

## EXTERNAL CAGE

### Liquid Float Level Switches

#### DESCRIPTION

External cage type level switches are completely self-contained units designed for side mounting to a tank or vessel with threaded or flanged pipe connections. These switches are engineered to customer specifications.

#### FEATURES

- Carbon steel or stainless steel cages (other materials available at request)
- Process temperature up to 540 °C (1000 °F)
- Up to 3 switch levels
- Standard anti corrosive protection

##### Flanged cages:

- Removable sensing unit from cage allows easy maintenance
- Specific gravity as low as 0,50
- Process pressure up to 51,0 bar (740 psi)

##### Sealed cages:

- Sensing unit and cage are self-containing
- Specific gravity as low as 0,49
- Process pressure up to 69,0 bar (1000 psi)

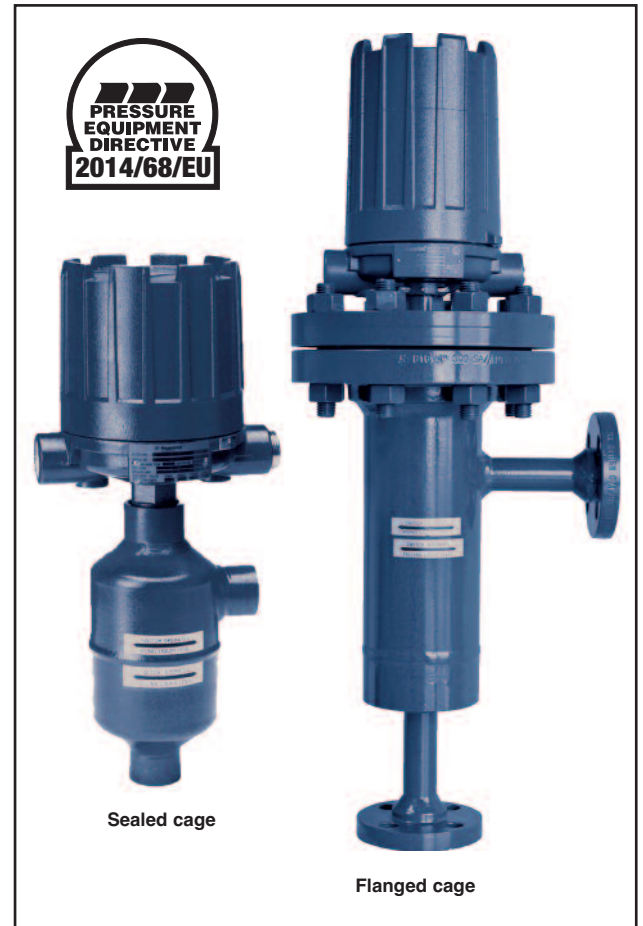
##### Optional:

- NACE construction
- Interface calibration
- Customized installation dimensions
- Special actuating levels
- Special tank connections
- Extreme temperature modifications
- Special exterior surface preparation and finish

#### APPLICATIONS

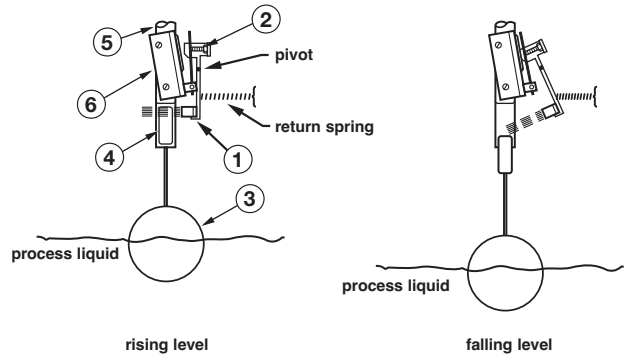
- |                              |                       |
|------------------------------|-----------------------|
| • Foaming or surging liquids | • Paints              |
| • Agitated fluids            | • Varnishes           |
| • Sewage handling            | • Heavy oils          |
| • Dirty liquids              | • Liquids with solids |

#### Standard & tailor made designs

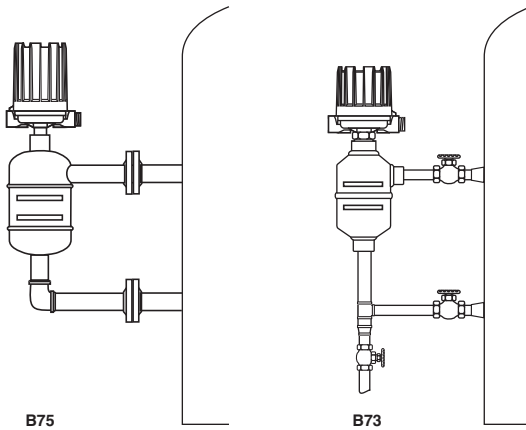


## PRINCIPLE OF OPERATION

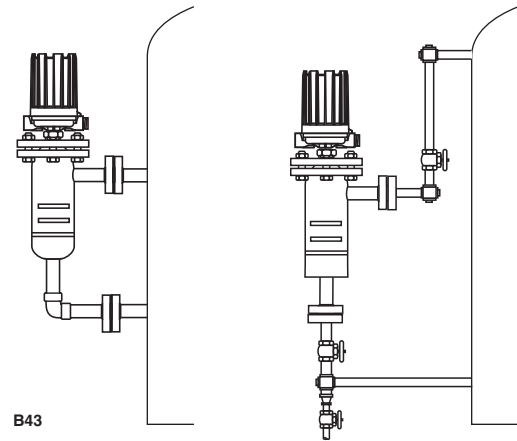
A permanent magnet ① is attached to a pivoted switch actuator and adjustment screw ②. As the float ③ rises following the liquid level, it raises the attraction sleeve ④ into the field of the magnet, which then snaps against the non-magnetic enclosing tube ⑤, actuating the switch ⑥. The enclosing tube provides a static pressure boundary between the switch mechanism and the process. On a falling level, an inconel spring retracts the magnet, deactivating the switch.



## MOUNTING










Sealed cages

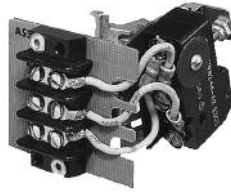


Flanged cages

## AGENCY APPROVALS

AGENCY	APPROVED MODEL	AREA CLASSIFICATION
<b>ATEX</b> 	All with electric switch mechanism and housing listed as ATEX Ex d	ATEX II 2 G Ex d IIC T6 Gb
	All with electric switch mechanism and housing listed as ATEX Ex ia	ATEX II 1 G Ex ia IIC T6 Ga
<b>FM</b> 	All with electric switch mechanism and housing listed as NEMA 7/9	Class I, Div 1, groups C & D Class II, Div 1, Groups E, F & G
	Consult factory for proper model numbers	Class I, Div 1, groups B, C & D Class II, Div 1, Groups E, F & G
<b>IECEX</b> 	All with electric switch mechanism and housing listed as IECEX Ex d	Ex d IIC T6
	All with electric switch mechanism and housing listed as IECEX Ex ia	Ex ia IIC T6 Ga
<b>CSA</b> 	Consult factory for proper model numbers	Class I, Div 1, groups C & D Class II, Div 1, Groups E, F & G
	Consult factory for proper model numbers	Class I, Div 1, groups B, C & D Class II, Div 1, Groups E, F & G
<b>EAC (Russia, Kazakhstan, Belarus)</b> 	All with electric switch mechanism and housing listed as ATEX Ex d	1Ex d IIC T6 Gb
	All with electric switch mechanism and housing listed as ATEX Ex ia	0Ex ia IIC T4 Ga
<b>LRS</b> 	All sealed cages B73, series 75	Marine approval
<b>CE</b> 	The units are conform to the ATEX directive 2014/34/EU, PED directive 2014/68/EU, Low Voltage Directive 2014/35/EU and RoHS directive 2011/65/EU	
Other approvals are available, consult factory for more details		

# SWITCH MECHANISMS AND HOUSINGS



## Series B, C, D, R & U Dry contact switches <sup>①</sup>

- Series B and C switches are general purpose units with a selection of maximum liquid temperature ratings
- Series D switch is designed for high DC current applications
- Series U switches have gold alloy contacts
- Series R switches are designed for the highest temperature applications up to +540 °C (+1000 °F)

## Series J & K Pneumatic switches <sup>③</sup>

- Suited for process industry applications in hazardous locations or where electrical power is not available
- Series J bleed type switch is intended for general purpose applications
- Series K switch is specially designed to provide non-bleed operation with a high degree of vibration resistance



## Series HS <sup>②</sup>, F, W, X, 8 & 9 Hermetically sealed switches

- Entire mechanism and contacts are contained within a positively pressurized capsule with series HS
- Ideal for use in salt and other corrosive atmospheres

## Switch housings <sup>①</sup>

- Die cast aluminium housings
- Cast iron housings
- Stainless steel housings
- Optional housing heaters and drains available for some housings
- Pneumatic switch mechanisms available with alu base/cold rolled steel cover
- Electrical switch mechanisms for high temperature available with aluminium base / cold rolled steel cover



## Series V Inductive Proximity switch <sup>④</sup>

- Series V switches are inductive proximity switches type SJ3,5-SN with a maximum liquid temperature rating of +100 °C (+210 °F)

## Basic electrical ratings <sup>①</sup>

Voltage	Switch Series and Non-Inductive Ampere Rating										
	B	C	D	F	HS	R	U	W	X	8	9
120 V AC	15.00	15.00	10.00	2.50	5.00	1.00	1.00	1.00	0.50	1.00	1.00
240 V AC	15.00	15.00	—	—	5.00	1.00	—	1.00	0.50	—	—
24 V DC	6.00	6.00	10.00	4.00	5.00	1.00	1.00	3.00	0.50	3.00	1.00
120 V DC	0.50	1.00	10.00	0.30	0.50	0.40	—	0.50	0.50	—	—
240 V DC	0.25	0.50	3.00	—	0.25	—	—	—	—	—	—

<sup>①</sup> For more details see bulletin BE 42-683

<sup>②</sup> For more details on HS Hermetically sealed switches, see bulletin BE 42-694

<sup>③</sup> For more details on J & K Pneumatic switches, see bulletin BE 42-685 and bulletin BE 42-686

<sup>④</sup> For more details on V Inductive Proximity switches, see bulletin BE 42-798

## SELECTION DATA

Specific gravity and pressure limits as per selected material of construction. Refer to selection data per model for material code definitions.

Minimum specific gravity ratings are valid for units with 1 SPDT or 1 DPDT switch. Consult factory for multiple stage units.

Consult factory for applications with process temperature above 400 °C (750 °F) or with S.G./pressure rating exceeding the limits shown in below table.

Sealed cages		Carbon steel cages			Stainless steel cages	
Model Number	Process Temp °C (°F)	Min. S.G.		Pressure bar (psi)	Min. S.G.	Pressure bar (psi)
		Material code A	Material code B			
075	40 (100)	Not available	Not available	-	0,83	34,5 (500)
	230 (450)			-		32,1 (466)
	400 (750)			-		27,6 (400)
B73	40 (100)	0,60	0,68	24,1 (350)	Not available	-
	230 (450)			19,0 (275)		-
	-			-		-
P75	40 (100)	Not available	Not available	-	0,71	27,6 (400)
	230 (450)			-		17,9 (260)
	400 (750)			-		15,5 (225)
B75	40 (100)	0,69	0,73	69,0 (1000)	0,73	69,0 (1000)
	230 (450)			58,6 (850)		58,6 (850)
	400 (750)			51,7 (750)		51,7 (750)
A75	40 (100)	0,64	0,68	69,0 (1000)	0,68	69,0 (1000)
	230 (450)			58,6 (850)		58,6 (850)
	400 (750)			51,7 (750)		51,7 (750)
C75	40 (100)	0,56	0,60	34,5 (500)	0,60	34,5 (500)
	230 (450)			25,5 (370)		22,4 (325)
	400 (750)			20,7 (300)		19,6 (285)
G75	40 (100)	0,54	0,56	51,7 (750)	0,56	51,7 (750)
	230 (450)			38,6 (560)		38,6 (560)
	400 (750)			32,7 (475)		32,7 (475)
-	-	-	-	-	-	-
	-			-		-
	-			-		-
J75	40 (100)	0,49	0,52	27,6 (400)	0,52	27,6 (400)
	230 (450)			20,3 (295)		17,9 (260)
	400 (750)			17,2 (250)		15,5 (225)

Flanged cages		Carbon steel cages			Stainless steel cages	
Model Number	Process Temp °C (°F)	Min. S.G.		Pressure bar (psi)	Min. S.G.	Pressure bar (psi)
		Material code A	Material code B			
030	40 (100)	Not available	Not available	-	0,84	34,5 (500)
	230 (450)			-		32,1 (466)
	400 (750)			-		27,6 (400)
B41	40 (100)	0,67	0,70	19,6 (285)	0,70	19,0 (275)
	230 (450)			12,7 (185)		12,4 (180)
	400 (750)			6,5 (95)		6,5 (95)
B43	40 (100)	0,72	0,77	27,6 (400)	0,77	27,6 (400)
	230 (450)			19,0 (275)		19,0 (275)
	400 (750)			15,1 (220)		15,1 (220)
-	-	-	-	-	-	-
	-			-		-
	-			-		-
A40	40 (100)	0,65	0,69	51,0 (740)	0,69	49,6 (720)
	230 (450)			42,4 (615)		34,1 (495)
	400 (750)			34,8 (505)		29,3 (425)
-	-	-	-	-	-	-
	-			-		-
	-			-		-
G33	40 (100)	0,54	0,56	51,0 (740)	0,56	49,6 (720)
	230 (450)			38,6 (560)		34,1 (495)
	400 (750)			32,7 (475)		29,3 (425)
J31	40 (100)	0,50	0,52	19,6 (285)	0,52	19,0 (275)
	230 (450)			12,7 (185)		12,4 (180)
	400 (750)			6,5 (95)		6,5 (95)
J33	40 (100)	0,50	0,52	27,6 (400)	0,52	27,6 (400)
	230 (450)			20,3 (295)		20,3 (295)
	400 (750)			17,2 (250)		17,2 (250)

### EXPEDITE SHIP PLAN (ESP)

Several models are available for quick shipment, within max. 4 weeks after factory receipt of purchase order, through the Expedite Ship Plan (ESP). To take advantage of ESP, simply match the blue model number codes.

ESP delivery is limited to a maximum of 10 units per order. Contact your local representative for lead times on larger volume orders, as well as other products and options.

# SELECTION DATA MODEL B73

Order code for liquid float level switches in an external cage

## 1 - 3 | BASIC MODEL NUMBER, SPECIFIC GRAVITY AND PRESSURE LIMITS

Model No.	Cage type	Min. S.G.	Max. pressure	
B73	sealed	down to 0,60	up to 24,1 bar (350 psi)	- min S.G. varies per material of construction - max pressure varies per material of construction and temperature - select as per table on page 5

## 4 | MATERIALS OF CONSTRUCTION

	Cage	Float and trim	Magnetic sleeve
A	Carbon steel	316 SST (1.4401)	400 series SST
B			316 SST (1.4401)

## 5 - 7 | PROCESS CONNECTION

		Threaded NPT connection					
		upper side / bottom					
1"		B20					
		Socket weld connection					
		upper side / bottom					
1"		B30					
		ASME flanges					
		upper side / bottom			side / side		
		150 lbs RF	300 lbs RF	600 lbs RF	150 lbs RF	300 lbs RF	600 lbs RF
1"		N30	N40	N50	S30	S40	S50
		EN 1092-1 flanges					
		upper side / bottom			side / side		
		PN 16	PN 25/40	PN 63	PN 16	PN 25/40	PN 63
		EN 1092-1 Type B1	EN 1092-1 Type B1	EN 1092-1 Type B2	EN 1092-1 Type B1	EN 1092-1 Type B1	EN 1092-1 Type B2
DN 25		1FA	1HA	1JA	1FB	1HB	1JB

## 8 - 10 | SWITCH MECHANISM & HOUSING (see next page)



complete order code for B73 models

X = product with a specific customer requirement

SELECT ELECTRIC SWITCH MECHANISM & HOUSING: MODEL B73

Switch Description	Process <sup>①</sup> Temperature Range °C (°F)	Contacts	Material code A									Material code B								
			Weather proof (IP 66)	ATEX - IECEx (IP 66)						FM (IP 66)	Weather proof (IP 66)	ATEX - IECEx (IP 66)						FM (IP 66)		
				II 2G Ex d IIC T6 Gb			II 1G Ex ia IIC T6 Ga					NEMA 7/9	II 2G Ex d IIC T6 Gb			II 1G Ex ia IIC T6 Ga			NEMA 7/9	
				Cast Aluminium		Cast Aluminium		Cast Iron (ATEX only)		Cast Aluminium			Cast Alu.	Cast Aluminium		Cast Aluminium		Cast Iron (ATEX only)		Cast Aluminium
M20x1,5	1" NPT	M20x1,5	1" NPT	M20x1,5	3/4" NPT	M20x1,5	1" NPT	1" NPT	M20x1,5	1" NPT	M20x1,5	1" NPT	M20x1,5	1" NPT	M20x1,5	3/4" NPT	M20x1,5	1" NPT	1" NPT	
Series B Snap switch	-40 to +120 (-40 to +250)	1x SPDT	B2P	BAP	BHC	BAC	BK7	BU7	–	–	BKP	B2Q	BAQ	BH9	BA9	BK5	BU5	–	–	BKQ
		1x DPDT	B8P	BDP	BJC	BBC	BD7	BW7	–	–	BNP	B8Q	BDQ	BJ9	BB9	BD5	BW5	–	–	BNQ
Series C Snap switch	-40 to +230 (-40 to +450)	1x SPDT	C2P	CAP	CHC	CAC	CK7	CU7	C2L	CAL	CKP	C2Q	CAQ	CH9	CA9	CK5	CU5	C2S	CAS	CKQ
		1x DPDT	C8P	CDP	CJC	CBC	CD7	CW7	C8L	CDL	CNP	C8Q	CDQ	CJ9	CB9	CD5	CW5	C8S	CDS	CNQ
Series D DC Current Snap switch	-40 to +120 (-40 to +250)	1x SPDT	–	–	–	–	–	–	–	–	–	D2Q	DAQ	DH9	DA9	DK5	DU5	–	–	DKQ
		1x DPDT	–	–	–	–	–	–	–	–	–	D8Q	DDQ	DJ9	DB9	DD5	DW5	–	–	DNQ
Series F Hermetically sealed Snap switch	-45 to +230 (-50 to +450)	1x SPDT	F2P	FAP	FHC	FAC	FK7	FU7	–	–	FKP	F2Q	FAQ	FH9	FA9	FK5	FU5	–	–	FKQ
		1x DPDT	F8P	FDP	FJC	FBC	FD7	FW7	–	–	FNP	F8Q	FDQ	FJ9	FB9	FD5	FW5	–	–	FNQ
Series HS Hermetically sealed Snap switch	-45 to +230 <sup>②</sup> (-50 to +450)	1x SPDT	–	–	–	–	–	–	–	–	–	H7A	HM2	HFC	HA9	HB3	HB4	–	–	HM3
		1x DPDT	–	–	–	–	–	–	–	–	–	H7C	HM6	HGC	HB9	HB7	HB8	–	–	HM7
Series U Gold alloy contacts Snap switch	-40 to +120 (-40 to +250)	1x SPDT	U2P	UAP	UHC	UAC	UK7	UU7	U2L	UAL	UKP	U2Q	UAQ	UH9	UA9	UK5	UU5	U2S	UAS	UKQ
		1x DPDT	U8P	UDP	UJC	UBC	UD7	UW7	U8L	UDL	UNP	U8Q	UDQ	UJ9	UB9	UD5	UW5	U8S	UDS	UNQ
Series V Inductive Proximity switch	-40 to +100 (-40 to +210)	–	–	–	–	–	–	VFS	VHS	–	–	–	–	–	–	–	V5S	VBS	–	
Series W Hermetically sealed Silver plated contacts Snap switch	-45 to +230 (-50 to +450)	1x SPDT	W2P	WAP	WHC	WAC	WK7	WU7	W2L	WAL	WKP	W2Q	WAQ	WH9	WA9	WK5	WU5	W2S	WAS	WKQ
		1x DPDT	–	–	–	–	–	–	–	–	–	W8Q	WDQ	WJ9	WB9	WD5	WW5	W8S	WDS	WNQ
Series X Hermetically sealed Gold plated contacts Snap switch	-45 to +230 (-50 to +450)	1x SPDT	X2P	XAP	XHC	XAC	XK7	XU7	X2L	XAL	XKP	X2Q	XAQ	XH9	XA9	XK5	XU5	X2S	XAS	XKQ
		1x SPDT	–	–	–	–	–	–	–	–	–	X8Q	XDQ	XJ9	XB9	XD5	XW5	X8S	XDS	XNQ

SELECT PNEUMATIC SWITCH MECHANISM & HOUSING: MODEL B73

Switch Description	Max supply pressure bar (psi)	Max liquid temperature <sup>①</sup> °C (°F)	Bleed orifice Ø mm (inches)	NEMA 3R (IP 53)	
				Material code A	Material code B
Series J (open air)	6,9 (100)	200 (400)	1,60 (0.063)	JDG	JDE
	4,1 (60)		2,39 (0.094)	JEG	JEE
	4,1 (60)	230 (450)	1,40 (0.055)	JFG	JFE
Series K (closed circuit)	6,9 (100)	200 (400)	–	–	KOE
	2,8 (40)		–	KOG	–

① Process temperature based on max. 40 °C (100 °F) ambient temperature and for non steam applications.

② On steam applications, temperature down-rated to +200 °C (+400 °F) process at +40 °C (+100 °F) ambient.

# SELECTION DATA MODEL B41

Order code for liquid float level switches in an external cage

## 1 - 3 | BASIC MODEL NUMBER, SPECIFIC GRAVITY AND PRESSURE LIMITS

Model No.	Cage type	Min. S.G.	Max. pressure	
B41	flanged	down to 0,67	up to 19,6 bar (285 psi)	- min S.G. varies per material of construction - max pressure varies per material of construction and temperature - select as per table on page 5

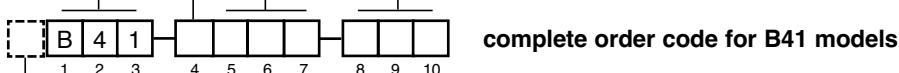
## 4 | MATERIALS OF CONSTRUCTION

	Cage	Float and trim	Magnetic sleeve
A	Carbon steel	316 SST (1.4401)	400 series SST
B	Carbon steel		316 SST (1.4401)
D	316/316L SST (1.4401/1.4404)		316 SST (1.4401)

## 5 - 7 | PROCESS CONNECTION

Threaded NPT connection						
upper side / bottom						
1"	B20					
1 1/2"	C20					
2"	D20					
Socket weld connection						
upper side / bottom						
1"	B30					
1 1/2"	C30					
2"	D30					
ASME flanges						
upper side / bottom			side / side			
	150 lbs RF	300 lbs RF	600 lbs RF	150 lbs RF	300 lbs RF	600 lbs RF
1"	N30	N40	N50	S30	S40	S50
1 1/2"	P30	P40	P50	T30	T40	T50
2"	Q30	Q40	Q50	V30	V40	V50
EN 1092-1 flanges						
upper side / bottom			side / side			
	PN 16 EN 1092-1 Type B1	PN 25/40 EN 1092-1 Type B1	PN 63 EN 1092-1 Type B2	PN 16 EN 1092-1 Type B1	PN 25/40 EN 1092-1 Type B1	PN 63 EN 1092-1 Type B2
DN 25	1FA	1HA	1JA	1FB	1HB	1JB
DN 40	2FA	2HA	2JA	2FB	2HB	2JB
DN 50	3FA	3HA	3JA	3FB	3HB	3JB

## 8 - 10 | SWITCH MECHANISM & HOUSING (see next page)



X = product with a specific customer requirement



SELECT ELECTRIC SWITCH MECHANISM & HOUSING: MODEL B41

Switch Description	Process <sup>①</sup> Temperature Range °C (°F)	Contacts	Material code A									Material codes B & D								
			Weather proof (IP 66)	ATEX - IECEx (IP 66)						FM (IP 66)	Weather proof (IP 66)	ATEX - IECEx (IP 66)						FM (IP 66)		
				II 2G Ex d IIC T6 Gb			II 1G Ex ia IIC T6 Ga					NEMA 7/9	II 2G Ex d IIC T6 Gb			II 1G Ex ia IIC T6 Ga			NEMA 7/9	
				Cast Aluminium	Cast Aluminium	Cast Iron (ATEX only)	Cast Aluminium	Cast Alu.	Cast Aluminium	Cast Aluminium		Cast Iron (ATEX only)	Cast Aluminium	Cast Alu.	Cast Aluminium	Cast Aluminium	Cast Iron (ATEX only)	Cast Aluminium	Cast Alu.	
M20x1,5	1" NPT	M20x1,5	1" NPT	M20x1,5	3/4" NPT	M20x1,5	1" NPT	1" NPT	M20x1,5	1" NPT	M20x1,5	1" NPT	M20x1,5	3/4" NPT	M20x1,5	1" NPT	1" NPT			
Series B Snap switch	-40 to +120 (-40 to +250)	1x SPDT	B2P	BAP	BHC	BAC	BK7	BU7	-	-	BKP	B2Q	BAQ	BH9	BA9	BK5	BU5	-	-	BKQ
		1x DPDT	B8P	BDP	BJC	BBC	BD7	BW7	-	-	BNP	B8Q	BDQ	BJ9	BB9	BD5	BW5	-	-	BNQ
Series C Snap switch	-40 to +230 (-40 to +450)	1x SPDT	C2P	CAP	CHC	CAC	CK7	CU7	C2L	CAL	CKP	C2Q	CAQ	CH9	CA9	CK5	CU5	C2S	CAS	CKQ
		1x DPDT	C8P	CDP	CJC	CBC	CD7	CW7	C8L	CDL	CNP	C8Q	CDQ	CJ9	CB9	CD5	CW5	C8S	CDS	CNQ
Series D DC Current Snap switch	-40 to +120 (-40 to +250)	1x SPDT	-	-	-	-	-	-	-	-	-	D2Q	DAQ	DH9	DA9	DK5	DU5	-	-	DKQ
		1x DPDT	-	-	-	-	-	-	-	-	-	D8Q	DDQ	DJ9	DB9	DD5	DW5	-	-	DNQ
Series F Hermetically sealed Snap switch	-45 to +230 (-50 to +450)	1x SPDT	F2P	FAP	FHC	FAC	FK7	FU7	-	-	FKP	F2Q	FAQ	FH9	FA9	FK5	FU5	-	-	FKQ
		1x DPDT	F8P	FDP	FJC	FBC	FD7	FW7	-	-	FNP	F8Q	FDQ	FJ9	FB9	FD5	FW5	-	-	FNQ
Series HS Hermetically sealed Snap switch	-45 to +230 <sup>②</sup> (-50 to +450)	1x SPDT	-	-	-	-	-	-	-	-	-	H7A	HM2	HFC	HA9	HB3	HB4	-	-	HM3
		1x DPDT	-	-	-	-	-	-	-	-	-	H7C	HM6	HGC	HB9	HB7	HB8	-	-	HM7
Series U Gold alloy contacts Snap switch	-40 to +120 (-40 to +250)	1x SPDT	U2P	UAP	UHC	UAC	UK7	UU7	U2L	UAL	UKP	U2Q	UAQ	UH9	UA9	UK5	UU5	U2S	UAS	UKQ
		1x DPDT	U8P	UDP	UJC	UBC	UD7	UW7	U8L	UDL	UNP	U8Q	UDQ	UJ9	UB9	UD5	UW5	U8S	UDS	UNQ
Series V Inductive Proximity switch	-40 to +100 (-40 to +210)	-	-	-	-	-	-	VFS	VHS	-	-	-	-	-	-	-	-	V5S	VBS	-
Series W Hermetically sealed Silver plated contacts Snap switch	-45 to +230 (-50 to +450)	1x SPDT	W2P	WAP	WHC	WAC	WK7	WU7	W2L	WAL	WKP	W2Q	WAQ	WH9	WA9	WK5	WU5	W2S	WAS	WKQ
		1x DPDT	-	-	-	-	-	-	-	-	-	W8Q	WDQ	WJ9	WB9	WD5	WW5	W8S	WDS	WNQ
Series X Hermetically sealed Gold plated contacts Snap switch	-45 to +230 (-50 to +450)	1x SPDT	X2P	XAP	XHC	XAC	XK7	XU7	X2L	XAL	XKP	X2Q	XAQ	XH9	XA9	XK5	XU5	X2S	XAS	XKQ
		1x SPDT	-	-	-	-	-	-	-	-	-	X8Q	XDQ	XJ9	XB9	XD5	XW5	X8S	XDS	XNQ

SELECT PNEUMATIC SWITCH MECHANISM & HOUSING: MODEL B41

Switch Description	Max supply pressure bar (psi)	Max liquid temperature <sup>①</sup> °C (°F)	Bleed orifice Ø mm (inches)	NEMA 3R (IP 53)	
				Material code A	Material codes B & D
Series J (open air)	6,9 (100)	200 (400)	1,60 (0.063)	JDG	JDE
	4,1 (60)		2,39 (0.094)	JEG	JEE
	4,1 (60)	230 (450)	1,40 (0.055)	JFG	JFE
Series K (closed circuit)	6,9 (100)	200 (400)	-	-	KOE
	2,8 (40)		-	KOG	-

<sup>①</sup> Process temperature based on max. 40 °C (100 °F) ambient temperature and for non steam applications.

<sup>②</sup> On steam applications, temperature down-rated to +200 °C (+400 °F) process at +40 °C (+100 °F) ambient.

# SELECTION DATA MODELS A75, B75, C75, G75, J75

Order code for liquid float level switches in an external cage

## 1 - 3 | BASIC MODEL NUMBER, SPECIFIC GRAVITY AND PRESSURE LIMITS

Model No.	Cage type	Min. S.G.	Max. pressure	
A75	sealed	down to 0,64	up to 69,0 bar (1000 psi)	- min S.G. varies per material of construction - max pressure varies per material of construction and temperature - select as per table on page 5
B75		down to 0,69	up to 69,0 bar (1000 psi)	
C75		down to 0,56	up to 34,5 bar (500 psi)	
G75		down to 0,54	up to 51,7 bar (750 psi)	
J75		down to 0,49	up to 27,6 bar (400 psi)	

## 4 | MATERIALS OF CONSTRUCTION

	Cage	Float and trim	Magnetic sleeve
A	Carbon steel	316 SST (1.4401)	400 series SST
B	Carbon steel		316 SST (1.4401)
D	316/316L SST (1.4401/1.4404)		316 SST (1.4401)

## 5 - 7 | PROCESS CONNECTION

Threaded NPT connection						
upper side / bottom						
1"	B20					
1 1/2"	C20					
2"	D20					
Socket weld connection						
upper side / bottom						
1"	B30					
1 1/2"	C30					
2"	D30					
ASME flanges						
upper side / bottom			side / side			
	150 lbs RF	300 lbs RF	600 lbs RF	150 lbs RF	300 lbs RF	600 lbs RF
1"	N30	N40	N50	S30	S40	S50
1 1/2"	P30	P40	P50	T30	T40	T50
2"	Q30	Q40	Q50	V30	V40	V50
EN 1092-1 flanges						
upper side / bottom			side / side			
	PN 16 EN 1092-1 Type B1	PN 25/40 EN 1092-1 Type B1	PN 63 EN 1092-1 Type B2	PN 16 EN 1092-1 Type B1	PN 25/40 EN 1092-1 Type B1	PN 63 EN 1092-1 Type B2
DN 25	1FA	1HA	1JA	1FB	1HB	1JB
DN 40	2FA	2HA	2JA	2FB	2HB	2JB
DN 50	3FA	3HA	3JA	3FB	3HB	3JB

## 8 - 10 | SWITCH MECHANISM & HOUSING (see next page)



complete order code for A75/B75/C75/G75/J75 models

X = product with a specific customer requirement

SELECT ELECTRIC SWITCH MECHANISM & HOUSING: MODELS A75, B75, C75, G75, J75

Switch Description	Process Temperature Range °C (°F)	Contacts	Material code A										Material codes B & D									
			Weather proof (IP 66)		ATEX - IECEx (IP 66)						FM (IP 66)		Weather proof (IP 66)		ATEX - IECEx (IP 66)						FM (IP 66)	
					II 2G Ex d IIC T6 Gb						NEMA 7/9				II 2G Ex d IIC T6 Gb						NEMA 7/9	
			Cast Aluminium		Cast Aluminium		Cast iron (ATEX only)		Cast Aluminium		Cast Alu.		Cast Aluminium		Cast Iron (ATEX only)		Cast Aluminium		Cast Alu.			
Series B Snap switch	-40 to +120 (-40 to +250)	1x SPDT	B2A	BAA	BKC	BCC	BK7	BU7	-	-	BKA	B2B	BAB	BK9	BC9	BK5	BU5	-	-	BKB		
		2x SPDT	B4A	BBA	BLC	BDC	BL7	BV7	-	-	BLA	B4B	BBB	BL9	BD9	BL5	BV5	-	-	BLB		
		3x SPDT	B6A	BCA	BMC	BEC	B67	B77	-	-	BMA	B6B	BCB	BM9	BE9	B65	B75	-	-	BMB		
		1x DPDT	B8A	BDA	BNC	BFC	BD7	BW7	-	-	BNA	B8B	BDB	BN9	BF9	BD5	BW5	-	-	BNB		
		2x DPDT	B1A	BEA	BPC	BGC	BO7	BY7	-	-	BOA	B1B	BEB	BP9	BG9	BO5	BY5	-	-	BOB		
Series C Snap switch	-40 to +230 (-40 to +450)	1x SPDT	C2A	CAA	CKC	CCC	CK7	CU7	C2X	CAX	CKA	C2B	CAB	CK9	CC9	CK5	CU5	C2T	CAT	CKB		
		2x SPDT	C4A	CBA	CLC	CDC	CL7	CV7	C4X	CBX	CLA	C4B	CBB	CL9	CD9	CL5	CV5	C4T	CBT	CLB		
		3x SPDT	C6A	CCA	CMC	CEC	C67	C77	-	-	CMA	C6B	CCB	CM9	CE9	C65	C75	-	-	CMB		
		1x DPDT	C8A	CDA	CNC	CFC	CD7	CW7	C8X	CDX	CNA	C8B	CDB	CN9	CF9	CD5	CW5	C8T	CDT	CNB		
		2x DPDT	C1A	CEA	CPC	CGC	CO7	CY7	C1X	CEX	COA	C1B	CEB	CP9	CG9	CO5	CY5	C1T	CET	COB		
Series D DC Current Snap switch	-40 to +120 (-40 to +250)	1x SPDT	D2B	DAB	DK9	DC9	DK5	DU5	-	-	DKB	D2B	DAB	DK9	DC9	DK5	DU5	-	-	DKB		
		2x SPDT	D4B	DBB	DL9	DD9	DL5	DV5	-	-	DLB	D4B	DBB	DL9	DD9	DL5	DV5	-	-	DLB		
		3x SPDT	-	-	-	-	-	-	-	-	-	D6B	DCB	DM9	DE9	D65	D75	-	-	DMB		
		1x DPDT	D8B	DBB	DN9	DF9	DD5	DW5	-	-	DNB	D8B	DBB	DN9	DF9	DD5	DW5	-	-	DNB		
		2x DPDT	D1B	DEB	DP9	DG9	DO5	DY5	-	-	DOB	D1B	DEB	DP9	DG9	DO5	DY5	-	-	DOB		
Series F Hermetically sealed Snap switch	-45 to +400 (-50 to +750)	1x SPDT	FCA	FAA	FKC	FCC	FK7	FU7	-	-	FKA	F1B	FAB	FK9	FC9	FK5	FU5	-	-	FKB		
		2x SPDT	FFA	FBA	FLC	FDC	FL7	FV7	-	-	FLA	FFB	FBB	FL9	FD9	FL5	FV5	-	-	FLB		
		1x DPDT	FGA	FDA	FNC	FFC	FD7	FW7	-	-	FNA	FGB	FDB	FN9	FF9	FD5	FW5	-	-	FNB		
		2x DPDT	FHA	FEA	FPC	FGC	FO7	FY7	-	-	FOA	FHB	FEB	FP9	FG9	FO5	FY5	-	-	FOB		
Series HS Hermetically sealed Snap switch	-45 to +290 (-50 to +550)	1x SPDT	H7A	HM2	HFC	HA9	HB3	HB4	-	-	HM3	H7A	HM2	HFC	HA9	HB3	HB4	-	-	HM3		
		1x DPDT	H7C	HM6	HGC	HB9	HB7	HB8	-	-	HM7	H7C	HM6	HGC	HB9	HB7	HB8	-	-	HM7		
Series U Gold alloy contacts Snap switch	-40 to +120 (-40 to +250)	1x SPDT	U2A	UAA	UKC	UCC	UK7	UU7	U2X	UAX	UKA	U2B	UAB	UK9	UC9	UK5	UU5	U2T	UAT	UKB		
		2x SPDT	U4A	UBA	ULC	UDC	UL7	UV7	U4X	UBX	ULA	U4B	UBB	UL9	UD9	UL5	UV5	U4T	UBT	ULB		
		3x SPDT	U6A	UCA	UMC	UEC	U67	U77	-	-	UMA	U6B	UCB	UM9	UE9	U65	U75	-	-	UMB		
		1x DPDT	U8A	UDA	UNC	UFC	UD7	UW7	U8X	UDX	UNA	U8B	UDB	UN9	UF9	UD5	UW5	U8T	UDT	UNB		
		2x DPDT	U1A	UEA	UPC	UGC	UO7	UY7	U1X	UEX	UOA	U1B	UEB	UP9	UG9	UO5	UY5	U1T	UET	UOB		
Series V Inductive Proximity switch	-40 to +100 (-40 to +210)	-	-	-	-	-	-	VJS	VLS	-	-	-	-	-	-	-	-	VCS	VES	-		
Series W Hermetically sealed Silver plated contacts Snap switch	-45 to +230 (-50 to +450)	1x SPDT	W2A	WAA	WKC	WCC	WK7	WU7	W2X	WAX	WKA	W2B	WAB	WK9	WC9	WK5	WU5	W2T	WAT	WKB		
		2x SPDT	W4A	WBA	WLC	WDC	WL7	WV7	W4X	WBX	WLA	W4B	WBB	WL9	WD9	WL5	WV5	W4T	WBT	WLB		
		3x SPDT	W6A	WCA	WMC	WEC	W67	W77	-	-	WMA	W6B	WCB	WM9	WE9	W65	W75	-	-	WMB		
		1x DPDT	W8B	WDB	WNB	WFB	WN9	WF9	WD5	WW5	W8T	WDT	WNB	WDB	WN9	WF9	WD5	WW5	W8T	WDT	WNB	
		2x DPDT	W1B	WEB	WP9	WG9	WO5	WY5	W1T	WET	WOB	W1B	WEB	WP9	WG9	WO5	WY5	W1T	WET	WOB		
Series X Hermetically sealed Gold plated contacts Snap switch	-45 to +230 (-50 to +450)	1x SPDT	X2A	XAA	XKC	XCC	XK7	XU7	X2X	XAX	XKA	X2B	XAB	XK9	XC9	XK5	XU5	X2T	XAT	XKB		
		2x SPDT	X4A	XBA	XLC	XDC	XL7	XV7	X4X	XBX	XLA	X4B	XBB	XL9	XD9	XL5	XV5	X4T	XBT	XLB		
		3x SPDT	X6A	XCA	XMC	XEC	X67	X77	-	-	XMA	X6B	XCB	XM9	XE9	X65	X75	-	-	XMB		
		1x DPDT	X8B	XDB	XN9	XF9	XD5	XW5	X8T	XDT	XNB	X8B	XDB	XN9	XF9	XD5	XW5	X8T	XDT	XNB		
		2x DPDT	X1B	XEB	XP9	XG9	XO5	XY5	X1T	XET	XOB	X1B	XEB	XP9	XG9	XO5	XY5	X1T	XET	XOB		
Series R High temperature Snap switch	-40 to +400 (-40 to +750)	1x SPDT	R2B	R1B	RK9	RC9	RK5	RU5	-	-	RKB	R2B	R1B	RK9	RC9	RK5	RU5	-	-	RKB		
		2x SPDT	R4B	R3B	RL9	RD9	RL5	RV5	-	-	RLB	R4B	R3B	RL9	RD9	RL5	RV5	-	-	RLB		
		1x DPDT	RGB	RDB	RN9	RF9	RN5	RF5	-	-	RNB	RGB	RDB	RN9	RF9	RN5	RF5	-	-	RNB		
		2x DPDT	RHB	REB	RP9	RG9	RO5	RG5	-	-	ROB	RHB	REB	RP9	RG9	RO5	RG5	-	-	ROB		
Series 8 Hermetically sealed Snap switch	-45 to +400 (-50 to +750)	1x SPDT	82A	8AA	8KC	8CC	8K7	8U7	-	-	8KA	82B	8AB	8K9	8C9	8K5	8U5	-	-	8KB		
		2x SPDT	84A	8BA	8LC	8DC	8L7	8V7	-	-	8LA	84B	8BB	8L9	8D9	8L5	8V5	-	-	8LB		
		3x SPDT	86A	8CA	88C	8EC	867	877	-	-	8MA	86B	8CB	889	8E9	865	875	-	-	8MB		
		1x DPDT	88A	8DA	8NC	8FC	8D7	8W7	-	-	8NA	88B	8DB	8N9	8F9	8D5	8W5	-	-	8NB		
		2x DPDT	81A	8EA	8PC	8GC	8O7	8Y7	-	-	8OA	81B	8EB	8P9	8G9	8O5	8Y5	-	-	8OB		
Series 9 High temperature Hermetically sealed Snap switch	-45 to +400 (-50 to +750)	1x SPDT	92A	9AA	9KC	9CC	9K7	9U7	-	-	9KA	92B	9AB	9K9	9C9	9K5	9U5	-	-	9KB		
		2x SPDT	94A	9BA	9LC	9DC	9L7	9V7	-	-	9LA	94B	9BB	9L9	9D9	9L5	9V5	-	-	9LB		
		3x SPDT	96A	9CA	98C	9EC	967	977	-	-	9MA	96B	9CB	989	9E9	965	975	-	-	9MB		
		1x DPDT	98A	9DA	9NC	9FC	9D7	9W7	-	-	9NA	98B	9DB	9N9	9F9	9D5	9W5	-	-	9NB		
		2x DPDT	91A	9EA	9PC	9GC	9O7	9Y7	-	-	9OA	91B	9EB	9P9	9G9	9O5	9Y5	-	-	9OB		
Switch Description	Process Temperature Range °C (°F)	Contacts	Weather proof (IP 65)		ATEX (IP 66)					Weather proof (IP 65)		ATEX (IP 66)										
			CS/Aluminium		II 2G Ex d IIC T6 Gb					CS/Aluminium		II 2G Ex d IIC T6 Gb										
			3/4" NPT		M20x1,5		3/4" NPT			3/4" NPT		M20x1,5		3/4" NPT								
Series R High temperature Snap switch	-40 to +540 (-40 to +1000)	1x SPDT	R1Y		RK5			RU5		R1Y		RK5			RU5							
		1x DPDT	RDY		RN5			RF5		RDY		RN5			RF5							
Series 9 High temperature Hermetically sealed Snap switch	-40 to +540 (-40 to +1000)	1x SPDT	9AR		9K7			9U7		9AY		9K5			9U5							
		1x DPDT	9DR		9D7			9W7		9DY		9D5			9W5							

SELECT PNEUMATIC SWITCH MECHANISM & HOUSING: MODELS A75, B75, C75, G75, J75

Switch description	Max supply pressure bar (psi)	Max liquid temperature °C (°F)	Bleed orifice Ø mm (inches)	NEMA 3R (IP 53)	
				Material code A	Material codes B & D
Series J (open air)	6,9 (100)	200 (400)	1,60 (0.063)	JDG	JDE
	4,1 (60)		2,39 (0.094)	JEG	JEE
	4,1 (60)		1,40 (0.055)	JFG	JFE
Series K (closed circuit)	6,9 (100)	200 (400)	-	KOE	KOE
	2,8 (40)		-	KOG	-

- ① Process temperature based on max. 40 °C (100 °F) ambient temperature and for non steam applications.
- ② On steam applications, temperature down-rated to +200 °C (+400 °F) process at +40 °C (+100 °F) ambient.
- ③ Upon prolonged exposure to temperatures above 425 °C (800 °F), the carbide phase of steel may be converted to graphite. Permissible but not recommended for prolonged use above 425 °C (800 °F).

# SELECTION DATA MODELS A40, B43, G33, J31, J33

Order code for liquid float level switches in an external cage

## 1 - 3 | BASIC MODEL NUMBER, SPECIFIC GRAVITY AND PRESSURE LIMITS

Model No.	Cage type	Min. S.G.	Max. pressure	
A40	flanged	down to 0,65	up to 51,0 bar (740 psi)	- min S.G. varies per material of construction - max pressure varies per material of construction and temperature - select as per table on page 5
B43		down to 0,72	up to 27,6 bar (400 psi)	
G33		down to 0,54	up to 51,0 bar (740 psi)	
J31		down to 0,50	up to 19,6 bar (285 psi)	
J33		down to 0,50	up to 27,6 bar (400 psi)	

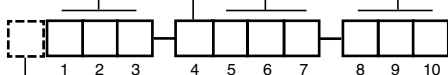
## 4 | MATERIALS OF CONSTRUCTION

	Cage	Float and trim	Magnetic sleeve
A	Carbon steel	316 SST (1.4401)	400 series SST
B	Carbon steel		316 SST (1.4401)
D	316/316L SST (1.4401/1.4404)		316 SST (1.4401)

## 5 - 7 | PROCESS CONNECTION

Threaded NPT connection						
upper side / bottom						
1"	B20					
1 1/2"	C20					
2"	D20					
Socket weld connection						
upper side / bottom						
1"	B30					
1 1/2"	C30					
2"	D30					
ASME flanges						
upper side / bottom			side / side			
	150 lbs RF	300 lbs RF	600 lbs RF	150 lbs RF	300 lbs RF	600 lbs RF
1"	N30	N40	N50	S30	S40	S50
1 1/2"	P30	P40	P50	T30	T40	T50
2"	Q30	Q40	Q50	V30	V40	V50
EN 1092-1 flanges						
upper side / bottom			side / side			
	PN 16	PN 25/40	PN 63	PN 16	PN 25/40	PN 63
	EN 1092-1 Type B1	EN 1092-1 Type B1	EN 1092-1 Type B2	EN 1092-1 Type B1	EN 1092-1 Type B1	EN 1092-1 Type B2
DN 25	1FA	1HA	1JA	1FB	1HB	1JB
DN 40	2FA	2HA	2JA	2FB	2HB	2JB
DN 50	3FA	3HA	3JA	3FB	3HB	3JB

## 8 - 10 | SWITCH MECHANISM & HOUSING (see next page)



complete order code for A40/B43/G33/J31/J33 models

X = product with a specific customer requirement

SELECT ELECTRIC SWITCH MECHANISM & HOUSING: MODELS A40, B43, G33, J31, J33

Switch Description	Process Temperature Range °C (°F)	Contacts	Material code A									Material codes B & D														
			Weather proof (IP 66)			ATEX - IECEx (IP 66)						FM (IP 66)			Weather proof (IP 66)			ATEX - IECEx (IP 66)						FM (IP 66)		
						II 2G Ex d IIC T6 Gb												II 1G Ex ia IIC T6 Ga								
			Cast Aluminium			Cast Aluminium			Cast iron (ATEX only)			Cast Aluminium			Cast Alu.			Cast Aluminium			Cast Iron (ATEX only)			Cast Aluminium		
Series B Snap switch	-40 to +120 (-40 to +250)	1x SPDT	B2A	BAA	BKC	BCC	BK7	BU7	-	-	BKA	B2B	BAB	BK9	BC9	BK5	BU5	-	-	BKB						
		2x SPDT	B4A	BBA	BLC	BDC	BL7	BV7	-	-	BLA	B4B	BBB	BL9	BD9	BL5	BV5	-	-	BLB						
		3x SPDT	B6A	BCA	BMC	BEC	B67	B77	-	-	BMA	B6B	BCB	BM9	BE9	B65	B75	-	-	BMB						
		1x DPDT	B8A	BDA	BNC	BFC	BD7	BW7	-	-	BNA	B8B	BDB	BN9	BF9	BD5	BW5	-	-	BNB						
Series C Snap switch	-40 to +230 (-40 to +450)	1x SPDT	B1A	BEA	BPC	BGC	BO7	BY7	-	-	BOA	B1B	BEB	BP9	BG9	BO5	BY5	-	-	BOB						
		2x SPDT	C2A	CAA	CKC	CCC	CK7	CU7	C2X	CAX	CKA	C2B	CAB	CK9	CC9	CK5	CU5	C2T	CAT	CKB						
		3x SPDT	C4A	CBA	CLC	CDC	CL7	CV7	C4X	CBX	CLA	C4B	CBB	CL9	CD9	CL5	CV5	C4T	CBT	CLB						
		1x DPDT	C6A	CCA	CMC	CEC	C67	C77	-	-	CMA	C6B	CCB	CM9	CE9	C65	C75	-	-	CMB						
Series D DC Current Snap switch	-40 to +120 (-40 to +250)	1x DPDT	C8A	CDA	CNC	CFC	CD7	CW7	C8X	CDX	CNA	C8B	CDB	CN9	CF9	CD5	CW5	C8T	CDT	CNB						
		2x DPDT	C1A	CEA	CPC	CGC	CO7	CY7	C1X	CEX	COA	C1B	CEB	CP9	CG9	CO5	CY5	C1T	CET	COB						
		1x SPDT	D2B	DAB	DK9	DC9	DK5	DU5	-	-	DKB	D2B	DAB	DK9	DC9	DK5	DU5	-	-	DKB						
		2x SPDT	D4B	DBB	DL9	DD9	DL5	DV5	-	-	DLB	D4B	DBB	DL9	DD9	DL5	DV5	-	-	DLB						
Series F Hermetically sealed Snap switch	-45 to +400 (-50 to +750)	3x SPDT	-	-	-	-	-	-	-	-	D6B	DCB	DM9	DE9	D65	D75	-	-	DMB							
		1x DPDT	D8B	DDB	DN9	DF9	DD5	DW5	-	-	DNB	D8B	DDB	DN9	DF9	DD5	DW5	-	-	DNB						
		2x DPDT	D1B	DEB	DP9	DG9	DO5	DY5	-	-	DOB	D1B	DEB	DP9	DG9	DO5	DY5	-	-	DOB						
		1x SPDT	FCA	FAA	FKC	FCC	FK7	FU7	-	-	FKA	F1B	FAB	FK9	FC9	FK5	FU5	-	-	FKB						
Series HS Hermetically sealed Snap switch	-45 to +290 (-50 to +550)	2x SPDT	FFA	FBA	FLC	FDC	FL7	FV7	-	-	FLA	FFB	FBB	FL9	FD9	FL5	FV5	-	-	FLB						
		1x DPDT	FGA	FDA	FNC	FFC	FD7	FW7	-	-	FNA	FGB	FDB	FN9	FF9	FD5	FW5	-	-	FNB						
		2x DPDT	FHA	FEA	FPC	FGC	FO7	FY7	-	-	FOA	FHB	FEB	FP9	FG9	FO5	FY5	-	-	FOB						
		1x SPDT	H7A	HM2	HFC	HA9	HB3	HB4	-	-	HM3	H7A	HM2	HFC	HA9	HB3	HB4	-	-	HM3						
Series U Gold alloy contacts Snap switch	-40 to +120 (-40 to +250)	1x DPDT	H7C	HM6	HGC	HB9	HB7	HB8	-	-	HM7	H7C	HM6	HGC	HB9	HB7	HB8	-	-	HM7						
		1x SPDT	U2A	UAA	UKC	UCC	UK7	UJ7	U2X	UAX	UKA	U2B	UAB	UK9	UC9	UK5	UJ5	U2T	UAT	UKB						
		2x SPDT	U4A	UBA	ULC	UDC	UL7	UV7	U4X	UBX	ULA	U4B	UBB	UL9	UD9	UL5	UV5	U4T	UBT	ULB						
		3x SPDT	U6A	UCA	UMC	UEC	U67	U77	-	-	UMA	U6B	UCB	UM9	UE9	U65	U75	-	-	UMB						
Series V Inductive Proximity switch	-40 to +100 (-40 to +210)	1x DPDT	U8A	UDA	UNC	UFC	UD7	UW7	U8X	UDX	UNA	U8B	UDB	UN9	UF9	UD5	UW5	U8T	UDT	UNB						
		2x DPDT	U1A	UEA	UPC	UGC	UO7	UY7	U1X	UEX	UOA	U1B	UEB	UP9	UG9	UO5	UY5	U1T	UET	UOB						
		-	-	-	-	-	-	-	VJS	VLS	-	-	-	-	-	-	-	VCS	VES	-						
		1x SPDT	W2A	WAA	WKC	WCC	WK7	WU7	W2X	WAX	WKA	W2B	WAB	WK9	WC9	WK5	WU5	W2T	WAT	WKB						
Series W Hermetically sealed Silver plated contacts Snap switch	-45 to +230 (-50 to +450)	2x SPDT	W4A	WBA	WLC	WDC	WL7	WV7	W4X	WBX	WLA	W4B	WBB	WL9	WD9	WL5	WV5	W4T	WBT	WLB						
		3x SPDT	W6A	WCA	WMC	WEC	W67	W77	-	-	WMA	W6B	WCB	WM9	WE9	W65	W75	-	-	WMB						
		1x DPDT	W8B	WDB	WN9	WF9	WD5	WW5	W8T	WDT	WNB	W8B	WDB	WN9	WF9	WD5	WW5	W8T	WDT	WNB						
		2x DPDT	W1B	WEB	WP9	WG9	WO5	WY5	W1T	WET	WOB	W1B	WEB	WP9	WG9	WO5	WY5	W1T	WET	WOB						
Series X Hermetically sealed Gold plated contacts Snap switch	-45 to +230 (-50 to +450)	1x SPDT	X2A	XAA	XKC	XCC	XK7	XU7	X2X	XAX	XKA	X2B	XAB	XK9	XC9	XK5	XU5	X2T	XAT	XKB						
		2x SPDT	X4A	XBA	XLC	XDC	XL7	XV7	X4X	XBX	XLA	X4B	XBB	XL9	XD9	XL5	XV5	X4T	XBT	XLB						
		3x SPDT	X6A	XCA	XMC	XEC	X67	X77	-	-	XMA	X6B	XCB	XM9	XE9	X65	X75	-	-	XMB						
		1x DPDT	X8B	XDB	XN9	XF9	XD5	XW5	X8T	XDT	XNB	X8B	XDB	XN9	XF9	XD5	XW5	X8T	XDT	XNB						
Series R High temperature Snap switch	-40 to +400 (-40 to +750)	2x DPDT	X1B	XEB	XP9	XG9	XO5	XY5	X1T	XET	XOB	X1B	XEB	XP9	XG9	XO5	XY5	X1T	XET	XOB						
		1x SPDT	R2B	R1B	RK9	RC9	RK5	RU5	-	-	RKB	R2B	R1B	RK9	RC9	RK5	RU5	-	-	RKB						
		2x SPDT	R4B	R3B	RL9	RD9	RL5	RV5	-	-	RLB	R4B	R3B	RL9	RD9	RL5	RV5	-	-	RLB						
		1x DPDT	RGB	RDB	RN9	RF9	RN5	RF5	-	-	RNB	RGB	RDB	RN9	RF9	RN5	RF5	-	-	RNB						
Series 8 Hermetically sealed Snap switch	-45 to +400 (-50 to +750)	2x DPDT	RHB	REB	RP9	RG9	RO5	RG5	-	-	ROB	RHB	REB	RP9	RG9	RO5	RG5	-	-	ROB						
		1x SPDT	82A	8AA	8KC	8CC	8K7	8U7	-	-	8KA	82B	8AB	8K9	8C9	8K5	8U5	-	-	8KB						
		2x SPDT	84A	8BA	8LC	8DC	8L7	8V7	-	-	8LA	84B	8BB	8L9	8D9	8L5	8V5	-	-	8LB						
		3x SPDT	86A	8CA	88C	8EC	867	877	-	-	8MA	86B	8CB	889	8E9	865	875	-	-	8MB						
Series 9 High temperature Hermetically sealed Snap switch	-45 to +400 (-50 to +750)	1x DPDT	88A	8DA	8NC	8FC	8D7	8W7	-	-	8NA	88B	8DB	8N9	8F9	8D5	8W5	-	-	8NB						
		2x DPDT	81A	8EA	8PC	8GC	8O7	8Y7	-	-	8OA	81B	8EB	8P9	8G9	8O5	8Y5	-	-	8OB						
		1x SPDT	92A	9AA	9KC	9CC	9K7	9U7	-	-	9KA	92B	9AB	9K9	9C9	9K5	9U5	-	-	9KB						
		2x SPDT	94A	9BA	9LC	9DC	9L7	9V7	-	-	9LA	94B	9BB	9L9	9D9	9L5	9V5	-	-	9LB						
Series R High temperature Snap switch	-40 to +540 (-40 to +1000)	3x SPDT	96A	9CA	98C	9EC	967	977	-	-	9MA	96B	9CB	989	9E9	965	975	-	-	9MB						
		1x DPDT	98A	9DA	9NC	9FC	9D7	9W7	-	-	9NA	98B	9DB	9N9	9F9	9D5	9W5	-	-	9NB						
Series 9 Hermetically sealed Snap switch	-40 to +540 (-40 to +1000)	2x DPDT	91A	9EA	9PC	9GC	9O7	9Y7	-	-	9OA	91B	9EB	9P9	9G9	9O5	9Y5	-	-	9OB						

SELECT PNEUMATIC SWITCH MECHANISM & HOUSING: MODELS A40, B43, G33, J31, J33

Switch description	Max supply pressure bar (psi)	Max liquid temperature °C (°F)	Bleed orifice Ø mm (inches)	NEMA 3R (IP 53)	
				Material code A	Material codes B & D
				Weather proof (IP 65)	
Series J (open air)	6,9 (100)	200 (400)	1,60 (0.063)	JDG	JDE
	4,1 (60)		2,39 (0.094)	JEG	JEE
	4,1 (60)		1,40 (0.055)	JFG	JFE
Series K (closed circuit)	6,9 (100)	200 (400)	-	KOE	KOE
	2,8 (40)		-	KOG	-

- ① Process temperature based on max. 40 °C (100 °F) ambient temperature and for non steam applications.
- ② On steam applications, temperature down-rated to +200 °C (+400 °F) process at +40 °C (+100 °F) ambient.
- ③ Upon prolonged exposure to temperatures above 425 °C (800 °F), the carbide phase of steel may be converted to graphite. Permissible but not recommended for prolonged use above 425 °C (800 °F).

# SELECTION DATA MODELS O30 & O75

Order code for liquid float level switches in an external cage

## 1 - 3 | BASIC MODEL NUMBER, SPECIFIC GRAVITY AND PRESSURE LIMITS

Model No.	Cage type	Min. S.G.	Max. pressure	
O30	flanged	down to 0,84	up to 34,5 bar (500 psi)	- min S.G. varies per material of construction - max pressure varies per material of construction and temperature - select as per table on page 5
O75	sealed	down to 0,83	up to 34,5 bar (500 psi)	

## 4 | MATERIALS OF CONSTRUCTION

	Cage	Float and trim	Magnetic sleeve
D	316/316L SST (1.4401/1.4404)	316 SST (1.4401)	316 SST (1.4401)

## 5 - 7 | PROCESS CONNECTION

	<b>Threaded NPT connection</b>					
	upper side / bottom					
1"	B20					
	<b>Socket weld connection</b>					
	upper side / bottom					
1"	B30					
	<b>ASME flanges</b>					
	upper side / bottom			side / side		
	150 lbs RF	300 lbs RF	600 lbs RF	150 lbs RF	300 lbs RF	600 lbs RF
1"	N30	N40	N50	S30	S40	S50
	<b>EN 1092-1 flanges</b>					
	upper side / bottom			side / side		
	PN 16	PN 25/40	PN 63	PN 16	PN 25/40	PN 63
	EN 1092-1 Type B1	EN 1092-1 Type B1	EN 1092-1 Type B2	EN 1092-1 Type B1	EN 1092-1 Type B1	EN 1092-1 Type B2
DN 25	1FA	1HA	1JA	1FB	1HB	1JB

## 8 - 10 | SWITCH MECHANISM & HOUSING (see next page)



complete order code for O30/O75 models

X = product with a specific customer requirement



SELECT ELECTRIC SWITCH MECHANISM & HOUSING: MODELS O30 & O75

Switch Description	Process ① Temperature Range °C (°F)	Contacts	Weather proof (IP 66)		ATEX - IECEx (IP 66)						FM (IP 66)
					II 2G Ex d IIC T6 Gb			II 1G Ex ia IIC T6 Ga			NEMA 7/9
			Cast Aluminium		Cast Aluminium		Cast Iron (ATEX only)		Cast Aluminium		Cast Alu.
			M20x1,5	1" NPT	M20x1,5	1" NPT	M20x1,5	3/4" NPT	M20x1,5	1" NPT	1" NPT
Series B Snap switch	-40 to +120 (-40 to +250)	1x SPDT	B2B	BAB	BK9	BC9	BK5	BU5	-	-	BKB
		2x SPDT	B4B	BBB	BL9	BD9	BL5	BV5	-	-	BLB
		3x SPDT	B6B	BCB	BM9	BE9	B65	B75	-	-	BMB
		1x DPDT	B8B	BDB	BN9	BF9	BD5	BW5	-	-	BNB
Series C Snap switch	-40 to +230 (-40 to +450)	2x DPDT	B1B	BEB	BP9	BG9	BO5	BY5	-	-	BOB
		1x SPDT	C2B	CAB	CK9	CC9	CK5	CU5	C2T	CAT	CKB
		2x SPDT	C4B	CBB	CL9	CD9	CL5	CV5	C4T	CBT	CLB
		3x SPDT	C6B	CCB	CM9	CE9	C65	C75	-	-	CMB
Series D DC Current Snap switch	-40 to +120 (-40 to +250)	1x DPDT	C8B	CDB	CN9	CF9	CD5	CW5	C8T	CDT	CNB
		2x DPDT	C1B	CEB	CP9	CG9	CO5	CY5	C1T	CET	COB
		1x SPDT	D2B	DAB	DK9	DC9	DK5	DU5	-	-	DKB
		2x SPDT	D4B	DBB	DL9	DD9	DL5	DV5	-	-	DLB
Series F Hermetically sealed Snap switch	-45 to +400 (-50 to +750)	3x SPDT	D6B	DCB	DM9	DE9	D65	D75	-	-	DMB
		1x DPDT	D8B	DCB	DN9	DF9	DD5	DW5	-	-	DNB
		2x DPDT	D1B	DEB	DP9	DG9	DO5	DY5	-	-	DOB
		1x SPDT	FCB	FAB	FK9	FC9	FK5	FU5	-	-	FKB
Series HS Hermetically sealed Snap switch	-45 to +290 ② (-50 to +550)	2x SPDT	FFB	FBB	FL9	FD9	FL5	FV5	-	-	FLB
		1x DPDT	FGB	FDB	FN9	FF9	FD5	FW5	-	-	FNB
		2x DPDT	FHB	FEB	FP9	FG9	FO5	FY5	-	-	FOB
		1x SPDT	H7A	HM2	HFC	HA9	HB3	HB4	-	-	HM3
Series U Gold alloy contacts Snap switch	-40 to +120 (-40 to +250)	1x DPDT	H7C	HM6	HGC	HB9	HB7	HB8	-	-	HM7
		1x SPDT	U2B	UAB	UK9	UC9	UK5	UU5	U2T	UAT	UKB
		2x SPDT	U4B	UBB	UL9	UD9	UL5	UV5	U4T	UBT	ULB
		3x SPDT	U6B	UCB	UM9	UE9	U65	U75	-	-	UMB
Series V Inductive Proximity switch	-40 to +100 (-40 to +210)	1x DPDT	U8B	UDB	UN9	UF9	UD5	UW5	U8T	UDT	UNB
		2x DPDT	U1B	UEB	UP9	UG9	UO5	UY5	U1T	UET	UOB
		-	-	-	-	-	-	-	VCS	VES	-
		1x SPDT	W2B	WAB	WK9	WC9	WK5	WU5	W2T	WAT	WKB
Series W Hermetically sealed Silver plated contacts Snap switch	-45 to +230 (-50 to +450)	2x SPDT	W4B	WBB	WL9	WD9	WL5	WV5	W4T	WBT	WLB
		3x SPDT	W6B	WCB	WM9	WE9	W65	W75	-	-	WMB
		1x DPDT	W8B	WDB	WN9	WF9	WD5	WW5	W8T	WDT	WNB
		2x DPDT	W1B	WEB	WP9	WG9	WO5	WY5	W1T	WET	WOB
Series X Hermetically sealed Gold plated contacts Snap switch	-45 to +230 (-50 to +450)	1x SPDT	X2B	XAB	XK9	XC9	XK5	XU5	X2T	XAT	XKB
		2x SPDT	X4B	XBB	XL9	XD9	XL5	XV5	X4T	XBT	XLB
		3x SPDT	X6B	XCB	XM9	XE9	X65	X75	-	-	XMB
		1x DPDT	X8B	XDB	XN9	XF9	XD5	XW5	X8T	XDT	XNB
Series R High temperature Snap switch	-40 to +400 (-40 to +750)	2x DPDT	X1B	XEB	XP9	XG9	XO5	XY5	X1T	XET	XOB
		1x SPDT	R2B	R1B	RK9	RC9	RK5	RU5	-	-	RKB
		2x SPDT	R4B	R3B	RL9	RD9	RL5	RV5	-	-	RLB
		1x DPDT	RGB	RDB	RN9	RF9	RN5	RF5	-	-	RNB
Series 8 Hermetically sealed Snap switch	-45 to +400 (-50 to +750)	2x DPDT	RHB	REB	RP9	RG9	RO5	RG5	-	-	ROB
		1x SPDT	82B	8AB	8K9	8C9	8K5	8U5	-	-	8KB
		2x SPDT	84B	8BB	8L9	8D9	8L5	8V5	-	-	8LB
		3x SPDT	86B	8CB	889	8E9	865	875	-	-	8MB
Series 9 High temperature Hermetically sealed Snap switch	-45 to +400 (-50 to +750)	1x DPDT	88B	8DB	8N9	8F9	8D5	8W5	-	-	8NB
		2x DPDT	81B	8EB	8P9	8G9	8O5	8Y5	-	-	8OB
		1x SPDT	92B	9AB	9K9	9C9	9K5	9U5	-	-	9KB
		2x SPDT	94B	9BB	9L9	9D9	9L5	9V5	-	-	9LB
Series R High temperature Snap switch	-40 to +540 ③ (-40 to +1000)	3x SPDT	96B	9CB	989	9E9	965	975	-	-	9MB
		1x DPDT	98B	9DB	9N9	9F9	9D5	9W5	-	-	9NB
		2x DPDT	91B	9EB	9P9	9G9	9O5	9Y5	-	-	9OB
		1x SPDT	R1Y				RK5				RU5
Series 9 High temperature Hermetically sealed Snap switch	-40 to +540 ③ (-40 to +1000)	1x DPDT	RDY			RN5				RF5	
		1x SPDT	9AY			9K5				9U5	
		1x DPDT	9DY			9D5				9W5	

SELECT PNEUMATIC SWITCH MECHANISM & HOUSING: MODELS O30 & O75

Switch description	Max supply pressure bar (psi)	Max liquid temperature ① °C (°F)	Bleed orifice Ø mm (inches)	NEMA 3R (IP 53)
Series J (open air)	6,9 (100)	200 (400)	1,60 (0.063)	JDE
	4,1 (60)		2,39 (0.094)	JEE
	4,1 (60)	370 (700)	1,40 (0.055)	JFE
Series K (closed circuit)	6,9 (100)	200 (400)	-	KOE

- ① Process temperature based on max. 40 °C (100 °F) ambient temperature and for non steam applications.
- ② On steam applications, temperature down-rated to +200 °C (+400 °F) process at +40 °C (+100 °F) ambient.
- ③ Upon prolonged exposure to temperatures above 425 °C (800 °F), the carbide phase of steel may be converted to graphite. Permissible but not recommended for prolonged use above 425 °C (800 °F).

# SELECTION DATA MODEL P75

Order code for liquid float level switches in an external cage

## 1 - 3 | BASIC MODEL NUMBER, SPECIFIC GRAVITY AND PRESSURE LIMITS

Model No.	Cage type	Min. S.G.	Max. pressure	
P75	sealed	down to 0,71	up to 27,6 bar (400 psi)	- min S.G. varies per material of construction - max pressure varies per material of construction and temperature - select as per table on page 5

## 4 | MATERIALS OF CONSTRUCTION

	Cage	Float and trim	Magnetic sleeve
D	316/316L SST (1.4401/1.4404)	316 SST (1.4401)	316 SST (1.4401)

## 5 - 7 | PROCESS CONNECTION

Threaded NPT connection						
upper side / bottom						
1"	B20					
1 1/2"	C20					
2"	D20					
Socket weld connection						
upper side / bottom						
1"	B30					
1 1/2"	C30					
2"	D30					
ASME flanges						
upper side / bottom			side / side			
	150 lbs RF	300 lbs RF	600 lbs RF	150 lbs RF	300 lbs RF	600 lbs RF
1"	N30	N40	N50	S30	S40	S50
1 1/2"	P30	P40	P50	T30	T40	T50
2"	Q30	Q40	Q50	V30	V40	V50
EN 1092-1 flanges						
upper side / bottom			side / side			
	PN 16	PN 25/40	PN 63	PN 16	PN 25/40	PN 63
	EN 1092-1 Type B1	EN 1092-1 Type B1	EN 1092-1 Type B2	EN 1092-1 Type B1	EN 1092-1 Type B1	EN 1092-1 Type B2
DN 25	1FA	1HA	1JA	1FB	1HB	1JB
DN 40	2FA	2HA	2JA	2FB	2HB	2JB
DN 50	3FA	3HA	3JA	3FB	3HB	3JB

## 8 - 10 | SWITCH MECHANISM & HOUSING (see next page)



complete order code for P75 models

X = product with a specific customer requirement



SELECT ELECTRIC SWITCH MECHANISM & HOUSING: MODEL P75

Switch Description	Process ① Temperature Range °C (°F)	Contacts	Weather proof (IP 66)		ATEX - IECEx (IP 66)						FM (IP 66)
					II 2G Ex d IIC T6 Gb			II 1G Ex ia IIC T6 Ga			NEMA 7/9
			Cast Aluminium		Cast Aluminium		Cast Iron (ATEX only)		Cast Aluminium		Cast Alu.
			M20x1,5	1" NPT	M20x1,5	1" NPT	M20x1,5	3/4" NPT	M20x1,5	1" NPT	1" NPT
Series B Snap switch	-40 to +120 (-40 to +250)	1x SPDT	B2B	BAB	BK9	BC9	BK5	BU5	-	-	BKB
		2x SPDT	B4B	BBB	BL9	BD9	BL5	BV5	-	-	BLB
		3x SPDT	B6B	BCB	BM9	BE9	B65	B75	-	-	BMB
		1x DPDT	B8B	BDB	BN9	BF9	BD5	BW5	-	-	BNB
		2x DPDT	B1B	BEB	BP9	BG9	BO5	BY5	-	-	BOB
Series C Snap switch	-40 to +230 (-40 to +450)	1x SPDT	C2B	CAB	CK9	CC9	CK5	CU5	C2T	CAT	CKB
		2x SPDT	C4B	CBB	CL9	CD9	CL5	CV5	C4T	CBT	CLB
		3x SPDT	C6B	CCB	CM9	CE9	C65	C75	-	-	CMB
		1x DPDT	C8B	CDB	CN9	CF9	CD5	CW5	C8T	CDT	CNB
		2x DPDT	C1B	CEB	CP9	CG9	CO5	CY5	C1T	CET	COB
Series D DC Current Snap switch	-40 to +120 (-40 to +250)	1x SPDT	D2B	DAB	DK9	DC9	DK5	DU5	-	-	DKB
		2x SPDT	D4B	DBB	DL9	DD9	DL5	DV5	-	-	DLB
		3x SPDT	D6B	DCB	DM9	DE9	D65	D75	-	-	DMB
		1x DPDT	D8B	DCB	DN9	DF9	DD5	DW5	-	-	DNB
		2x DPDT	D1B	DEB	DP9	DG9	DO5	DY5	-	-	DOB
Series F Hermetically sealed Snap switch	-45 to +400 (-50 to +750)	1x SPDT	FCB	FAB	FK9	FC9	FK5	FU5	-	-	FKB
		2x SPDT	FFB	FBB	FL9	FD9	FL5	FV5	-	-	FLB
		1x DPDT	FGB	FDB	FN9	FF9	FD5	FW5	-	-	FNB
Series HS Hermetically sealed Snap switch	-45 to +290 ② (-50 to +550)	1x SPDT	H7A	HM2	HFC	HA9	HB3	HB4	-	-	HM3
		1x DPDT	H7C	HM6	HGC	HB9	HB7	HB8	-	-	HM7
		2x DPDT	FHB	FEB	FP9	FG9	FO5	FY5	-	-	FOB
Series U Gold alloy contacts Snap switch	-40 to +120 (-40 to +250)	1x SPDT	U2B	UAB	UK9	UC9	UK5	UU5	U2T	UAT	UKB
		2x SPDT	U4B	UBB	UL9	UD9	UL5	UV5	U4T	UBT	ULB
		3x SPDT	U6B	UCB	UM9	UE9	U65	U75	-	-	UMB
		1x DPDT	U8B	UCB	UN9	UF9	UD5	UW5	U8T	UDT	UNB
		2x DPDT	U1B	UEB	UP9	UG9	UO5	UY5	U1T	UET	UOB
Series V Inductive Proximity switch	-40 to +100 (-40 to +210)	-	-	-	-	-	-	VCS	VES	-	
Series W Hermetically sealed Silver plated contacts Snap switch	-45 to +230 (-50 to +450)	1x SPDT	W2B	WAB	WK9	WC9	WK5	WU5	W2T	WAT	WKB
		2x SPDT	W4B	WBB	WL9	WD9	WL5	WV5	W4T	WBT	WLB
		3x SPDT	W6B	WCB	WM9	WE9	W65	W75	-	-	WMB
		1x DPDT	W8B	WDB	WN9	WF9	WD5	WW5	W8T	WDT	WNB
		2x DPDT	W1B	WEB	WP9	WG9	WO5	WY5	W1T	WET	WOB
Series X Hermetically sealed Gold plated contacts Snap switch	-45 to +230 (-50 to +450)	1x SPDT	X2B	XAB	XK9	XC9	XK5	XU5	X2T	XAT	XKB
		2x SPDT	X4B	XBB	XL9	XD9	XL5	XV5	X4T	XBT	XLB
		3x SPDT	X6B	XCB	XM9	XE9	X65	X75	-	-	XMB
		1x DPDT	X8B	XDB	XN9	XF9	XD5	XW5	X8T	XDT	XNB
		2x DPDT	X1B	XEB	XP9	XG9	XO5	XY5	X1T	XET	XOB
Series R High temperature Snap switch	-40 to +400 (-40 to +750)	1x SPDT	R2B	R1B	RK9	RC9	RK5	RU5	-	-	RKB
		2x SPDT	R4B	R3B	RL9	RD9	RL5	RV5	-	-	RLB
		1x DPDT	RGB	RDB	RN9	RF9	RN5	RF5	-	-	RNB
		2x DPDT	RHB	REB	RP9	RG9	RO5	RG5	-	-	ROB
Series 8 Hermetically sealed Snap switch	-45 to +400 (-50 to +750)	1x SPDT	82B	8AB	8K9	8C9	8K5	8U5	-	-	8KB
		2x SPDT	84B	8BB	8L9	8D9	8L5	8V5	-	-	8LB
		3x SPDT	86B	8CB	889	8E9	865	875	-	-	8MB
		1x DPDT	88B	8DB	8N9	8F9	8D5	8W5	-	-	8NB
		2x DPDT	81B	8EB	8P9	8G9	8O5	8Y5	-	-	8OB
Series 9 High temperature Hermetically sealed Snap switch	-45 to +400 (-50 to +750)	1x SPDT	92B	9AB	9K9	9C9	9K5	9U5	-	-	9KB
		2x SPDT	94B	9BB	9L9	9D9	9L5	9V5	-	-	9LB
		3x SPDT	96B	9CB	989	9E9	965	975	-	-	9MB
		1x DPDT	98B	9DB	9N9	9F9	9D5	9W5	-	-	9NB
		2x DPDT	91B	9EB	9P9	9G9	9O5	9Y5	-	-	9OB
Switch Description	Process ① Temperature Range °C (°F)	Contacts	Weather proof (IP 65)		ATEX (IP 66)						
					II 2G Ex d IIC T6 Gb						
			CS/Aluminium		Cast Iron						
			3/4" NPT		M20x1,5			3/4" NPT			
Series R High temperature Snap switch	-40 to +540 ③ (-40 to +1000)	1x SPDT	R1Y			RK5			RU5		
		1x DPDT	RDY			RN5			RF5		
Series 9 High temperature Hermetically sealed Snap switch	-40 to +540 ③ (-40 to +1000)	1x SPDT	9AY			9K5			9U5		
		1x DPDT	9DY			9D5			9W5		

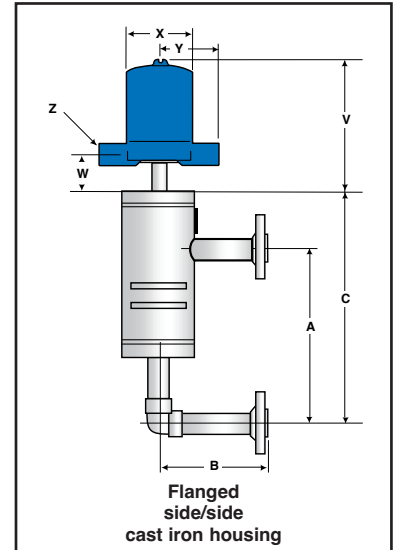
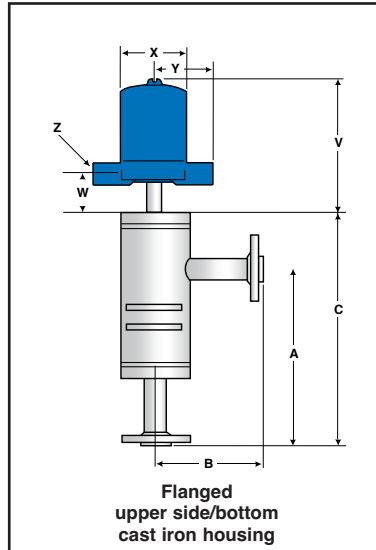
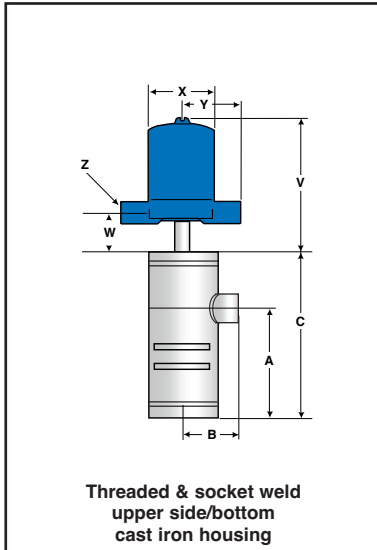
SELECT PNEUMATIC SWITCH MECHANISM & HOUSING: MODEL P75

Switch description	Max supply pressure bar (psi)	Max liquid temperature ① °C (°F)	Bleed orifice Ø mm (inches)	NEMA 3R (IP 53)
Series J (open air)	6,9 (100)	200 (400)	1,60 (0.063)	JDE
	4,1 (60)		2,39 (0.094)	JEE
	4,1 (60)	370 (700)	1,40 (0.055)	JFE
Series K (closed circuit)	6,9 (100)	200 (400)	-	KOE

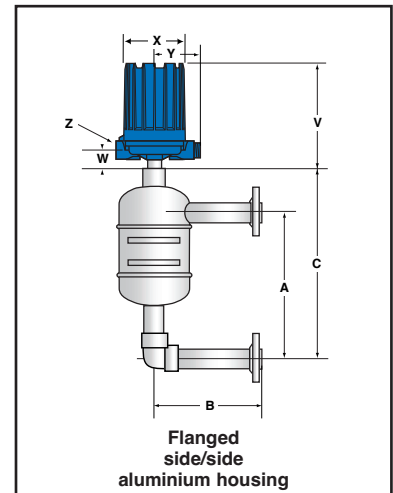
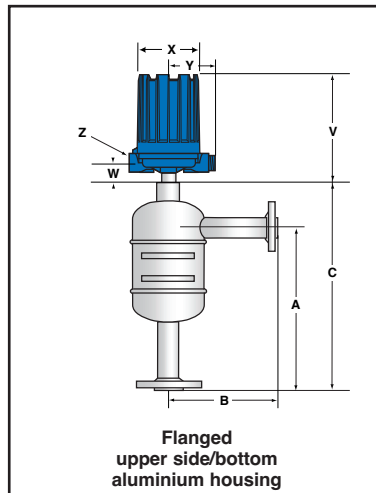
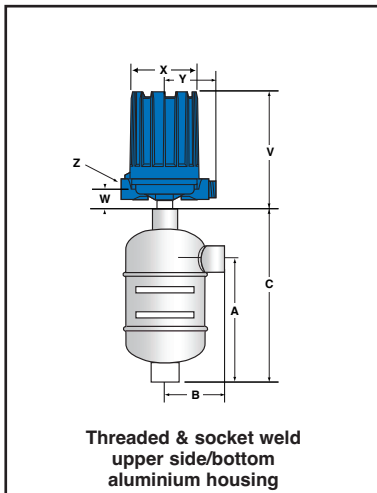
- ① Process temperature based on max. 40 °C (100 °F) ambient temperature and for non steam applications.
- ② On steam applications, temperature down-rated to +200 °C (+400 °F) process at +40 °C (+100 °F) ambient.
- ③ Upon prolonged exposure to temperatures above 425 °C (800 °F), the carbide phase of steel may be converted to graphite. Permissible but not recommended for prolonged use above 425 °C (800 °F).

SEALED CAGE MODELS - DIMENSIONS in mm (inches)

- Only A75 Model -



- All models except A75 -



Housing type	Models	V		W		ø X		Y		Z
		mm	inches	mm	inches	mm	inches	mm	inches	
Weatherproof-FM (NEMA 7/9) - ATEX (Cast Alu)	B73 with HS-switch All other models	257	10.12	42	1.66	151	5.93	109	4.29	M20 x 1,5 (*) or 1" NPT (2 entries - 1 plugged) (*) not for FM (NEMA 7/9)
	B73 excl. HS-switch	202	7.94							
Weatherproof (CS/Aluminium)	All (B73: not applicable)	216	8.50	39	1.54	118	4.65	83	3.27	3/4" NPT (single entry)
ATEX (Cast Iron)	All	249	9.80	45	1.77	143	5.63	110	4.33	M20 x 1,5 or 3/4" NPT (single entry - 2 entries at request)
Pneumatics Switch Module J	All	165	6.50	39	1.54	118	4.65	110	4.33	1/4" NPT
Pneumatics Switch Module K								130	5.12	

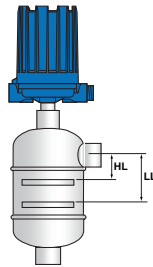
Allow 200 mm (7.87") overhead clearance / All housings are 360 ° rotatable

# SEALED CAGE MODELS - DIMENSIONS in mm (inches)

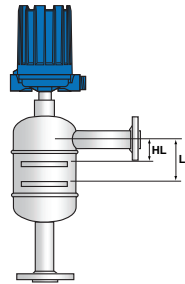
Process connection size	Mounting configuration	Model	Dimensions						Model	Dimensions											
			A		B		C			A		B		C							
			mm	inches	mm	inches	mm	inches		mm	inches	mm	inches	mm	inches						
1" - DN 25	threaded / socket welded	A75	222	8.74	82	3.23	347	13.66	B73	159	6.26	83	3.27	239	9.41						
	flanged upper side / bottom		356	14	185	7.28	481	18.94		250	9.84	160	6.30	330	12.99						
	flanged side/side		356	14	185	7.28	481	18.94		250	9.84	160	6.30	330	12.99						
1 1/2" - DN 40	threaded / socket welded		222	8.74	94	3.70	347	13.66		not applicable											
	flanged upper side / bottom		356	14	200	7.87	481	18.94													
	flanged side/side		356	14	200	7.87	481	18.94													
2" - DN 50	threaded / socket welded		222	8.74	97	3.82	347	13.66													
	flanged upper side / bottom		356	14	200	7.87	481	18.94													
	flanged side/side		356	14	200	7.87	481	18.94													
1" - DN 25	threaded / socket welded	B75 C75	222	8.74	96	3.78	396	15.59	G75 J75							242	9.53	109	4.29	429	16.89
	flanged upper side / bottom		356	14	200	7.87	530	20.87								356	14	215	8.46	543	21.38
	flanged side/side		356	14	200	7.87	530	20.87								356	14	215	8.46	543	21.38
1 1/2" - DN 40	threaded / socket welded		222	8.74	107	4.21	406	15.98		242	9.53	121	4.76	439	17.28						
	flanged upper side / bottom		356	14	215	8.46	540	21.26		356	14	230	9.06	553	21.77						
	flanged side/side		356	14	215	8.46	540	21.26		356	14	230	9.06	553	21.77						
2" - DN 50	threaded / socket welded		217	8.54	110	4.33	407	16.02		238	9.37	124	4.88	441	17.36						
	flanged upper side / bottom		356	14	220	8.66	546	21.50		356	14	235	9.25	559	22.01						
	flanged side/side		356	14	220	8.66	546	21.50		356	14	235	9.25	559	22.01						
1" - DN 25	threaded / socket welded	P75	222	8.74	82	3.23	382	15.04	O75	222	8.74	70	2.76	347	13.66						
	flanged upper side / bottom		356	14	185	7.28	516	20.31		356	14	165	6.50	481	18.94						
	flanged side/side		356	14	185	7.28	516	20.31		356	14	165	6.50	481	18.94						
1 1/2" - DN 40	threaded / socket welded		221	8.70	94	3.70	392	15.43		not applicable											
	flanged upper side / bottom		356	14	200	7.87	527	20.75													
	flanged side/side		356	14	200	7.87	527	20.75													
2" - DN 50	threaded / socket welded		213	8.39	97	3.82	393	15.47													
	flanged upper side / bottom		356	14	200	7.87	536	21.10													
	flanged side/side		356	14	200	7.87	536	21.10													

## ACTUATING LEVELS

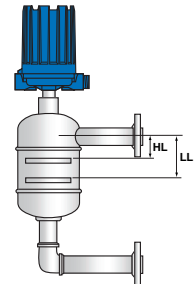
Actuating levels shown are for single switch units at minimum specific gravity only. Levels will change for multistage units. Consult factory for these units.



Upper side / bottom  
NPT & Socket weld



Upper side / bottom  
Flanged



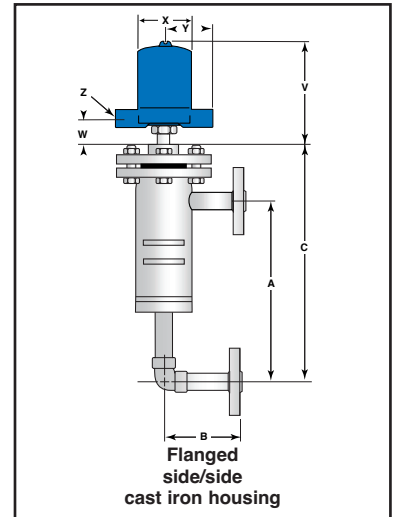
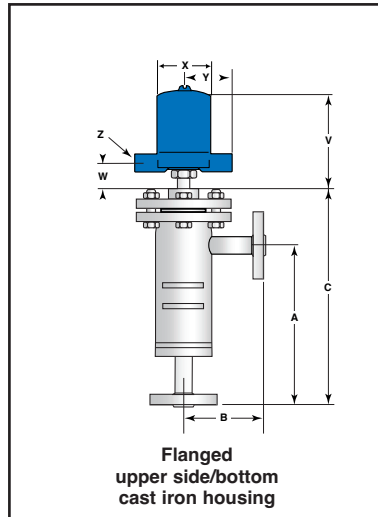
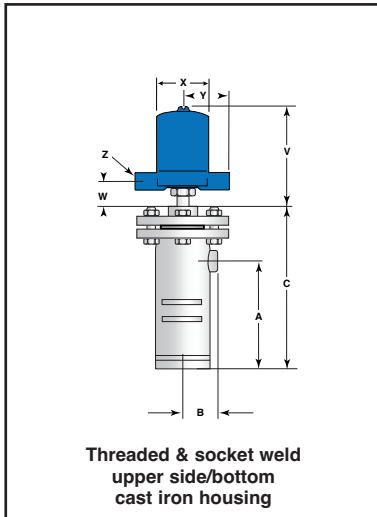
Side / Side  
Flanged

Actuation levels in mm (inches) for minimum specific gravity and as per selected material of construction (see selection data)

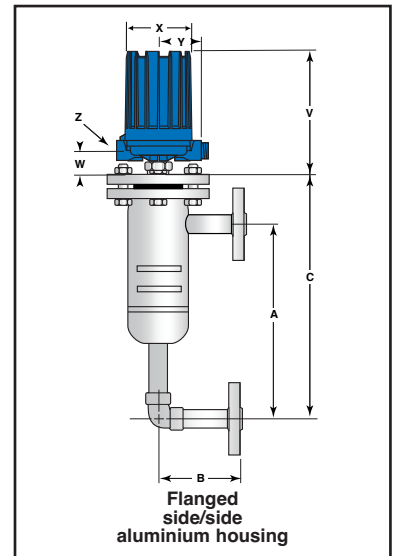
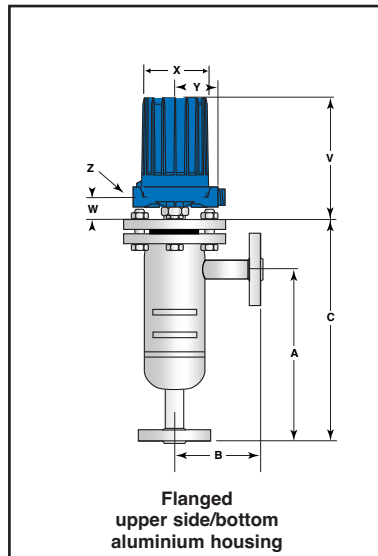
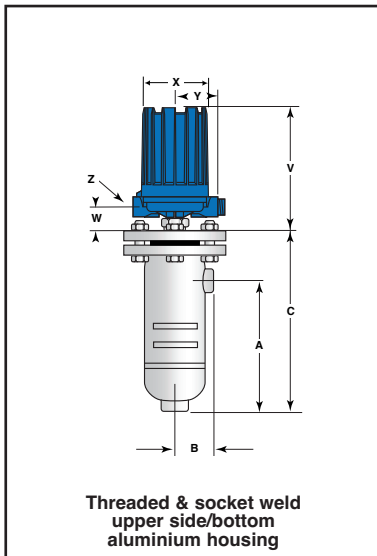
Model	1" / DN 25				1 1/2" / DN 40				2" / DN 50			
	Material code A		Material codes B & D		Material code A		Material codes B & D		Material code A		Material codes B & D	
	High Level (HL)	Low Level (LL)	High Level (HL)	Low Level (LL)	High Level (HL)	Low Level (LL)	High Level (HL)	Low Level (LL)	High Level (HL)	Low Level (LL)	High Level (HL)	Low Level (LL)
A75	34 (1.34)	56 (2.20)	32 (1.26)	59 (2.32)	34 (1.34)	56 (2.20)	32 (1.26)	59 (2.32)	34 (1.34)	56 (2.20)	32 (1.26)	59 (2.32)
B73	30 (1.18)	53 (2.09)	30 (1.18)	57 (2.24)	-	-	-	-	-	-	-	-
B75	67 (2.64)	85 (3.35)	66 (2.60)	87 (3.43)	50 (1.97)	68 (2.68)	49 (1.93)	70 (2.76)	38 (1.50)	56 (2.20)	37 (1.46)	58 (2.28)
C75	69 (2.72)	88 (3.46)	68 (2.68)	91 (3.58)	52 (2.05)	71 (2.80)	51 (2.01)	74 (2.91)	40 (1.57)	59 (2.32)	39 (1.54)	62 (2.44)
G75	60 (2.36)	78 (3.07)	60 (2.36)	81 (3.19)	43 (1.69)	61 (2.40)	43 (1.69)	64 (2.52)	34 (1.34)	52 (2.05)	34 (1.34)	55 (2.17)
J75	75 (2.95)	94 (3.70)	75 (2.95)	98 (3.86)	58 (2.28)	77 (3.03)	58 (2.28)	81 (3.19)	50 (1.97)	69 (2.72)	50 (1.97)	73 (2.87)
O75	-	-	57 (2.24)	85 (3.35)	-	-	-	-	-	-	-	-
P75	-	-	57 (2.24)	83 (3.27)	-	-	40 (1.57)	66 (2.60)	-	-	28 (1.10)	54 (2.13)

# FLANGED CAGE MODELS - DIMENSIONS in mm (inches)

## - Only A40 Model -



## - All models except A40 -



Housing type	Models	V		W		ø X		Y		Z
		mm	inches	mm	inches	mm	inches	mm	inches	
Weatherproof- FM (NEMA 7/9) - ATEX (Cast Alu)	B41 with HS-switch All other models	257	10.12	42	1.66	151	5.93	109	4.29	M20 x 1,5 (*) or 1" NPT (2 entries - 1 plugged) (*) not for FM (NEMA 7/9)
	B41 excl. HS-switch	202	7.94							
Weatherproof (CS/Aluminium)	All (B41, J31: not applicable)	216	8.50	39	1.54	118	4.65	83	3.27	3/4" NPT (single entry)
ATEX (Cast Iron)	All	249	9.80	45	1.77	143	5.63	110	4.33	M20 x 1,5 or 3/4" NPT (single entry - 2 entries at request)
Pneumatics Switch Module J	All	165	6.50	39	1.54	118	4.65	110	4.33	1/4" NPT
Pneumatics Switch Module K								130	5.12	

Allow 200 mm (7.87") overhead clearance / All housings are 360 ° rotatable

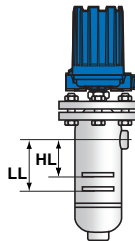
# FLANGED CAGE MODELS - DIMENSIONS in mm (inches)

Process connection size	Mounting configuration	Model	Dimensions						Model	Dimensions					
			A		B		C			A		B		C	
			mm	inches	mm	inches	mm	inches		mm	inches	mm	inches	mm	inches
1" - DN 25	threaded / socket welded	A40 (*)	222	8.74	82	3.23	391	15.39	B41	250	9.84	82	3.23	411	16.18
	flanged upper side / bottom		356	14	185	7.28	525	20.67		356	14	185	7.28	517	20.35
	flanged side/side		356	14	185	7.28	525	20.67		356	14	185	7.28	517	20.35
1 1/2" - DN 40	threaded / socket welded		222	8.74	94	3.70	391	15.39		260	10.24	94	3.70	421	16.57
	flanged upper side / bottom		356	14	200	7.87	525	20.67		381	15	200	7.87	542	21.34
	flanged side/side		356	14	200	7.87	525	20.67		356	14	200	7.87	517	20.35
2" - DN 50	threaded / socket welded		222	8.74	97	3.82	391	15.39		261	10.28	97	3.82	422	16.61
	flanged upper side / bottom		356	14	200	7.87	525	20.67		381	15	200	7.87	542	21.34
	flanged side/side		356	14	200	7.87	525	20.67		381	15	200	7.87	542	21.34
1" - DN 25	threaded / socket welded	B43 (*)	250	9.84	82	3.23	419	16.50	G33 J33	250	9.84	109	4.29	429	16.89
	flanged upper side / bottom		356	14	185	7.28	525	20.67		356	14	215	8.46	535	21.06
	flanged side/side		356	14	185	7.28	525	20.67		356	14	215	8.46	535	21.06
1 1/2" - DN 40	threaded / socket welded		260	10.24	94	3.70	429	16.89		261	10.28	121	4.76	440	17.32
	flanged upper side / bottom		381	15	200	7.87	550	21.65		381	15	230	9.06	560	22.05
	flanged side/side		356	14	200	7.87	525	20.67		356	14	230	9.06	535	21.06
2" - DN 50	threaded / socket welded		261	10.28	97	3.82	430	16.93		262	10.31	124	4.88	441	17.36
	flanged upper side / bottom		381	15	200	7.87	550	21.65		381	15	235	9.25	560	22.05
	flanged side/side		381	15	200	7.87	550	21.65		381	15	235	9.25	560	22.05
1" - DN 25	threaded / socket welded	J31 (*)	250	9.84	109	4.29	418	16.46	O30 (*)	222	8.74	70	2.76	353	13.90
	flanged upper side / bottom		356	14	215	8.46	524	20.63		356	14.02	165	6.50	487	19.17
	flanged side/side		356	14	215	8.46	524	20.63		356	14.02	165	6.50	487	19.17
1 1/2" - DN 40	threaded / socket welded		261	10.28	121	4.76	429	16.89		not applicable					
	flanged upper side / bottom		381	15	230	9.06	549	21.61							
	flanged side/side		356	14	230	9.06	524	20.63							
2" - DN 50	threaded / socket welded		262	10.31	124	4.88	430	16.93							
	flanged upper side / bottom		381	15	235	9.25	549	21.61							
	flanged side/side		381	15	235	9.25	549	21.61							

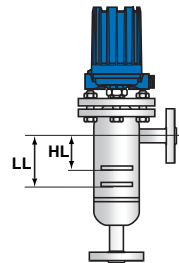
(\*) Add 33 mm (1.3") to 'C'-dimension for cast iron Ex d housings

## ACTUATING LEVELS

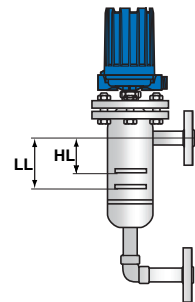
Actuating levels shown are for single switch units at minimum specific gravity only. Levels will change for multistage units. Consult factory for these units.



Upper side / bottom  
NPT & Socket weld



Upper side / bottom  
Flanged



Side / Side  
Flanged

Actuation levels in mm (inches) for minimum specific gravity and as per selected material of construction (see selection data)

Model	1" / DN 25				1 1/2" / DN 40				2" / DN 50			
	Material code A		Material codes B & D		Material code A		Material codes B & D		Material code A		Material codes B & D	
	High Level (HL)	Low Level (LL)	High Level (HL)	Low Level (LL)	High Level (HL)	Low Level (LL)	High Level (HL)	Low Level (LL)	High Level (HL)	Low Level (LL)	High Level (HL)	Low Level (LL)
A40	34 (1.34)	56 (2.20)	32 (1.26)	59 (2.32)	34 (1.34)	56 (2.20)	32 (1.26)	59 (2.32)	34 (1.34)	56 (2.20)	32 (1.26)	59 (2.32)
B41	23 (0.91)	45 (1.77)	25 (0.98)	51 (2.01)	23 (0.91)	45 (1.77)	25 (0.98)	51 (2.01)	23 (0.91)	45 (1.77)	25 (0.98)	51 (2.01)
B43	53 (2.09)	77 (3.03)	60 (2.36)	90 (3.54)	46 (1.81)	70 (2.76)	53 (2.09)	83 (3.27)	38 (1.50)	62 (2.44)	45 (1.77)	75 (2.95)
G33	65 (2.56)	83 (3.27)	66 (2.60)	87 (3.43)	58 (2.28)	76 (2.99)	59 (2.32)	80 (3.15)	50 (1.97)	68 (2.68)	51 (2.01)	72 (2.83)
J31/J33	74 (2.91)	93 (3.66)	80 (3.15)	103 (4.06)	55 (2.17)	74 (2.91)	61 (2.40)	84 (3.31)	47 (1.85)	66 (2.60)	53 (2.09)	76 (2.99)
O30	-	-	57 (2.24)	85 (3.35)	-	-	-	-	-	-	-	-

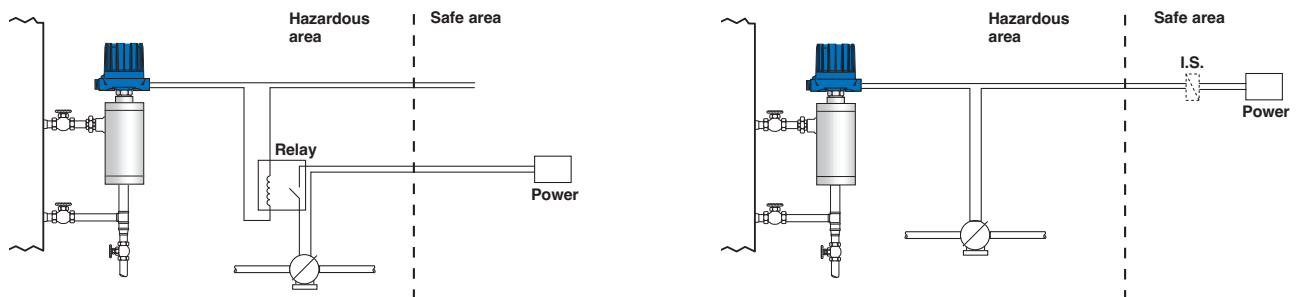
## PHYSICAL SPECIFICATIONS

Description		Specification
Measured variable		Liquid level / interface level
Physical range		Standard models: min S.G. 0,49
Process temperature		Up to 540 °C (1000 °F)
Process pressure (for higher ratings consult factory)		Up to 69,0 bar (1000 psi)
Cage material		Carbon steel or stainless steel (others at request)
Wetted materials	Float and trim	316 SST (1.4401)
	Magnetic sleeve	316 SST (1.4401), or 400 series SST

## ELECTRICAL SPECIFICATIONS

Description	Specification
Switch ratings	Up to 15 A @ 240 V AC (depending on switch mechanism) Up to 10 A @ 120 V DC (depending on switch mechanism)
Signal Output	Single, dual or triple SPDT or DPDT contacts (single contacts for B73/B41 models only) or single pneumatic
Switch Types (see page 4)	Dry contact with standard or gold alloy contacts, Hermetically sealed, Hermetically sealed with gold or silver plated contacts, Proximity switch, or single pneumatic bleed and non bleed

## ELECTRICAL CONNECTION







#### QUALITY ASSURANCE - ISO 9001

THE QUALITY ASSURANCE SYSTEM IN PLACE AT MAGNETROL GUARANTEES THE HIGHEST LEVEL OF QUALITY DURING THE DESIGN, THE CONSTRUCTION AND THE SERVICE OF CONTROLS. OUR QUALITY ASSURANCE SYSTEM IS APPROVED AND CERTIFIED TO **ISO 9001** AND OUR TOTAL COMPANY IS COMMITTED TO PROVIDING FULL CUSTOMER SATISFACTION BOTH IN QUALITY PRODUCTS AND QUALITY SERVICE.

#### PRODUCT WARRANTY

ALL MAGNETROL MECHANICAL LEVEL CONTROLS ARE WARRANTED FREE OF DEFECTS IN MATERIALS AND WORKMANSHIP FOR 3 FULL YEARS FROM THE DATE OF ORIGINAL FACTORY SHIPMENT.

IF RETURNED WITHIN THE WARRANTY PERIOD; AND, UPON FACTORY INSPECTION OF THE CONTROL, THE CAUSE OF THE CLAIM IS DETERMINED TO BE COVERED UNDER THE WARRANTY; THEN, MAGNETROL INTERNATIONAL WILL REPAIR OR REPLACE THE CONTROL AT NO COST TO THE PURCHASER (OR OWNER) OTHER THAN TRANSPORTATION.

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