

RPP Low and medium range standard pressure switches

All industrial environments

All fluids

One or two thresholds

All stainless steel version for aggressive environments

French Electricity Generating Board (EDF)
electronuclear version

Marine version

Conforms to CÉ

These instruments compare a pre-established adjustable set point to the received process pressure.

Equipped with one or two snap action microswitches, they are used for controlling the process cycles, or operate an alarm when pressure reaches set point value.

Depending on options selected, adjustable differential deadband is available. Featuring possibility to adjust change on rise and change on fall limits or enabling to get rid of undesired repetitive on/off around set point.



Technical Data (20°C)

Operating temperature	See pages 2 and 3
Storage temperature	-40...70°C
Reproducibility	±2% of F.S.
Reading accuracy	±5% of F.S.
Conformité CÉ	Low Voltage Directive DBT 73/23/CÉ Pressure Directive PED 97/23/CÉ
Degree of protection	IP 65, NF EN 60529

Important

Normal operation is between 10 % and 90 % of the selected scale. The deadband values given in the tables (see inside pages) are defined under these conditions. The maximum overpressure values correspond to accidental overpressures of limited duration.

All circuits must be equipped with a safety system protecting them against excess pressure.

Any pulsating circuit must be fitted with pulsation dampeners. Mechanical vibrations should be reduced by means of antivibration mounts fitted to the pressure switches.

Manufacturing

Cover	Blue ZAMAK protected Captive screws for cover attachment
Case	Black ZAMAK protected
Wall mounting	Removable bracket
Earth connection	Internal
Electrical connection	Internal terminal block with P.E. 11 cable gland for cable between 7 and 10.5 in diameter
Pressure connection	G 1/2 or female 1/4 NPT
Adjustment element	External adjustment screw fitter with an antivibration system locking the set point and the deadband, protected by screwed lead seal on in option Internal mechanism of bichromate - treated cadmium-plated steel

**BOURDON
HAENNI**

made to measure



Operating range

RPPA - RPPN - RPPH - RPHN low pressure

RPPA : standard sensing element with treated steel flanges and diaphragm in Viton

RPPN : standard sensing element with lower flange in stainless steel 1.4404 (316 L) and diaphragm in Viton.

Scale	P max Accidental	Code	MICROSWITCH								DIMENSIONS
			Adjustable Deadband				Max Fixed Deadband		Max Fixed Deadband		
			N (tropicalized) (SI) At 10 % of scale	A (SI) At 90 % of scale	M (gold) At 10 % of scale	C (SH) At 90 % of scale	E (GS) At 10 % of scale		H (SRC) At 10 % of scale	D (GSH) At 90 % of scale	
mbar	bar		mbar	mbar	mbar	mbar	mbar	mbar	mbar	mbar	See figure
-50 to 0	0.15	101	2 to 25	2.5 to 25	6.5 to 25	7.5 to 25	0.5	0.5	2.5	3	Fig 3
-2 to 10	0.15	102	1 to 5	1.2 to 5	4.5 to 5	4.5 to 5	0.3	0.3	1.5	1.5	Fig 3
-5 to 50	0.15	103	1.2 to 15	2 to 15	5 to 15	7 to 15	0.4	0.4	1.5	2.5	Fig 3
-8 to 100	0.15	104	1.5 to 25	2 to 25	5 to 25	10 to 25	0.5	0.5	2	2.5	Fig 3
-200 to 0	1	151	6 to 80	8 to 80	15 to 80	15 to 80	2	3	7.5	10	Fig 3
0 to 200	1	152	6 to 80	8 to 80	15 to 80	15 to 80	2	3	7.5	10	Fig 3
0 to 400	1	153	15 to 150	20 to 150	30 to 150	35 to 150	4	6	18	25	Fig 3

RPPH : sensing element withstanding overpressure with treated steel flanges and EPDM diaphragm.

RPHN : sensing element withstanding overpressure with lower flange in stainless steel 1.4404 (316 L) and viton diaphragm.

Scale	P max Accidental	Code	MICROSWITCH								DIMENSIONS
			Adjustable Deadband				Max Fixed Deadband		Max Fixed Deadband		
			N (tropicalized) (SI) At 10 % of scale	A (SI) At 90 % of scale	M (gold) At 10 % of scale	C (SH) At 90 % of scale	E (GS) At 10 % of scale		H (SRC) At 10 % of scale	D (GSH) At 90 % of scale	
mbar	bar		mbar	mbar	mbar	mbar	mbar	mbar	mbar	mbar	See figure
-50 to 0	10	101	2 to 25	2.5 to 25	6.5 to 25	7.5 to 25	0.6	0.6	2.5	3	Fig 3
-2 to 10	10	102	1 to 10	1 to 10	4.5 to 10	4.5 to 10	0.4	0.4	1.5	1.5	Fig 3
-5 to 50	10	103	1 to 20	2 to 20	4.5 to 20	5 to 20	0.4	0.4	1.5	2.5	Fig 3
-8 to 100	10	104	1.5 to 25	2.5 to 25	5 to 25	10 to 25	0.5	0.5	2	3	Fig 3
-200 to 0	50	151	12 to 80	20 to 80	25 to 80	40 to 80	3	4	14.5	25	Fig 3
0 to 200	50	152	15 to 80	25 to 80	30 to 80	45 to 80	3.5	4	18	30	Fig 3
0 to 400	50	153	17 to 150	30 to 150	35 to 150	50 to 150	4	5.5	20.5	35	Fig 3
0 to 1000	50	154	22 to 150	35 to 150	45 to 150	60 to 150	6	7	26.5	45	Fig 3
0 to 700	100	171*	20 to 350	40 to 350	40 to 350	70 to 350	7	9	24	50	Fig 3
0 to 1500	100	172*	20 to 350	60 to 350	40 to 350	100 to 350	7	9	24	75	Fig 3
0 to 2500	100	173*	25 to 350	90 to 350	50 to 350	160 to 350	9	11	30	110	Fig 3

T° fluid : -15° + 150° C
T° ambient : -25° + 70° C

} RPPA/RPPN
RPPH/RPHN

* G 1/4 female connection

These microswitches can be implemented with two simultaneous contacts : W (2xC)

Warning : in this case, deadbands are multiplied by 1.5

For microswitches G : consult us

Operating range

RPPA - RPPN - RPPC - RPPX medium pressure

RPPA : standard sensing element with brass base plate, tombac bellow or nickel plated piston.

RPPN : stainless steel sensing element, stainless steel bellow or nickel plated piston.

Scale	P max Accidental	Code	MICROSWITCH								DIMENSIONS	
			Adjustable Deadband				Max Fixed Deadband		Max Fixed Deadband			
			N (tropicalized) At 10 % of scale	A (SI) At 90 % of scale	M (gold) At 10 % of scale	C (SH) At 90 % of scale	E (GS) At 10 % of scale		H (SRC) At 10 % of scale	D (GSH) At 90 % of scale	J (SRJ) At 90 % of scale	Sensing element See figure
bar	bar		mbar	mbar	mbar	mbar	mbar	mbar	mbar	mbar	mbar	
-1 to 0	1.5	200	25 to 250	35 to 250	80 to 250	95 to 250	5	6	30	42	Fig 4	
-1 to 2.5	7	201	80 to 1200	100 to 1200	150 to 1200	200 to 1200	22	25	96	120	Fig 4	
0 to 0.2	1.5	202	15 to 100	20 to 100	60 to 100	65 to 100	4	5	18	24	Fig 4	
0.05 to 1	1.5	203	20 to 400	25 to 400	80 to 400	95 to 400	4	5	24	30	Fig 4	
0.5 to 10	15	204 ⁽¹⁾	200 to 3000	250 to 3000	650 to 3000	850 to 3000	45	50	240	300	Fig 4	
3.5 to 25	30	205	600 to 5000	1200 to 5000	750 to 5000	1300 to 5000	60	100	720	1440	Fig 4	
5 to 50	65	206	bar 1 to 10	bar 2 to 10	bar 2.5 to 10	bar 3 to 10	mbar 150	mbar 200	bar 1.5	bar 2.5	Fig 4	
5 to 100	220	207 ⁽³⁾	2.5 to 15	3 to 15	5.5 to 15	6.5 to 15	700	900	3	3.5	Fig 4	
20 to 150	220	208 ⁽³⁾	2.5 to 15	3.5 to 15	5.5 to 15	6.5 to 15	700	1000	3	4.5	Fig 4	
-1 to 3.5	15	209	0.15 to 1.5	0.2 to 1.5	0.65 to 1.5	0.85 to 1.5	45	50	0.2	0.25	Fig 4	
25 to 175	800	600 ⁽²⁾	bar 20 to 80	bar 30 to 80	bar 30 to 80	bar 35 to 80	bar 14	bar 10	bar 24	bar 36	Fig 4	
30 to 350	800	601 ⁽²⁾	20 to 100	30 to 100	30 to 100	35 to 100	16	16	24	36	Fig 4	
60 to 600	800	602 ⁽²⁾	20 to 120	30 to 120	30 to 120	35 to 120	16	16	24	36	Fig 4	

(1) 30 bar in stainless steel version

(2) sensing element with piston

(3) stainless steel version only

RPPC : sensing element withstanding overpressure with bichromate finish galvanized base plate and Perbunan diaphragm (code 201 only).

RPPX : sensing element withstanding overpressure with stainless steel base and diaphragm. (except code 201)

Scale	P max Accidental	Code	MICROSWITCH								DIMENSIONS
			Adjustable Deadband				Max Fixed Deadband		Max Fixed Deadband		
			N (tropicalized) At 10 % of scale	A (SI) At 90 % of scale	M (gold) At 10 % of scale	C (SH) At 90 % of scale	E (GS) At 10 % of scale		H (SRC) At 10 % of scale	D (GSH) At 90 % of scale	J (SRJ) At 90 % of scale
bar	bar		bar	bar	bar	bar	mbar	mbar	bar	bar	
-1 to +2.5	80	201	0.25 to 2	0.30 to 2	0.8 to 2	1 to 2.5	65	75	0.3	0.35	Fig. 4
0.5 to 10	50	204	0.18 to 3	0.25 to 3	0.63 to 3	0.8 to 3	45	62	0.25	0.3	Fig. 4
3.5 to 25	100	205	0.45 to 10	0.9 to 10	1.5 to 10	3.1 to 10	150	200	0.55	1.1	Fig. 4
5 to 50	100	206	1 to 10	2 to 10	3.5 to 10	7 to 10	200	300	1.5	2.5	Fig. 4
5 to 100	200	207	2 to 25	4 to 25	5 to 25	10 to 25	700	900	2.5	5	Fig. 4
20 to 150	200	208	2 to 25	6 to 25	5 to 25	15 to 25	1500	2000	2.5	7.5	Fig. 4
0.2 to 4	50	210	0.1 to 3	0.18 to 3	0.35 to 3	0.63 to 3	40	50	0.15	0.25	Fig. 4

T° fluid : -50...+ 200° C ; - 50° + 80°C (RPPA only)

T° ambient : -25...+ 55° C (all versions)

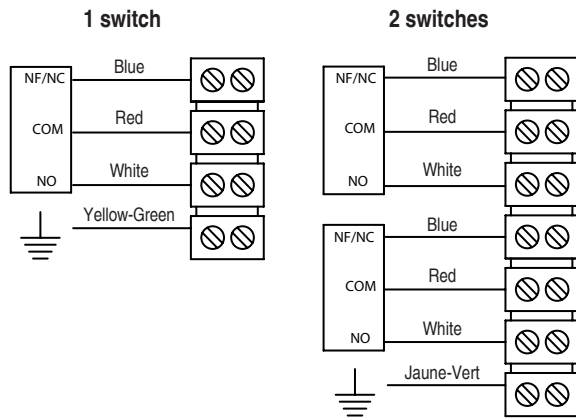
These microswitches can be implemented with two simultaneous contacts : W (2xC)

Warning : in this case, deadbands are multiplied by 1.5

For microswitches G : consult us

Cable identification, current rating

Cable identification



Current rating

Microswitch type SPDT

A	Standard Adjustable deadband	0.1 A min.; 10 A max. 250 Vac max. or 220 Vcc max.
B	2 simultaneous contact Adjustable deadband	0.1 A min.; 10 A max. 250 Vac max. or 220 Vcc max.
C	Hermetic Adjustable deadband	5 mA min.; 4A max. 250 Vac max. or 220 Vcc max.
W	2 hermetically contact Adjustable deadband	5 mA min.; 4A max. 250 Vac max. or 220 Vcc max.
E	Ultra sensitive Fixed deadband	0.2 A min.; 10A max. 250 Vac max. or 30 Vcc max.
F	2 contacts ultra sensitive Fixed deadband	0.2 A min.; 10A max. 250 Vac max. or 30 Vcc max.
G	2 movable contacts Fixed deadband	0.2 A min.; 10A max. 250 Vac max. or 30 Vcc max.
D	Hermetically ultra sensitive Fixed deadband	0.4 A min.; 10A max. 30 Vcc max.
V	2 hermetically contact ultra sensitive Fixed deadband	0.4 A min.; 10A max. 30 Vcc max.
M	Gold contact Adjustable deadband	10 mA min.; 50 mA max. 250 Vac max. or 220 Vdc max.
N	Tropicalized Adjustable deadband	0,1 A min.; 10A max. 250 Vac max. or 48 Vdc max.
H	1 changeover switch with manual reset opening on rise Fixed deadband	0.1 A min.; 10A max. 250 Vac max. or 30 Vcc max.
J	1 changeover switch with manual reset opening on fall Fixed deadband	0.1 A min.; 10A max. 250 Vac max. or 30 Vcc max.

Operating principle

A flexing element, bellows, diaphragm or piston, actuates one or two microswitches by means of levers. The set point and the deadband are set by springs mounted in opposition.

Accessories

Adaptator for welded connection in steel ZRM1 or stainless steel ZRMN 1.

Ring siphon steel or 1.4401 (AISI 316) stainless steel.

Chemical seal (for code 200-201-204 to 602)

Isolating valve.

Manifold.

Pulsation dampener.

Dimensions (mm)

Watertight case

Fig. 1

Sensing element RPPA / RPPH / RPPN / RPHN low pressure

RPPA / RPPN - 101 - 102 - 103 - 104
weight : 3 kg

RPPA / RPPN - 151 - 152 - 153
weight : 2.8 kg

RPPH / RPHN - 101 - 102 - 103 - 104
weight : 10 kg

24/flat hexagonal

24/flat hexagonal

24/flat hexagonal

1/4 NPT female

1/4 NPT female

1/4 NPT female

RPPH / RPHN - 151 - 152 - 153
weight : 6.4 kg

RPPH / RPHN - 171 - 172 - 173
weight : 7 kg

24/flat hexagonal

1/4 NPT female

Fig. 3

Dimensions (mm)

Sensing element RPPA / RPPC / RPPN / RPPX medium pressure

RPPA / RPPN - 200 - 202 - 203
weight : 2.5 kg

RPPA / RPPN - 201
weight : 2.4 kg

RPPA / RPPN - 204 - 205 - 206 - 207 - 208 - 209
600 - 601 - 602
weight : 2 kg

24/flat hexagonal

1/4 NPT female

24/flat hexagonal

1/4 NPT female

1/4 NPT female

RPPC - 201
weight : 2.4 kg

RPPX - 204 - 205 - 206 - 207 - 208 - 210
weight : 2.4 kg

26/flat square

24/flat hexagonal

1/4 NPT female

G1/2 male

Fig. 4

Options

All stainless steel construction (screws and sensing element)
for aggressive environments
Specific connection
Cleanliness for oxygen service **Code 0765**
Stainless steel tag plate and wire **Code 9941**

Connection on pipe 2 " dia. **Code 0407**
Adjustment of the set point **Code SETP**
French electricity (EDF) version (consult SEPTEN ZP, ZPH leaflet)

Ordering Details - RPP

RPxxxxxxxx	
Model	1' digit
Pressure switch	R
Type	2'...4' digit
Code 101 à 173	
PPA	PPA
PPH	PPH
PPN	PPN
PHN	PHN
Code 200 à 602	
PPA	PPA
PPC	PPC
PPN	PPN
PPX	PPX
Microswitch**	5' digit
1 standard changeover switch	A
2 simultaneous changeover switches	B
1 hermetically changeover switch	C
1 hermetically ultra sensitive changeover switch	D
1 ultra sensitive changeover switches	E
2 ultra sensitive changeover switches	F
2 movable changeover switches	G
2 hermetically ultra sensitive changeover switches	V
2 hermetically changeover switches	W
1 gold contact changeover switches	M
1 tropicalized changeover switches	N
1 changeover switch with manual reset opening on rise	H
1 changeover switch with manual reset opening on fall	J
Pneumatic changeover NO	Z
Pneumatic changeover NF	Y
Protection	6' digit
Standard	A
Hydraulic connection	7' digit
G 1/4 female (171, 172, 173 only)	H
G 1/2 male	3
1/2 NPT male	6
1/4 NPT female	8
Pressure range	8'...10' digit
See codes in table	xxx

Code	Range in mbar		RPPA	RPPH	
			RPPN	RPHN	
101	-50	+	0	X	X
102	-2	+	10	X	X
103	-5	+	50	X	X
104	-8	+	100	X	X
151	-200	+	0	X	X
152	0	+	200	X	X
153	0	+	400	X	X
154	0	+	1000		X
171	0	+	700		X
172	0	+	1500		X
173	0	+	2500		X
Code	Range in bar		RPPA	RPPC	RPPX
			RPPN		
200	-1	+	0	X	
201	-1	+	2.5	X	X
202	0	+	0.2	X	
203	0.05	+	1	X	
204	0.5	+	10	X	X
205	3.5	+	25	X	X
206	5	+	50	X	X
207	5	+	100	X	X
208	20	+	150	X	X
209	-1	+	3.5	X	
210	0.2	+	4		X
600	25	+	175	X	
601	30	+	350	X	
602	60	+	600	X	

** SPDT microswitches only

Electronuclear versions : ZP-SHM or CHM, ZPH-SHM or CHM
French Electricity Generating Board (EDF) certification of tests HM063/6864 on ZPN 204 SHD

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