



# W-Series Differential

BETA products are manufactured in The Netherlands

**Enclosures:**

**Cast Aluminum:**

Oven baked powder coating  
hammer tone grey

**Also available in  
SS 316**

Wheatherproof IP 66 -  
EN 60529 - Ex d / Ex tb  
(Nema 4X)

**Repeatability:**

typical 0.2% of Full Scale

**Range & 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!



**Ranges for Differential switches**

RANGE CODE	ADJUSTABLE 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 302 L	12 - 75 <sup>2)</sup>	mBar	7	mBar	30	Bar	30 <sup>3)</sup>	Bar	35	Bar
D 304 L	22 - 180	mBar	8	mBar						
D 306 L	25 - 450	mBar	11	mBar						
D 309 L	35 - 1250	mBar	15	mBar	10	Bar	140 <sup>4)</sup>	Bar	140	Bar
D 402 M	0.3 - 1.0	Bar	0.15	Bar						
D 404 M	0.5 - 2.5	Bar	0.2	Bar						
D 406 M	1.0 - 6.0	Bar								
D 408 M	1.0 - 14.5	Bar	0.8	Bar	50	Bar	200 <sup>4)</sup>	Bar	200	Bar
D 506 M	5 - 20	Bar								
D 508 M	10 - 50	Bar								
D 608 M	10 - 70	Bar	1.5	Bar	140	Bar	200 <sup>4)</sup>	Bar	200	Bar
D 352 H	80 - 160	mBar	25	mBar						
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:**

- <sup>1)</sup> 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.
- <sup>2)</sup> Range only with L1 micro switch.
- <sup>3)</sup> D...L can withstand a differential pressure P-low max. 1 bar above P-High.
- <sup>4)</sup> 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.

**Disclaimer:**

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Making the modelcode: Follow steps 1 to 5

## 1 Selection of enclosure type.

Conduit:	Material:	Code:
3/4" NPT F	Aluminium	W3
M20 x 1.5	SS 316	W8
3/4" NPT F	SS 316	W9

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

## 3 Selection of process connection.

Size:	Material:	Code:
1/4" NPT F	SS 316 *	S1N
1/4" BSP F	SS 316 *	S1B
1/4" NPT F	Aluminium **	A1N
1/4" BSP F	Aluminium **	A1B
1/2" NPT M	SS 316	S7N

\* 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	B1 **
Viton	Viton	V2 **
SS 316	Buna N	S1
SS 316	Viton	S2
SS 316	Teflon	S4 **
SS 316	EPDM	S6
SS 316	Welded	S0 **

\*\* 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

### Accessoires:

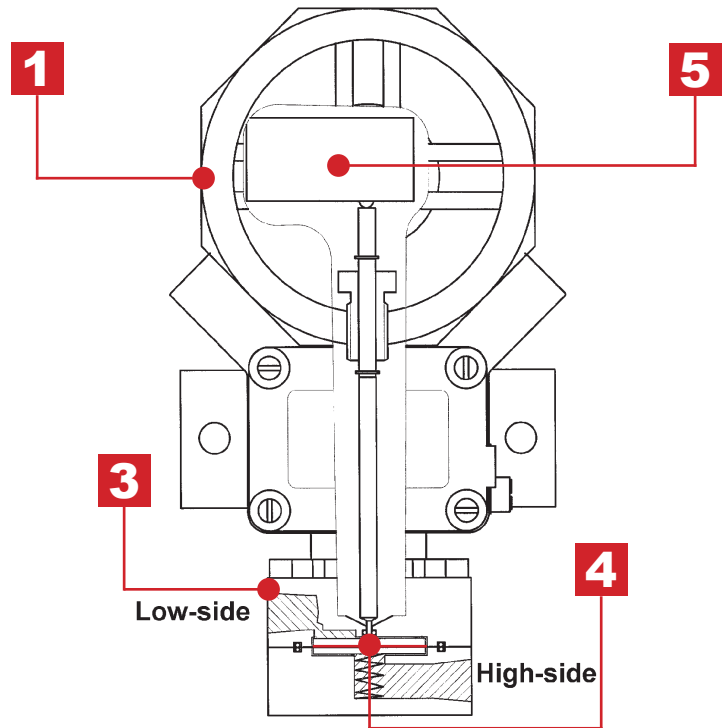
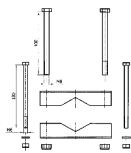
2" Pipe mount bracket set available.

#### Contents :

2 x Bracket +  
2 x Bolts M8 x 100 mm + nut

#### 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.



## 5 Selection of microswitches.

Rating:		Use:	Code:
VAC.	VDC. <sup>3)</sup>		
480/ 15A	28/ 0.5A	Standard	K1 <sup>2)</sup>
480/ 10A	28/ 0.5A	Standaard for L-serie	L1 <sup>2)</sup>
480/ 15A	125/ 0.5A	Normal DC-service	U1 <sup>2)</sup>
125/ 1A	28/ 0.5A	For use in H <sub>2</sub> S environment <sup>3)</sup> and/ or for Ex d & Ex tb applications.	G1 **
250/ 0.1A	30/ 0.1A		Y1 <sup>1)</sup>
250/ 0.1A	30/ 0.1A	Environmental proof (IP 67)	O1 <sup>1)</sup>
250/ 2A	30/ 2A		N1 <sup>1)</sup>

1) For D.P.D.T action, second code figure should be specified as "2"

For example: Y1 = S.P.D.T./ Y2 = D.P.D.T

2) VDE certified acc. to DIN EN 61 058-1:1992+A1:1993.

3) Indicated ratings are for resistive DC load only.

\*\* DC Rating not U.L. listed, although experience and third party testing confirm the D.C Voltage ratings. Consult your local BETA switch Representative.

## 6 Selection of options.

Description:	Code:
Cable gland	C
Vacuum Protection Plate	M
Stainless steel tag key ringed to enclosure (Tag has 2 lines - 16 characters per line)	S

\* Not possible for D..H. (Standard for D..L)

For extended selection and/ or specified technical information, please ask for the "BETA User Friendly" Catalogue.