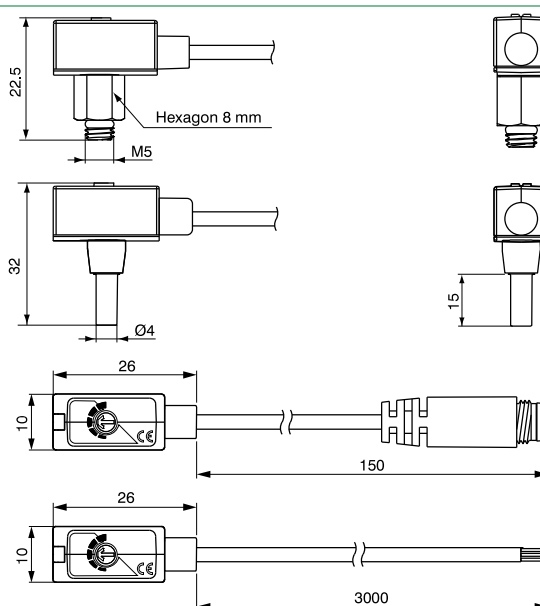


# ACCESSORIES AND INSTRUMENTS

Vacuum switch, vacuum gauge, silencers and filters

## Series DS

### ► Mini digital vacuum switch

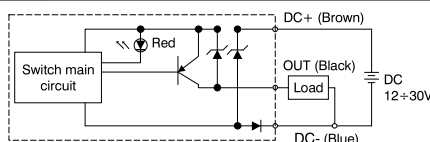


Ordering code	
<b>DS.10.V.B.●.●.●</b>	
CONNECTION	
● F4= Male M5	
R4= Plug-in connection Ø4	
CABLE LENGTH	
● A=150 mm *	
E=3000 mm **	
OPTIONS	
0= Without connector	
● 1= With connector M8 male 3 Pin	

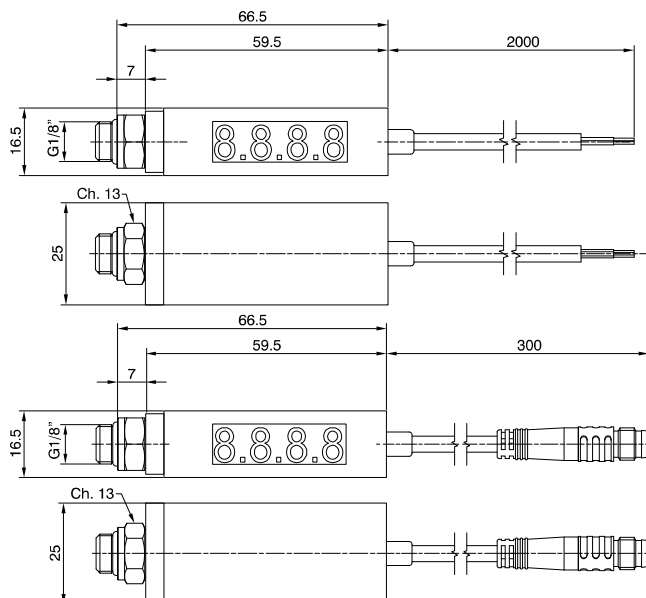
\* only with M8 connector  
\*\* only without connector

Technical features		
Working pressure range		0 ... -100.0kPa
Regulation pressure range		0 ... -100.0kPa
Maximum supported pressure		600 kPa
Allowed fluids		Air, non-corrosive gases, non-combustible gases
Supply voltage		From 12 to 30 VDC $\pm 10\%$
Current consumption		$\leq 10$ mA
Digital output		PNP N.O. 1 outputs Maximum load current: 80 mA Maximum supply voltage: 30 VDC Voltage drop: $\leq 0.8$ V
Repeatability (Digital output)		$\pm 1\%$ Full Scale
Digital output	Type of hysteresis	Fixed
	Hysteresis	3% Full Scale max.
Response time		1 ms
Protection from short circuit at output		Present
Method of setting threshold		Adjustable, trimmer
Indicator		LED red (output)
Ingress protection rating	IP Rating	IP40
	Ambient temperature	Operational: 0°C ... 60°C, Storage: -20°C ... 70°C (without ice or condensation)
	Ambient humidity	Operational/Storage: 35 ... 85% (without condensation)
	Vibration	Total amplitude 1.5 mm, 10 Hz - 55 Hz - 10 Hz scanning for 1 minute, 2 hours in each direction of X, Y and Z
Temperature characteristics		980m/s <sup>2</sup> (100G), 3 times in each direction of X, Y and Z
Type of connection		$\pm 2\%$ Full Scale in a range between 0°C ... 50°C
Electrical cable		Male M5x0.8, Plug-in connection Ø4
Weight		Oilproof cable, 3 wires (0.18mm <sup>2</sup> ), Ø2.6 mm
		Approximately 50 g (with 3 metres of cable)

### Output circuit wiring scheme



**Digital vacuum switch**



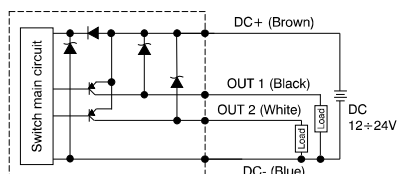
Ordering code	
<b>DS.30.C.C.F8.L.0</b>	
<b>CABLE LENGTH</b>	
<b>L</b>	B=300 mm *
	D=2000 mm **
<b>OPTIONS</b>	
<b>0</b>	= Without connector
<b>2</b>	= With M8 4 Pin male connector

\* only with M8 connector  
\*\* only without connector

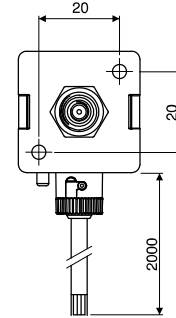
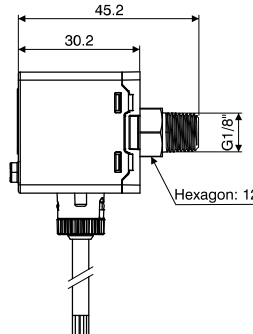
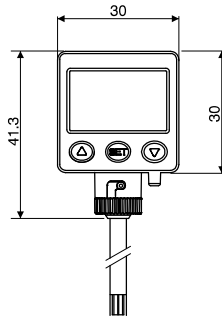
**Technical features**

Working pressure range		-100.0 ... 100.0 kPa
Regulation pressure range		-100.0 ... 100.0 kPa
Maximum supported pressure		300 kPa
Allowed fluids		Air, non-corrosive gases, non-combustible gases
Pressure calibration sensitivity	kPa	0.1
	2 kgf/cm <sup>2</sup>	0.001
	bar	0.001
	psi	0.01
	InHg	0.1
	mmHg	1
	mmH <sub>2</sub> O	0.1
Supply voltage		From 12 to 24 VDC ± 10%
Current consumption		≤ 60mA
Digital output		PNP N.O. 2 outputs Maximum load current: 80 mA Maximum supply voltage: 30 VDC Voltage drop: ≤1V
Repeatability (Digital output)		± 0.2% Full Scale ± 1 digit
Digital output	Type of hysteresis	Fixed
	Hysteresis	0.003 bar
Response time		≤2,5 ms (anti-interference function: 24 ms, 192 ms and 768 ms selectable)
Protection from short circuit at output		Present
Display		Display with 3 1/2 digits (sampling 5 times per sec.)
Indicator precision		±2% F. S. ±1 digit (at ambient temperature of 25°C ±3°C)
Indicator		LED green (output1) LED red (output2)
Ingress protection rating	IP Rating	IP40
	Ambient temperature	Operational: 0 ... 50°C, Storage: -20°C ... 60°C (without ice or condensation)
	Ambient humidity	Operational/Storage: 35 ... 85% (without condensation)
	Supported voltage	1000 VAC in 1-min. (between body and cable)
	Insulation resistance	50MΩ min. (at 500VDC, between body and cable)
	Vibration	Total amplitude 1.5 mm. or 10 G, 10 Hz - 55Hz - 10 Hz scanning for 1 minute, 2 hours in each direction of X, Y and Z
	Impacts/shocks	980 m/s <sup>2</sup> (100G), 3 times in each direction of X, Y and Z
Temperature characteristics		±2% Full Scale in a range between 0°C ... 50°C
Type of connection		G1/8 (Swivel)
Electrical cable		Oil resistant cable
Weight		Approximately 67 g (with 2 metres of cable)

**Output circuit wiring scheme**



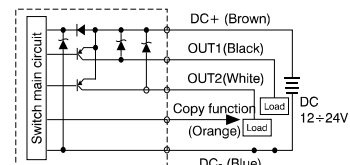
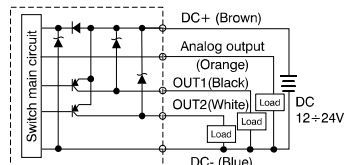
## Panel-mounted digital vacuum switch



Ordering code	
<b>DS.45.V.U.F3.D.0</b>	
VERSION	
V	C = Vacuum/Pressure (-100 / 100 kPa)
	V = Vacuum (0 / -101,3 kPa)
OUTPUTS	
E	2 PNP outputs + Analog output (4 / 20 mA)
L	2 PNP outputs + copy function

Technical features		
		DS.45.C.U.F3.D.0 (Composite)
Working pressure range		-100.0 ... 100.0 kPa
Regulation pressure range		-100.0 ... 100.0 kPa
Maximum supported pressure		300 kPa
Allowed fluids		Air, non-corrosive gases, non-combustible gases
Pressure calibration sensitivity	kPa	0.1
	2 kgf/cm <sup>2</sup>	0.001
	bar	0.001
	psi	0.01
	InHg	0.1
Supply voltage		From 12 to 24 VDC
Current consumption		≤40 mA (without load)
Digital output		PNP N.O. 2 outputs Maximum load current: 125 mA Maximum supply voltage: 24 VDC Voltage drop: ≤1.5V
Repeatability (Digital output)		± 0.2% Full Scale ± 1 digit
Digital output	Type of hysteresis	Settable
	Hysteresis	from 0.001 to 0.008 bar
Response time		≤2,5 ms (anti-interference function: 25 ms, 100 ms, 250 ms, 500 ms, 1000 ms and 1500 ms selectable)
Protection from short circuit at output		Present
Display		Display with 3 1/2 digits (red/green)
Indicator precision		±2% F. S. ± 1 digit
Indicator		LED orange (output1) LED orange (output2)
Analog output		Output current: 4 ... 20 mA ±2.5% F. S. Linearity: ±1% F. S. Maximum load resistance: 250Ω supply at 12 V and 600Ω supply at 24 V Minimum load resistance: 50Ω
Ingress protection rating	IP Rating	IP65
	Ambient temperature	Operational: 0°C ... 50°C, Storage: -10°C ... 60°C (without ice or condensation)
	Ambient humidity	Operation/Storage: 35 ... 85% (without condensation)
	Supported voltage	1000 VAC in 1min. (between body and cable)
	Insulation resistance	50MΩ (at 500 VDC, between body and cable)
	Vibration	Total amplitude 1.5 mm or 10 G, 10 Hz - 55 Hz - 10 Hz scanning for 1 minute, 2 hours in each direction of X, Y and Z
Temperature characteristics		±2.5% Full Scale in a range between 0°C ... 50°C
Type of connection		G1/8 (BSPP), M5 female
Electrical cable		Oil resistant cable (internal 0.15 mm <sup>2</sup> )
Weight		Approximately 86 g (with 2 metres of cable)

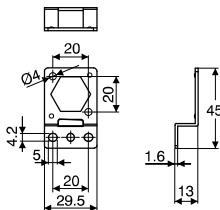
## Output circuit wiring scheme



## Fastening bracket



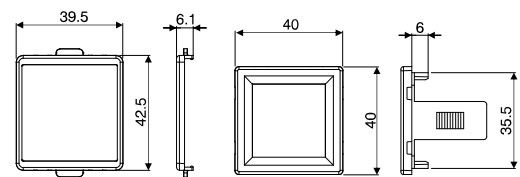
Ordering code  
**DS.BT10**



## Panel mount adapter



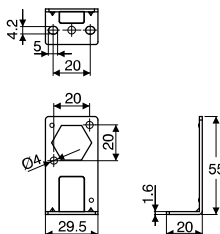
Ordering code  
**DS.PAE**



## Fastening bracket



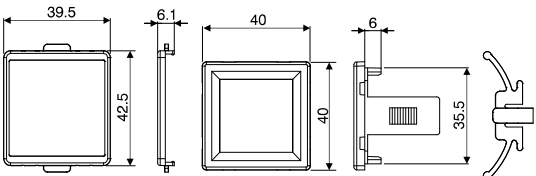
Ordering code  
**DS.BT11**



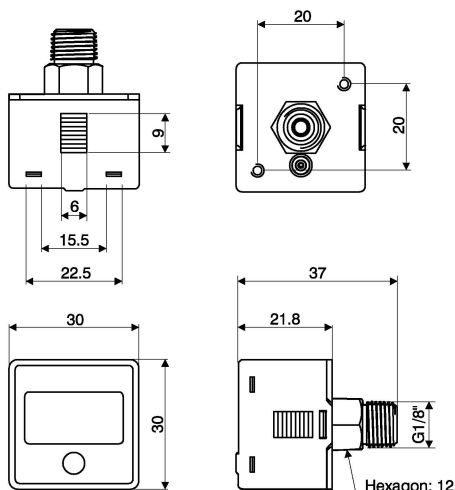
## Panel mount adapter with screen protection



Ordering code  
**DS.PAF**



## Digital battery vacuum gauge



Ordering code  
**DS.60.V.I.F1.F.0**

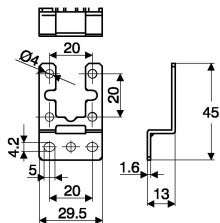
### Caratteristiche tecniche

Caratteristiche tecniche		
Working pressure range		0 ... -100.0 kPa
Regulation pressure range		0 ... -100.0 kPa
Maximum supported pressure		300 kPa
Allowed fluids		Air, non-corrosive gases, non-combustible gases
Pressure calibration sensitivity	kPa	0.1
	bar	0.01
	psi	0.1
	mmHg	1
Battery		CR 2032 lithium
Backlight		Not present
Battery life		3 years (5 powerups a day)
Indication of battery level		Present
Battery replaceable		Yes
Display powerup time		Goes off after 60 seconds
Sampling frequency		2 Hz (2 times per second)
Repeatability		±1% F. S. ±1 digit
Display		Display with 3 1/2 digits
Indicator precision		±2% F.S. ±1 digit (at ambient temperature of 25°C ±3°C)
Ingress protection rating	IP Rating	IP65 (only with connected air tube)
	Ambient temperature	Operational: 0°C ... 50°C, Storage: -10°C ... 60°C (without ice or condensation)
	Ambient humidity	Operational/Storage 35 ... 85% (without condensation)
	Vibration	Total amplitude 1.5 mm or 10 G, 10 Hz - 55 Hz - 10 Hz scanning for 1 minute, 2 hours in each direction of X, Y and Z
	Impacts/shocks	100 m/s² (10G), 3 times in each direction of X, Y and Z
Temperature characteristics		±2% Full Scale in a range between 0°C ... 50°C
Type of connection		R1/8, M5 female
Weight		Approximately 40 g

### Fastening bracket



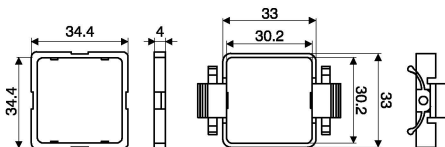
Ordering code  
**DS.BT5**



### Panel mount adapter



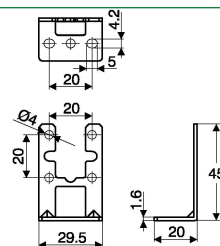
Ordering code  
**DS.PAC**



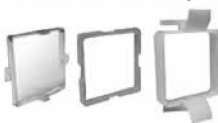
### Fastening bracket



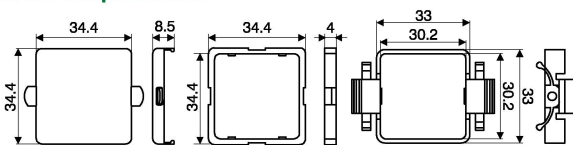
Ordering code  
**DS.BT6**



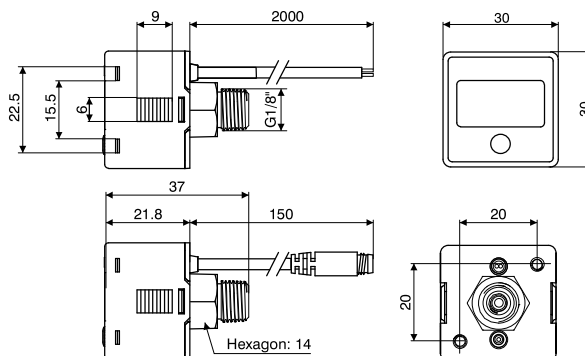
### Panel mount adapter with screen protection



Ordering code  
**DS.PAD**



### Digital vacuum gauge

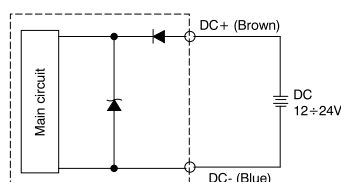


Ordering code	
<b>DS.61.V.I.F1.L.⓪</b>	
<b>L</b>	CABLE LENGTH
	A=150 mm * D=2000 mm **
<b>⓪</b>	OPTIONS
	0= Without connector 2= With M8 4 Pin male connector

\* only with M8 connector  
\*\* only without connector

Technical features		
Working pressure range		0 ... -100.0 kPa
Regulation pressure range		0 ... -100.0 kPa
Maximum supported pressure		300 kPa
Allowed fluids		Air, non-corrosive gases, non-combustible gases
Pressure calibration sensitivity	kPa	1
	2 kgf/cm²	0.01
	bar	0.01
	psi	0.1
Supply voltage		From 12 to 24 VDC ± 10%
Current consumption		10 mA
Repeatability		±1% Full Scale ±1 digit
Display		Display with 3 1/2 digits (sampling 5 times per sec.)
Indicator precision		±2% F. S. ±1 digit (at ambient temperature of 25°C ± 3°C)
Ingress protection rating	IP Rating	IP65 (only with connected air tube)
	Ambient temperature	Operational: 0°C ... 50°C, Storage: -10°C ... 60°C (without ice or condensation)
	Ambient humidity	Operation/Storage: 35 ... 85% (without condensation)
	Supported voltage	1000 VAC in 1 min. (between body and cable)
	Insulation resistance	50MΩ (at 500 VDC, between body and cable)
	Vibration	Total amplitude 1.5 mm or 10G, 10 Hz - 55 Hz - 10 Hz scanning for 1 minute, 2 hours in each direction of X, Y and Z
	Impacts/shocks	100 m/s² (10G), 3 times in each direction of X, Y and Z
Temperature characteristics		±2% Full Scale in a range between 0°C ... 50°C
Type of connection		R1/8, M5 female
Electrical cable		Oil resistant cable (internal 0.15 mm²)
Weight		Approximately 60 g (with 2 metres of cable) and approximately 40 g (with M8 4 pin male connector)

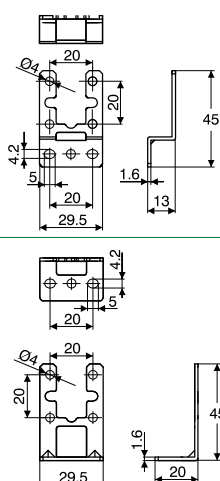
### Output circuit wiring scheme



### Fastening bracket



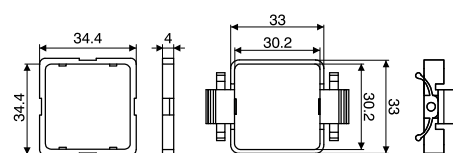
Ordering code  
**DS.BT5**



### Panel mount adapter



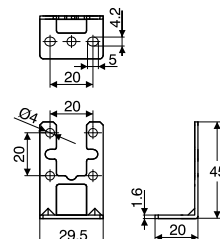
Ordering code  
**DS.PAC**



### Fastening bracket



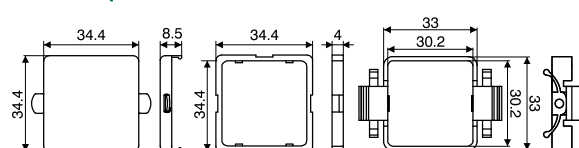
Ordering code  
**DS.BT6**



### Panel mount adapter with screen protection

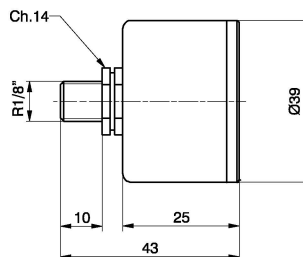
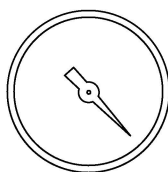


Ordering code  
**DS.PAD**



## Series 1900

### Vacuum Gauge



Ordering code

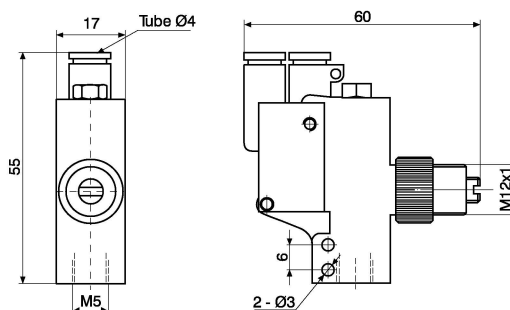
**17070A.V**



#### Technical features

Fluid	Unlubricated filtered air
Scale (-kPa)	0 ... 100
Temperature (°C)	-10 ... 80
Weight (g)	56

### Pneumatic vacuum switch

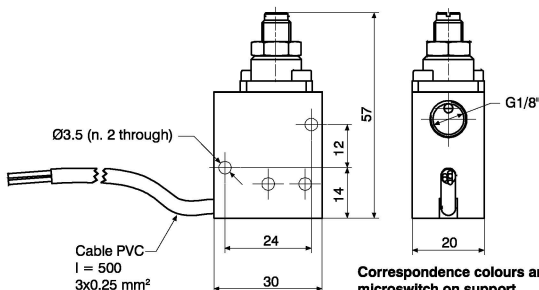


Vacuum switch whose function is, depending on the model, to turn a pneumatic signal on or off when a certain vacuum level is reached. The pressure differential that exists between the maximum value set and the restoration value cannot be adjusted. Especially recommended for the control of vacuum generators with a view to save energy.

Code	19TR4.C	19TR4.A
Type of contact	N.C. (Normally closed)	N.O. (Normally open)
Pressure (bar)	1.5 ~ 8	
Actuation threshold can be set (-kPa)	15 ~ 95	10 ~ 95
Hysteresis (kPa)	12	3
Temperature (°C)	-10 ~ +60°C	
Weight (g)	44	
Connections for vacuum	M5	

Function	Settable
N.C. (Normally closed)	
N.O. (Normally open)	

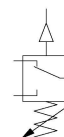
### Electromechanical vacuum switch



**Correspondence colours and mounted microswitch on support**  
Black = Common  
Blue = N.C.  
Grey = N.O.

Ordering code

**19VCE.0.C1**



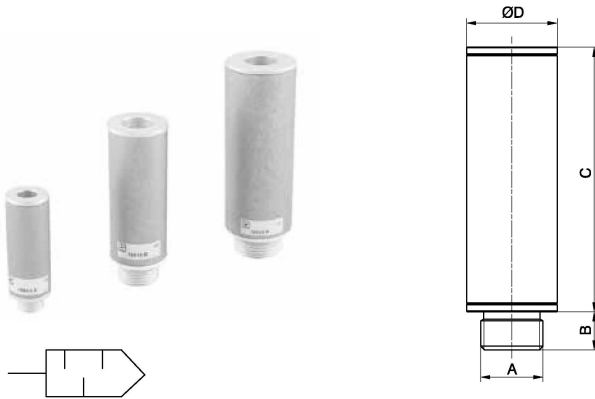
Vacuum switch whose function is to turn an electrical signal on or off when a certain vacuum level is reached. The pressure differential that exists between the maximum value set and the restoration value cannot be adjusted. Recommended for all cases where it is necessary to obtain an electrical signal once a certain level of vacuum is reached to start a work cycle, for control of the already attained grip by the suction cups or for reasons of safety, etc.

#### Technical features

Fluid	Vacuum
Flow rate	2A - 250 VAC
Regulation (-kPa)	20 ... 90
Temperature (°C)	-5 ... 70
IP Rating	IP67
Weight (g)	62,5



## High efficiency silencers



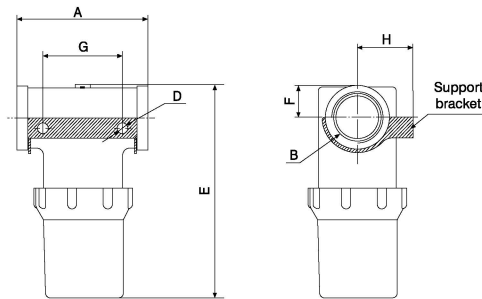
Code	Description	A	B	C	ØD	Weight (g)
19S18.S	Silencer G1/8	G1/8	6	30	16	10
19S14.S	Silencer G1/4	G1/4	8	50	20	21
19S38.S	Silencer G3/8	G3/8	10	70	24	35
19S12.R	Silencer G1/2 reduced	G1/2	12	70	29	46
19S12.S	Silencer G1/2	G1/2	12	90	35	83
19S34.R	Silencer G3/4 reduced	G3/4	12	90	35	86
19S34.S	Silencer G3/4	G3/4	12	110	50	144
19S10.R	Silencer G1 reduced	G1	14	110	50	144

The use of sound-absorbing material enclosed in appropriate aluminium containers made it possible to create this range of silencers which significantly lower air noise in the vacuum generator discharge stage.

Noise reduction: from -13 to -20 dBA

Working temperature: from -20 to +100 °C

## Vertical filters



Code	Description	Flow rate (l/min)	Volume (cm³)	A	B	D	E	F	G	Weight (g)
19F38.V.00	Filter G3/8"	150	45	76	2-G3/8	2 - Ø6.5	71.3	14	45	70
19F12.V.00	Filter G1/2"	900	195	91	2-G1/2	2 - Ø8.5	131.5	16	50	168
19F34.V.00	Filter G3/4"	900	205	91	2-G3/4	2 - Ø8.5	139	18.5	50	170
19F10.V.00	Filter G1"	2520	495	126	2-G1	2 - Ø10.5	167	23	80	424

### Filter elements

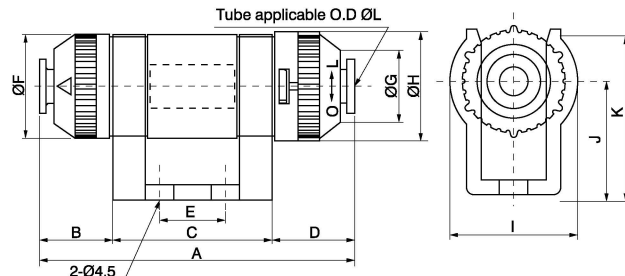
Code	Description
RK1900/0022	Filter element for 19F38.V.00
RK1900/0023	Filter element for 19F12.V.00 and 19F34.V.00
RK1900/0024	Filter element for 19F10.V.00



Preventing contaminants from reaching the vacuum generator is critical for maintaining its proper operation. Filters of this series have this function, manufactured in a simple way, have threaded connections for installation and a bowl that can be easily taken off to allow fast cleaning of the internal filter cartridge.

The various models of filter cover a flow rate range running from 150 to 2520 l/m, degree of filtration: 10 micron, working temperature: -20 / 80 °C, working pressure: -100 / 0 kPa.

## Line filters



Code	Description	A	B	C	D	E	ØF	ØG	ØH	I	J	K	ØL	Weight (g)
19F04.L.01	Tube Ø4 - 20 l/min	53,2	9,1	30	14,1	10	18	11,6	19,5	23	20	29	4	14
19F06.L.01	Tube Ø6 - 20 l/min	53,2	9,1	30	14,1	10	18	11,6	19,5	23	20	29	6	13
19F06.L.02	Tube Ø6 - 50 l/min	67	15,5	34	17,5	14	22	15,6	23,1	27	24	35	6	26
19F08.L.02	Tube Ø8 - 50 l/min	67	15,5	34	17,5	14	22	15,6	23,1	27	24	35	8	24

### Filter elements

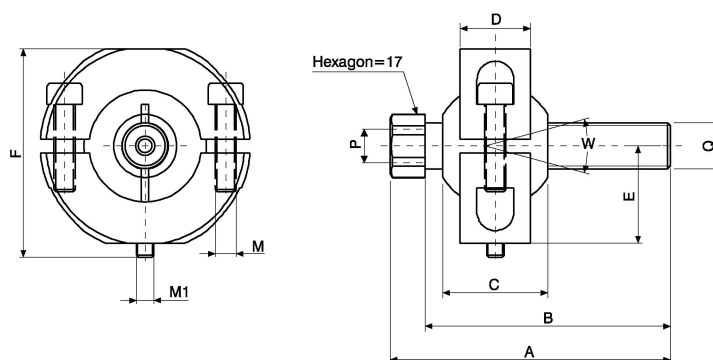
Code	Description
RK1900/0020	Filter element for 19F04.L.01 and 19F06.L.01
RK1900/0021	Filter element for 19F06.L.02 and 19F08.L.02



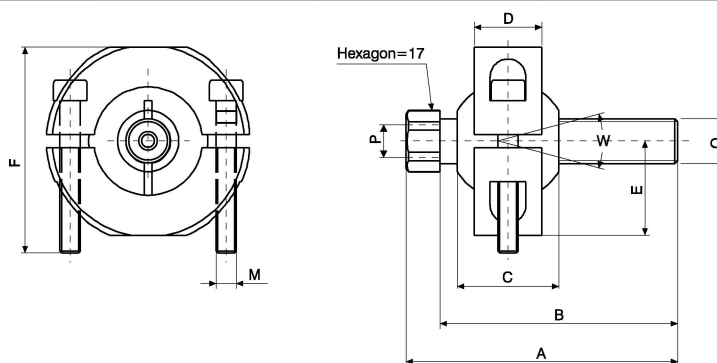
Line filters can handle very fine powders and contaminants without interfering with the intake flow rate. Thanks to the small dimensions they can be installed directly on the suction cups or on the vacuum pipework, and since they have automatic connections, wiring operations are facilitated.

Degree of filtration: 10 micron, working temperature: 0-60 °C, working pressure: -100 / 0 kPa.

► **Suction Cup Support**



Code	A	B	C	D	E	F	P	Q	M	M1	W	Weight (g)
19SP1.T	80	70	30	20	27.5	59.5	G1/4	G1/4	M6	M5	30°	174



Code	A	B	C	D	E	F	P	Q	M	W	Weight (g)
19SP2.T	80	70	30	20	27.5	61	G1/4	G1/4	M6	30°	180

Support for suction cup with adjustability and fastening via a ball bearing that allows it to be kept in the desired position.