

scavenging facility **LSE-HD**

**Scavenging facility for
SDF-flow sensors used
in dustladen media**

S.K.I.

Schlegel & Kremer Industrieautomation
GmbH

PR-LSE-002-0

Field of application

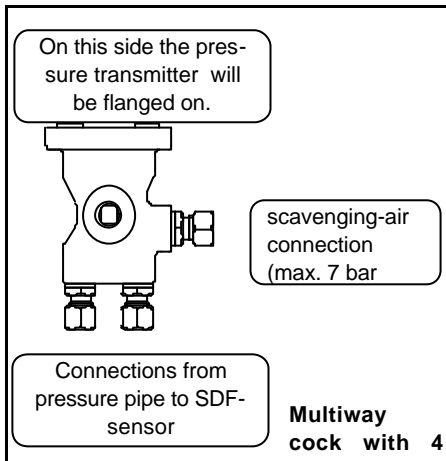
scavenging- when and why ?

The scavenging facility LSE-HD is used with our SDF-sensor (or any other differential pressure transducer) in gaseous media which is highly dustladen, e.g. dust in waste air. Used regularly, it avoids clogging of the bore-holes of the pressure transducer in the sensor profile by the carried along pollution, which would influence correct measurements. If, and how often the sensor has to be cleaned, depends on the particular application. As rule of thumb can be said that pollutions up to 150 mg/m³ do not require a regular scavenging. Pollution over 300 mg/m³ does make a regular scavenging with our scavenging facility LSE-HD absolutely necessary in order to receive dependable measurement results. In the range between 150 and 300 mg/m³ it is recommended to consider a scavenging facility when observations show excessive pollution.

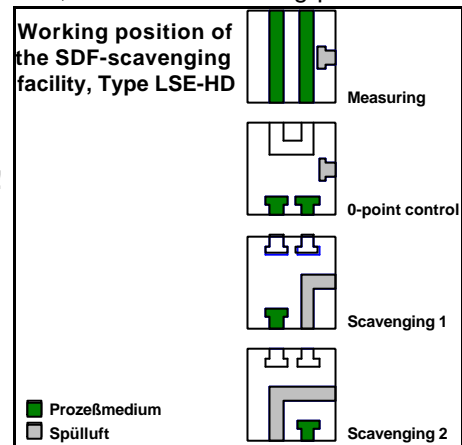
Function

scavenging the chambers-separately and one after the other

Function of the scavenging facility is to clean both chambers of the connected sensor with compressed-air in order to avoid, respectively remove, clogging of and from the bore-holes. First of all, the flanged-on differential pressure transmitter has to be disconnected on both ends from the pressure piping. Then, both pressure pipes including the sensor chambers will be, **separately** and **one after the other**, put under compressed-air and scavenged.



Central element of the scavenging facility is the **multiway cock**, shown in the drawing on the left, with its four working positions. The procedure to scavenge both chambers separately and one after the other has, compared to competitor's products, one essential advantage: **It works!** Should a chamber really be clogged, the compressed air will not escape unused through the chamber that is clean anyhow.



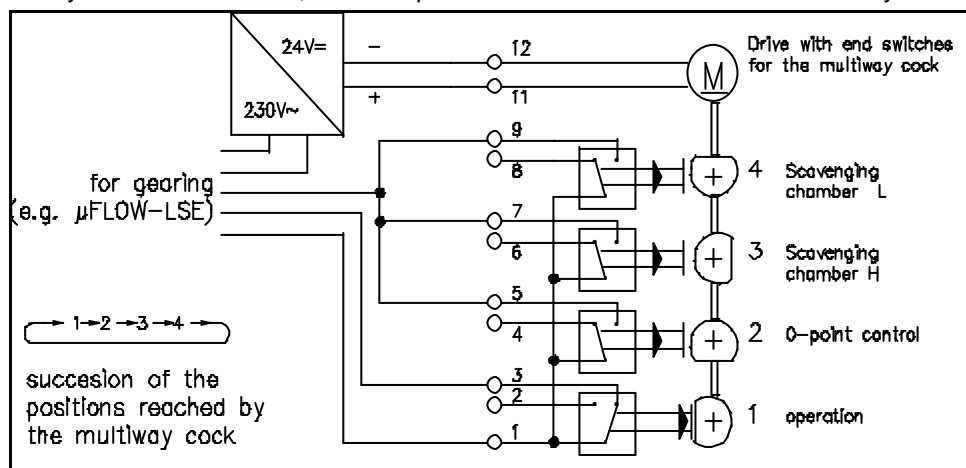
The multiway cock will be operated by hand, depending on the equipment of the scavenging facility, or automatically by an electric drive. Before starting both scavengings, the Δp -pressure transmitter will be disconnected from the process by the multiway cock, then both transmitter chambers connected with each other over a compensating channel, in order to realize a 0-point control of the pressure transmitter. Is the scavenging facility also equipped with a controlling computer **µFLOW-LSE**, the 0-point control will be initiated automatically, whereas a relais contact reports inadmissible deviation (adjustable!) from the 0-point (4 mA)

Equipment

simply: by hand - or comfortably: automatically

A glimpse to the table with order-details (last page) will give you an impression of the multifold possibilities offered by our scavenging facility **LSE-HD** in regard to equipment and functionality. Precondition for an automatic scavenging will be met by an electrical drive, which replaces the manual crank of the multiway cock.

This drive contains four cam switches, being operated when the corresponding working position is reached and this way gives the information about the cock position to the connected gear. The gearing is generally done by the compact computer **µFLOW-LSE**, which is either directly integrated in the scavenging facility (then a pro-



protecting case is absolutely essential), or is installed, e.g. in the switch cabinet, where it gives the operator information about the scavenging cyclus. Integrated in the scavenging facility or not, the μ FLOW LSE can be used for the determination of the volume flow, or even of the standard volume flow (*depending on the order-option*). For density corrections (under standard conditions: 0°C, 101,3 kPa_{abs}) the medium's temperature will be given to the μ FLOW-LSE as Pt100-signal and process pressure as 4..20 mA - signal .

Technical Data

available parts and finish

<p>Multiway cock Material Pressure gauge Function Connection Manual crank</p>	<p>1.4571 PN100 four positions: operating, 0-point control, scavenging 1 and 2 directly flangeable to the pressure transmitter acc. to DIN 19213 aluminium, black anodized</p>
<p>Drive Operating tension Function Rated torque Turning time for 90° Power input starting stage Power input operating Protection</p>	<p>230 VAC, over transformer-rectifying aggregate four positions with cam switch 23 Nm ca. 8 s ca. 70 VA for aprpx. 1 s ca. 40 VA IP 65</p>
<p>Protecting case Material Color Sealing Protection External dimensions</p>	<p>hot-pressed, glass-fibre-reinforced polyester pebble-grey , RAL 7032 colored Neoprene IP 65 ca. 600 x 400 x 430 mm (H x W x D)</p>
<p>Heating Operating tension Power Function Setting</p>	<p>230 VAC 500 W thermostatically regulated, with control-lamp +5..+45°C</p>
<p>μFLOW-LSE Operating tension Case External dimension Display Keyboard Protection Manual scavenging Setting scavenging-time Setting scavenging-interval 0-point control of the pressure transmitter Other</p>	<p>230 VAC switchboard-installation-case according to DIN 43700 72 x 144 x 185 mm (H x B x T) 2-line LC-Display, 8 mm heighth of characters five foil-keys operating-front IP 64 possible over menu-point „MANUAL“ 5...60 s 1...6000 min alarm signal when exceeding the permissible deviation(display and relais-contact) see operating manual μFLOW-LSE</p>
<p>Other Electrical connection in case Pneumatic connection Scavenging-air Piping in protecting case</p>	<p>on row-terminals via wiring-screw joint PG11 cutting-ring joint made from material 1.4571 for high-grade-steel tube 12x1 mm (2x differential pressure tube, 1x scavenging-air connection) compressed air max. 7 bar tube 12x1 mm, material 1.4571</p>

- technical data is subject to change -

Overview

- 👉 separate scavenging of both differential pressure tubes, standard even for the most simple version
- 👉 multiway cock as central element offers position for **0-point control** of the Δp -transmitters
- 👉 for field applications: installation in heated glass-fibre protection-case.
- 👉 automatisisation possible by installing an electrical drive for the multiway cock.
- 👉 application of a gearing computer **μFLOW-LSE**, therefore additional possibilities:
 - automatic performance of the necessary scavenging cyclus
 - **storage of the measured value** (signal-storage) during scavenging
 - display of the operating stage during and between scavenging procedure.
 - automatic **0-point control** of the differential pressure transmitter and alarm-signal (display and relais contact) when exceeding the permissible 0-point deviation.(adjustable)
 - adjustment of scavenging duration and scavenging interval, independently from each other via keyboard.
 - determination of the **standard-volume-flow** (*option*) through correcting-calculation by additional opening of temperatur and process pressure signal.
 - analog exit (4..20 mA) for standard volume flow
 - digital exit (NPN open collector) optionally as a puls exit for flow-summary or as status-signal (scavenging aktiv)
 - pressure transmitter supply.

Order details

LSE-HD - - - - -

MH
EO
E I
EE
X1

O
K
D
X2

OO
OP
SO
SF
X3

O
H
X4

O
W
R
X5

Drive and Gear

manually with hand crank
electrically , without gear
electrically, geared by built-in μFLOW-LSE
electrically, geared by external μFLOW-LSE
special versions (upon request)

Volume-flow calculation

without
by μFLOW-LSE without density correction
by μFLOW-LSE with density correction, [signal-opening of temperatur (Pt100 direct) and pressure (4-20 mA) necessary]
special versions (upon request)

Protection case

without case, without mounting plate
without case, installed on mounting plate
protecting case without window
protecting case with window (acrylic glas)
special version (upon request)

Protection case heating

without
electrical heating 500 W
special version (upon request)

Mounting accessories

without
wall rack
tube clamp for 2"-tube
special versions (upon request)

technical data
is subject to
change

S.K.I.

Schlegel & Kremer Industrieautomation GmbH
Heukenstraße 20 D-41238 Mönchengladbach
Telefon:+49-02166-83021 Telefax:+49-02166-83023

Your distributing partner: