

Halton MSS – Static pressure measurement unit

Overview

- Pressure transmitter equipped with automatic zero point calibration to ensure continuous accuracy
- Circular duct static pressure measurement unit comprising measurement element and pressure transmitter with LCD display
- The static pressure measurement unit MSS is designed to be used in combination with static pressure control damper Halton HFS to maintain the desired constant duct pressure
- Adjustable pressure measurement range 0...1000 Pa
- Accurate measurement, inaccuracy less than $\pm 10\%$ in typical applications
- Pressure transmitter equipped with automatic zero point calibration to ensure continuous accuracy
- Available in sizes Ø200 ... Ø 500
- Classification of casing leakage EN 1751 class C
- Duct spigots have integrated rubber gaskets

Dimensions and weight

NS	L	ØD
200	142	199
250	142	249
315	142	314
400	195	399
500	195	499

Weight

NS	kg
200	0,9
250	1,1
315	1,3
400	2,3
500	2,9

Material

Part	Material	Note
Casing	Galvanised steel	–
Measurement tube	Silicone	–
Measurement tab	Polyurethane	–
Duct gaskets	1C-polyurethane hybrid	–
Transmitter Enclosure	Polycarbonate	IP54

Duct connection gaskets are vulcanised to the casing.

Function

Duct static pressure is accurately determined using multipoint averaging measurement. The duct static pressure is measured between the Halton MSS measurement tab and the reference space. The pressure of reference space represents the air pressure of the spaces in the ventilation system's service area (see Installation section).

The Halton MSS unit includes static type pressure measurement sensor with a digital display of the actual pressure value. The measured value is transmitted using 0 to 10 volt signal.

Key:

- A Pressure measurement chamber
- B Pressure measurement tube connection points
- C Power supply and output signal.

Continuous accuracy is assured by automatic zero point calibration of pressure sensor. Thus, no manual re-calibration is needed in normal operating conditions.

Installation

The static pressure measurement unit must be installed in a space where ambient temperature is between 0 and 45°C.

Ductwork installation, Safety distances

In order to ensure the accuracy of the duct static pressure, measurement the safety distances between the measurement unit and flow disturbances (e.g. bends, T-branches) must be respected. The necessary safety distances before and after different disturbances are presented in figures below.

Fig.1. 90° elbow

Fig.2. Branch on supply duct

Fig.3. Branch on exhaust duct

Fig.4. Safety distance between MDC/HFS control damper and MSS, straight duct

Measurement tube connections

Connect the pressure measurement tube from the unit to the sensor, either to +/- taps, according to the exhaust/supply application. Supply connection is the default factory setting.

In typical installations the reference pressure inlet (+ for exhaust installation and – for supply installation) is left open at the ambient air. If necessary, the reference pressure can be connected to the reference pressure inlet by the contractor using Ø 6/4 mm measurement tubes.

Connection of measurement tube to the transmitter in supply and exhaust installations.

Electric connections

1. Power supply, 24 VAC / 24 VDC
2. Neutral, 0 V
3. Output signal, 0 to 10 VDC, < 2 mA

Power supply is wired from pressure control damper.

Technical data of the pressure transmitter

Supply voltage: 22...28 VAC/VDC

Power consumption: < 1.5 VA 24 VAC, < 1.0 VA 24 VDC

Measurement ranges:

- 0...100 Pa
- 0...200 Pa (factory default)
- 0...500 Pa
- 0...1000 Pa
- 0...2500 Pa (not to be used with Halton MDC or Halton HFS)

Operating temperature 0 ...+45°C

Maximum overpressure 25 kPa

Enclosure IP 54, polycarbonate

Dimensions (width x height x depth) 115 x 115 x 45 mm

Measurement

The Halton MSS unit includes static type pressure measurement sensor with digital display. Adjustable pressure measurement ranges corresponding to 0-10 VDC output signal are:

- 0...100 Pa
- 0...200 Pa (Factory default)
- 0...500 Pa
- 0...1000 Pa
- 0...2500 Pa (Not used)

Pressure measurement range is set with jumpers according to the diagram below:

Delay selection

Pressure measurement output signal delay of 2 s is designed to be used in Halton MDC/HFS control damper and Halton MSS applications.

Measurement tubes

- + Higher pressure
- Lower pressure

Inaccuracy of the Halton MSS is a function of measured static pressure and air velocity in ventilation duct. In undisturbed flow conditions inaccuracy is less than $\pm 10\%$ when:

- Static pressure > 40 Pa and air velocity < 6 m/s
- Static pressure > 100 Pa and air velocity < 10 m/s

Continuous accuracy is assured by automatic zero point calibration of pressure sensor. Thus, no manual re-calibration is needed in normal operating conditions.

Specification

The casing of the measurement unit is made of galvanised steel.
The flow measurement probe pipes is made of aluminium.

The measurement unit has integral gaskets.

The unit has integrated pressure transmitter (0-10V signal) with display showing measured value.

Order code

MSS-D; ZT

D = Size of duct connection (mm)
200, 250, 315, 400, 500

Other options and accessories

ZT = Tailored product

N No

Y Yes (ETO)

Code example

MSS-200, ZT=N