



# Z-Series

# DIFFERENTIAL

BETA products are manufactured in The Netherlands

**Enclosures:**

**Cast Aluminum:**

Oven baked powder coating  
hammertone grey

**Also available in  
SS 316**

Wheaterproof IP 66 -  
EN 60529

ATEX: Ex de IIC T6

**Repeatability:**  
typical 0.2% of Full Scale

**Standard unit:** Barg

**Optional:** PSI / Kg / Pa

**Standard process conetion:**  
1/4" NPT F or BSP F

**Standard Diaphragm/O-ring:**

D..L/ M: Buna N / Buna N

D..H: TCP/ Buna N

**For wetted parts:**  
more possibilities available,  
see full catalogue

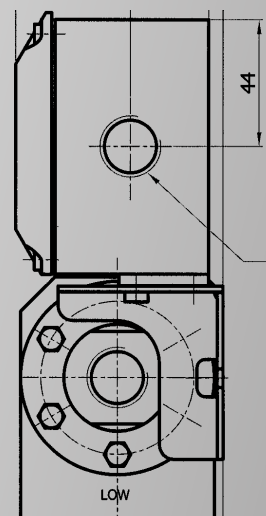
**BETA SWITCHES ARE,  
BUILD TO LAST!**

**Do you want to know more:**

Please contact your local dealer  
and ask for the General Bulletin.  
Or contact us directly!



[www.beta-b.nl](http://www.beta-b.nl)



## RANGES for Differential switches

RANGE CODE	ADJUSTABLE RANGE DIFF. RANGE <sup>1)</sup>		TYPICAL DEADBAND <sup>1)</sup>		MAX. STATIC PRESSURE		MAX.OVERRANGE PRESSURE		PROOF PRESSURE	
	mBar / Bar		mBar / Bar		Bar		Bar		Bar	
D 304 L	22 - 180	mBar	8	mBar	30	Bar	30 <sup>3)</sup>	Bar	35	Bar
D 306 L	25 - 450	mBar	11	mBar						
D 309 L	35 - 1250	mBar	15	mBar						
D 402 M	0.3 - 1.0	Bar	0.15	Bar	10	Bar	140 <sup>4)</sup>	Bar	140	Bar
D 404 M	0.5 - 2.5	Bar	0.2	Bar	50	Bar				
D 406 M	1.0 - 6.0	Bar								
D 408 M	1.0 - 14.5	Bar	0.8	Bar	100	Bar				
D 506 M	5 - 20	Bar								
D 508 M	10 - 50	Bar								
D 608 M	10 - 70	Bar								
D 352 H	80 - 160	mBar	25	mBar	200	Bar	200 <sup>4)</sup>	Bar	200	Bar
D 354 H	100 - 500	mBar	35	mBar						
D 356 H	120 - 1450	mBar	50	mBar						
D 359 H	150 - 3450	mBar	75	mBar						

**NOTES:**

- 1) Ranges and deadbands are given at 50% of Max. Static pressure.  
All differential pressure sensors are sensitive to static pressure, both for setpoint and deadband.
- 2) D...L can withstand a differential pressure P-low max. 1 bar above P-High.
- 3) D...M, D...H can sustain full High and Low-side reversal.

IN THE FOLLOWING TABLE THE ESTIMATED INFLUENCE FOR INCREASING STATIC PRESSURE IS GIVEN.

SENSOR	SETPOINT	DEADBAND
D...L	- 0.7 mBar/Bar	= - 0.1 mBar/Bar
D...M	= + 3 mBar/Bar	+ 10 mBar/Bar
D...H	- 2 mBar/Bar	= - 0.4 mBar/Bar

Example: D...H-type Diff. setpoint: 1 bar (1000 mbar).

If static pressure increases 10 bar Diff.setpoint will be (10 x - 2 mbar ) = - 20 mbar less = 980 mbar.

**NOTE:** For differential application outside above ranges consult your BETA Switch Representative.

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Making the modelcode: Follow steps 1 to 5

### 1 Selection of enclosure type.

Conduit	Material	Enclosure code
Pg13.5	Aluminium	<b>Z1</b>
M20x1.5	Aluminium	<b>Z2</b>
3/4" NPT F	Aluminium	<b>Z3</b>
1/2" NPT F	Aluminium	<b>Z4</b>
M20x1.5	SS 316	<b>Z8</b>
3/4" NPT F	SS 316	<b>Z9</b>

### 2 Selection of range code, see front page

### 3 Selection of process connection.

Size	Material	Code
1/4"NPT F	SS316 *	<b>S1N</b>
1/4"BSP F	SS316 *	<b>S1B</b>
1/4"NPT F	Aluminium **	<b>A1N</b>
1/4"BSP F	Aluminium **	<b>A1B</b>
1/2"NPT M	SS316	<b>S7N</b>

\* Only for D..H, D..D and D..M available

\*\* D.. L: A1N or A1B For low side only.  
High side: Only "L"-sensor connection

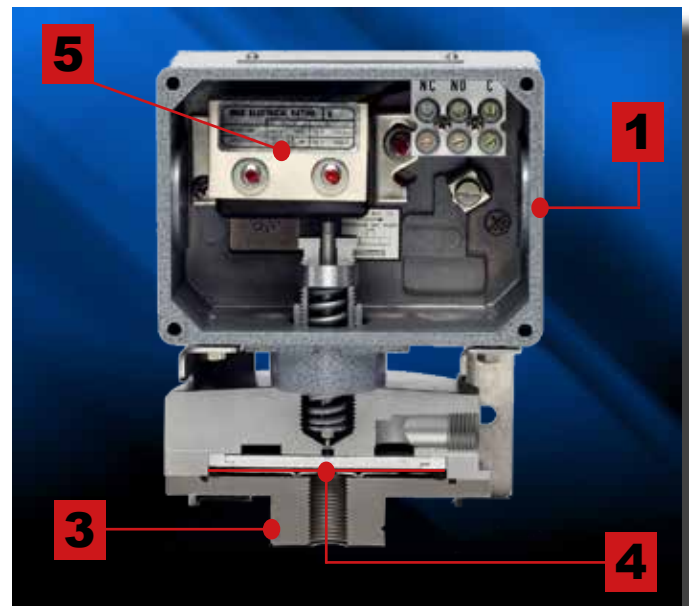
Proces connection according to NACE standard are available.  
Consult your local BETA Switch Representative.

### 4 Selection of wetted parts\*

Diaphragm	O-ring	Code
Buna N	Buna N	<b>B1</b> **
PTFE	Buna N	<b>P1</b>
SS316	Buna N	<b>S1</b>
SS316	Viton	<b>S2</b>
SS316	Teflon	<b>S4</b> **
SS316	EPDM	<b>S6</b>
SS316	Welded	<b>S0</b> **

\*\* Not possible for D..H. (P1 = Standard for D..H)

\* **WETTED PARTS ARE NOT GUARANTEED,** against corrosion or permeation since processes vary from plant to plant and concentration of harmful fluids, gasses or solids vary from time to time in a given process. Empirical experience by users should be the final guide and alternate materials based on this are generally available. The diaphragm / O-Ring combinations are for process temperatures of -5°C to +90°C, unless otherwise indicated. For process temperatures beyond these limits please contact your BETA Switch Representative



### 5 Selection of microswitches

Rating		Use:	Switch Code:
VAC.	VDC.		
250/ 5A	250/ 0.25A	ATEX approved. For z-series only	R1
250/ 5A	250/ 0.25A		R2

1) For D.P.D.T action, second code figure should be specified as "2"  
For example: R1 = S.P.D.T./ R2 = D.P.D.T

### 6 Selection of options

Description	Option code
Cable gland	<b>C</b>
Vacuum Protection Plate	<b>M</b> *
Stainless steel tag key ringed to enclosure (Tag has 2 lines - 16 characters per line)	<b>S</b>
Epoxy coating of switch. (External) Only in combination SS 316 process connection	<b>Y</b>

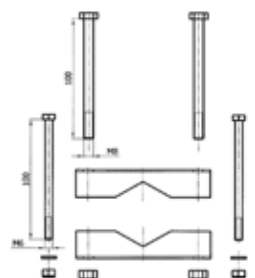
\* Not possible for D..H, standard for D..L sensor.

#### Accessoires:

2" Pipe mount bracket set available.

#### Contents :

2 x bolts M6 x 100 mm + washer + nut  
Size +/- 1,5 mm / Material SS 304



#### Disclaimer :

This pipe mount bracket is solely intended for use in combination with BETA Pressure & Temperature Switches.

Foundation vibrations, as well as process vibrations, can disturb the proper functioning of the mounted instrument, the use of this bracket does not prevent or diminishes such occurrence.