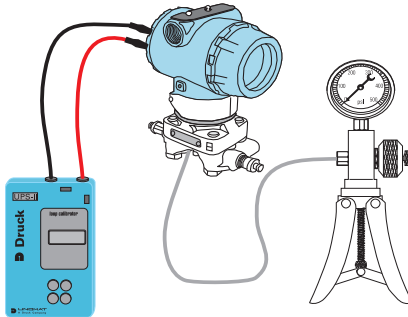
Current reading

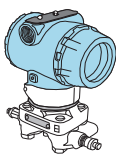
Switch positions	
Function	Loop power
Read	Ext.



Transmitter Calibration

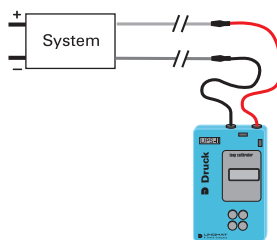
Switch positions	
Function	Loop power
Read	Int.





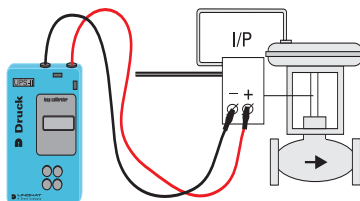
Transmitter Simulation

Switch positions	
Function	Loop power
Out	Ext.



Valve Stroking

Switch positions	
Function	Loop power
Out	Int.



Calibration Instructions

General

A calibration period of 12 months is recommended. The actual calibration interval depends on instrument usage and the total measurement uncertainty acceptable for the specified application.

The UPS-II is a precise measuring instrument and the test equipment and conditions of test must be suitable for the type of work. The calibration check and calibration adjustment should be carried out in a controlled environment by a calibration technician*.

The manufacturer offers a comprehensive and, if required, UKAS accredited calibration service.

* *A calibration technician must have the necessary technical knowledge, documentation, special test equipment and tools to carry out the calibration work on this equipment.*

Calibration Equipment

The following tables give the accuracy requirements for the calibration equipment and the UPS-II.

Calibration requires a stable temperature of $21^{\circ} \pm 1^{\circ}\text{C}$ ($70^{\circ} \pm 2^{\circ}\text{F}$).

UPS-II measure mode

Table 1

Applied mA	Permitted UPS-II error (mA)	Calibrator error (mA)
0	0.007	0
4	0.007	0.00014
12	0.007	0.00030
20	0.007	0.00046

UPS-II source mode

Table 2

Applied mA	Permitted UPS-II error (mA)	Calibrator error (mA)
0	0.01	0
4	0.01	0.00012
12	0.01	0.00011
20	0.01	0.00015

Calibration Check

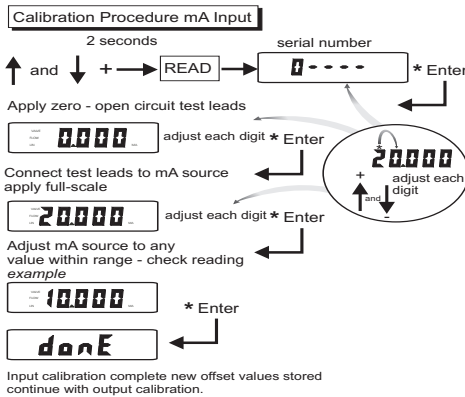
1. Check the instrument for accuracy in measure and source modes, if there is an error greater than the permitted error, the instrument requires a calibration adjustment.

Calibration Adjustment

Note: For complete accuracy, the measure mode and source mode adjustment must be carried together and in the following order.

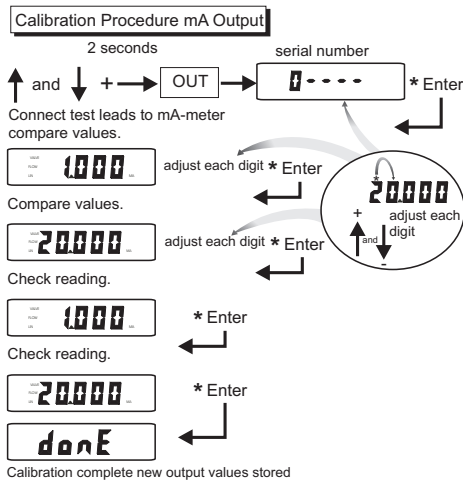
Measure mode

1. Connect the UPS-II to the electrical calibrator. Switch on the electrical calibrator and allow it to thermally stabilise.
2. Switch on the UPS-II and allow the instrument to thermally stabilise.
3. Select EXT on the LOOP PWR slide switch. Use the display menu to select the calibration values:



Source mode

1. Connect the UPS-II to the electrical calibrator. Switch on the electrical calibrator and allow it to thermally stabilise.
2. Switch on the UPS-II and allow the instrument to thermally stabilise.
3. Select INT on the LOOP PWR slide switch. Use the display menu to select the calibration values:



Completion

1. Switch off and disconnect the calibration equipment.
2. Update the calibration records for the instrument.

Specifications

Range.....	0 to 22.2 mA
Accuracy.....	0,05% of range
Resolution.....	10 microamps
Temperature effect.....	0,003%/°C - 0,0015%/°F
Internal loop power.....	24 VDC stabilized
External loop power.....	48 VDC max.
Measurement input.....	12 ohms fused
Drive capability.....	900 ohms
Operating temperature.....	-10°C to 50°C - 14°F to 122°F
Storage temperature	-20°C to 60°C - -4°F to 140°F
Battery.....	4 x 1.5V alkaline or rechargeable size AA
Battery life (alkaline).....	source 12mA; 18 hours
.....	measure 900 hours
Loop mismatch.....	flashes "LOOP"
Low battery.....	flashes "LOBAT"
Over-range.....	flashes "EEEE"
Reversed polarity.....	flashes "POL"
Adaptor line/6VDC	
230V/50Hz.....	part numbers - UNO-13600-1 (UK)
.....	- UNO-13600-2 (Europe)
110V/60Hz.....	part number - UNO-13600-3 (USA)
Housing.....	high impact ABS
Size.....	3" x 5" x 0,83"
.....	77 x 124 x 21 mm
Weight.....	212 grams - 7.5 oz
.....	(including batteries)