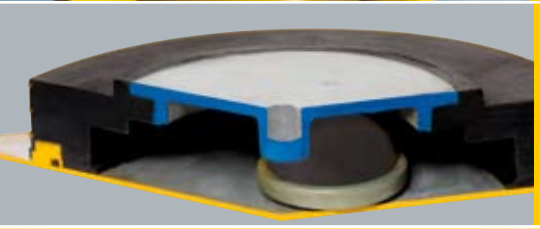
EFFBE



LEVELMOUNT MACHINE SUPPORTS

ADS/SLM ISR-System

ADS-ISR construction
Membrane-based pneumatic spring element with housing, carrier and base plate made of aluminium

Natural frequencies
1.5 Hz – 3 Hz

SLM-ISR construction
Elastomer-metal combination with screwed on base plate

Natural frequencies
3 Hz – 5 Hz

Delivery contents of standard ISR pneumatic spring system
- 4 supporting points
  - 3 pneumatic springs ADS/SLM type Master with sensors and control valves
  - 1 pneumatic spring ADS/SLM type Slave without sensors and valves
- 1 control unit as 3-channel circuit board with RS-232 PC interface
- Control cable for master elements
- Hose NW 4 with cross piece or T-pieces
- Power adapter

(see page 16/17)

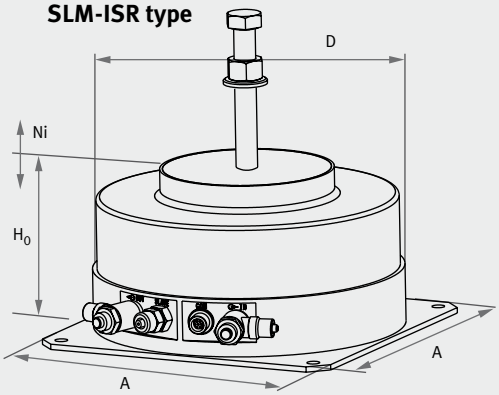
ADS-ISR

Options
- Control unit: circuit board in synthetic enclosure
- Connectors for control cable
- Filter-regulator unit consisting of pressure regulator, pressure gauge, filter, water separator
- Control cable: length of 3 control cables to customer specifications
- ”Air Level Control“ software for PC (Windows)
- Serial cable RS-232
- Additional hose sections and connectors according to number of pneumatic springs

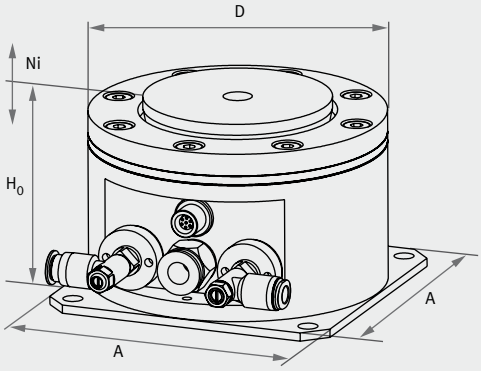
Supply conditions
- Compressed air: operating pressure 1 – 6 bar, dry, dust and oil free; alternative filter-regulator (FRK)
- Control unit: Circuit board approx. 160 x 100 x 15 mm; alternative circuit board in synthetic housing approx. 225 x 200 x 40 mm
- Power supply: 24 V – 1A; alternative power adapter, input 230 V, 50 Hz, 130 Watt, output 24 V, 1A, DC
- PC interface: serial connection
- RS-232; for programming EFFBE Soft ware ”Air Level Control“ is required
- Commissioning and adjusting of pneumatic spring system as well as operator training by EFFBE staff upon request

SLM-ISR

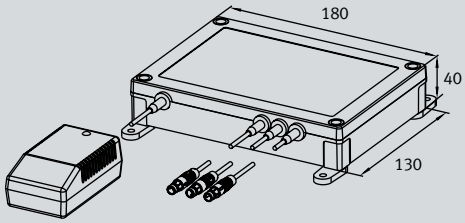
SLM-ISR type



ADS-ISR type



ISR Control Unit



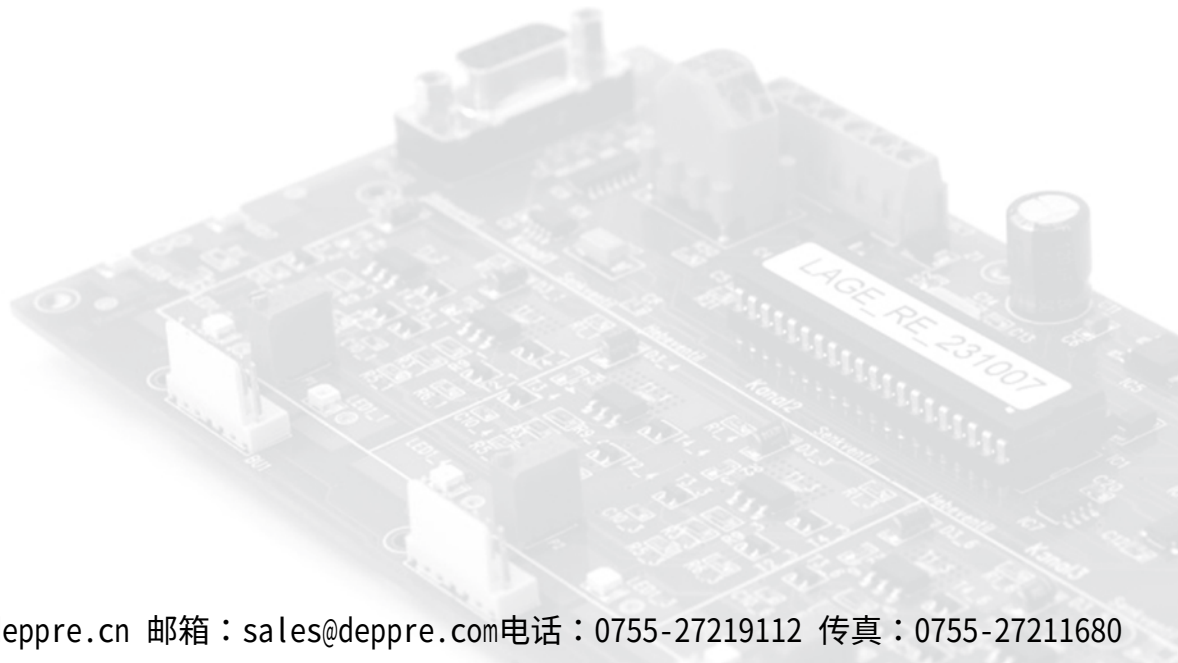
ISR system

The basic version of the ISR pneumatic spring system is factory-programmed. However, the software allows varying the following parameters: reset accuracy, permissible deflection, response time, average level. These parameters can be viewed, freely chosen within wide limits, and permanently stored in the control unit. The values are retained even after a power failure. The factory default settings are documented in a datasheet.

Overview of programmable parameters

- Reset accuracy:
  rough (+/- 0.5 mm, fine (+/- 0.1 mm),
  user-defined (+/- 0.01 mm ... 1 mm)
- Permissible deflection:
  wide (+/- 1.0 mm), narrow
  (+/- 0.5 mm), user-defined
  (+/- 0.01 mm ... 1.5 mm)
- Response time:
  fast (10 ms), slow (125 ms),
  user-defined (5 ms ... 125 ms)
- Level:
  Middle position (+/- 5 mm),
  fine adjustment with potentiometer
  and / or software

ADS-/SLM-ISR Series Dimension table Dimensions in mm	D	Ho	Ni	A	Load (max.) kN
ADS 3	105	65	+/- 5	106	1.8
ADS 6	127	90	+/- 6	130	2.8
ADS 12 / SLM 12 B ISR	175 / 170	90	+/- 6	175	6.0
ADS 24	245	90	+/- 6	255	13.0
ADS 48	338	90	+/- 6	343	26.0
ADS 96	468	90	+/- 6	470	55.0
ADS 192	610	90	+/- 6	610	100.0



ISR System

Construction
The ISR pneumatic spring control system combines the proven pneumatic springs with a new contactless electro-pneumatic controller, where sensor and control valves are combined into one compact assembly, and integrated into the pneumatic spring.

A controller with manual operation or PC connection allows the selection of the following settings:

- Levelling of the system (horizontal installation)
- Tracking the position of each support (operating height)
- Tolerance choice of height and reset accuracy
- Delayed or suppressed reaction with dynamic action
- Monitoring and documenting

The design implements a compact design with low cost modules.

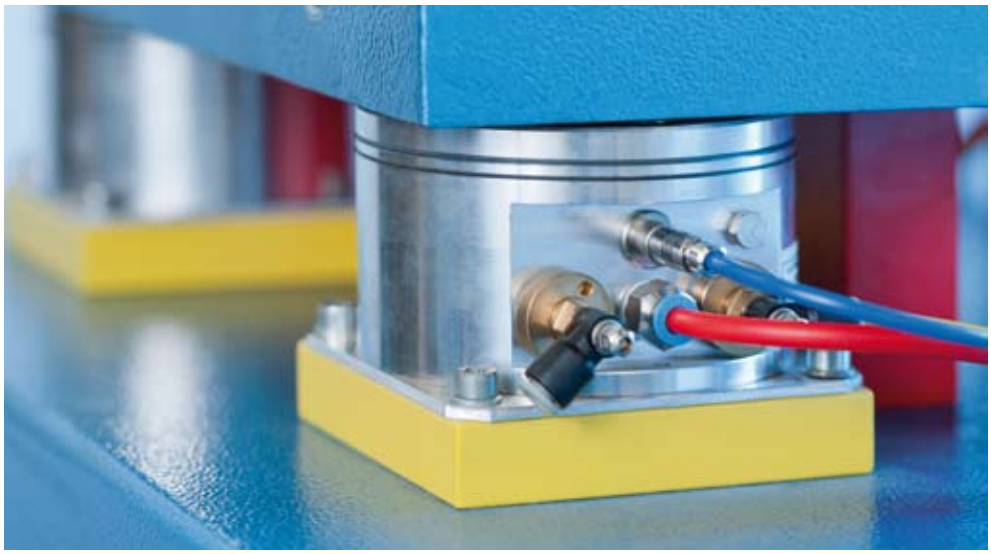
A sensor for non-contact level detection is integrated in the pneumatic element. As a result, separate sensing of the machine height is unnecessary. In addition, valves for filling or emptying the interior chamber are arranged as lifting and lowering valves within the pneumatic spring.

The outlet air can be discharged feely or guided (e.g. for clean room requirements).

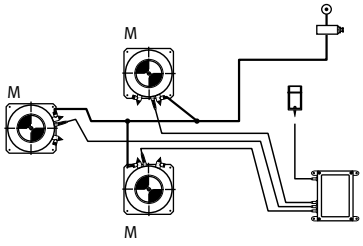
The system comprises three controlled pneumatic supports (masters) and further pneumatic supports (slaves) without control that may be engaged for load distribution. The system includes a controller that records data from sensors on the operating height or level of each support, and compares this information with adjustable set-point valuers.

A user-specific tolerance can be preset for avoiding overreactions. The individual zero positions of the three controlled supports are adjusted with a potentiometer; the system is levelled at the same time.

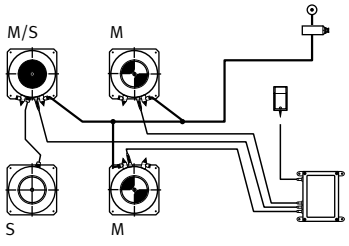
Menu-driven software allows the selection of resetting accuracy, height tolerance, switching and response times as well as monitoring.



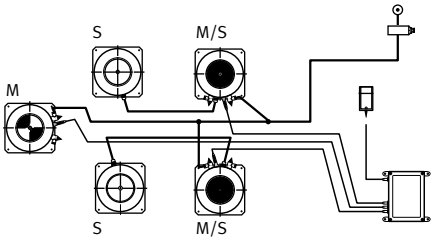
Circuit diagram
Examples for 3, 4, 5 and 6 support points. Other versions upon request.



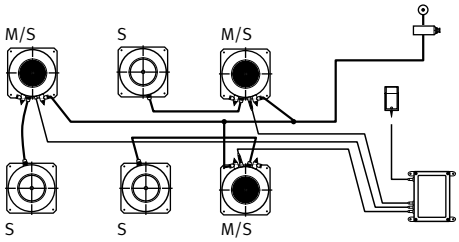
3 support points



4 support points



5 support points



6 support points

Working method
Software ”Air Level Control“
- Display and documentation of set-point and actual values
- Settings of programmable parameters
- Function check of valves