



System monitoring | Vacuum switches

Vacuum switch - electromechanical

Vacuum switch - electromechanical

With NO/NC function for DC- and AC-connection



Product Description

- > An electrical signal is triggered when set vacuum value is reached
- > Switching point set via setscrew
- > Hysteresis is fixed
- > Standard vacuum connection via galvanised steel G1/8 screw-in port
- > Long service life due to high quality, robust design
- > Can be mounted in any position

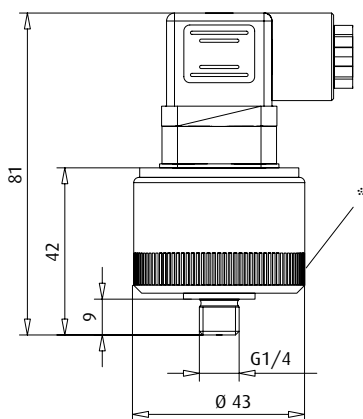
Ordering notes

- > If desired the switching point can be preset

Technical data

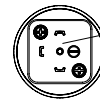
Item no.	20.011
Adjustable range [mbar]	20 - 800
Hysteresis	6 % switch point
Switching capacity DC up to 28 V [A]	max. 2
Switching capacity AC up to 250 V [A]	max. 2
Max. switching frequency [Hz]	200
Protection class	IP65
Suitable media	Filtered, oiled or unoled air or neutral gases
Operating temperature [°C]	-25 - 85
Weight [g]	120

Dimensions



* = Knurled screw

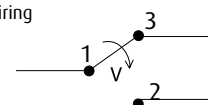
Electrical connection / changeover contact



Setting screw
M3 DIN 914

1. Completely screw in with hex-wrench
2. Apply switching vacuum
3. Ease screw until contact toggles

Wiring





Vacuum switch - pneumatic

NEW



Product Description

- > Switch outputs a pneumatic signal when the set vacuum level is reached
- > No electrical connection required
- > Usable as switch element for pneumatic valves

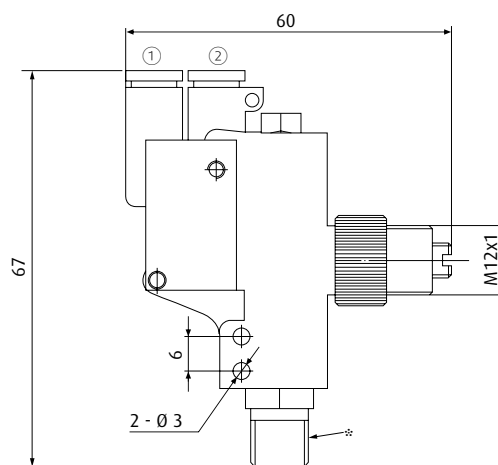
Notes

- > Vacuum switch 20.002 is part of the air-saving function for multi-chamber ejectors 65.340-LSE to 65.390-LSE

Technical data

Item no.	20.002
Adjustable range [mbar]	-950 - -150
Hysteresis [mbar]	120
Operating pressure [bar]	1.5 - 8
Operating principle	NC
Repeat accuracy [%]	± 5
Suitable media	Dry, unooled air and non-abrasive gases
Operating temperature [°C]	10 - 60
Weight [g]	44

Dimensions



① = Compressed air inlet, quick fitting \varnothing 4 mm ② = Compressed air output, quick fitting \varnothing 4 mm * = G1/8-male



System monitoring | Vacuum switches

Vacuum switch - electronic with analogue output

Vacuum switch - electronic with analogue output



Product Description

- > Analogue output enables monitoring of the continuous vacuum trend
- > Compact and light design for installation directly on the vacuum cup
- > LED display in plug connection

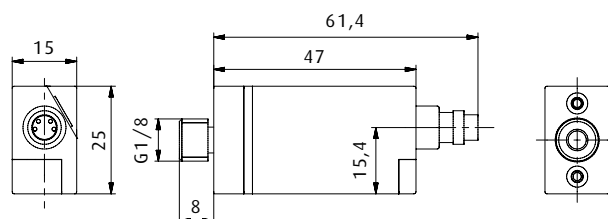
Notes

- > As an option: Mounting rail 20.008-H incl. channel nut for mounting the vacuum switch, e.g. on FIPA SLine extrusions

Technical data

Item no.	20.007
Adjustable range [mbar]	-999 - 0
Hysteresis	0 - 30 %
Analogue output [VDC]	1 - 5
Switching logic	Contact breaker (NC)
Response time [ms]	< 5
Thermal error	± 3 % from measuring range
Overpressure safety [bar]	3
Supply voltage [VDC]	18 - 30
Current consumption [mA]	< 20
Protection class	IP50
Suitable media	Dry, unoled air and non-abrasive gases
Operating temperature [°C]	0 - 50
Weight [g]	85
Electric connection	Plug M8x1, 4-pin
Suitable accessories	Mounting rail 20.008-H Connector cable 20.501 (p.717) Connector cable 20.502 (p.717)

Dimensions





Mini vacuum switch - electronic with digital output



Example: Mini vacuum switch 20.040 on ejector EBA.08H.2-A and flat vacuum cup \varnothing 40 mm

Product Description

- > Switch outputs a digital signal when a specific vacuum level is reached
- > Vacuum level is manually set with a potentiometer screw
- > Hysteresis is fixed
- > Red LED indicates set level reached
- > Space-saving installation on ejectors thanks to very small design

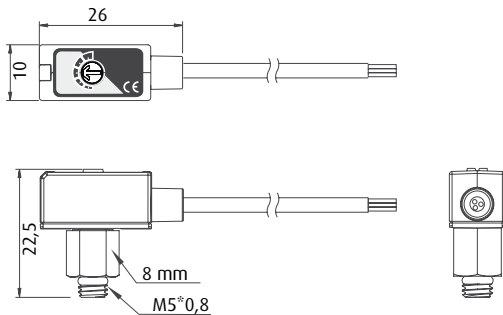
Ordering notes

- > Included in scope of delivery: Cable 1.5 meter, 3-pole, open wire

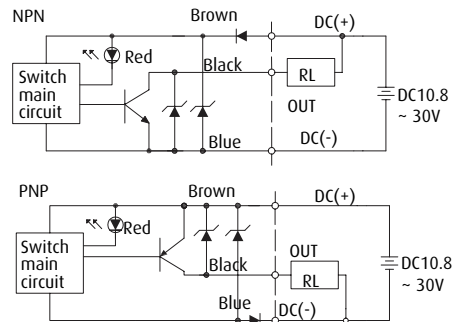
Technical data

Item no.	20.040	20.041
Adjustable range [mbar]	-990 - 0	-990 - 0
Hysteresis	3 % from default setting	3 % from default setting
Digital switching outputs	PNP	NPN
Response time [ms]	~ 1	~ 1
Repeat accuracy [%]	$\leq \pm 1$ % from measuring range	$\leq \pm 1$ % from measuring range
Overpressure safety [bar]	2	2
Supply voltage [VDC]	10.8 - 30	10.8 - 30
Max. Current consumption [mA]	10	10
Vacuum connection	M5	M5
Protection class	IP40	IP40
Suitable media	Filtered, oiled or unoled air or neutral gases	Filtered, oiled or unoled air or neutral gases
Operating temperature [°C]	0 - 60	0 - 60
Weight [g]	20	20

Dimensions



Wiring diagrams





System monitoring | Vacuum switches

Vacuum switch - electronic with analogue and digital output

Vacuum switch - electronic with analogue and digital output



Product Description

- > Monitoring of vacuum levels e.g. in handling systems
- > Intelligent sensor with "teaching" feature
- > Suitable for all vacuum levels due to flexible setting of switching point and hysteresis
- > Small and robust
- > Easy operation
- > Protection class IP65 (no ventilation tube required)
- > Flexible mounting: Control panel can be rotated 360° after installation

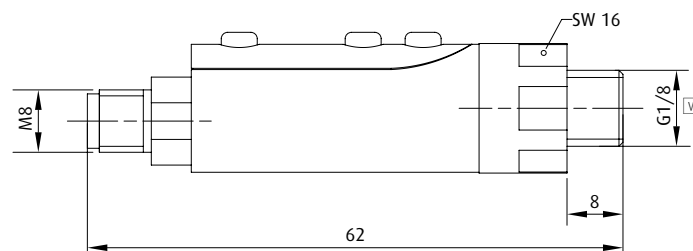
Notes

- > Transient emissions: EN 61000-6-4:2007; EN 61326-2-3:2006
- > Interference resistance: EN 61000-6-2:2005; EN 61326-2-3:2006

Technical data

Item no.	20.020
Measuring range [bar]	-1 - 0
Digital switching outputs	1x PNP (NO or NC)
Analogue output [V]	1 - 5
Repeat accuracy [%]	± 0.2 % from measuring range
Overpressure safety [bar]	6
Supply voltage [VDC]	11 - 30
Current consumption [mA]	< 25
Maximum switching current [mA]	125
Electric connection	Plug M8x1, 4-pin
Protection class	IP65
Suitable media	Dry, unoled air and non-abrasive gases
Operating temperature [°C]	0 - 50
Weight [g]	20
Suitable accessories	Connector cable 20.501 (p.717), Connector cable 20.502 (p.717), Adapter 20.511 (p.698), Adapter 20.523 (p.698), Adapter 20.522 (p.698), Wall clip 20.520 (p.700)

Dimensions



∇ = Vacuum connection



Vacuum switch - electronic with two digital outputs and display



Product Description

- > Monitoring of vacuum levels, e.g. in handling systems
- > Optimisation of cycle times to improve the economy of vacuum systems
- > Two freely adjustable digital outputs to set lower and upper threshold values
- > Additional analogue output
- > 7-segment LED-display
- > Protection class IP65 (no ventilation tube required)
- > Integrated reverse voltage protection
- > Compact, lightweight and robust design
- > Flexible mounting: 20.021 can be rotated 360° after installation

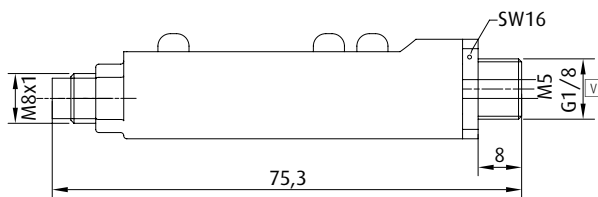
Notes

- > Transient emissions: EN 61000-6-4:2007; EN 61326-2-3:2006
- > Interference resistance: EN 61000-6-2:2005; EN 61326-2-3:2006
- > Vacuum values can be displayed and adjusted by the customer in following units: MPa, bar, inHg, mmHg

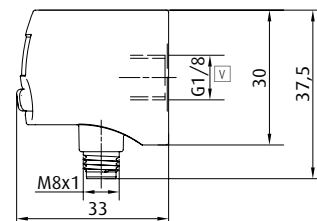
Technical data

Item no.	20.021	20.022
Measuring range [bar]	-1 - 0	-1 - 0
Digital switching outputs	2x PNP (NO or NC)	2x PNP (NO or NC)
Repeat accuracy [%]	± 0.2 % from measuring range	± 0.2 % from measuring range
Overpressure safety [bar]	6	6
Supply voltage [VDC]	11 - 30	11 - 30
Current consumption [mA]	< 55	< 55
Maximum switching current [mA]	125	125
Electric connection	Plug M8x1, 4-pin	Plug M8x1, 4-pin
Protection class	IP65	IP65
Suitable media	Filtered, oiled or unoled air or neutral gases	Filtered, oiled or unoled air or neutral gases
Operating temperature [°C]	0 - 50	0 - 50
Weight [g]	25	45
Suitable accessories	Connector cable 20.501, 20.502 (p.717), Adapter 20.522, 20.523, 20.511 (p.698), Wall clip 20.520 (p.700)	Connector cable 20.501, 20.502 (p.717), Mounting bracket 20.514 (p.699), Mounting bracket 20.515 (p.699)

Dimensions



20.021



20.022

∇ = Vacuum connection



System monitoring | Vacuum switches

Vacuum switch - electronic with two digital outputs and analogue output

Vacuum switch - electronic with two digital outputs and analogue output



Product Description

- > Monitoring of vacuum levels, e.g. in handling systems
- > Optimisation of cycle times to improve the economy of vacuum systems
- > Two freely adjustable digital outputs to set lower and upper threshold values
- > Analogue output for continuous monitoring of vacuum level
- > Stable measurement even with short fluctuations of the supply pressure due to anti-chattering function
- > 7-segment 3 digit LED display
- > Integrated reverse voltage protection
- > Compact and lightweight design

Notes

- > Vacuum values can be displayed and adjusted by the customer in following units: kPa, kgf/cm², bar, psi, inHg, mmHg

Ordering notes

- > Connector cable 0.3 meter with plug (M12 5-pin, straight) included in delivery
- > Connector cable optional
 - 20.508: M12, 5-pin, straight, open wires, 2 m
 - 20.509: M12, 5-pin, 90°, open wires, 2 m

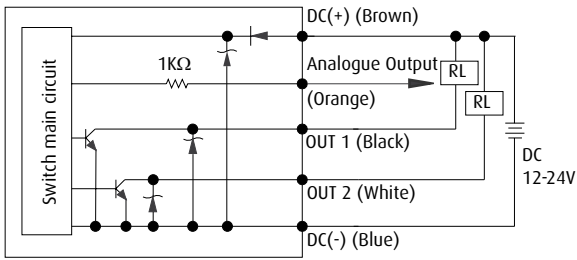
Technical data

Item no.	20.035	20.036
Measuring range [bar]	-1 - 0	-1 - 0
Digital switching outputs	2 x PNP	2 x NPN
Analogue output [V]	1 - 5	1 - 5
Repeat accuracy [%]	≤ ± 0.2 % from measuring range	≤ ± 0.2 % from measuring range
Overpressure safety [bar]	3	3
Supply voltage [VDC]	10.8 - 30	10.8 - 30
Current consumption [mA]	≤ 55	≤ 55
Maximum switching current [mA]	80	80
Electric connection	Plug M12x1, 5-pin	Plug M12x1, 5-pin
Protection class	IP40	IP40
Suitable media	Dry, unoled air and non-abrasive gases	Dry, unoled air and non-abrasive gases
Operating temperature [°C]	0 - 50	0 - 50
Weight [g]	35	35
Suitable connector cable	20.508 (p.717) 20.509 (p.717)	20.508 (p.717) 20.509 (p.717)

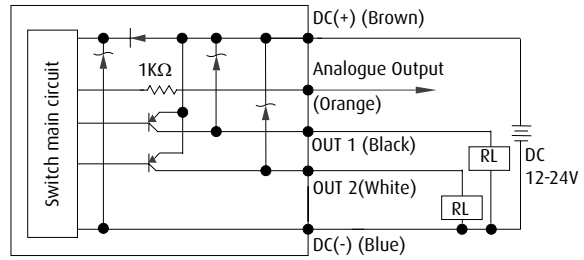


Wiring diagrams

20.035 (NPN)

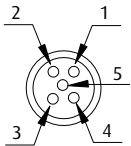


20.036 (PNP)



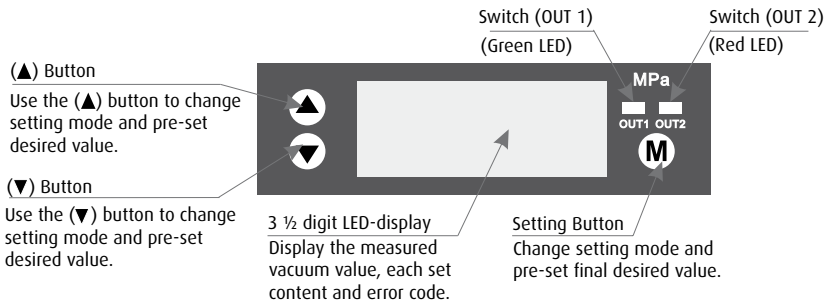
Plug assignment

20.035 and 20.036

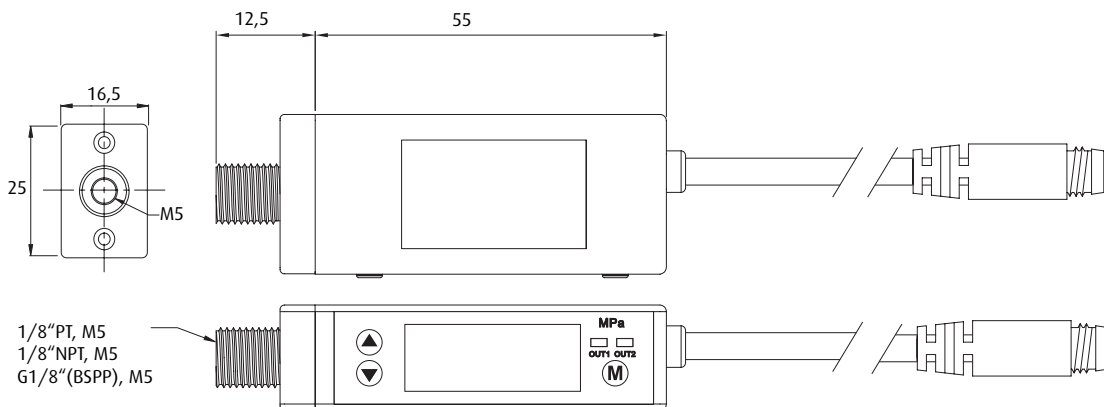


- (1) Brown (+)
- (2) White (OUT 2)
- (3) Blue (-)
- (4) Black (OUT 1)
- (5) Orange (analogue OUT 1-5)

Panel instructions



Dimensions





System monitoring | Vacuum / Pressure switches

Vacuum / Pressure switches - electronic with digital output

Vacuum / Pressure switches - electronic with digital output

Compact design



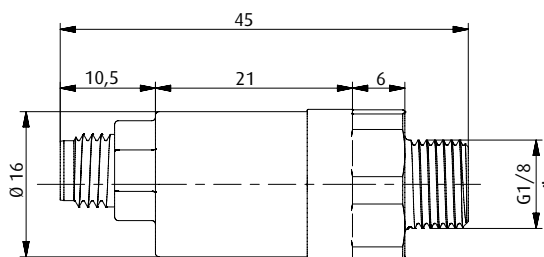
Product Description

- > Digital monitoring of vacuum and pressure in handling and automation systems
- > Small, lightweight and compact
- > Transistor output
- > Simple programming of the switching point, hysteresis and switching logic NC/NO
- > Monitoring of a pressure window is possible
- > Locking feature
- > LED operation and status indication
- > Item 20.027: With fitting pipe \varnothing 6 mm to be inserted into tubing or ejectors (e.g. inline or base ejectors)

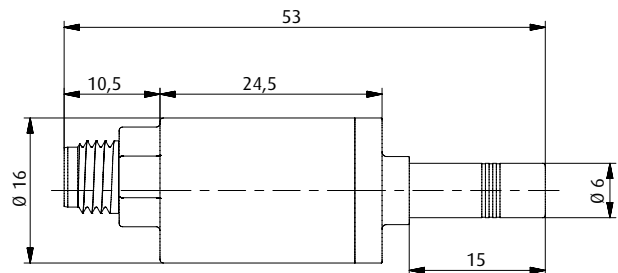
Technical data

Item no.	20.026	20.027
Adjustable range [mbar]	-999 - 999	-999 - 999
Hysteresis	0 - 100 %	0 - 100 %
Digital switching outputs	PNP Transistor	PNP Transistor
Switching logic	NO/NC	NO/NC
Repeat accuracy [%]	± 0.2 % from measuring range	± 0.2 % from measuring range
Supply voltage [VDC]	9 - 30 (reverse polarity, short circuit protected)	9 - 30 (reverse polarity, short circuit protected)
Current consumption [mA]	< 20	< 20
Maximum switching current [mA]	250	250
Voltage at the output	ca. $U_b - 1,5$ V	ca. $U_b - 1,5$ V
EMI / EMC	According to EU-directive 2004 / 108 / EG	According to EU-directive 2004 / 108 / EG
Protection class	IP65	IP65
Suitable media	Dry, unoiled air and non-abrasive gases	Dry, unoiled air and non-abrasive gases
Operating temperature [°C]	-10 - 80	-10 - 80
Electric connection	Plug M8x1, 4-pin	Plug M8x1, 4-pin
Suitable accessories	Connector cable 20.501 (p.717) Connector cable 20.502 (p.717) Adapter 20.511 (p.698), Adapter 20.522 (p.698) Adapter 20.523 (p.698)	Connector cable 20.501 (p.717) Connector cable 20.502 (p.717) Adapter 20.511 (p.698), Adapter 20.522 (p.698) Adapter 20.523 (p.698)

Dimensions



20.026



20.027

* = M5-female