Switch Options

TABLE 6

Model S21/4

CSA RATING (RESISTIVE) § See note	IEC947-5-1 / EN 60947-5-1 RATING							Contact	Code
	Designation & Utilization Category	Rated operational current I_e (A) At rated operational voltage U_e	*Ui*	*Uimp*	VA Rating				
						Make	Break		
5 Amps @ 110/250V AC Light Duty for AC only	AC14 D300 DC13 R300	0.6/0.3A @ 120/240 V AC 0.22/0.1A @ 125/250V DC	250V	0.8kV	AC DC	432 28	72 28	SPDT DPDT	**00** **01**
5 Amps @ 110/250V AC and 2 Amps @ 30V DC General purpose precision	AC14 D300 DC13 R300	0.6/0.3A @ 120/240 V AC 0.22/0.1A @ 125/250V DC	250V	0.8kV	AC DC	432 28	72 28	SPDT DPDT	**02** **03**
1 Amp @ 125V AC and § ***100mA @ 30V DC*** Gold Alloy contacts for low voltage switching	1A @ 125 VAC RESISTIVE (IEC 1058-1/EN 61058-1)							SPDT DPDT	**04** **05**
§ ***5 Amps @ 110/250V AC & 5 Amps @ 30V DC*** Environmentally sealed	AC14 D300 DC13 R300	0.6/0.3A @ 120/240 V AC 0.22/0.1A @ 125/250V DC	250V	0.5kV	AC DC	432 28	72 28	SPDT* DPDT*	**08** **09**
15 Amps @ 125/250/480V AC General purpose precision	AC14 D300	0.6/0.3A @ 120/240V AC	250V	0.8kV	AC	432	72	SPDT DPDT	**10** **11**
§ ***1 Amp @ 30V AC and 30V DC*** Environmentally sealed with gold contacts	AC14 E150	0.3A @ 120 V AC	125V	0.5kV	AC	216	36	SPDT* DPDT*	**0G** **0H**
5 Amps @ 250V AC & 2 Amps @ 30V DC Hermetically sealed. Gold plated silver contacts	AC14 D300 DC13 R300	0.6/0.3A @ 120/240 V AC 0.22/0.1A @ 125/250V DC	250V	0.5kV	AC DC	432 28	72 28	SPDT DPDT	**H2** **H3†, H6‡**

† 2 Single pole, double throw, simultaneous falling under pressure
‡ 2 Single pole, double throw, simultaneous rising under pressure

Model S22

5 Amps @ 110/250V AC Adjustable for AC only	AC14 D300	0.6/0.3A @ 120/240 V AC	250V	0.8kV	AC	432	72	SPDT	**0C**
5 Amps @ 110/250V AC & 2 Amps @ 30V DC Adjustable	AC14 D300 DC13 R300	0.6/0.3A @ 120/240 V AC 0.22/0.1A @ 125/250V DC	250V	0.8kV	AC DC	432 28	72 28	SPDT	**0D**

NOTE:

Enclosure Codes T and U.
Microswitch Codes 02 and 03.
CSA rating as follows:-
110/250V AC 5A 250V/125V DC 0.25/0.5A

Enclosure Codes H and R.
Microswitch Codes 02 and 03.
CSA rating as follows:-
110/250V AC 5A 250V/125/30V DC 0.25/0.5/2A

00, 01, 02, 03, 04, 05, H2, H3†, H6‡ microswitches
CSA accepted component for use in hazardous areas Class 1, Div 2, Groups A, B, C and D.
When used in enclosures T and U.

The electrical rating is dependent on the microswitch fitted to the instrument. The electrical ratings defined by each approval that the microswitch complies with and is shown on the product nameplate, ie CSA, or IEC. It should be noted that the instrument must be used within the electrical rating specified from the approval you require. This table lists the actual IEC ratings against the Designation & Utilization Category marked on the nameplates. In the absence of any verification by CSA the microswitch § manufacturer's rating is stated in ***italics and bold*****. If in doubt seek guidance from the factory.**

NOTE: For low energy circuits e.g, 30V and up to 100mA, we recommend using gold alloy contact switches.
Ui = rated insulation voltage Uimp = rated impulse to withstand voltage across contacts.

Process Connection

TABLE 7

Applies to all connections in this table.

	Code
Rc 1/4 (1/4 BSP tr INT) to (ISO 7/1)	**A**
1/4—18 NPT INT	**F**
1/2—14 NPT INT	**H**
1/2—14 NPT EXT	**J**

Options & Treatments

TABLE 8

Combinations available, apply for details.

Applies to all options and treatments in this table.

	Code
Tropicalisation High humidity atmospheres	**01**
Marine and Offshore Saline atmosphere or salt spray	**02**
Ammonia Process (wetted) parts and construction suitable for atmospheric ammonia	**03**
Oxygen Service 2: Process (wetted) parts are cleaned for oxygen	**04**
Oxygen Service 3: Process and non-process parts are cleaned for use with oxygen	**05**
Stainless Steel Pipe Mounting Bracket Permits local 2” pipe work to be utilized for mounting the instrument	**10**
Category IV Safety Accessory as defined in the Pressure Equipment Directive 2014/68/EU	**60**
Tagging - Variety of tagging methods are available	**APPLY FOR DETAILS**
Applies when - no option is required and selection is made from special engineering	**00**

Special Engineering

TABLE 9

Last 4 digits of model code only used when special engineering is required.

Refer to engineering

	Code
Please consult Delta sales engineering for special requirements	**TBA**

Performance Data

TABLE 10

TABLES 10A, 10B
MODEL S21
FIXED SWITCHING DIFFERENTIAL

Due to manufacturing tolerances the figures quoted in these tables are for guidance only.

Flameproof models maybe up to 2 times higher depending on the range.

Should the differential be critical for specific applications our engineers should be consulted prior to ordering.

MODEL S21 PSI UNITS TABLE 10A

Range		P_{max} psi	SWITCHING OPTIONS SWITCHING DIFFERENTIAL IN **H_2O** / in Hg / psi									
Code	**H_2O** / in Hg / psi		00	01	02	03	04	05	08/0G	09/0H	H2	H3/H6
CW	**5 to 100**	217	**2.0**	**3.2**	**2.4**	**3.2**	**2.0**	**2.4**	**3.2**	**6.0**	**12.0**	**12.0**
CH	**-50 to +50**	217	**3.2**	**5.6**	**3.2**	**9.2**	**3.2**	**3.2**	**5.6**	**7.2**	**8.0**	**8.0**
CK	1.5 to 8.5	217	**3.2**	**5.6**	**6.0**	**9.2**	**3.2**	**4.8**	**5.6**	**7.2**	**18.0**	**18.0**
AB	-30 to 0	217	0.6	0.8	1.3	1.7	0.5	0.5	0.8	1.0	3.0	3.0
GK	14.5 to +20	218	0.3	0.6	0.7	1.5	0.3	0.4	0.5	0.7	2.2	2.2
DK	4 to 25	400	0.4	0.7	1.0	1.5	1.0	1.5	2.6	3.5	1.2	2.3
DP	6 to 40	400	0.4	0.7	1.0	1.5	1.0	1.5	2.6	3.5	1.2	2.3
DZ	16 to 100	400	0.6	0.9	1.7	2.0	1.5	2.2	3.5	1.6	2.9	5.8
EH	25 to 160	1000	1.5	2.2	3.6	6.5	2.2	3.3	11.6	14.5	6.0	11.6
EM	40 to 250	1000	2.2	4.0	5.1	9.9	3.6	5.8	13.1	17.4	7.5	14.5
ER	60 to 400	1600	4.4	6.5	15.2	19.6	7.3	10.2	26.0	35.0	26.0	52.0
EW	160 to 600	1600	7.3	11.6	20.0	26.0	11.6	17.4	44.0	46.0	31.0	61.0
EE	250 to 1000	1600	9.4	14.5	25.0	33.0	14.5	22.0	44.0	58.0	51.0	102
F6	160 to 1500	2250	14.5	22.0	51.0	65.0	29.0	44.0	87.0	116	73.0	145

MODEL S21 BAR UNITS TABLE 10B

Range		P_{max} bar	SWITCHING OPTIONS SWITCHING DIFFERENTIAL IN mbar									
Code	mbar/bar		00	01	02	03	04	05	08/0G	09/0H	H2	H3/H6
CC	12 to 250	15	5	8	6	8	5	6	8	15	30	30
CD	-120 to +120	15	8	14	8	23	8	8	14	18	20	20
CE	100 to 600	15	8	14	15	23	8	12	14	18	45	45
A0	-1000 to 0	15	21	27	45	60	18	18	30	36	105	105
G3	-1 to +1.5	15	21	40	48	100	24	30	36	45	150	150
DB	0.25 to 1.6	27	30	45	70	100	70	100	180	240	80	160
DC	0.4 to 2.5	27	30	45	70	100	70	100	180	240	80	160
DE	1 to 6	27	40	60	120	140	100	150	240	320	200	400
EA	1.6 to 10	70	100	150	250	450	150	230	800	1000	400	800
EB	2.5 to 16	70	150	275	350	680	250	400	900	1200	500	1000
EC	4 to 25	110	300	450	1050	1350	500	700	1800	2400	1800	3600
ED	10 to 40	110	500	800	1400	1800	800	1200	3000	3200	2100	4200
EF	15 to 75	110	650	1000	1750	2250	1000	1500	3000	4000	3500	7000
FA	10 to 100	155	1000	1500	3500	4500	2000	3000	6000	8000	5000	10000

Performance Data

TABLE 10

TABLES 10C, 10D
MODEL S24
FIXED SWITCHING DIFFERENTIAL

Due to manufacturing tolerances the figures quoted in these tables are for guidance only.

Flameproof models maybe up to 2 times higher depending on the range.

Should the differential be critical for specific applications, our engineers should be consulted prior to ordering.

MODEL S24 **PSI UNITS** **TABLE 10C**

Range		P_{max} psi	SWITCHING OPTIONS SWITCHING DIFFERENTIAL IN psi									
Code	psi		00	01	02	03	04	05	08/0G	09/0H	H2	H3/H6
DP	6 to 40	8700	3.2	4.8	5.8	5.8	4.4	4.4	6.5	7.4	6.0	11.6
DZ	16 to 100	8700	3.5	5.8	8.7	11.6	7.3	10.2	8.7	9.4	12.0	23.0
EH	25 to 160	8700	5.5	10.2	11.6	17.4	8.7	13.0	8.7	11.0	18.0	35.0
EM	40 to 250	8700	6.7	11.5	11.6	17.4	8.7	13.0	11.6	17.4	18.0	35.0
ER	60 to 400	8700	12.5	20.0	17.4	23.0	11.6	17.4	20.0	22.0	34.0	67.0
EW	160 to 600	8700	14.5	23.0	29.0	44.0	22.0	36.0	29.0	44.0	51.0	102
EE	250 to 1000	8700	22.0	28.0	36.0	73.0	22.0	58.0	44.0	58.0	58.0	116
F6	160 to 1500	8700	29.0	36.0	65.0	87.0	51.0	73.0	58.0	73.0	73.0	145
UK	100 to 2300	15000	49.0	80.0	99.0	145	58.0	77.0	73.0	90.0	150	290
VC	350 to 3500	15000	81.0	162	145	244	122	203	725	870	370	725
W9	800 to 6000	15000	128	255	255	574	192	319	1160	1160	600	1160
YF	1600 to 10000	15000	218	435	290	653	326	486	1450	1450	750	1450

MODEL S24 **BAR UNITS** **TABLE 10D**

Range		P_{max} bar	SWITCHING OPTIONS SWITCHING DIFFERENTIAL IN mbar									
Code	bar		00	01	02	03	04	05	08/0G	09/0H	H2	H3/H6
DC	0.4 to 2.5	600	220	330	400	400	300	300	450	510	400	800
DE	1 to 6	600	240	400	600	800	500	700	600	650	800	1600
EA	1.6 to 10	600	380	700	800	1200	600	900	600	750	1200	2400
EB	2.5 to 16	600	480	790	800	1200	600	900	800	1200	1200	2400
EC	4 to 25	600	860	1400	1200	1600	800	1200	1350	1500	2300	4600
ED	10 to 40	600	1000	1600	2000	3000	1500	2500	2000	3000	3500	7000
EF	15 to 75	600	1500	1900	2500	5000	1500	4000	3000	4000	4000	8000
FA	10 to 100	600	2000	2500	4500	6000	3500	5000	4000	5000	5000	10000
U7	7 to 160	1000	3400	5500	6800	10000	4000	5300	5000	6200	10000	20000
V7	25 to 250	1000	5600	11200	10000	16800	8400	14000	50000	60000	35000	50000
W7	50 to 400	1000	8800	17600	17600	39600	13200	22000	80000	80000	40000	80000
Y4	100 to 700	1000	15000	30000	20000	45000	22500	33500	100000	100000	50000	100000

Performance Data

TABLE 10

TABLES 10E, 10F
MODEL S22
ADJUSTABLE SWITCHING DIFFERENTIAL

Due to manufacturing tolerances the figures quoted in these tables are for guidance only.

Flameproof models maybe up to 2 times higher depending on the range.

Should the differential be critical for specific applications, our engineers should be consulted prior to ordering.

MODEL S22 **PSI UNITS** **TABLE 10E**

Range		P_{max} psi	SWITCHING OPTIONS SWITCHING DIFFERENTIAL psi			
Code	psi		MIN 0C MAX		MIN 0D MAX	
DK	4 to 25	400	0.2	1.1	1.0	2.9
DP	6 to 40	400	0.3	1.2	1.3	3.0
DZ	16 to 100	400	0.5	2.8	2.5	7.3
EH	25 to 160	1000	1.9	6.2	6.4	16.0
EM	40 to 250	1000	3.2	9.1	9.6	23.0
ER	60 to 400	1600	9.6	35.0	41.0	88.0
EW	160 to 600	1600	13.0	61.0	57.0	125
EE	250 to 1000	1600	16.0	62.0	80.0	160
F6	160 to 1500	2250	25.0	83.0	96.0	212

MODEL S22 **BAR UNITS** **TABLE 10F**

Range		P_{max} bar	SWITCHING OPTIONS SWITCHING DIFFERENTIAL mbar			
Code	bar		MIN 0C MAX		MIN 0D MAX	
DB	0.25 to 1.6	27	11	78	66	200
DC	0.4 to 2.5	27	22	82	88	210
DE	1 to 6	27	33	190	170	500
EA	1.6 to 10	70	132	430	440	1100
EB	2.5 to 16	70	220	630	660	1600
EC	4 to 25	110	660	2400	2800	6100
ED	10 to 40	110	880	3300	3900	8600
EF	15 to 75	110	1100	4300	5500	11000
FA	10 to 100	155	1700	5700	6600	14600

Electrical Connections

Terminal Block
Cable entry is to a non-pinching terminal block made of a non-hygroscopic thermosetting plastic, suitable for cables up to 2.5mm²/14AWG.

Earthing/Grounding
An earthing stud is provided inside all weatherproof enclosures, adjacent to the entry.External earthing is standard on flameproof versions. Safety note see Table 3.

Dielectric Strength
The electrical assembly is capable of withstanding *2kV between live parts and earth/ground and 500V between open contacts.
* 1.2kV for micro switch Codes H2, H3,and H6. Refer to Table 6.

Electrical Entry
Standard options are listed in Table 3. Other threads can be accommodated by adaptors. Dual entry available, see Table 3.

Optional Extras

Chemical Seals
Chemical seals of our own or proprietary manufacture can be fitted when required.

Mounting Position/Location/Installation
Vertical as shown, IN DIMENSIONS, taking care to avoid siting in locations that transmit excessive shock or vibration. For further advice contact our engineers.

Pollution degree (EN60947-5-1)
All products are suitable for use in pollution degree 3. For extreme conditions where condensation may readily form, then sealed contacts should be used. See Table 6 Codes 08/09, 0G/0H, H2/H3/H6.

Electrical Isolation
These products are not suitable for electrical isolation. Always isolate circuit separately to carry out any electrical work.

Approvals

EUROPEAN DIRECTIVES

Low voltage Directive (LVD) 2014/35/EU.
Compliant to LVD

Pressure Equipment Directive (PED) 2014/68/EU:
This product has a process connection size ≤DN25 and is therefore categorised as sound engineering practice under Cat 3.3

ATEX Directive 2014/34/EU

INTRINSIC SAFETY:
Certificate No. Baseefa05ATEX0111
EN 60079-0, EN 60079-11

For Zone 0 models **(Enclosure code 4/5, see table 1)**

Because of the low voltages and currents of intrinsically safe circuits, we recommend using gold contacts.
Refer to Table 6.

II 1 G Ex ia IIC T6 Ga (Tamb –25°C to +60°C) or T5 Ga (Tamb –60°C to +80°C)

FLAMEPROOF:
Certificate No. BAS01ATEX2113X
EN 60079-0, EN 60079-1, EN 60079-31, EN 60079-26

For Zone 0/1 models **(Enclosure code 2/3, see table 1)**

Fluorosilicone O-ring

II 1/2 GD	Ex d IIC T6 Ga/Gb (Tamb –60°C to +65°C) Ex ta/tb IIIC T85°C Da/Db
II 1/2 GD	Ex d IIC T5 Ga/Gb (Tamb –60°C to +80°C) Ex ta/tb IIIC T100°C Da/Db

Nitrile O-ring

II 1/2 GD	Ex d IIC T6 Ga/Gb (Tamb –30°C to +65°C) Ex ta/tb IIIC T85°C Da/Db
II 1/2 GD	Ex d IIC T5 Ga/Gb (Tamb –30°C to +80°C) Ex ta/tb IIIC T100°C Da/Db

For Zone 1 models **(Enclosure code H/R, see table 1)**

Fluorosilicone O-ring

II 2 GD	Ex d IIC T6 Gb (Tamb –60°C to +65°C) Ex tb IIIC T85°C Db
II 2 GD	Ex d IIC T5 Gb (Tamb –60°C to +80°C) Ex tb IIIC T100°C Db

Nitrile O-ring

II 2 GD	Ex d IIC T6 Gb (Tamb –30°C to +65°C) Ex tb IIIC T85°C Db
II 2 GD	Ex d IIC T5 Gb (Tamb –30°C to +80°C) Ex tb IIIC T100°C Db

GLOBAL CERTIFICATION

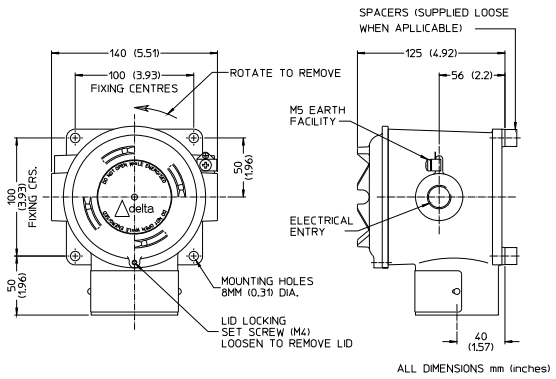
CANADIAN STANDARDS ASSOCIATION
Switches - Automatic - Pressure Type - for hazardous locations
Enclosure codes T & U.
Class 1, Groups C & D Class II, Groups E, F, G.
LR94185-2

SAFETY INTEGRITY LEVEL (SIL)
IEC 61508 Part 1 and 2
Systematic integrity and random integrity SIL2 Capable
Certificate number DC060816C001

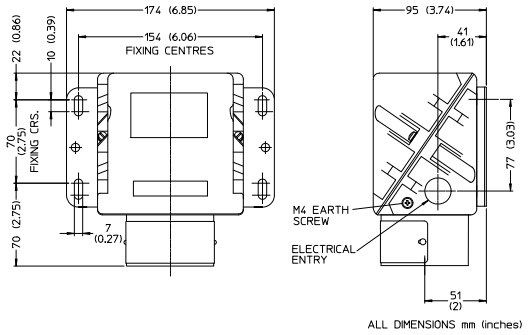
Dimensions

All dimensions mm (inches)

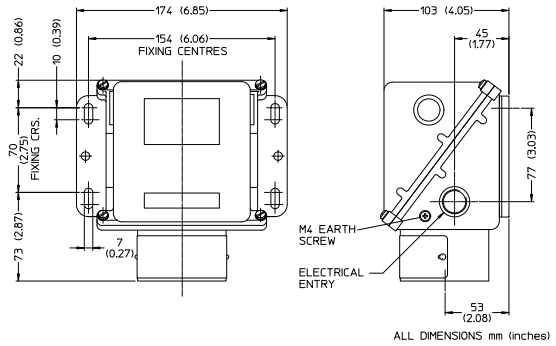
H, R, T & U ENCLOSURES



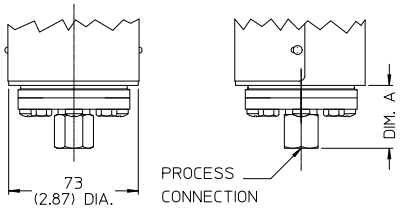
W/5 ENCLOSURE



A/4 ENCLOSURE



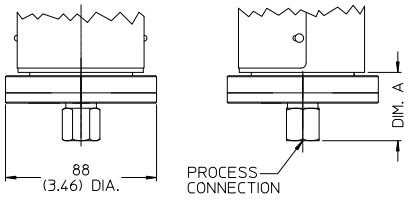
MODEL S21/2 ALL RANGES EXCEPT CC, CD & CE



PROCESS CONN.	DIM 'A'
Rc1/4 1/4"NPT INT.	36 (1.41)
1/2"NPT INT. 1/2"NPT EXT.	48 (1.88)

ALL DIMENSIONS mm (inches)

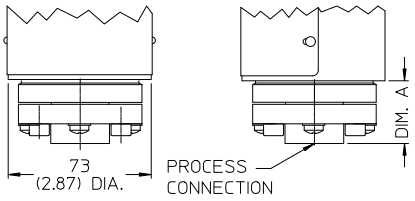
MODEL S21/2 RANGES CC, CD & CE



PROCESS CONN.	DIM. A
Rc1/4 1/4"NPT INT.	40 (1.57)
1/2"NPT INT. 1/2"NPT EXT.	52 (2.04)

ALL DIMENSIONS mm (inches)

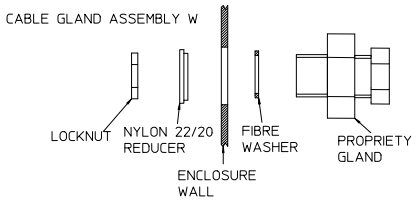
MODEL S24 ALL RANGES



PROCESS CONN.	DIM. A
Rc1/4 1/4"NPT INT.	33 (1.29)
1/2"NPT INT.	45 (1.77)
1/2"NPT EXT.	60 (2.36)

ALL DIMENSIONS mm (inches)

CABLE GLAND ASSEMBLY



Industrial Series
Models: S21, S22 & S24

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