

AIR VOLUME TRANSMITTER / CONTROLLER IML

IML air volume transmitter is designed for detecting and controlling air volumes in air handling units and room spaces. Air volumes are calculated by using the differential pressure resulting from the air flow in the duct or in the fan.

The display shows alternately either air volume or differential pressure or the desired variable can be locked on the display. The variable unit can be selected in the menu during commissioning. The effect of the fast changing pressures resulting from process problems can be eliminated by changing the time constant. The measurement accuracy is guaranteed by using the automatic zero point calibration.

A model IML-M with Modbus communication is available. The IML-M measurements can be read and the settings can be made via Modbus.

Air volume measuring can be implemented by:

1. Using fans with flow measuring joints: By selecting the fan manufacturer in the menu, and by setting the fan k-value and air volume unit.
2. Using traditional air flow sensors like pitot tube or iris dampers in the ventilation duct and by selecting the common form, $Q = k \cdot \sqrt{\Delta P}$ in the menu. The k-value size depends on the duct cross section or the iris damper hole diameter.

With the internal controller functions you can implement variable air volume control or differential pressure control.

Variable air volume (VAV) control

The VAV control set point can be set in three different ways:

- By an external 0...10 V signal
- During commissioning in the menu
- Via Modbus (IML-M)

The internal P/PI-controller controls the 0...10 V output by using the set point and the detected air volume. The 0...10 V controlled damper connected to the controller output keeps the air volume in the set value.

By using two IML transmitters and two 0...10 V controlled dampers it is possible to keep the incoming and exhausted air volume in balance. The output signal of the exhausted air volume (output 1) is then used as a set point for the IML that controls incoming air volume (input 1). For balancing the air volumes, there is a balancing coefficient (50...150 %) in the menu.



Technical data

Supply	24 Vac/dc (22...28 V)
Power consumption	24 Vdc < 1.0 VA 24 Vac < 1.5 VA
Range	0...1000 Pa
selectable at commissioning	0...2000 Pa 0...5000 Pa 0...7000 Pa
Air volume range	selectable from menu
Output 1: air volume	0...10 Vdc, < 2 mA
Output 2: differential pressure or controller output	0...10 Vdc, < 2 mA
Accuracy (differential pressure)	± 1 Pa + ±1% of reading (25 °C)
Temperature drift of the range (typ.)	< 0,1 % / K
Output time constant	1...20 s, 8 s *
Balancing coefficient	50...150 %, 100 % *
Operating temperature	0...45 °C
Maximum allowed overpressure	25 kPa
Housing	IP54
Pressure connection	with Ø 6/4 mm hoses

* = Factory setting

Wiring:

1	24 Vac/dc
2	0 V
3	Output 1: Air volume, 0...10 Vdc
4	Output 2: Differential pressure or controller output, 0...10 Vdc
5	Input 1: External set point, 0...10 Vdc
6	RS-485 A+ (Modbus, IML-M)
7	RS-485 B- (Modbus, IML-M)
8	RS-485 GND (Modbus, IML-M)

Ordering guide:

Model	Product number	Description
IML	1131600	air volume transmitter / controller
IML-M	1131610	air volume transmitter / controller, Modbus connection

Products fulfil the requirements of directive 2004/108/EY and are in accordance with the standards EN61000-6-3: 2001 (Emission) and EN61000-6-2: 2001 (Immunity).