

# SENSO-X<sup>®</sup>

## Get Smart



**The new generation with Oppermann NFC<sup>®</sup>.  
Quicker, currentless parameterization.**

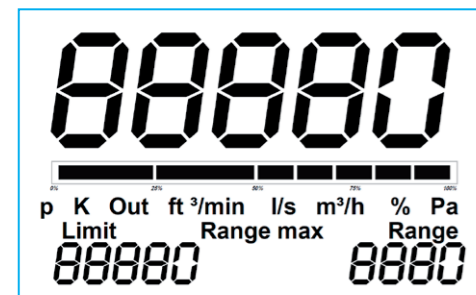
Differential Pressure  
Volume Flow Transmitter



## Highlights

- Extremely **large, non-reflecting display** for optimal readability also at a distance
- Direct **volume flow indication in m<sup>3</sup>/h, l/s or ft<sup>3</sup>/min**
- Linear output signal** for volume flow or pressure or filter contamination (**0 – 10 V or 4 – 20 mA**)
- Adjustable working ranges**
- Change-over contact** for limit signaling
- Filter contamination indication in %** (e.g. i.a.w. VDI 6022) or pressure indication in Pa
- High measuring accuracy**
- Ideal **alternative to inclined tube manometer** or mechanical **indicating instrument**
- Surface mounted housings available for all types**
- Downward compatible with SENSO**
- Display with additional bar showing limit value in %**
- Additional key for manual zero adjustment**
- New digital I2C pressure sensors with minimal drift and high long-time stability**
- Spring terminals for quicker wiring**
- Oppermann NFC<sup>®</sup> parameterization**
- Additional temperature /absolute pressure transducer**
- Optional Modbus bus versions**
- Three-colour LED (red/green/yellow)**
- New version VPX1000 for volume flow measurement with greater accuracy up to 1,000 Pa**

## New Display



The new display has an additional indicator bar showing the current reading as a percentage of the selected limit value, thus providing the user with even quicker visual feedback.

The lower middle segment displays the function indicators whenever parameterization is done manually rather than by NFC. The three-colour LED indicates the operating state, with green for normal operation, red for limit value overshoot or undershoot and yellow for fault.

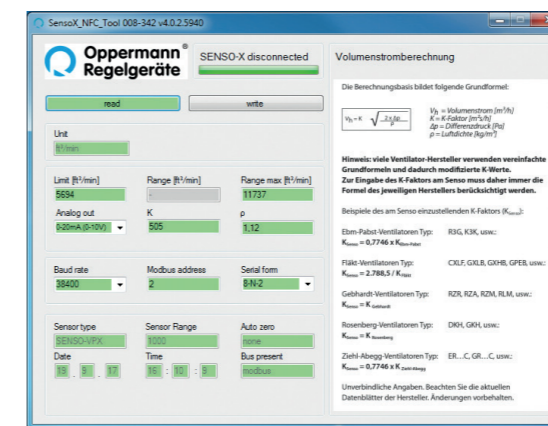
## NFC Parameterization



NFC stands for Near Field Communication, which is a method of reading parameterization data in or out without power draw from the transmitter.

**Get smart – Save 90 percent time!**

NFC **cuts initialization time by almost 90 percent** compared with conventional parameterization or manual read-out of data using a display and keyboard, thus saving costs.



No matter whether it's built in or just placed on a table or whether it has a power supply or not, with its miniature NFC reader the **SENSO-X<sup>®</sup>** is always ready to read all data in or out. No plugging in or out, no setting up of connections – just plug and play. But the biggest advantage is that the **SENSO-X<sup>®</sup>** doesn't even need a power supply. And security is guaranteed by the fact that NFC technology allows a transmission range of a few centimeters at most.

Oppermann is the first manufacturer to implement this technology as a standard feature in sensors. Of course it's always possible to stick to the conventional keying-in method. A separate unit called a **SENSO-X<sup>®</sup>** NFC Reader / Writer, connected to the computer via USB, is required for performing configurations with **Oppermann NFC<sup>®</sup>**. The configuration software NFC-RW is available online as a download.

## Vast Functionality in High-End Design

Our **SENSO-X**® product line brings together the functions of recording, displaying, signaling and switching of differential pressure and volume flow in a consistent device concept with an optimized mounting philosophy and appealing design.

**SENSO-X**® provides a unitary concept that can take the place of any standard differential pressure indicator, monitor or transmitter as well as any volume flow indicator or monitor.

## Clever Design

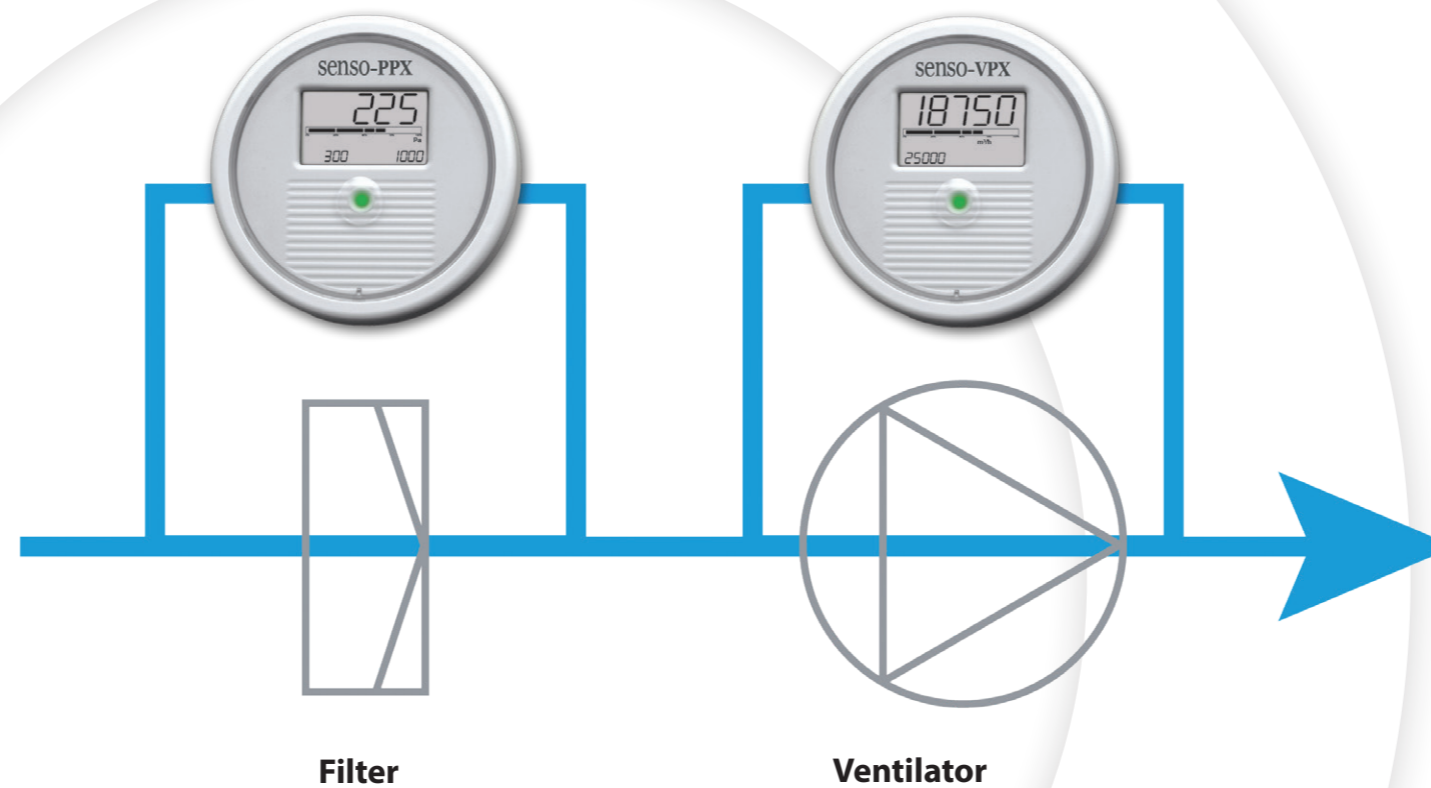
The design solution is based on an always identical installation unit with integrated electronics and a display. The devices are optimized for use in air-conditioning equipment and control cabinets. All connectors for pressure measurement and optional electrical connectors are located on the rear side of the device. The front panel can just be taken off, making it very easy to make electrical connections and set parameters using the controls or the NFC Reader-Writer. Thanks to the new surface-mounted housing the device can be easily mounted on the outside of ventilation units. With this version all connectors are located at the bottom of the housing.

### Differential Pressure **SENSO-X**® PPX

$\Delta P$  in Pa or  
filter contamination in %

### Flow Volume **SENSO-X**® VPX

$m^3/h$  (0 – 4,000 Pa)  
via ring nozzle of ventilator  
(entry of k-value and air density  $\rho$ )



## Easy to Read

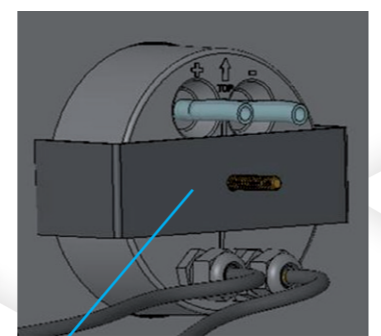
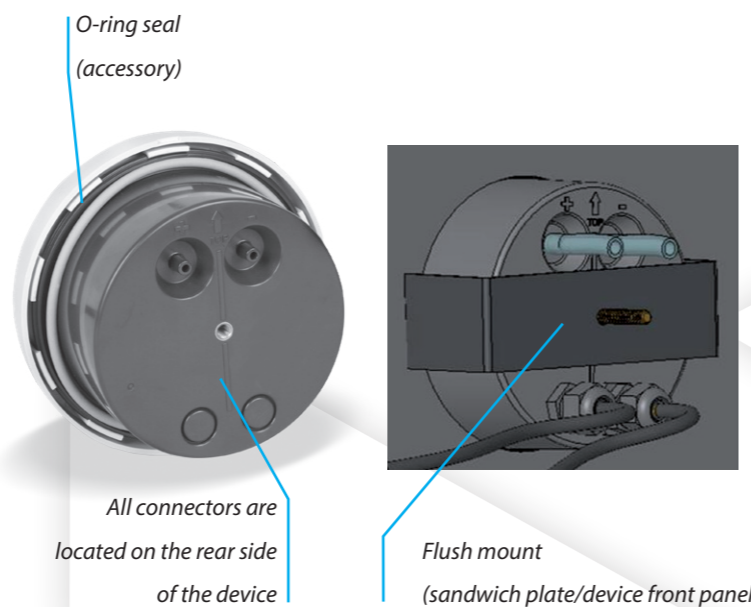
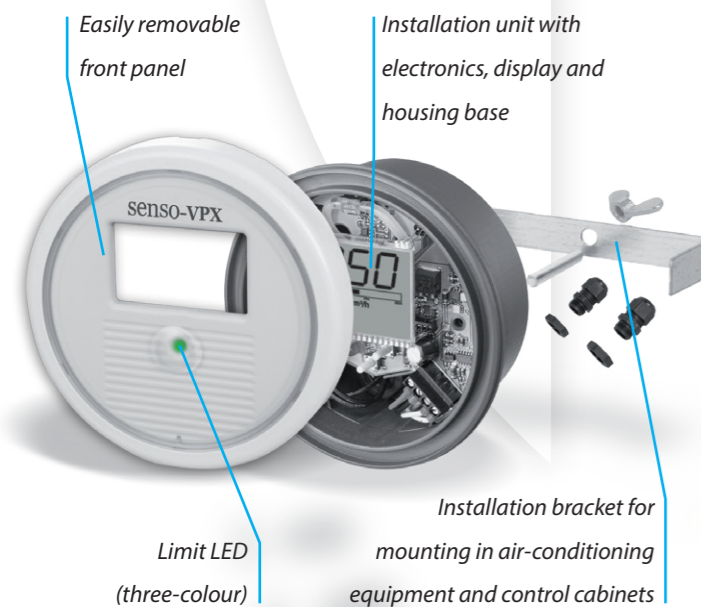
The large-digit, residual-light reflecting main display is extremely easy to read. An indicator bar shows how close the limit value is. Limit value overshoot (PPX) or undershoot (VPX) is additionally indicated by the LED changing from green to red. An upper or lower limit value can be freely selected, causing a red LED to light up as soon as it is reached. The digital display dampens rapidly fluctuating readings by continuously averaging the last five values.

## Easy to Program

Programming is done using the NFC Reader-Writer or, after taking off the front panel, via the program key or keys. For the latter option the device comes with either one or three keys for entering a limit value or other parameters.

## OEM Version

On request, and subject to sufficient order quantity, the device color and/or design/wording of the front label or front panel as well as customer-specific functions can all be adapted to the customer's wishes at the factory. Standard delivery is made in single units with mounting bracket and fasteners included. Bulk buyers may request delivery without fastening material.



# Technical Data

## SENSO-X® PPX1000 / PPX4000 Differential Pressure Transmitter

**Linear output:** for differential pressure / filter contamination

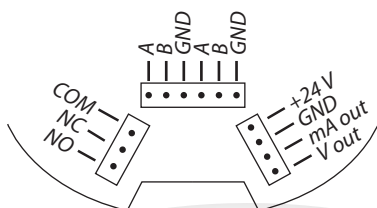
**Error margin:** < 1.0 % of measuring range

## SENSO-X® VPX1000 / VPX4000 Volume Flow Transmitter

**Linear output:** for volume flow

**Error margin:** < 1.0 % of measuring range

### Electrical Connection



**Power supply:** 24 V AC/DC  
**Linear output:** 0(2) – 10V or 0(4) – 20 mA (monitor)

**Change-over contact:** floating, max. 6 A, 250 VAC; 5 A, 30 VDC

**Operating temperature:** -5 – 65 °C, max. 95 % RH, non-condensing

**Storage temperature:** -20 – 70 °C

**Housing:** ABS

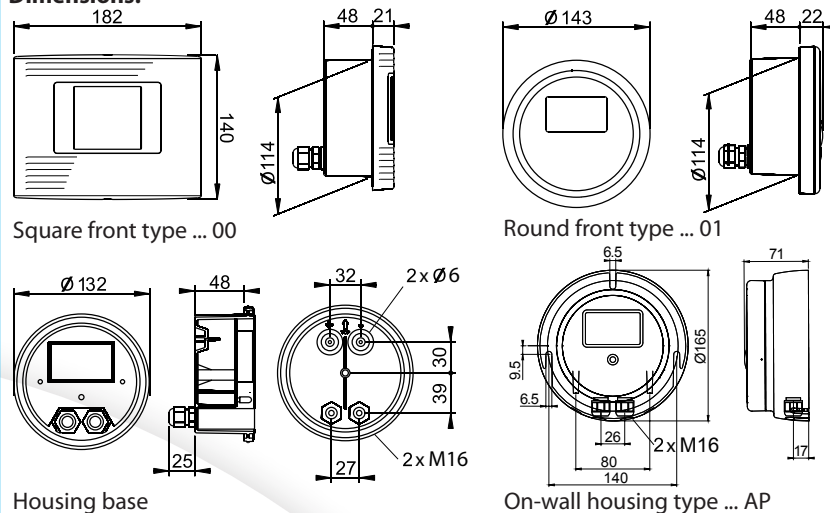
**Protection class:** On-wall versions (AP) IP 65.

Built-in versions IP 54/  
with additional gasket  
(accessory) IP 64

**Connection fittings:** 2 x Ø 6 mm

**Accessories:** various on-wall housings and installation lids connection kit NFC Reader-Writer

### Dimensions:



Type	Measuring range	Working range (output signal)	Units of measure / output*	Limit value monitoring	Application examples
PPX1000	0 – 1,000 Pa	Freely adjustable from 10 to 1,000 Pa in steps of 1 Pa	Pa, %	Freely selectable. LED signal + switching output for <b>overshoot</b>	Differential pressure indication / measurement. e.g. filter contamination
PPX4000	0 – 4,000 Pa	Freely adjustable from 40 to 4,000 Pa in steps of 1 Pa	Pa, %	Freely selectable. LED signal + switching output for <b>overshoot</b>	Differential pressure indication / measurement. e.g. filter contamination
VPX1000	0 – 1,000 Pa	0 - 99,999 m³/h freely adjustable in steps of 1 m³/h	m³/h, l/s, ft³/min	Freely selectable. LED signal + switching output for <b>undershoot</b>	Volume flow measurement
VPX4000	0 – 4,000 Pa	0 - 99,999 m³/h freely adjustable in steps of 1 m³/h	m³/h, l/s, ft³/min	Freely selectable. LED signal + switching output for <b>undershoot</b>	Volume flow measurement

All models optionally with a square or round front panel or as an on-wall version; manual offset adjustment a standard feature \* analog output 0(2) – 10V or 0(4) – 20mA linear depending on selected working range and unit of measure.

### Oppermann® NFC

The **SENSO-X®** NFC tool (PC configuration software) is needed for configuring **SENSO-X®** transmitters using NFC via the integrated USB interface.



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