

### INTRODUCTION

Thank you for choosing an HK Instruments DPT-Flow-Batt series air flow meter. The DPT-Flow-Batt series is intended for use in environments and applications where electricity is not available. The DPT-Flow-Batt measures air flow, velocity and differential pressure. It is designed to be used in combination with centrifugal fans that provide differential pressure connections and K-values.

### APPLICATIONS

DPT-Flow series devices are commonly used in HVAC/R systems for:

- air flow monitoring across centrifugal fans and blowers
- in-duct air flow monitoring

### SPECIFICATIONS

#### Performance

**Accuracy (from FS):**

±1.5 %

(Accuracy specifications include: general accuracy, temperature drift, linearity, hysteresis, long term stability, and repetition error)

**Thermal effects:**

Temperature compensated across the full spectrum of capability

**Overpressure:**

Proof pressure: 25 kPa

**Zero point calibration:**

Manual pushbutton

**Response time:**

1.0–10 s, selectable via menu

#### Technical Specifications

**Media compatibility:**

Dry air or non-aggressive gases

**Pressure units (select via menu):**

Pa, kPa, mbar, inWC, mmWC

**Flow units (select via menu):**

Volume: m<sup>3</sup>/s, m<sup>3</sup>/hr, cfm, l/s

Velocity: m/s, ft/min

**Measuring element:**

MEMS

**Environment:**

Operating temperature: -10...50 °C

Storage temperature: -20...70 °C

Humidity: 0 to 95 % rH, non condensing

**Physical****Dimensions:**

Case: 102.0 x 71.5 x 36.0 mm

**Weight:**

150 g

**Mounting:**

2 each 4.3 mm screw holes, one slotted

**Materials:**

Case: ABS

Lid: PC

Duct connectors: ABS

Tubing: PVC

**Protection standard:**

IP54

**Display**

2-line display (12 characters/line)

Line 1: Volume or velocity measurement

Line 2: Pressure measurement

Size: 46.0 x 14.5 mm

### WARNING

- READ THESE INSTRUCTIONS CAREFULLY BEFORE ATTEMPTING TO INSTALL, OPERATE OR SERVICE THIS DEVICE.
- Failure to observe safety information and comply with instructions can result in PERSONAL INJURY, DEATH AND/OR PROPERTY DAMAGE.
- To avoid potential fire and/or explosion do not use in potentially flammable or explosive atmospheres.
- Retain these instructions for future reference.
- This product, when installed, will be part of an engineered system whose specifications and performance characteristics are not designed or controlled by HK Instruments. Review applications and national and local codes to assure that the installation will be functional and safe. Use only experienced and knowledgeable technicians to install this device.

**Electrical connections:**

9 VDC battery connector

**Pressure fittings**

Male ø 5.0 mm and 6.3 mm

**Electrical**

Current consumption:

~20 mA on active mode

**Conformance**

Meets requirements for CE marking:

EMC Directive 2014/30/EU

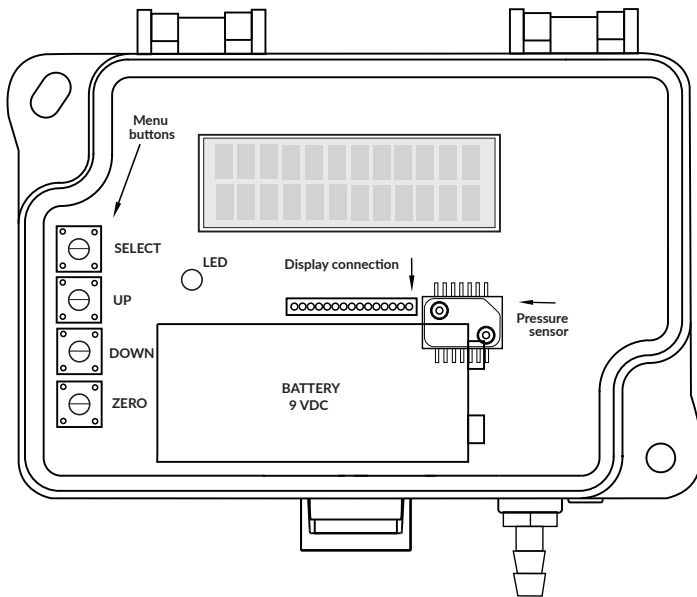
RoHS Directive 2011/65/EU

WEEE Directive 2012/19/EU

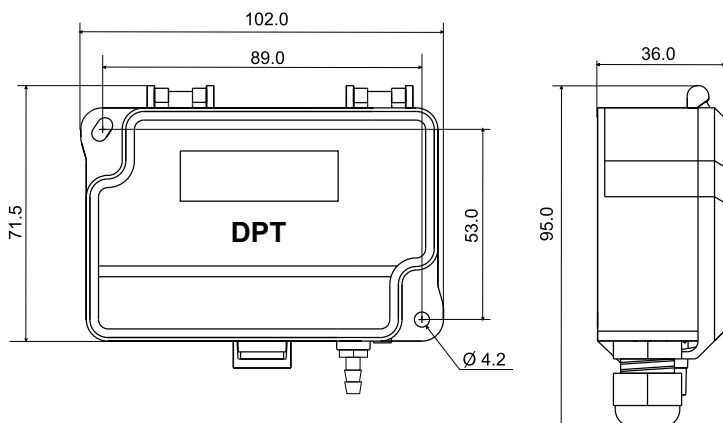
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= ISO 9001 = ISO 14001 =



## SCHEMATICS



## DIMENSIONAL DRAWINGS



## INSTALLATION

- 1) Mount the device in the desired location (see step 1).
- 2) Push the button on the top right corner of the housing to turn on the device.
- 3) The device is now ready for configuration.

### STEP 1: MOUNTING THE DEVICE

- 1) Select the mounting location (duct, wall, panel).
- 2) Use the device as a template and mark the screw holes.
- 3) Mount with appropriate screws.

Figure 1a - Surface mounting

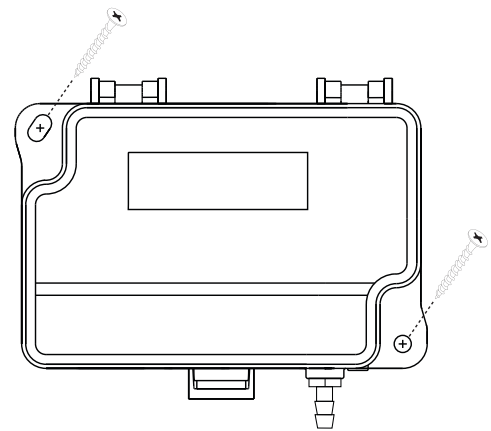


Figure 1b - Mounting orientation

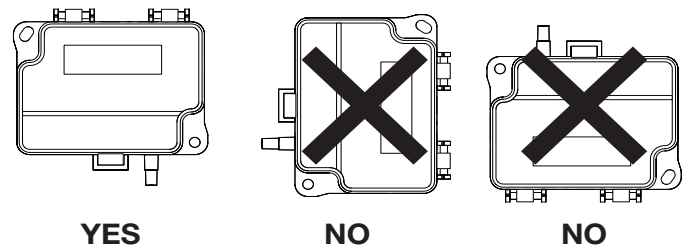
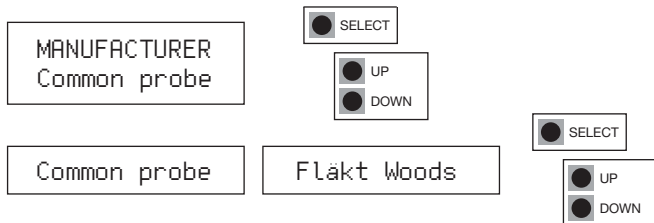


Figure 1c - Application connections

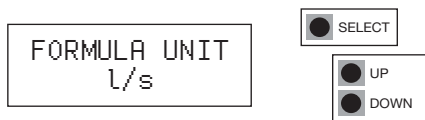
The pressure tubes are connected to a flow measurement probe (i.e. FloXact), or to the measurement ports specified by the fan manufacturer. Please see the FloXact installation guide or the fan manufacturer's technical specifications for more information.

## STEP 2: CONFIGURATION

- 1) Start the transmitter by pushing the button on the housing.
- 2) Select the functioning mode of the flow meter:
  - Select *Manufacturer* when connecting DPT-Flow to a fan with pressure measurement points
  - Select *Common probe* when using DPT-Flow with a common measurement probe that follows the formula:  $q = k \cdot \sqrt{\Delta P}$  (i.e. FloXact)



- 3) If *Common probe* selected: select measurement units used in the formula (aka Formula unit) (i.e. l/s)



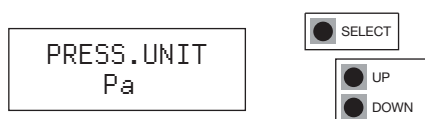
- 4) Select K-value
  - a. If manufacturer selected in step 1: Each fan has a specific K-value. Select the K-value from fan manufacturer's specifications.

Manufacturer:	K-value:
Fläktwoods	k = 0,3...99
Rosenberg	k = 37...800
Nicotra	k = 10...1500
Comefri	k = 10...2000
Ziehl	k = 10...1500
Ebm-papst	k = 10...1500
Gebhardt	k = 50...4700

- b. If *Common probe* selected in step 1: Each common probe has a specific K-value. Select the K-value from common probe manufacturer's specifications. Available K-value range: 0.001...9999.000



- 5) Select pressure unit for display and output: Pa, kPa, mbar, inWC or mmWC

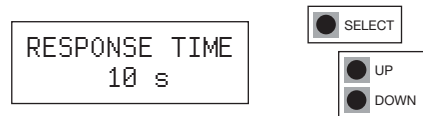


## CONFIGURATION CONTINUED

- 6) Select flow unit for display and output:
  - Flow volume: m<sup>3</sup>/s, m<sup>3</sup>/h, cfm, l/s
  - Velocity: m/s, f/min



- 7) Response time: Select response time between 1.0-10 s.



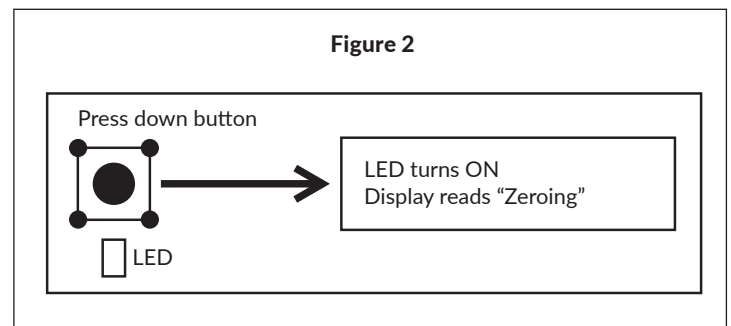
- 8) Push select button to save changes and to exit menu.



## STEP 3: ZEROING THE DEVICE

Manual Pushbutton zero point calibration

- a) Disconnect both pressure tubes from the pressure ports labeled + and -.
- b) Push down the zero button until the LED light (red) turns on and the display reads "zeroing". (see figure 3)
- c) The zeroing of the device will proceed automatically. Zeroing is complete when the LED turns off, and the display reads 0.
- d) Reinstall the pressure tubes ensuring that the High pressure tube is connected to the port labeled +, and the Low pressure tube is connected to the port labeled -.



## RECYCLING/DISPOSAL

The parts left over from installation should be recycled according to your local instructions. Decommissioned devices should be taken to a recycling site that specializes in electronic waste.



## WARRANTY POLICY

The seller is obligated to provide a warranty of five years for the delivered goods regarding material and manufacturing. The warranty period is considered to start on the delivery date of the product. If a defect in raw materials or a production flaw is found, the seller is obligated, when the product is sent to the seller without delay or before expiration of the warranty, to amend the mistake at his/her discretion either by repairing the defective product or by delivering free of charge to the buyer a new flawless product and sending it to the buyer. Delivery costs for the repair under warranty will be paid by the buyer and the return costs by the seller. The warranty does not comprise damages caused by accident, lightning, flood or other natural phenomenon, normal wear and tear, improper or careless handling, abnormal use, overloading, improper storage, incorrect care or reconstruction, or changes and installation work not done by the seller or his/her authorized representative. The selection of materials for devices prone to corrosion is the buyer's responsibility, unless otherwise is legally agreed upon. Should the manufacturer alter the structure of the device, the seller is not obligated to make comparable changes to devices already purchased. Appealing for warranty requires that the buyer has correctly fulfilled his/her duties arisen from the delivery and stated in the contract. The seller will give a new warranty for goods that have been replaced or repaired within the warranty, however only to the expiration of the original product's warranty time. The warranty includes the repair of a defective part or device, or if needed, a new part or device, but not installation or exchange costs. Under no circumstance is the seller liable for damages compensation for indirect damage.