

Product Catalogue

MINICOMB[®]-EDS

INDUSENS[®]-EDS

Electronic Pressure & Vacuum Switches



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Introduction Electronic Pressure Switches

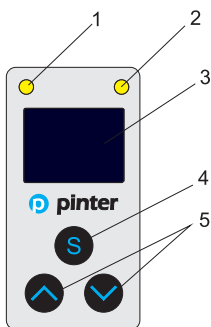
Electronic pressure switches from PINTER for measuring, switching and display of relative or absolute pressure and vacuum of gaseous and liquid media are characterized by a variety of features and capabilities.

Particular emphasis in the development was placed on ease of use.

All multifunctional electronic pressure switches from PINTER feature a high-resolution monochrome OLED full graphic display, which shows the actual pressure in different pressure units and various other information.

Via display and ergonomic 3-button panel the pressure switch is operated by a menu according to VDMA standard and additional plain text menu.

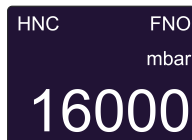
Display / Operating Panel



1. LED for Switch Output 1
2. LED for Switch Output 2
3. Display (Pressure Indicator, Operating Modes, Menu)
4. Menu Key / Menu Item Selection / Parameter Confirmation
5. Keys for Menu Navigation / Parameter Change

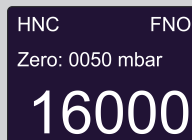
OLED full graphic display / Display Indications

Standard View
with information about output configuration, pressure unit and pressure value



Row 1: Output Configuration(s)
Row 2: Pressure Unit
Row 3: Pressure Value

Standard View
with information about output configuration and pressure value **with activated zero correction**



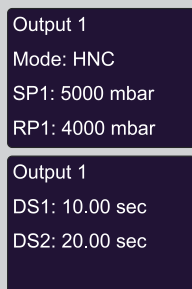
Row 1: Output Configuration(s)
Row 2: Zero Offset Value and Pressure Unit
Row 3: Pressure Value

Standard View
in case of an error



Row 1: Plaintext Description of Error
Row 2: Plaintext Description of Error
Row 3: Error Code

Status View
with summarized information of parameters for each output



Switching Function

Electronic pressure switches from PINTER feature - depending on configuration - several switching elements and several analogue outputs.

For the switching elements following modes are available:

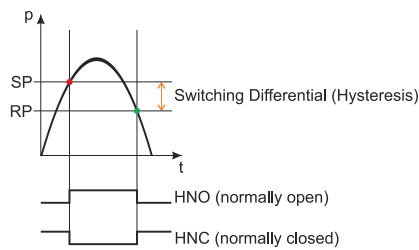
In **Hysteresis-Mode** both switching point SP and reset point RP can be adjusted freely. The switch switches back when the RP is reached. This allows, for example, a simple 2-point control.

With the **Window-Mode** defined areas can be monitored. If the process pressure is within the defined range the output is either closed or open.

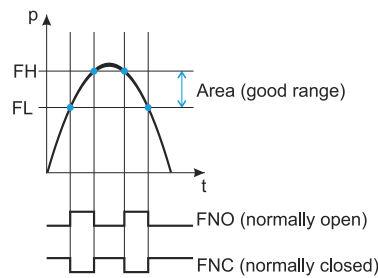
The Window can be adjusted freely via FH (upper value) und FL (lower value).

Both modes can be configured individually to either NO (normally open) or NC (normally closed).

Hysteresis-Mode

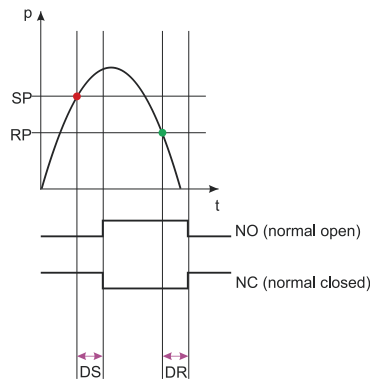


Window-Mode



Switch Delay

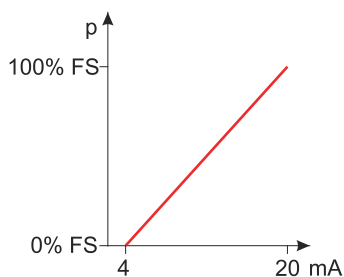
By adjusting switch delay and re-set switch delay you can change the time between the detection of a pressure signal and the switch-over of the digital output(s).



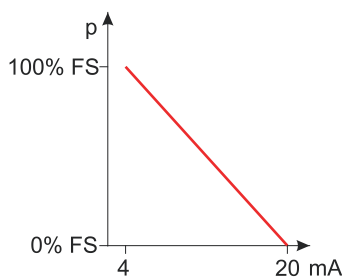
Invertible Analogue Signal

If necessary, the analogue signal can be inverted; in this case 4 mA corresponds to full scale and 20 mA corresponds to zero scale.

Standard-Mode



Inverted Mode



Extended Features, Parameters, Description, Values, Factory Defaults

Parameters	Description	Values	Factory Defaults
SP1 / FH1	set point 1 or upper window value 1	OFF; >= 0,5% FS up to 100% FS	75% FS
RP1 / FL1 ⁽¹⁾	re-set point 1 or lower window value 1	0% FS up to SP -0,5% FS (+0,5% FS if SP < 0)	74,5% FS
SP2 / FH2 ⁽²⁾	set point 2 or upper window value 2	OFF; >= 0,5% FS up to 100% FS	25% FS
RP2 / FL2 ^(1,2)	re-set point 2 or lower window value 2	0% FS up to SP -0,5% FS (+0,5% FS if SP < 0)	24,5% FS
DS1	switch delay 1	OFF; 0,2 up to 50 s	OFF
DR1	re-set switch delay 1	OFF; 0,2 up to 50 s	OFF
DS2 ⁽²⁾	switch delay 2	OFF; 0,2 up to 50 s	OFF
DR2 ⁽²⁾	re-set switch delay 2	OFF; 0,2 up to 50 s	OFF
OU1	switching function 1	HNO (hysteresis function, normally open) HNC (hysteresis function, normally closed) FNO (hysteresis function, normally open) FNC (hysteresis function, normally closed)	HNO
OU2 ⁽²⁾	switching function 2	HNO (hysteresis function, normally open) HNC (hysteresis function, normally closed) FNO (hysteresis function, normally open) FNC (hysteresis function, normally closed)	HNO
OUA ⁽³⁾	configuration analogue output	I (4 - 20 mA = 0 - 100% FS) I INV (4 - 20 mA = 100 - 0% FS)	I
UNI	pressure unit	bar; mbar; MPa; kPa; psi; %	bar
DISP	autom. display shut-off	OFF; 1 - 60 min	OFF
DISR	display rotation	NO (standard display) YES (display rotated by 180°)	NO
ZERO	zero correction	NO; 1% FS ⁽⁴⁾	NO
PASS	password protection	NO; 0000 - 9999	NO
LANG	language for text menu	DE; EN; ES; FR; IT; OFF	DE

Remarks

- 1 menu item not available, when corresponding output is turned OFF
- 2 only 2P
- 3 only 1PA
- 4 for pressure ranges < 4 bar max zero correction +/- 50 mbar

Diagnosis and Error Codes

Display	Text Menu	Reason	Correction
OL ⁽¹⁾	Over Pressure	applied pressure > 100% FS	operate the unit within the permissible specification
UL ⁽¹⁾	Low Pressure	applied pressure < 0% FS	operate the unit within the permissible specification
ERR3 ⁽²⁾	Over Voltage	supply voltage > 32 VDC	correct supply voltage
ERR3 ⁽³⁾	Low Voltage	supply voltage < 15 VDC	correct supply voltage
ATT2	Out of Range	try to make zero point correction out of specified range	press S button to acknowledge the message. Make zero-point correction within the specified range.
PASS?	Protected Mode active	try to jump into the menu with password protection active.	Enter password and disable password protection.

Remarks

- 1 all devices have an overrun of approx. +/- 5% FS befor the error message is displayed
- 2 on continuesly applied supply voltage of > 35 VDC the electronics will be damaged
- 3 if the supply voltage falls < 15 VDC the error message will be displayed and the digital output/s will be shut down. On 1PA versions the analogue output will be set to 3,6 mA. If the supply voltage falls < 8 VDC the device is being switched off.

Product Overview / Selection Matrix Electronic Pressure Switches



Model		MINICOMB-EDS	MINICOMB-EDS/HP	INDUSENS-EDS
Pressure Ranges	Vacuum	•		•
Pressure Ranges	Pressure ≤ 25 bar	•		•
Pressure Ranges	Pressure ≥ 40 bar		•	•
Pressure Ranges	combined Pressure/Vacuum	•		•
Wetted Parts	Aluminium, FKM, Al ₂ O ₃	•		
Wetted Parts	Stainless Steel, FKM, Al ₂ O ₃		•	•
Material Enclosure	Aluminium	•	•	
Material Enclosure	Stainless Steel		•	•
Output Signals	1 Switch	•	•	•
Output Signals	1 Switch & Analogue Output	•	•	•
Output Signals	2 Switches	•	•	•
Switch Element	PNP Transistor	•	•	•
Switching Current	0,5 A	•	•	•
Switching Current	5 A	•	•	•
Analogue Output	4 - 20 mA	•	•	•
Accuracy	Overall Accuracy [% FS]	1	1	0,5
Supply	24 VDC (15 - 32 VDC)	•	•	•
Display	monochrom OLED	•	•	•
Process Connection	Sub-base mounting	•		
Process Connection	Female Thread	•	•	•
Process Connection	Male Thread			•
Electrical Connection	M12x1 plug	•	•	•
Protection	IP67	•	•	•
Temperature Range	-20...+85°C	•	•	•
Weight	[kg]	0,2	0,4	0,4
Specialties	cleaned for O2 service	•	•	•
Specialties	OEM version	•	•	•

MINICOMB® Electronic Pressure Switch Model EDS



At a glance

- Electronic Pressure Switch
- Monochrome, high resolution OLED full graphic display
- Pressure Ranges from -1...0 bar / 0 - 1 bar up to 0 - 25 bar
- Relative and Absolute Pressure
- Outputs 1x PNP, 2x PNP or 1x PNP and 4 - 20 mA
- Hysteresis Mode or Window Mode
- Overall Accuracy < 1% FS

Description

The MINICOMB® EDS is an electronic pressure switch for measuring, switching and display of relative and absolute pressure and vacuum of gaseous and liquid media.

The multifunctional MINICOMB® EDS has a monochrome high-resolution **OLED full graphical display**, indicating the actual value in selectable pressure units. It offers the parameterization of the pressure switch according to VDMA standard and additional plain text menus. The parameters are set via the ergonomic 3-button control panel.

In addition, the EDS MINICOMB® is available with either 1 or 2 switching outputs or 1 switching output with additional analog output (4 - 20 mA).

Depending on the application different switching functions are available:

In **Hysteresis-Mode** both switching point SP and reset point RP can be adjusted freely. The switch switches back when the RP is reached. This allows, for example, a simple 2-point control.

With the **Window-Mode** defined areas can be monitored. If the process pressure is within the defined range the output is either closed or open. The area is freely adjustable via FH (upper value) and FL (lower value).

With 2P versions, the switching modes can be configured differently for both outputs.

Switching logic (NC or NO) as well as **switching delay** and **reset delay** can be set freely in all modes.

Further Features

such as rotatable display indication, adjustable display power off, zero-point adjustment or password protection increase both benefit and comfort of the MINICOMB® EDS.

Switching Function

1P	1x PNP-Transistor
1PA	1x PNP-Transistor, 1x Analogue Output
2P	2x PNP-Transistor

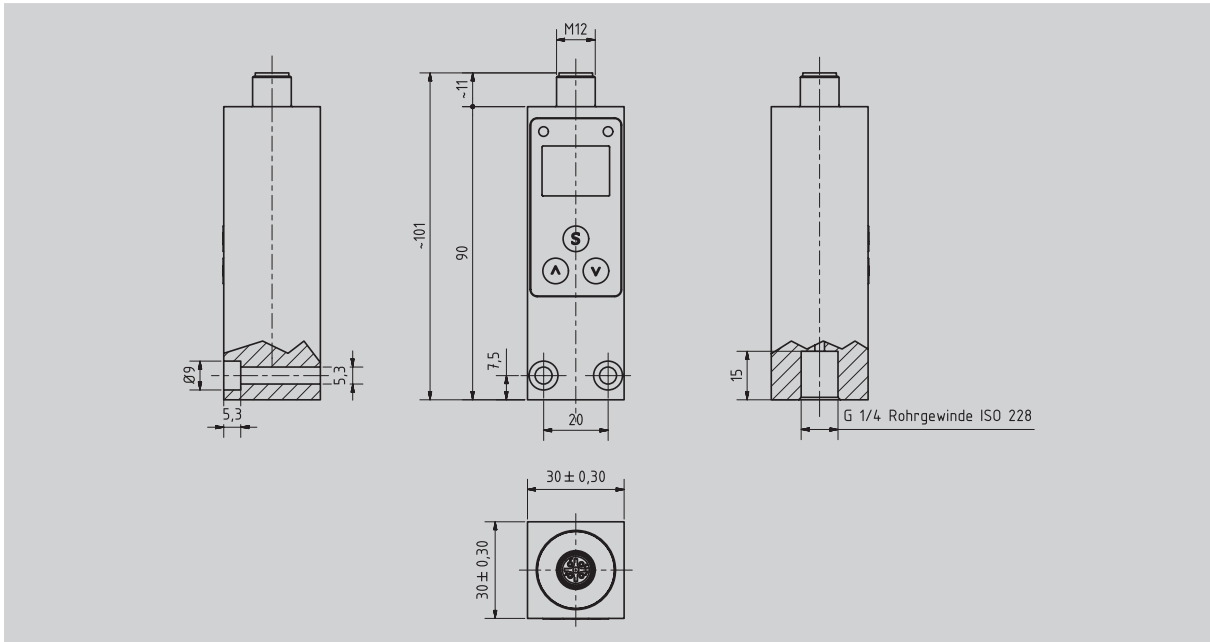
Technical Data

Standard

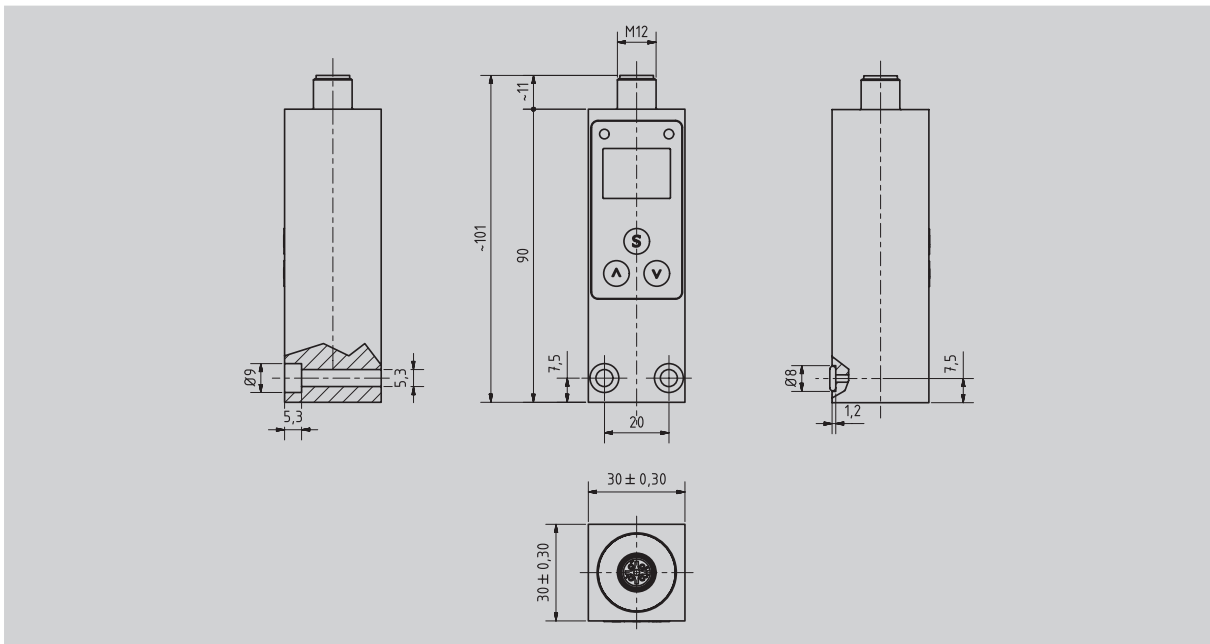
Function	electronic pressure switch with display; based on ceramics sensor
Life Cycle	at least 100 mio. switch cycles
Pressure Ranges (relative or absolute)	0 - 1 bar; 0 - 1,6 bar; 0 - 2,5 bar; 0 - 4 bar; 0 - 6 bar; 0 - 10 bar; 0 - 16 bar; 0 - 25 bar
Vacuum Ranges (relative)	-1...0 bar; -1...+1 bar; -1...+5 bar; -1...+9 bar; -1...+15 bar; -1...+24 bar
Overpressure Safety (short time)	≥ 2,5x FS
Burst Pressure	≥ 3,0x FS
Vacuum Safety	-1 bar
Material Enclosure	Aluminium
Material Pressure Inlet (wetted)	Aluminium
Material Sensor (wetted)	Al ₂ O ₃
Material Seal (wetted)	FKM (NBR and FKM for sub-base mounting)
Permissible Media Temperature	-20...+85°C
Permissible Ambient Temperature	-20...+85°C
Output Signals	either 1x PNP, 2x PNP or 1x PNP with analogue output 4 - 20 mA
Switch Accuracy, Repeatability	≤ 0,5% FS
Accuracy Analogue Output	≤ 0,5% FS
Longterm Stability (DIN EN 60770)	± 0,5% FS
Switch Point / Reset Point	adjustable ≥ 0,5% FS - 100% FS / adjustable ≥ 0,5% FS from switch point
Switching Function	adjustable, normally open, normally closed, hysteresis-mode, window-mode
Switch Delay / Reset Delay	adjustable; 0,2 - 50 s
Response Time	≤ 10ms
Switching Current DC	max. 0,5 A
Max. Load Resistance	600 Ω
Display	OLED
Switch State Indicator	1 LED per channel (yellow)
Menu Navigation	oriented to VDMA standard sheet 24574-1 (with addition plain text menu)
Menu Language	adjustable - English, French, German, Italian, Spanish
Supply	24 VDC (15 - 32 VDC)
Power Consumption	< 50 mA
Process Connection	either sub-base mounting or 1/4" female thread
Electrical Connection	M12x1 plug (5-pin)
Weight	approx. 0,3 kg
Protection (EN 60529)	IP67 (with installed counter-plug)
Shock Resistance (XYZ-direction)	30g, xyz, DIN EN 60068-2-27 (11ms)
Vibration Resistance (XYZ-direction)	5g (10...150Hz), xyz DIN EN 60068-2-6
Electromagnetic Compatibility	EMC-Directive 2004/108/EG, EN 61326-1:2013, EN 61326-2-3:2013; EN 61000-6-2:2005; EN 61000-6-4:2007 + A1:2011
Further Functions	zero-point adjustment, adjustable switching and re-set delay, changeable units, adjustable display power off, rotatable display indication, password protection
Further Options	cleaned for O ₂ service

Dimensions

with female thread



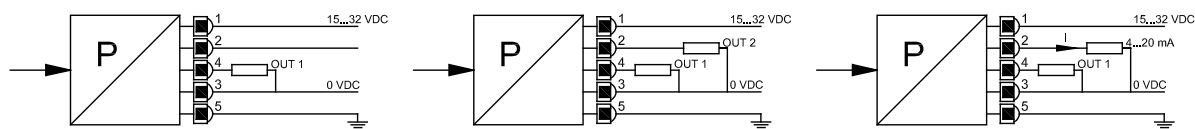
with sub-base mounting



Electrical Data

Switching Diagrams

1P (1 PNP output) 2P (2 PNP outputs) 1PA (PNP output & 1 Analogue Output)



Electrical Connection

	+Ub	OUT2 (PNP) / 4-20 mA	0 Volt	OUT1 (PNP)	FE
M12 plug	1	2	3	4	5
cable colour ¹	brown	white	blue	black	gray

Remarks

1 M12 connector with cable is available as optional accessories.

Order Codes

Overview with most common options

Order Code Structure	E 0 0 a b c - d e - f g h	
a / Model	sub-base mounting	1
a / Model	female thread	5
b / Material	Aluminium / Keramik / FKM	1
c / Output	1x PNP	A
c / Output	2x PNP	B
c / Output	1x PNP + 4 - 20 mA	C
d / Pressure	Relative Pressure	0
d / Pressure	Absolute Pressure	5
e / Pressure Range	-1...0 bar (only relative pressure)	06
e / Pressure Range	-1...+1 bar (only relative pressure)	09
e / Pressure Range	0 - 1 bar	20
e / Pressure Range	0 - 1,6 bar	22
e / Pressure Range	0 - 2,5 bar	23
e / Pressure Range	0 - 4 bar	24
e / Pressure Range	0 - 6 bar	25
e / Pressure Range	0 - 10 bar	26
e / Pressure Range	0 - 16 bar	27
e / Pressure Range	0 - 25 bar	28
f / Process Connection	standard sub-base mounting	P
f / Process Connection	G 1/4	4
g / Electrical Connection	M12 plug	D
h / further Options	no further options	O
h / further Options	cleaned O2 service	A

Example Order Code

Order Code Structure	E 0 0 a b c - d e - f g h	
Order Code	E0051A-026-4DO	
ID for MINICOMB-EDS		E00
a / Model	female thread	5
b / Material	Aluminium / Keramik / FKM	1
c / Output	1x PNP	A
-	dash	-
d / Pressure	Relative Pressure	0
e / Pressure Range	0 - 10 bar	26
-	dash	-
f / Process Connection	G 1/4	4
g / Electrical Connection	M12 plug	D
h / further Options	no further options	O

MINICOMB® Electronic Pressure Switch Model EDS/HP



At a glance

- Electronic Pressure Switch
- Monochrome, high resolution OLED full graphic display
- Pressure Ranges from 0 - 40 bar up to 0 - 600 bar
- Relative and Absolute Pressure
- Outputs 1x PNP, 2x PNP or 1x PNP and 4 - 20 mA
- Hysteresis Mode or Window Mode
- Overall Accuracy < 1% FS

Description

The MINICOMB® EDS/HP is an electronic pressure switch for measuring, switching and display of relative and absolute pressure and vacuum of gaseous and liquid media.

The multifunctional MINICOMB® EDS has a monochrome high-resolution **OLED full graphical display**, indicating the actual value in selectable pressure units. It offers the parameterization of the pressure switch according to VDMA standard and additional plain text menus. The parameters are set via the ergonomic 3-button control panel.

In addition, the EDS MINICOMB® is available with either 1 or 2 switching outputs or 1 switching output with additional analog output (4 - 20 mA).

Depending on the application different switching functions are available:

In **Hysteresis-Mode** both switching point SP and reset point RP can be adjusted freely. The switch switches back when the RP is reached. This allows, for example, a simple 2-point control.

With the **Window-Mode** defined areas can be monitored. If the process pressure is within the defined range the output is either closed or open. The area is freely adjustable via FH (upper value) and FL (lower value).

With 2P versions, the switching modes can be configured differently for both outputs.

Switching logic (NC or NO) as well as **switching delay** and **reset delay** can be set freely in all modes.

Further Features

such as rotatable display indication, adjustable display power off, zero-point adjustment or password protection increase both benefit and comfort of the MINICOMB® EDS.

Switching Function

1P	1x PNP-Transistor
1PA	1x PNP-Transistor, 1x Analogue Output
2P	2x PNP-Transistor

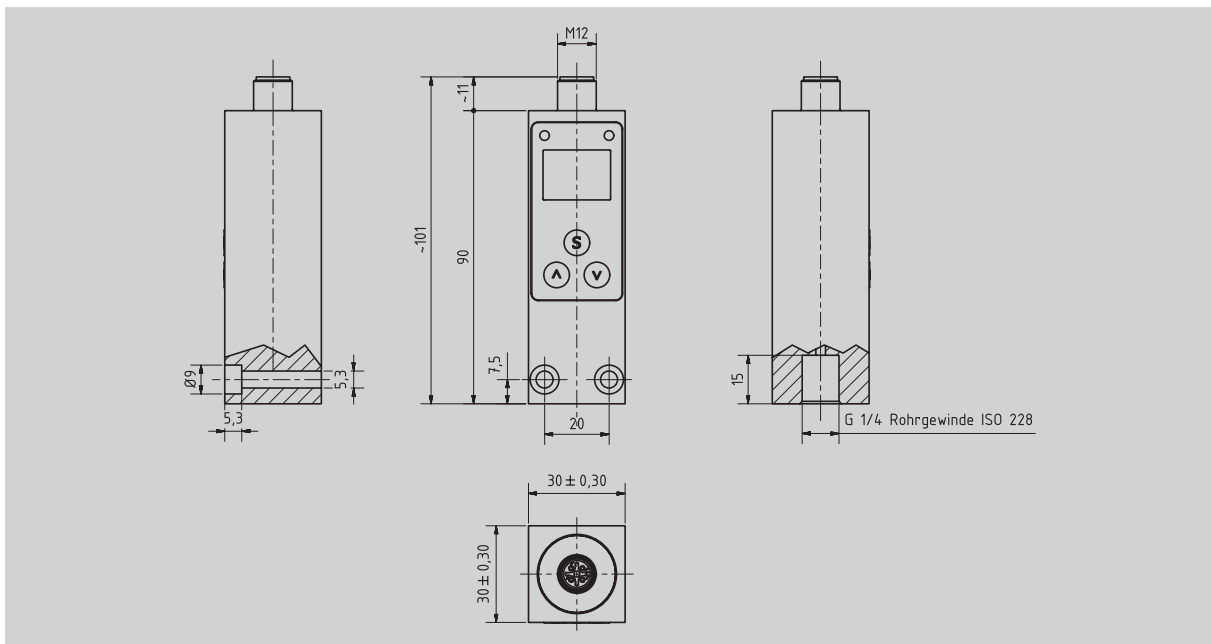
Technical Data

Standard

Function	electronic pressure switch with display; based on ceramics sensor
Life Cycle	at least 100 mio. switch cycles
Pressure Ranges	0 - 40 bar; 0 - 60 bar; 0 - 100 bar; 0 - 160 bar; 0 - 250 bar; 0 - 400 bar; 0 - 600 bar
Vacuum Ranges (relative)	-1...0 bar; -1...+1 bar; -1...+5 bar; -1...+9 bar; -1...+15 bar; -1...+24 bar
Overpressure Safety (short time)	≥ 2,5x FS
Burst Pressure	≥ 3,0x FS
Vacuum Safety	-1 bar
Material Enclosure	Aluminium
Material Pressure Inlet (wetted)	Stainless Steel 1.4301 (AISI 304) or Stainless Steel 1.4404 (AISI 316L)
Material Sensor (wetted)	Al ₂ O ₃
Material Seal (wetted)	FK
Permissible Media Temperature	-20...+85°C
Permissible Ambient Temperature	-20...+85°C
Output Signals	either 1x PNP, 2x PNP or 1x PNP with analogue output 4 - 20 mA
Switch Accuracy, Repeatability	≤ 0,5% FS
Accuracy Analogue Output	≤ 0,5% FS
Longterm Stability (DIN EN 60770)	± 0,5% FS
Switch Point / Reset Point	adjustable ≥ 0,5% FS - 100% FS / adjustable ≥ 0,5% FS from switch point
Switching Function	adjustable, normally open, normally closed, hysteresis-mode, window-mode
Switch Delay / Reset Delay	adjustable; 0,2 - 50 s
Response Time	≤ 10ms
Switching Current DC	max. 0,5 A
Max. Load Resistance	600 Ω
Display	OLED
Switch State Indicator	1 LED per channel (yellow)
Menu Navigation	oriented to VDMA standard sheet 24574-1 (with addition plain text menu)
Menu Language	adjustable - English, French, German, Italian, Spanish
Supply	24 VDC (15 - 32 VDC)
Power Consumption	< 50 mA
Process Connection	either sub-base mounting or 1/4" female thread
Electrical Connection	M12x1 plug (5-pin)
Weight	approx. 0,3 kg
Protection (EN 60529)	IP67 (with installed counter-plug)
Shock Resistance (XYZ-direction)	30g, xyz, DIN EN 60068-2-27 (11ms)
Vibration Resistance (XYZ-direction)	5g (10...150Hz), xyz DIN EN 60068-2-6
Electromagnetic Compatibility	EMC-Directive 2004/108/EG, EN 61326-1:2013, EN 61326-2-3:2013; EN 61000-6-2:2005; EN 61000-6-4:2007 + A1:2011
Further Functions	zero-point adjustment, adjustable switching and re-set delay, changeable units, adjustable display power off, rotatable display indication, password protection
Further Options	cleaned for O ₂ service

Dimensions

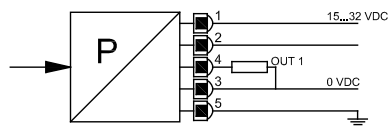
with female thread



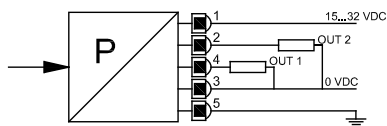
Electrical Data

Switching Diagrams

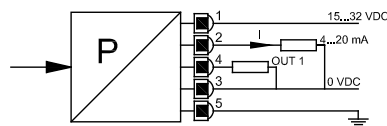
1P (1 PNP output)



2P (2 PNP outputs)



1PA (PNP output & 1 Analogue Output)



Electrical Connection

	+Ub	OUT2 (PNP) / 4-20 mA	0 Volt	OUT1 (PNP)	FE
M12 plug	1	2	3	4	5
cable colour ¹	brown	white	blue	black	gray

Remarks

1 M12 connector with cable is available as optional accessories.

Order Codes

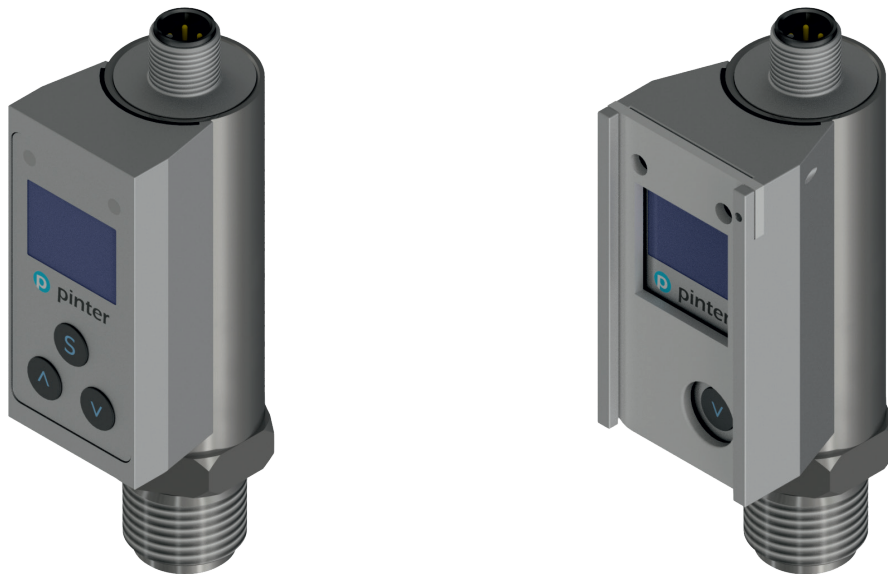
Overview with most common options

Order Code Structure	E 0 0 a b c - d e - f g h	
a / Model	female thread	5
b / Material	Stainless Steel 1.4301 (AISI 304) / Keramik / FKM	3
b / Material	Stainless Steel 1.4404 (AISI 316L) / Keramik / FKM	2
c / Output	1x PNP	A
c / Output	2x PNP	B
c / Output	1x PNP + 4 - 20 mA	C
d / Pressure	Relative Pressure	0
e / Pressure Range	0 - 40 bar	29
e / Pressure Range	0 - 60 bar	30
e / Pressure Range	0 - 100 bar	31
e / Pressure Range	0 - 160 bar	32
e / Pressure Range	0 - 250 bar	33
e / Pressure Range	0 - 400 bar	35
e / Pressure Range	0 - 600 bar	48
f / Process Connection	G 1/4	4
g / Electrical Connection	M12 plug	D
h / further Options	no further options	O
h / further Options	cleaned O2 service	A

Example Order Code

Order Code Structure	E 0 0 a b c - d e - f g h	
Order Code	E0053A-048-4DO	
ID for MINICOMB-EDS		E00
a / Model	female thread	5
b / Material	Aluminium / Keramik / FKM	3
c / Output	1x PNP	A
-	dash	-
d / Pressure	Relative Pressure	0
e / Pressure Range	0 - 600 bar	48
-	dash	-
f / Process Connection	G 1/4	4
g / Electrical Connection	M12 plug	D
h / further Options	no further options	O

INDUSENS® -EDS Universal Electronic Pressure Switch



At a glance

- Electronic Pressure Switch
- Monochrom, high resolution OLED full graphic display
- Pressure Ranges -1...0 bar / 0 - 1 bar up to 0 - 600 bar
- Relative and Absolute Pressure
- Outputs 1x PNP, 2x PNP or 1x PNP and 4 - 20 mA
- Hysteresis Mode or Window Mode
- Overall Accuracy < 0,5% FS

Description

The INDUSENS® EDS is an electronic pressure switch for measuring, switching and display of relative and absolute pressure and vacuum of gaseous and liquid media.

The multifunctional INDUSENS® EDS has a monochrome high-resolution **OLED full graphical display**, indicating the actual value in selectable pressure units. It offers the parameterization of the pressure switch according to VDMA standard and additional plain text menus. The parameters are set via the ergonomic 3-button control panel.

In addition, the INDUSENS® EDS is available with either 1 or 2 switching outputs or 1 switching output with additional analog output (4 - 20 mA).

Depending on the application different switching functions are available:

In **Hysteresis-Mode** both switching point SP and reset point RP can be adjusted freely. The switch switches back when the RP is reached. This allows, for example, a simple 2-point control.

With the **Window-Mode** defined areas can be monitored. If the process pressure is within the defined range the output is either closed or open. The area is freely adjustable via FH (upper value) and FL (lower value).

With 2P versions, the switching modes can be configured differently for both outputs.

Switching logic (NC or NO) as well as **switching delay** and **reset delay** can be set freely in all modes.

Further Features

such as rotatable display indication, adjustable display power off, zero-point adjustment or password protection increase both benefit and comfort of the INDUSENS® EDS.

Switching Function

1P	1x PNP-Transistor
1PA	1x PNP-Transistor, 1x Analogue Output
2P	2x PNP-Transistor

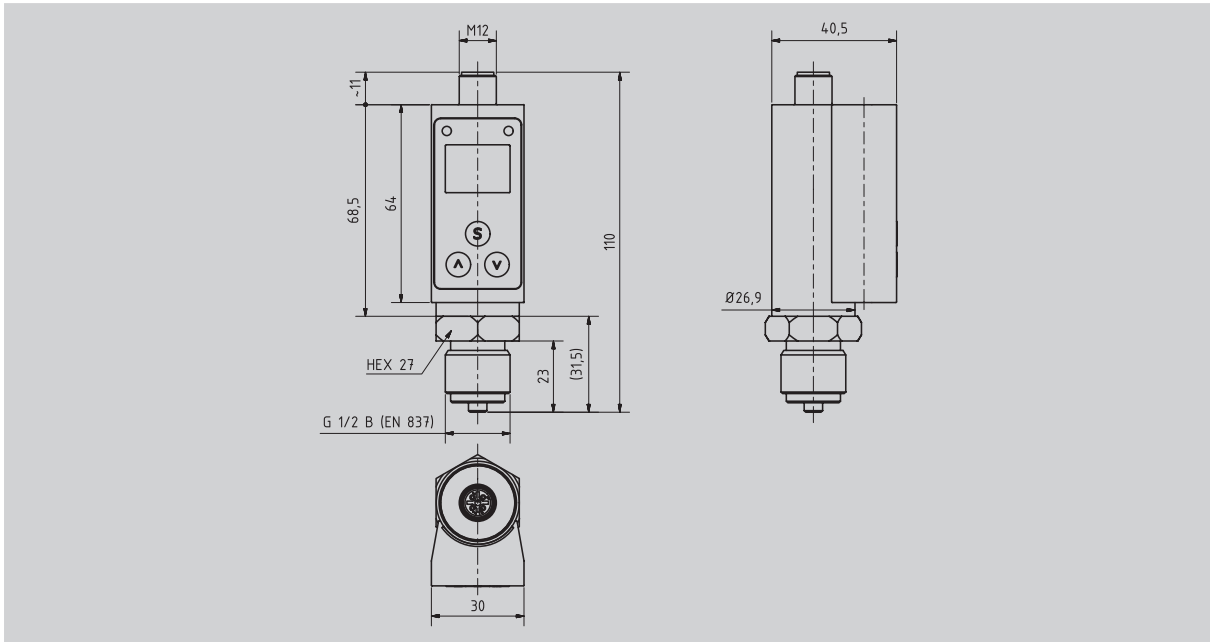
Technical Data

Standard

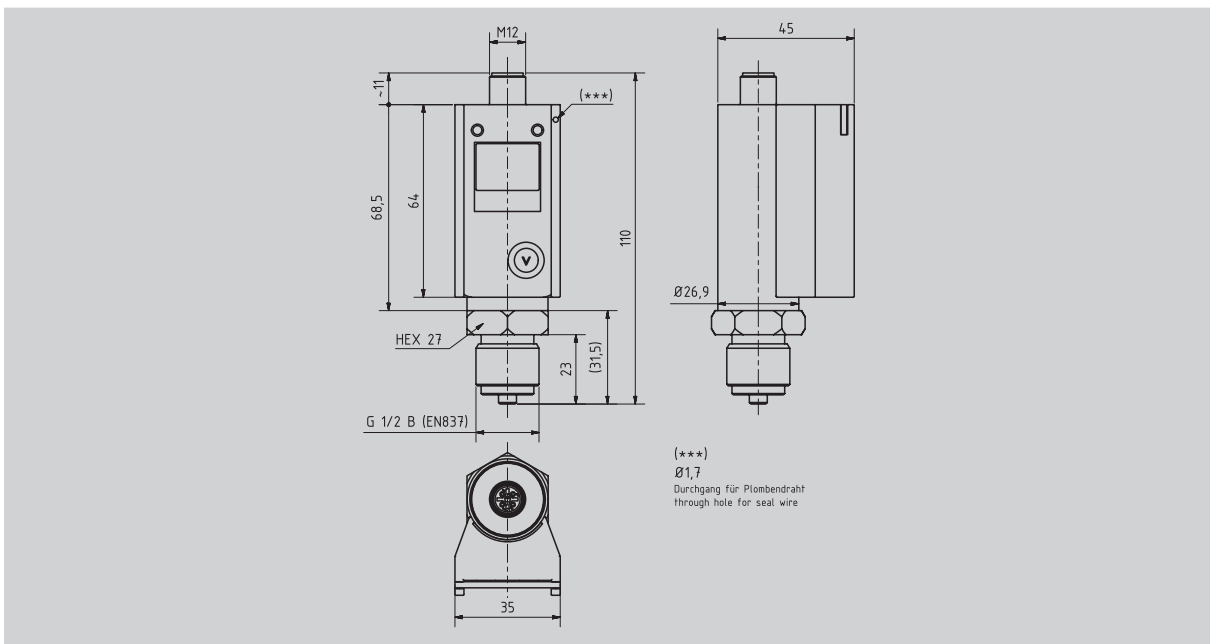
Function	electronic pressure switch with display; based on ceramics sensor
Life Cycle	at least 100 mio. switch cycles
Pressure Ranges (relative or absolute)	0 - 1 bar; 0 - 1,6 bar; 0 - 2,5 bar; 0 - 4 bar; 0 - 6 bar; 0 - 10 bar; 0 - 16 bar; 0 - 25 bar
High Pressure Ranges	0 - 40 bar; 0 - 60 bar; 0 - 100 bar; 0 - 160 bar; 0 - 250 bar; 0 - 400 bar; 0 - 600 bar
Vacuum Ranges (relative)	-1...0 bar; -1...+1 bar; -1...+5 bar; -1...+9 bar; -1...+15 bar; -1...+24 bar
Overpressure Safety (short time)	≥ 2,5x FS
Burst Pressure	≥ 3,0x FS
Vacuum Safety	-1 bar
Material Enclosure	Aluminium
Material Pressure Inlet (wetted)	Stainless Steel 1.4301 (AISI 304) or Stainless Steel 1.4404 (AISI 316L)
Material Sensor (wetted)	Al ₂ O ₃
Material Seal (wetted)	FK
Permissible Media Temperature	-20...+85°C
Permissible Ambient Temperature	-20...+85°C
Output Signals	either 1x PNP, 2x PNP or 1x PNP with analogue output 4 - 20 mA
Switch Accuracy, Repeatability	≤ 0,5% FS
Accuracy Analogue Output	≤ 0,5% FS
Longterm Stability (DIN EN 60770)	± 0,5% FS
Switch Point / Reset Point	adjustable ≥ 0,5% FS - 100% FS / adjustable ≥ 0,5% FS from switch point
Switching Function	adjustable, normally open, normally closed, hysteresis-mode, window-mode
Switch Delay / Reset Delay	adjustable; 0,2 - 50 s
Response Time	≤ 10ms
Switching Current DC	max. 0,5 A
Max. Load Resistance	600 Ω
Display	OLED
Switch State Indicator	1 LED per channel (yellow)
Menu Navigation	oriented to VDMA standard sheet 24574-1 (with addition plain text menu)
Menu Language	adjustable - English, French, German, Italian, Spanish
Supply	24 VDC (15 - 32 VDC)
Power Consumption	< 50 mA
Process Connection	either sub-base mounting or 1/4" female thread
Electrical Connection	M12x1 plug (5-pin)
Weight	approx. 0,3 kg
Protection (EN 60529)	IP67 (with installed counter-plug)
Shock Resistance (XYZ-direction)	30g, xyz, DIN EN 60068-2-27 (11ms)
Vibration Resistance (XYZ-direction)	5g (10...150Hz), xyz DIN EN 60068-2-6
Electromagnetic Compatibility	EMC-Directive 2004/108/EG, EN 61326-1:2013, EN 61326-2-3:2013; EN 61000-6-2:2005; EN 61000-6-4:2007 + A1:2011
Further Functions	zero-point adjustment, adjustable switching and re-set delay, changeable units, adjustable display power off, rotatable display indication, password protection
Further Options	cleaned for O ₂ service

Dimensions

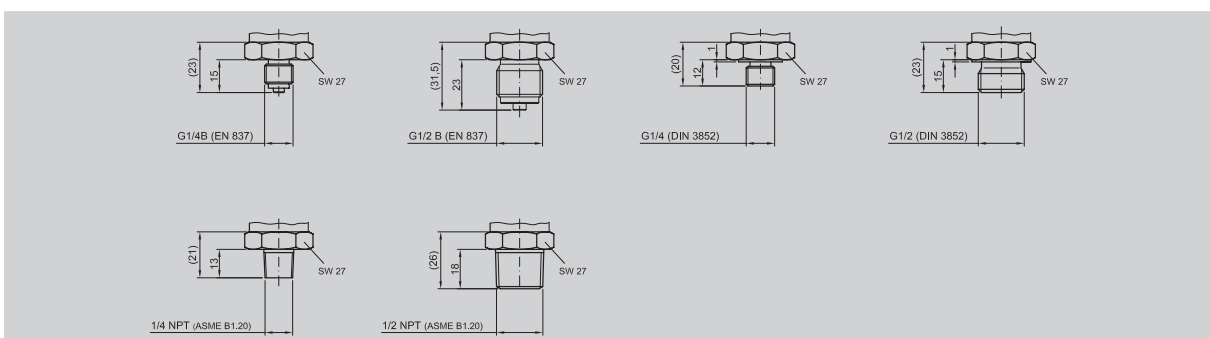
with male thread G 1/2 B



with male thread G 1/2 B and lead-sealable



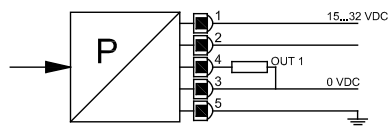
other process connections



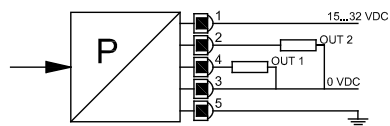
Electrical Data

Switching Diagrams

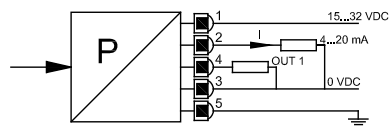
1P (1 PNP output)



2P (2 PNP outputs)



1PA (PNP output & 1 Analogue Output)



Electrical Connection

	+Ub	OUT2 (PNP) / 4-20 mA	0 Volt	OUT1 (PNP)	FE
M12 plug	1	2	3	4	5
cable colour ¹	brown	white	blue	black	gray

Remarks

1 M12 connector with cable is available as optional accessories.

Order Codes

Overview with most common options

Order Code Structure	SE 1 0 b c - d e - f g h	
b / Material	Stainless Steel 1.4301 (AISI 304) / ceramics / FKM	1
c / Output	1x PNP	A
c / Output	2x PNP	B
c / Output	1x PNP + 4 - 20 mA	C
d / Pressure	Relative Pressure	0
d / Pressure	Absolute Pressure	5
e / Pressure Range	-1...0 bar (only relative pressure)	06
e / Pressure Range	-1...+1 bar (only relative pressure)	09
e / Pressure Range	0 - 1 bar	20
e / Pressure Range	0 - 1,6 bar	22
e / Pressure Range	0 - 2,5 bar	23
e / Pressure Range	0 - 4 bar	24
e / Pressure Range	0 - 6 bar	25
e / Pressure Range	0 - 10 bar	26
e / Pressure Range	0 - 16 bar	27
e / Pressure Range	0 - 25 bar	28
e / Pressure Range	0 - 40 bar	29
e / Pressure Range	0 - 60 bar (only relative pressure)	30
e / Pressure Range	0 - 100 bar (only relative pressure)	31
e / Pressure Range	0 - 160 bar (only relative pressure)	32
e / Pressure Range	0 - 250 bar (only relative pressure)	33
e / Pressure Range	0 - 400 bar (only relative pressure)	35
e / Pressure Range	0 - 600 bar (only relative pressure)	48
f / Process Connection	G 1/4 B (EN 837), Stainless Steel 1.4571/AISI 316Ti (wetted)	B
f / Process Connection	G 1/2 B (EN 837), Stainless Steel 1.4571/AISI 316Ti (wetted)	D
f / Process Connection	G 1/4 female (EN 837), Stainless Steel 1.4571/AISI 316Ti (wetted)	G
f / Process Connection	G 1/2 female (EN 837), Stainless Steel 1.4571/AISI 316Ti (wetted)	H
f / Process Connection	1/2" NPT male (ASME B1.20), Stainless Steel 1.4571/AISI 316Ti (wetted)	J
f / Process Connection	G 1/4 (DIN 3852), Stainless Steel 1.4571/AISI 316Ti (wetted)	M
f / Process Connection	G 1/2 (DIN 3852), Stainless Steel 1.4571/AISI 316Ti (wetted)	N
g / Electrical Connection	M12 plug	D
h / further Options	no further options	O
h / further Options	cleaned O2 service	A

Example Order Code

Order Code Structure	S E 1 0 b c - d e - f g h	
Order Code	SE101A-027-DDO	
ID for INDUSENS-EDS		SE10
b / Material	Stainless Steel 1.4301 (AISI 304) / ceramics / FKM	1
c / Output	1x PNP	A
-	dash	-
d / Pressure	Relative Pressure	0
e / Pressure Range	0 - 16 bar	27
-	dash	-
f / Process Connection	G 1/2 B (EN 837), Stainless Steel 1.4571/AISI 316Ti (wetted)	D
g / Electrical Connection	M12 plug	D
h / further Options	no further options	O

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