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. At least 15 Pa pressure difference is needed for reliable measurement result.

The air volume can be measured from:

1. Fans with flow measuring joints. The air flow volume formulas are selectable for following fan manufacturers: Fläkt Woods, Rosenberg, Comefri, Ziehl-Abegg, ebm-papst, Nicotra and Gebhardt.

2. Using traditional air flow sensors like pitot tube, PP air flow probe or iris damper in the ventilation duct. In this case the air flow volume is counted by using the universal formula.
   Find more information about air volume measuring from the IML user guide.

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.

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.

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

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
Input 1: air volume set point	0...10 Vdc
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/EC and are in accordance with the standards EN61000-6-3: 2001 (Emission) and EN61000-6-2: 2001 (Immunity).