

ELECTRONIC VACUUM/PRESSURE SWITCHES

SERIES SWCN

With digital display
High precision, easy to use



- Compact and lightweight
- Digital indicator: precise electronic insertion with two separated switch outputs
- Switching point and hysteresis can be programmed with a membrane keypad
- Upper and lower limit values can be programmed through two PNP switch outputs
- Analog output 4-20 mA
- IP65 protection
- I/O Link Version

Applications:

- Electronic vacuum/pressure switch for safety monitoring, optimization of cycle times or energy saving devices;
- It can be installed directly on the gripping point of a handling system;
- Setting of the limit vacuum value and continuous vacuum control;
- Perfectly suitable for customer needs.

Electric connection:

- The device is available with hardwired cable of 2 meters or can be supplied with M8 connector.
- Accessories and extensions have to be ordered separately. Codes can be found at the end of this section.

General Data

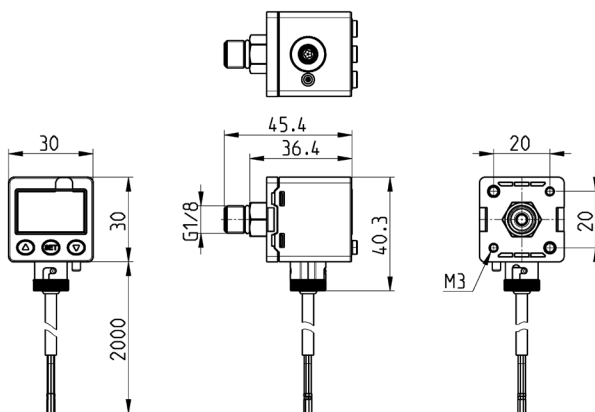
Pressure/vacuum switch	Electronic with polycarbonate housing
Port	With external thread G1/8 and internal thread M5
Display	3 Digit display with membrane keypad for the values set up
LED	Integrated LED indicators for switching state
Electric connection	With M8 4-pole connector or pre-wired cable of 2 meters

ELECTRONIC VACUUM/PRESSURE SWITCHES
SERIES SWCN - CODING EXAMPLES

Coding example

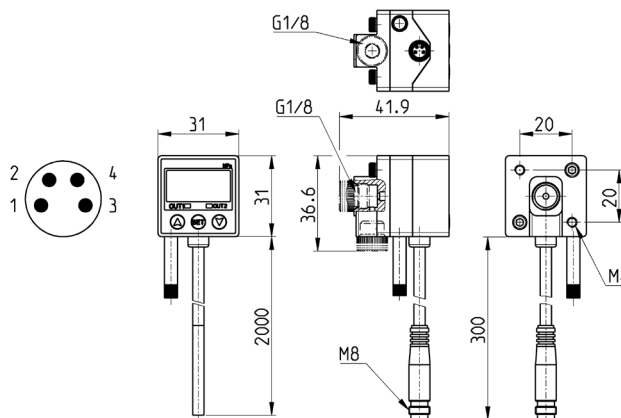
SWCN	-	V01	-	P3	-	2
SWCN	SERIES					
V01	SET PRESSURE RANGE V01 = from -1 bar to 1 bar P10 = from 0 bar to 10 bar					
P3	TYPE OF ELECTRIC CONNECTION: P3 = 2 PNP outputs + 1 analog output 1 - 5 V DC (this version is available with 5-pole cable only) P4 = 2 PNP outputs P6 = 2 PNP outputs + 1 analog output 4-20 mA (this version is available with 5-pole cable only) PI = I/O Link					
2	ELECTRIC CONNECTION 2 = Cable of 2 meters M = M8 4 pin connector				W = 26 AWG to Free wires (I/O-Link only) N = M12 4 Pins (I/O-Link only)	

Vacuum/Pressure switch with 4-20 mA output



Mod.
SWCN-V01-P6-2
SWCN-P10-P6-2

Vacuum/Pressure switch



Mod.
SWCN-V01-P3-2
SWCN-V01-P4-2
SWCN-V01-P4-M
SWCN-P10-P3-2
SWCN-P10-P4-2
SWCN-P10-P4-M

Technical data - Version P3 and P4

	SWCN-V01-...	SWCN-P10-...
Rated pressure range (set-value)	-1 ÷ 1 bar	0 ÷ 10 bar
Setting pressure range (it can be displayed on the screen)	-1 ÷ 1 bar	-1 ÷ 10 bar
Withstand (Maximum) pressure	3 bar	15 bar
Fluid	Air, non-corrosive gases, incombustible gases	Air, non-corrosive gases, incombustible gases
	0,1 kPa	-
	-	0,001 MPa
Set pressure resolution	0,001 Kg/cm ²	0,01 Kg/cm ²
	0,001 bar	0,01 bar
	0,01 Psi	0,1 Psi
	0,1 InHg	-
	1 mmHg	-
	0,1 mmH ₂ O	-
Power supply voltage	12-24 VDC ± 10%, ripple (P-P) 10% or less	12-24 VDC ± 10%, ripple (P-P) 10% or less
Current consumption	≤ 55mA	≤ 55mA
PNP switch output	2 Outputs with open collector Max. load current of 80mA Max. power supply voltage of 24VDC Residual voltage ≤ 1V (with load current of 80mA)	2 Outputs with open collector Max. load current of 80mA Max. power supply voltage of 24VDC Residual voltage ≤ 1V (with load current of 80mA)
Repeatability (switch output)	≤ ± 0,2% F.S. ± 1 digit	≤ ± 0,2% F.S. ± 1 digit
Analog output (where foreseen)	1 - 5V ± 5% F.S. (within the linearity range: ≤ ± 1% F.S.)	1 - 5V ± 2,5% F.S. (within the linearity range: ≤ ± 1% F.S.)
Hysteresis	Hysteresis mode : Adjustable Window comparator mode : Fixed (3 digits)	Hysteresis mode : Adjustable Window comparator mode : Fixed (3 digits)
Response time	≤ 2,5ms (Chattering-proof function: 24ms, 192ms and 768ms)	≤ 2,5ms (chattering-proof function: 24ms, 192ms and 768ms)
Output short circuit protection	YES	YES
7 segment LED display	3 ½ digit (sampling rate of 5 times/sec)	3 ½ digit (sampling rate of 5 times/sec)
Indicator accuracy	≤ ± 2% F.S. ± 1 digit (ambient temperature: 25 ± 3°C)	≤ ± 2% F.S. ± 1 digit (ambient temperature: 25 ± 3°C)
Indicator	Green LED (OUT1), Red LED (OUT2)	Green Led (OUT1), Red Led (OUT2)
Protection class	IP65	IP65
Temperature	Operation: 0 ÷ 50°C Storage: -20 ÷ 60°C (without condensation or freezing)	Operation: 0 ÷ 50°C Storage: -20 ÷ 60°C (without condensation or freezing)
Relative humidity	Operation/Storage: 35 ÷ 85% (without condensation)	Operation/Storage: 35 ÷ 85% (without condensation)
Withstand (Max.) voltage	1000 VAC in 1 min (between case and lead wire)	1000 VAC in 1 min ((between case and lead wire)
Insulation resistance	50MΩ min. (at 500VDC between case and lead wire)	50MΩ min. (at 500VDC between case and lead wire)
Vibration	Total amplitude 1,5 mm 10Hz-55Hz-10Hz scan for 1 minute 2 hours each direction of X, Y and Z	Total amplitude 1,5 mm 10Hz-55Hz-10Hz scan for 1 minute 2 hours each direction of X, Y and Z
Shock	980 m/s ² (100G) 3 times each direction of X, Y and Z	980 m/s ² (100G) 3 times each direction of X, Y and Z
Changes due to temperature	≤ ± 2% F.S. of detected pressure (25°C) within the operating temperature range	≤ ± 2% F.S. of detected pressure (25°C) within the operating temperature range
Port size	G1/8 - M5	G1/8 - M5
Lead wire	Oil-resistance cable (0,15 mm ²)	Oil-resistance cable (0,15 mm ²)
Weight	About 105 g for the version with 2-meter lead wire About 71 g for the version with male connector	About 105 g for the version with 2-meter lead wire About 71 g for the version with male connector

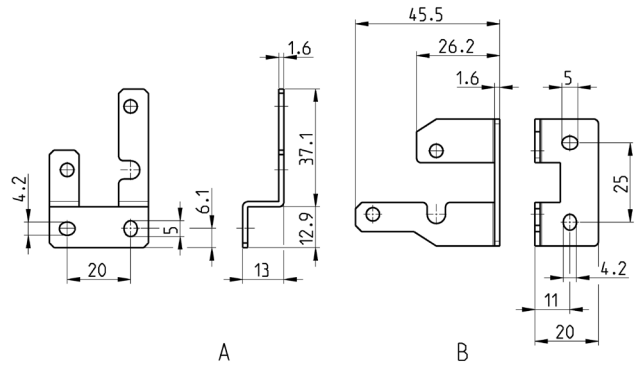
ELECTRONIC VACUUM/PRESSURE SWITCHES
SERIES SWCN - TECHNICAL DATA
Technical data - Version P6 with 4–20 mA analog output.

Fluid	Filtered air, Non-corrosive / Non-flammable gas	Filtered air, Non-corrosive / Non-flammable gas
Set pressure resolution	0,1 kPa - 0,001 Kgf/cm ² 0,001 bar 0,01 Psi 0,1 InHg	- 0,001 MPa 0,01 Kgf/cm ² 0,01 bar 0,1 Psi -
Power supply voltage	12 ~ 24 V DC ± 10%, ripple (P-P) ≤ 10% (UL class 2)	12 ~ 24 V DC ± 10%, ripple (P-P) ≤ 10% (UL class 2)
Current consumption	≤ 40 mA (with no load)	≤ 40 mA (with no load)
Switch output	2 PNP : open collector 2 outputs Max. Load Current : 125 mA Max. Supply Voltage : 24 V DC Residual Voltage : ≤ 1.5 V	2 PNP : open collector 2 outputs Max. Load Current : 125 mA Max. Supply Voltage : 24 V DC Residual Voltage : ≤ 1.5 V
Repeatability	± 0.2 % F.S. ± 1 digit	± 0.2 % F.S. ± 1 digit
Hysteresis	One Point Set Mode : Adjustable Hysteresis mode : Adjustable Window comparator mode : Adjustable	One Point Set Mode : Adjustable Hysteresis mode : Adjustable Window comparator mode : Adjustable
Response time	≤ 2.5 ms (Chattering-proof function : 25 ms, 100 ms, 250 ms, 500 ms, 1000 ms and 1500 ms selectable)	≤ 2.5 ms (Chattering-proof function : 25 ms, 100 ms, 250 ms, 500 ms, 1000 ms and 1500 ms selectable)
Output short circuit protection	YES	YES
Display	3 ½ digital, 7 segment LCD display (Red / Green / Orange) (Sampling rate : 5 times / sec.)	3 ½ digital, 7 segment LCD display (Red / Green / Orange) (Sampling rate : 5 times / sec.)
Indicator accuracy	± 2 % F.S. ± 1 digit (Ambient temperature : 25 ± 3 °C)	± 2 % F.S. ± 1 digit (Ambient temperature : 25 ± 3 °C)
Switch on Indicator	Orange Indicator 1 : OUT1 & Orange Indicator 2 : OUT2	Orange Indicator 1 : OUT1 & Orange Indicator 2 : OUT2
Analog Output (Voltage Output)	Output Voltage : 1 ~ 5 V ± 2.5 % F.S. (within rated pressure range) Linearity : ± 1 % F.S. Output Impedance : about 1 kΩ	Output Voltage : 1 ~ 5 V ± 2.5 % F.S. (within rated pressure range) Linearity : ± 1 % F.S. Output Impedance : about 1 kΩ
Analog Output (Current Output)	Output Current : 4 ~ 20 mA ± 2.5 % F.S. (within rated pressure range) Linearity : ± 1 % F.S. Max. Load Impedance : 250 Ω at power supply of 12 V 600 Ω at power supply of 24 V Min. Load Impedance : 50 Ω	Output Current : 4 ~ 20 mA ± 2.5 % F.S. (within rated pressure range) Linearity : ± 1 % F.S. Max. Load Impedance : 250 Ω at power supply of 12 V 600 Ω at power supply of 24 V Min. Load Impedance : 50 Ω
Enclosure	IP65	IP65
Ambient Temp. Range	Operation : 0 ~ 50 °C, Storage : -10 ~ 60 °C (No condensation or freezing)	Operation : 0 ~ 50 °C, Storage : -10 ~ 60 °C (No condensation or freezing)
Ambient Humidity Range	Operation / Storage : 35 ~ 85 % RH (No condensation)	Operation / Storage : 35 ~ 85 % RH (No condensation)
Withstand Voltage	1000 V AC in 1-min (between case and lead wire)	1000 V AC in 1-min (between case and lead wire)
Insulation resistance	≥ 50 MΩ (at 500 V DC, between case and lead wire)	≥ 50 MΩ (at 500 V DC, between case and lead wire)
Vibration	Total amplitude 1.5 mm or 10 G, 10 Hz-55 Hz-10 Hz scan for 1 minute, 2 hours each direction of X, Y and Z	Total amplitude 1.5 mm or 10 G, 10 Hz ~ 55 Hz ~ 10 Hz scan for 1 minute, 2 hours each direction of X, Y and Z
Shock	100 m/s ² (10 G), 3 times each in direction of X, Y and Z	100 m/s ² (10 G), 3 times each in direction of X, Y and Z
Temperature Characteristic	≤ ± 2% F.S. of detected pressure (25°C) within the operating temperature range	≤ ± 2% F.S. of detected pressure (25°C) within the operating temperature range
Port size	F1 : R1/8", M5 ; F2 : NPT1/8", #10-32 UNF ; F3 : G1/8" (BSPP), M5 F1C : Rc1/8" ; F2C : NPT1/8" ; F3C : G1/8" (BSPP)	F1 : R1/8", M5 ; F2 : NPT1/8", #10-32 UNF ; F3 : G1/8" (BSPP), M5 F1C : Rc1/8" ; F2C : NPT1/8" ; F3C : G1/8" (BSPP)
Lead wire	Ø4 Oil-resistance cable (PVC) - 26 AWG (0.15 mm ²) - 5 cores	Ø4 Oil-resistance cable (PVC) - 26 AWG (0.15 mm ²) - 5 cores
Weight (with 2 Meter Lead Wire)	Approx. 86 g (Port F1 ~ F3) ; Approx. 114 g (Port F1C ~ F3C)	Approx. 86 g (Port F1 ~ F3) ; Approx. 114 g (Port F1C ~ F3C)

Mounting bracket



Supplied with:
4x Fixing screws M4x5 ISO 724 (fine pitch)
1x Fixing bracket for surface mounting (A)
1x Fixing bracket for wall mounting (B)



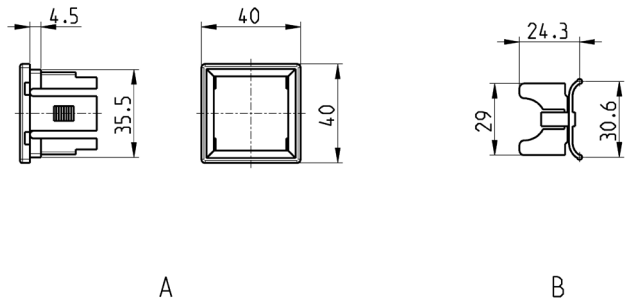
Mod.

SWCN-B

Panel mounting set



Supplied with:
1x Pressure switch holder (A)
2x Panel mounting brackets (B)



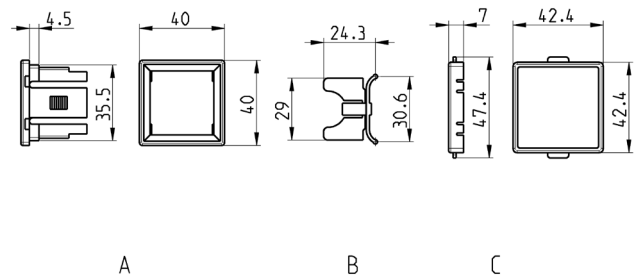
Mod.

SWCN-F

Panel mounting set + transparent cover



Supplied with:
1x Pressure switch holder (A)
2x Panel mounting brackets (B)
1x Transparent cover (C)



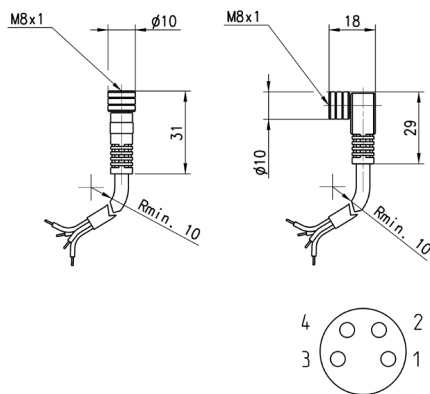
Mod.

SWCN-FP

Circular M8 4-pole connectors, female



With PU sheathing, non shielded cable.
 Protection class: IP65.



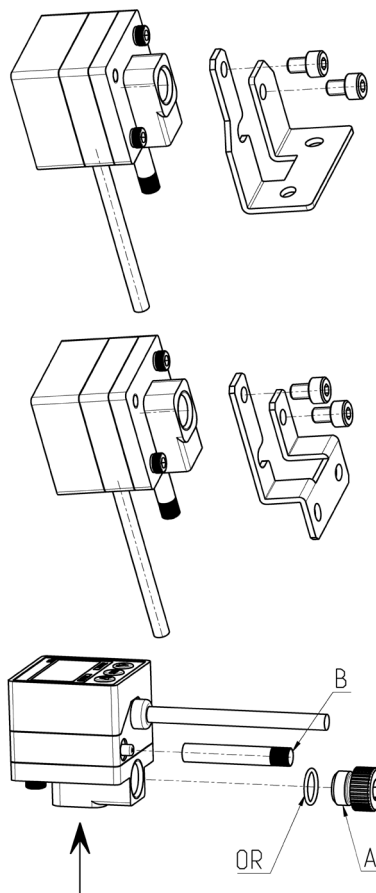
Mod.	Type of connector	Cable length [m]
CS-DF04EG-E200	Straight	2
CS-DF04EG-E500	Straight	5
CS-DR04EG-E200	90°	2
CS-DR04EG-E500	90°	5

Example of mounting with bracket (Mod. SWCN-B) and standard accessories

A: ADDITIONAL POWER SUPPLY

In case of use, please unscrew plug A from one side and mount it on the other one.

B: Use of the AIR FILTER TUBE to reach the IP 65 protection class.



Example of mounting with panel mounting set (Mod. SWCN-F)

A = Panel mounting set Mod. SWCN-F

B = Pressure switch Mod. SWCN-...

C = Panelw

