



HENNLICH

MERES

# PLOVÁKOVÝ SPÍNAČ HLADINY B73/B75

## 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

## Standard & tailor made designs

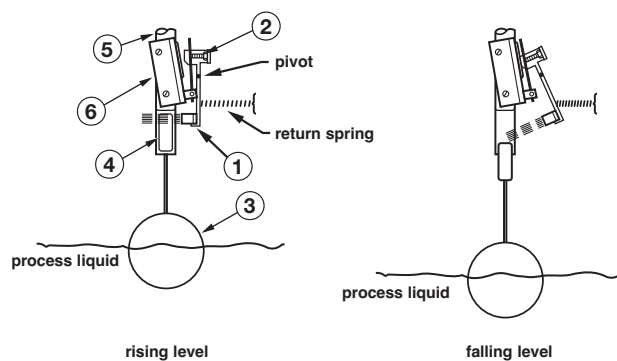


## APPLICATIONS

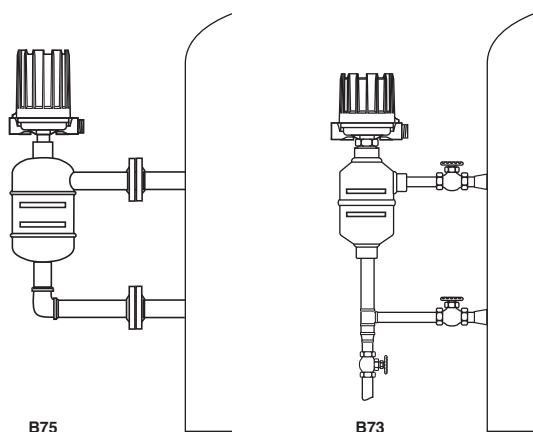
- |                              |                       |
|------------------------------|-----------------------|
| • Foaming or surging liquids | • Paints              |
| • Agitated fluids            | • Varnishes           |
| • Sewage handling            | • Heavy oils          |
| • Dirty liquids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

## PRINCIPLE OF OPERATION

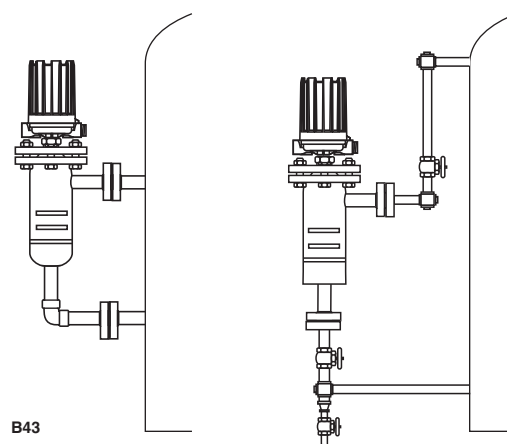
A permanent magnet ① is attached to a pivoted switch actuator and adjustment screw ②. As the float ③ rises following the liquid level, it raises the attraction sleeve ④ into the field of the magnet, which then snaps against the non-magnetic enclosing tube ⑤, actuating the switch ⑥. The enclosing tube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



## MOUNTING



Sealed cages

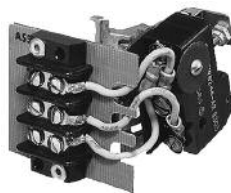


Flanged cages

## AGENCY APPROVALS

| AGENCY                                                                                                                  | APPROVED MODEL                                                                                                                                   | AREA CLASSIFICATION                                                 |
|-------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| ATEX<br>                               | 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                                         |
| FM<br>                                 | All with electric switch mechanism and housing listed as NEMA 7/9                                                                                | Class I, Div 1, groups C & D<br>Class II, Div 1, Groups E, F & G    |
|                                                                                                                         | Consult factory for proper model numbers                                                                                                         | Class I, Div 1, groups B, C & D<br>Class II, Div 1, Groups E, F & G |
| IECEx<br>                              | 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                                                     |
| CSA<br>                                | Consult factory for proper model numbers                                                                                                         | Class I, Div 1, groups C & D<br>Class II, Div 1, Groups E, F & G    |
|                                                                                                                         | Consult factory for proper model numbers                                                                                                         | Class I, Div 1, groups B, C & D<br>Class II, Div 1, Groups E, F & G |
| EAC (Russia, Kazakhstan, Belarus)<br> | 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                                                    |
| LRS<br>                              | All sealed cages B73, series 75                                                                                                                  | Marine approval                                                     |
| CE<br>                               | 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 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



### 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)



### 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



### 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

### 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<br>°C (°F) | Min. S.G.          |                    | Pressure<br>bar (psi) | Min. S.G.             |                       |
|              |                         | Material<br>code A | Material<br>code B |                       | Material<br>code D    | Pressure<br>bar (psi) |
| 075          | 40 (100)                | Not<br>available   | Not<br>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<br>available      | -                     |
|              | 230 (450)               |                    |                    | 19,0 (275)            |                       | -                     |
|              | -                       |                    |                    | -                     |                       | -                     |
| P75          | 40 (100)                | Not<br>available   | Not<br>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<br>°C (°F) | Min. S.G.          |                    | Pressure<br>bar (psi) | Min. S.G.             |                       |
|               |                         | Material<br>code A | Material<br>code B |                       | Material<br>code D    | Pressure<br>bar (psi) |
| 030           | 40 (100)                | Not<br>available   | Not<br>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            | - min S.G. varies per material of construction<br>- max pressure varies per material of construction and temperature<br>- select as per table on page 5 |
|-----------|-----------|--------------|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| B73       | sealed    | down to 0,60 | up to 24,1 bar (350 psi) |                                                                                                                                                         |

### 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<br>EN 1092-1 Type B1 | PN 25/40<br>EN 1092-1 Type B1 | PN 63<br>EN 1092-1 Type B2 | PN 16<br>EN 1092-1 Type B1 | PN 25/40<br>EN 1092-1 Type B1 | PN 63<br>EN 1092-1 Type B2 |
| DN 25 | 1FA                        | 1HA                           | 1JA                        | 1FB                        | 1HB                           | 1JB                        |

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

|   |   |   |   |   |   |   |   |   |    |
|---|---|---|---|---|---|---|---|---|----|
| B | 7 | 3 |   |   |   |   |   |   |    |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

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><br>Temperature Range<br>°C (°F) | Contacts | Material code A          |                      |        |                |        |                       |          |                       |        |               | Material code B          |                      |                      |        |                |        |                       |          |                       |               |          |           |
|---------------------------------------------------------------------------|------------------------------------------------------|----------|--------------------------|----------------------|--------|----------------|--------|-----------------------|----------|-----------------------|--------|---------------|--------------------------|----------------------|----------------------|--------|----------------|--------|-----------------------|----------|-----------------------|---------------|----------|-----------|
|                                                                           |                                                      |          | Weather proof<br>(IP 66) | ATEX - IECEx (IP 66) |        |                |        |                       |          |                       |        | FM<br>(IP 66) | Weather proof<br>(IP 66) | ATEX - IECEx (IP 66) |                      |        |                |        |                       |          |                       | FM<br>(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. |
|                                                                           |                                                      |          |                          | 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>B</b><br>Snap switch                                            | -40 to +120<br>(-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 <b>C</b><br>Snap switch                                            | -40 to +230<br>(-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 <b>D</b><br>DC Current Snap switch                                 | -40 to +120<br>(-40 to +250)                         | 1x SPDT  | —                        | —                    | —      | —              | —      | —                     | —        | —                     | —      | D2Q           | DAQ                      | DH9                  | DA9                  | DK5    | DU5            | —      | —                     | DKQ      |                       |               |          |           |
|                                                                           |                                                      | 1x DPDT  | —                        | —                    | —      | —              | —      | —                     | —        | —                     | —      | D8Q           | DDQ                      | DJ9                  | DB9                  | DD5    | DW5            | —      | —                     | DNQ      |                       |               |          |           |
| Series <b>F</b><br>Hermetically sealed Snap switch                        | -45 to +230<br>(-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 <b>HS</b><br>Hermetically sealed Snap switch                       | -45 to +230 <sup>②</sup><br>(-50 to +450)            | 1x SPDT  | —                        | —                    | —      | —              | —      | —                     | —        | —                     | —      | H7A           | HM2                      | HFC                  | HA9                  | HB3    | HB4            | —      | —                     | HM3      |                       |               |          |           |
|                                                                           |                                                      | 1x DPDT  | —                        | —                    | —      | —              | —      | —                     | —        | —                     | —      | H7C           | HM6                      | HGC                  | HB9                  | HB7    | HB8            | —      | —                     | HM7      |                       |               |          |           |
| Series <b>U</b><br>Gold alloy contacts Snap switch                        | -40 to +120<br>(-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 <b>V</b><br>Inductive Proximity switch                             | -40 to +100<br>(-40 to +210)                         | —        | —                        | —                    | —      | —              | —      | VFS                   | VHS      | —                     | —      | —             | —                        | —                    | —                    | —      | —              | V5S    | VBS                   | —        |                       |               |          |           |
| Series <b>W</b><br>Hermetically sealed Silver plated contacts Snap switch | -45 to +230<br>(-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 <b>X</b><br>Hermetically sealed Gold plated contacts Snap switch   | -45 to +230<br>(-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 °C (°F) | Bleed orifice Ø mm (inches) | NEMA 3R (IP 53) |                 |
|-------------------------------------|-------------------------------|--------------------------------|-----------------------------|-----------------|-----------------|
|                                     |                               |                                |                             | Material code A | Material code B |
| Series <b>J</b><br>(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 <b>K</b><br>(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 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            | - min S.G. varies per material of construction<br>- max pressure varies per material of construction and temperature<br>- select as per table on page 5 |
|-----------|-----------|--------------|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| B41       | flanged   | down to 0,67 | up to 19,6 bar (285 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<br>EN 1092-1 Type B1 | PN 25/40<br>EN 1092-1 Type B1 | PN 63<br>EN 1092-1 Type B2 | PN 16<br>EN 1092-1 Type B1 | PN 25/40<br>EN 1092-1 Type B1 | PN 63<br>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)

|   |   |   |   |   |   |   |   |   |    |
|---|---|---|---|---|---|---|---|---|----|
| B | 4 | 1 |   |   |   |   |   |   |    |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

complete order code for B41 models

X = product with a specific customer requirement

# SELECT ELECTRIC SWITCH MECHANISM & HOUSING: MODEL B41

| 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 |        |            |                       | NEMA 7/9             | II 2G Ex d IIC T6 Gb |                |         |                       | II 1G Ex ia IIC T6 Ga |            | NEMA 7/9 |                |         |           |
|                                                                        |                                   |          |                       | Cast Aluminium       |        | Cast Iron (ATEX only) |          | Cast Aluminium        |        |            |                       |                      | Cast Alu.            | Cast Aluminium |         | Cast Iron (ATEX only) |                       |            |          | Cast Aluminium |         | Cast Alu. |
|                                                                        |                                   |          |                       | 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 |           |
| Series <b>B</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 <b>C</b> 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 <b>D</b> 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 <b>F</b> 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 <b>HS</b> Hermetically sealed Snap switch                       | -45 to +230 ② (-50 to +450)       | 1x SPDT  | –                     | –                    | –      | –                     | –        | –                     | –      | –          | –                     | H7A                  | HM2                  | HFC            | HA9     | HB3                   | HB4                   | –          | –        | HM3            |         |           |
|                                                                        |                                   | 1x DPDT  | –                     | –                    | –      | –                     | –        | –                     | –      | –          | –                     | H7C                  | HM6                  | HGC            | HB9     | HB7                   | HB8                   | –          | –        | HM7            |         |           |
| Series <b>U</b> 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 <b>V</b> Inductive Proximity switch                             | -40 to +100 (-40 to +210)         | –        | –                     | –                    | –      | –                     | –        | –                     | VFS    | VHS        | –                     | –                    | –                    | –              | –       | –                     | –                     | V5S        | VBS      | –              |         |           |
| Series <b>W</b> 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 <b>X</b> 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 °C (°F) | Bleed orifice Ø mm (inches) | NEMA 3R (IP 53) |                      |
|-------------------------------------|-------------------------------|--------------------------------|-----------------------------|-----------------|----------------------|
|                                     |                               |                                |                             | Material code A | Material codes B & D |
| Series <b>J</b><br>(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 <b>K</b><br>(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             | - min S.G. varies per material of construction<br>- max pressure varies per material of construction and temperature<br>- select as per table on page 5 |
|-----------|-----------|--------------|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| A75       | sealed    | down to 0,64 | up to 69,0 bar (1000 psi) |                                                                                                                                                         |
| 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<br>EN 1092-1 Type B1 | PN 25/40<br>EN 1092-1 Type B1 | PN 63<br>EN 1092-1 Type B2 | PN 16<br>EN 1092-1 Type B1 | PN 25/40<br>EN 1092-1 Type B1 | PN 63<br>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 |        |                |           |                       |          | 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. |
|                                                                 |                                   |          |                       | 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 |           |
| 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                   | DOB                  | DN9    | DF9            | DD5       | DW5                   | —        | —                     | DNB                  | D8B        | DOB                   | 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                  | FCB        | 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 ② (-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                  | 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        |          |                |         |           |
|                                                                 |                                   | 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)         |            |                       |                      |                      |                |          |                |         |                       |                       |            |          |                |         |           |
|                                                                 |                                   |          |                       | II 2G Ex d IIC T6 Gb |        |                |           |                       |          |                       | II 2G Ex d IIC T6 Gb |            |                       |                      |                      |                |          |                |         |                       |                       |            |          |                |         |           |
|                                                                 |                                   |          |                       | CS/Aluminium         |        |                | Cast Iron |                       |          |                       | CS/Aluminium         |            |                       | Cast Iron            |                      |                |          |                |         |                       |                       |            |          |                |         |           |
|                                                                 |                                   |          |                       | 3/4" NPT             |        |                | M20x1,5   |                       |          |                       | 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      |                       |                      | R1Y        |                       |                      | RK5                  |                |          | RU5            |         |                       |                       |            |          |                |         |           |
|                                                                 |                                   | 1x DPDT  | RDY                   |                      |        | RN5            |           |                       | RF5      |                       |                      | RDY        |                       |                      | RN5                  |                |          | RF5            |         |                       |                       |            |          |                |         |           |
| Series 9 High temperature Hermetically sealed Snap switch       | -40 to +540 ③ (-40 to +1000)      | 1x SPDT  | 9AR                   |                      |        | 9K7            |           |                       | 9U7      |                       |                      | 9AY        |                       |                      | 9K5                  |                |          | 9U5            |         |                       |                       |            |          |                |         |           |
|                                                                 |                                   | 1x DPDT  | 9DR                   |                      |        | 9D7            |           |                       | 9W7      |                       |                      | 9DY        |                       |                      | 9D5                  |                |          | 9W5            |         |                       |                       |            |          |                |         |           |

# 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            | - min S.G. varies per material of construction<br>- max pressure varies per material of construction and temperature<br>- select as per table on page 5 |
|-----------|-----------|--------------|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| A40       | flanged   | down to 0,65 | up to 51,0 bar (740 psi) |                                                                                                                                                         |
| 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<br>EN 1092-1 Type B1 | PN 25/40<br>EN 1092-1 Type B1 | PN 63<br>EN 1092-1 Type B2 | PN 16<br>EN 1092-1 Type B1 | PN 25/40<br>EN 1092-1 Type B1 | PN 63<br>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 |                |            |                       | NEMA 7/9             | II 2G Ex d IIC T6 Gb |        |                       |         |                |           | II 1G Ex ia IIC T6 Ga |            | NEMA 7/9 |         |
|                                                                 |                                   |          |                       | 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 |
| 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                   | DOB                  | DN9    | DF9                   | DD5    | DW5            | —        | —                     | DNB            | D8B        | DOB                   | 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            | FCB        | 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 ② (-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                  | 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       |                       |            |          |         |
|                                                                 |                                   | 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)         |                      |        |                       |         |                |           |                       |            |          |         |
|                                                                 |                                   |          |                       | II 2G Ex d IIC T6 Gb |        |                       |        |                |          | II 2G Ex d IIC T6 Gb  |                |            |                       | II 2G Ex d IIC T6 Gb |                      |        |                       |         |                |           |                       |            |          |         |
|                                                                 |                                   |          |                       | CS/Aluminium         |        |                       |        |                |          | Cast Iron             |                |            |                       | CS/Aluminium         |                      |        |                       |         |                | Cast Iron |                       |            |          |         |
|                                                                 |                                   |          |                       | 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 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  | 9AR                   |                      |        |                       |        |                | 9K7      |                       |                |            | 9U7                   |                      |                      |        |                       |         |                |           |                       |            |          |         |
|                                                                 |                                   | 1x DPDT  | 9DR                   |                      |        |                       |        |                | 9D7      |                       |                |            | 9W7                   |                      |                      |        |                       |         |                |           |                       |            |          |         |

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

| Switch description           | Max supply pressure<br>bar (psi) | Max liquid<br>temperature ①°C (°F) | Bleed orifice Ø<br>mm (inches) | NEMA 3R (IP 53) |                      |
|------------------------------|----------------------------------|------------------------------------|--------------------------------|-----------------|----------------------|
|                              |                                  |                                    |                                | Material code A | Material codes B & D |
| Series J<br>(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)                         | 370 (700)                          | 1,40 (0.055)                   | JFG             | JFE                  |
| Series K<br>(closed circuit) | 6,9 (100)                        | 200 (400)                          | —                              | KOE             | KOE                  |
|                              | 2,8 (40)                         |                                    | —                              | KOG             | —                    |

## 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            | - min S.G. varies per material of construction<br>- max pressure varies per material of construction and temperature<br>- select as per table on page 5 |
|-----------|-----------|--------------|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| O30       | flanged   | down to 0,84 | up to 34,5 bar (500 psi) |                                                                                                                                                         |
| 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

|       | 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<br>EN 1092-1 Type B1 | PN 25/40<br>EN 1092-1 Type B1 | PN 63<br>EN 1092-1 Type B2 | PN 16<br>EN 1092-1 Type B1 | PN 25/40<br>EN 1092-1 Type B1 | PN 63<br>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 <sup>①</sup><br>Temperature Range<br>°C (°F) | Contacts | Weather proof<br>(IP 66) | ATEX - IECEx (IP 66) |         |                       |          |                       |        | FM<br>(IP 66) |     |
|---------------------------------------------------------------------------------|------------------------------------------------------|----------|--------------------------|----------------------|---------|-----------------------|----------|-----------------------|--------|---------------|-----|
|                                                                                 |                                                      |          |                          | II 2G Ex d IIC T6 Gb |         |                       |          | II 1G Ex ia IIC T6 Ga |        |               |     |
|                                                                                 |                                                      |          |                          | Cast Aluminium       |         | Cast Iron (ATEX only) |          | Cast Aluminium        |        |               |     |
|                                                                                 |                                                      |          |                          | M20x1,5              | 1" NPT  | M20x1,5               | 3/4" NPT | M20x1,5               | 1" NPT |               |     |
| Series <b>B</b><br>Snap switch                                                  | -40 to +120<br>(-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 <b>C</b><br>Snap switch                                                  | -40 to +230<br>(-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 <b>D</b><br>DC Current<br>Snap switch                                    | -40 to +120<br>(-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                      | DDB                  | DN9     | DF9                   | DD5      | DW5                   | –      | –             | DNB |
|                                                                                 |                                                      | 2x DPDT  | D1B                      | DEB                  | DP9     | DG9                   | DO5      | DY5                   | –      | –             | DOB |
| Series <b>F</b><br>Hermetically sealed<br>Snap switch                           | -45 to +400<br>(-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 |
|                                                                                 |                                                      | 2x DPDT  | FHB                      | FEB                  | FP9     | FG9                   | FO5      | FY5                   | –      | –             | FOB |
| Series <b>HS</b><br>Hermetically sealed Snap switch                             | -45 to +290 <sup>②</sup><br>(-50 to +550)            | 1x SPDT  | H7A                      | HM2                  | HFC     | HA9                   | HB3      | HB4                   | –      | –             | HM3 |
|                                                                                 |                                                      | 1x DPDT  | H7C                      | HM6                  | HGC     | HB9                   | HB7      | HB8                   | –      | –             | HM7 |
| Series <b>U</b><br>Gold alloy contacts<br>Snap switch                           | -40 to +120<br>(-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                      | UBB                  | UN9     | UF9                   | UD5      | UW5                   | U8T    | UDT           | UNB |
|                                                                                 |                                                      | 2x DPDT  | U1B                      | UEB                  | UP9     | UG9                   | UO5      | UY5                   | U1T    | UET           | UOB |
| Series <b>V</b><br>Inductive Proximity switch                                   | -40 to +100<br>(-40 to +210)                         | –        | –                        | –                    | –       | –                     | –        | –                     | VCS    | VES           | –   |
| Series <b>W</b><br>Hermetically sealed<br>Silver plated contacts<br>Snap switch | -45 to +230<br>(-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 <b>X</b><br>Hermetically sealed<br>Gold plated contacts<br>Snap switch   | -45 to +230<br>(-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 <b>R</b><br>High temperature<br>Snap switch                              | -40 to +400<br>(-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 <b>8</b><br>Hermetically sealed<br>Snap switch                           | -45 to +400<br>(-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 <b>9</b><br>High temperature<br>Hermetically sealed<br>Snap switch       | -45 to +400<br>(-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 <sup>①</sup><br>Temperature Range<br>°C (°F) | Contacts | Weather proof<br>(IP 65) | ATEX (IP 66)         |         |                       |          |                       |        |               |     |
|                                                                                 |                                                      |          |                          | II 2G Ex d IIC T6 Gb |         |                       |          |                       |        |               |     |
|                                                                                 |                                                      |          |                          | Cast Iron            |         |                       |          |                       |        |               |     |
|                                                                                 |                                                      |          |                          | 3/4" NPT             | M20x1,5 | 3/4" NPT              |          |                       |        |               |     |
| Series <b>R</b><br>High temperature<br>Snap switch                              | -40 to +540 <sup>③</sup><br>(-40 to +1000)           | 1x SPDT  | R1Y                      |                      | RK5     |                       | RU5      |                       |        |               |     |
|                                                                                 |                                                      | 1x DPDT  | RDY                      |                      | RN5     |                       | RF5      |                       |        |               |     |
| Series <b>9</b><br>High temperature<br>Hermetically sealed Snap switch          | -40 to +540 <sup>③</sup><br>(-40 to +1000)           | 1x SPDT  | 9AY                      |                      | 9K5     |                       | 9U5      |                       |        |               |     |
|                                                                                 |                                                      | 1x DPDT  | 9DY                      |                      | 9D5     |                       | 9W5      |                       |        |               |     |

## SELECT PNEUMATIC SWITCH MECHANISM & HOUSING: MODELS O30 & O75

| Switch description               | Max supply pressure<br>bar (psi) | Max liquid<br>temperature <sup>①</sup> °C (°F) | Bleed orifice Ø<br>mm (inches) | NEMA 3R (IP 53) |
|----------------------------------|----------------------------------|------------------------------------------------|--------------------------------|-----------------|
| Series <b>J</b> (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 <b>K</b> (closed circuit) | 6,9 (100)                        | 200 (400)                                      | –                              | KOE             |

- <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.
- <sup>③</sup> 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            | - min S.G. varies per material of construction<br>- max pressure varies per material of construction and temperature<br>- select as per table on page 5 |
|-----------|-----------|--------------|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| P75       | sealed    | down to 0,71 | up to 27,6 bar (400 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

|        | 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<br>EN 1092-1 Type B1 | PN 25/40<br>EN 1092-1 Type B1 | PN 63<br>EN 1092-1 Type B2 | PN 16<br>EN 1092-1 Type B1 | PN 25/40<br>EN 1092-1 Type B1 | PN 63<br>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)

|   |   |   |   |   |   |   |   |   |    |
|---|---|---|---|---|---|---|---|---|----|
| P | 7 | 5 | D |   |   |   |   |   |    |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

complete order code for P75 models

X = product with a specific customer requirement

# SELECT ELECTRIC SWITCH MECHANISM & HOUSING: MODEL P75

| Switch Description                                                        | Process ①<br>Temperature Range<br>°C (°F) | Contacts | Weather proof<br>(IP 66) |                      | ATEX - IECEx (IP 66) |          |                |                       |                       |           | FM<br>(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               | 1" NPT    | 1" NPT        |
| Series B<br>Snap switch                                                   | -40 to +120<br>(-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<br>Snap switch                                                   | -40 to +230<br>(-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<br>DC Current<br>Snap switch                                     | -40 to +120<br>(-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                      | DDB                  | DN9                  | DF9      | DD5            | DW5                   | —                     | —         | DNB           |
|                                                                           |                                           | 2x DPDT  | D1B                      | DEB                  | DP9                  | DG9      | DO5            | DY5                   | —                     | —         | DOB           |
| Series F<br>Hermetically sealed<br>Snap switch                            | -45 to +400<br>(-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           |
|                                                                           |                                           | 2x DPDT  | FHB                      | FEB                  | FP9                  | FG9      | FO5            | FY5                   | —                     | —         | FOB           |
| Series HS<br>Hermetically sealed Snap switch                              | -45 to +290 ②<br>(-50 to +550)            | 1x SPDT  | H7A                      | HM2                  | HFC                  | HA9      | HB3            | HB4                   | —                     | —         | HM3           |
|                                                                           |                                           | 1x DPDT  | H7C                      | HM6                  | HGC                  | HB9      | HB7            | HB8                   | —                     | —         | HM7           |
| Series U<br>Gold alloy contacts<br>Snap switch                            | -40 to +120<br>(-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                      | UDB                  | UN9                  | UF9      | UD5            | UW5                   | U8T                   | UDT       | UNB           |
|                                                                           |                                           | 2x DPDT  | U1B                      | UEB                  | UP9                  | UG9      | UO5            | UY5                   | U1T                   | UET       | UOB           |
| Series V<br>Inductive Proximity switch                                    | -40 to +100<br>(-40 to +210)              | —        | —                        | —                    | —                    | —        | —              | —                     | VCS                   | VES       | —             |
| Series W<br>Hermetically sealed<br>Silver plated contacts<br>Snap switch  | -45 to +230<br>(-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<br>Hermetically sealed<br>Gold plated<br>contacts<br>Snap switch | -45 to +230<br>(-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<br>High temperature<br>Snap switch                               | -40 to +400<br>(-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<br>Hermetically sealed<br>Snap switch                            | -45 to +400<br>(-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<br>High temperature<br>Hermetically sealed<br>Snap switch        | -45 to +400<br>(-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<br>Temperature Range<br>°C (°F) | Contacts | Weather proof<br>(IP 65) | ATEX (IP 66)         |                      |          |                |                       |                       |           |               |
|                                                                           |                                           |          |                          | II 2G Ex d IIC T6 Gb |                      |          |                |                       |                       |           |               |
|                                                                           |                                           |          |                          | Cast Iron            |                      |          |                |                       |                       |           |               |
|                                                                           |                                           |          |                          | 3/4" NPT             | M20x1,5              | 3/4" NPT |                |                       |                       |           |               |
| Series R<br>High temperature<br>Snap switch                               | -40 to +540 ③<br>(-40 to +1000)           | 1x SPDT  | R1Y                      |                      | RK5                  |          | RU5            |                       |                       |           |               |
|                                                                           |                                           | 1x DPDT  | RDY                      |                      | RN5                  |          | RF5            |                       |                       |           |               |
| Series 9<br>High temperature<br>Hermetically sealed Snap switch           | -40 to +540 ③<br>(-40 to +1000)           | 1x SPDT  | 9AY                      |                      | 9K5                  |          | 9U5            |                       |                       |           |               |
|                                                                           |                                           | 1x DPDT  | 9DY                      |                      | 9D5                  |          | 9W5            |                       |                       |           |               |

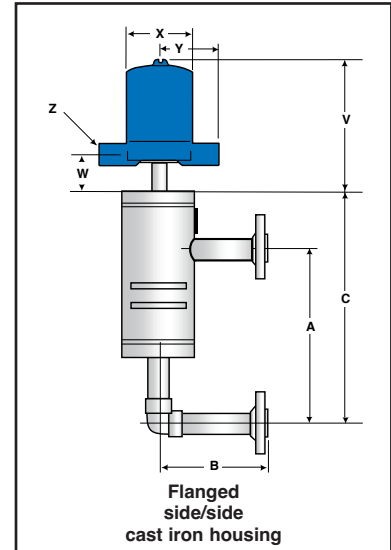
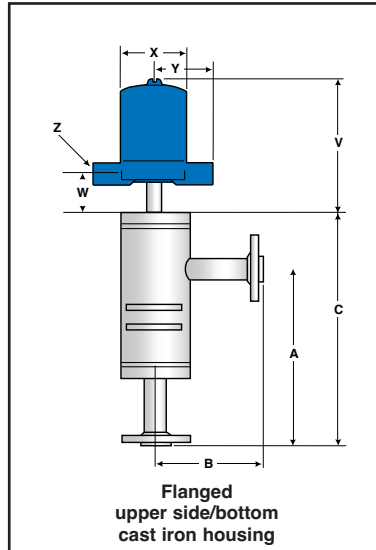
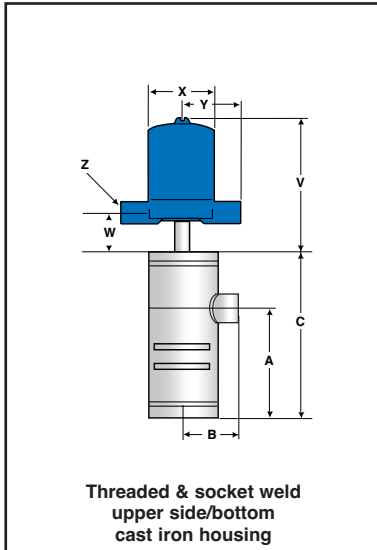
## SELECT PNEUMATIC SWITCH MECHANISM & HOUSING: MODEL P75

| Switch description        | Max supply pressure<br>bar (psi) | Max liquid<br>temperature ① °C (°F) | Bleed orifice Ø<br>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             |

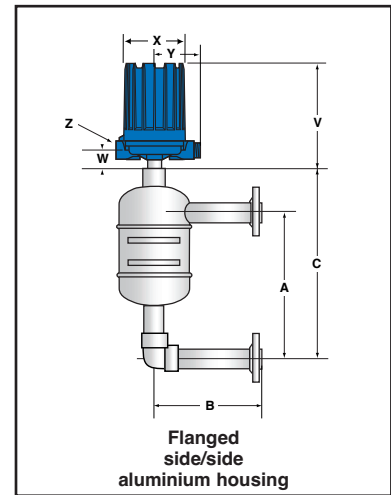
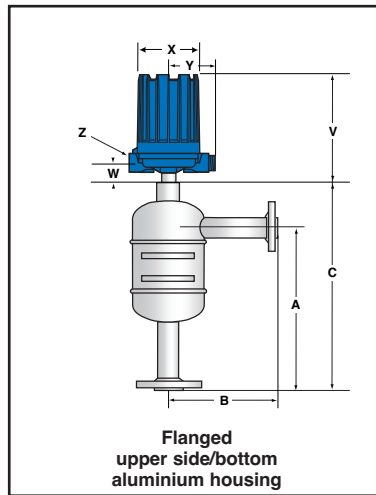
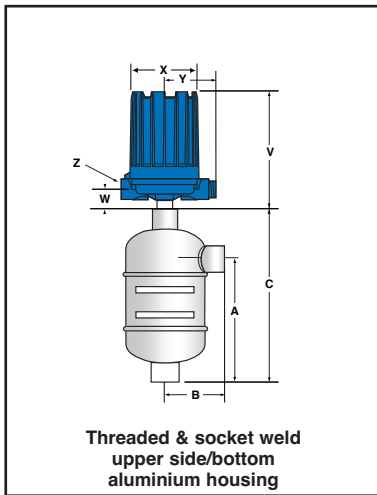
- ① Process temperature based on max. 40 °C (100 °F) ambient temperature and for non steam applications.
- ② On steam applications, temperature down-rated to +200 °C (+400 °F) process at +40 °C (+100 °F) ambient.
- ③ Upon prolonged exposure to temperatures above 425 °C (800 °F), the carbide phase of 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-<br>FM (NEMA 7/9) -<br>ATEX (Cast Alu) | B73 with HS-switch<br>All other models | 257 | 10.12  | 42 | 1.66   | 151 | 5.93   | 109 | 4.29   | M20 x 1,5 (*) or 1" NPT<br>(2 entries - 1 plugged)<br>(*) not for FM (NEMA 7/9) |
|                                                     | B73 excl. HS-switch                    | 202 | 7.94   |    |        |     |        |     |        |                                                                                 |
| Weatherproof<br>(CS/Aluminium)                      | All<br>(B73: not applicable)           | 216 | 8.50   | 39 | 1.54   | 118 | 4.65   | 83  | 3.27   | 3/4" NPT<br>(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<br>(single entry - 2 entries at request)                  |
| Pneumatics<br>Switch Module J                       | All                                    | 165 | 6.50   | 39 | 1.54   | 118 | 4.65   | 110 | 4.33   | 1/4" NPT                                                                        |
| Pneumatics<br>Switch Module K                       |                                        |     |        |    |        |     |        | 130 | 5.12   |                                                                                 |

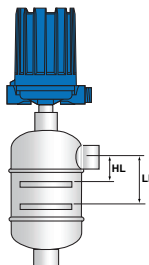
Allow 200 mm (7.87") overhead clearance / All housings are 360 ° rotatable

## SEALED CAGE MODELS - DIMENSIONS in mm (inches)

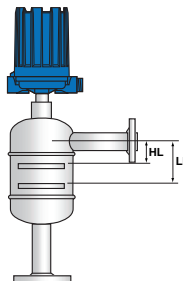
| Process connection size | Mounting configuration      | Model      | Dimensions |        |     |        |     |        | Model      | Dimensions     |        |     |        |     |        |
|-------------------------|-----------------------------|------------|------------|--------|-----|--------|-----|--------|------------|----------------|--------|-----|--------|-----|--------|
|                         |                             |            | 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<br>C75 | 222        | 8.74   | 96  | 3.78   | 396 | 15.59  | G75<br>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

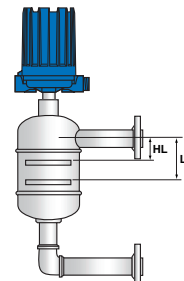
Actuating levels shown are for single switch units at minimum specific gravity only. Levels will change for multistage units. Consult factory for these units.



Upper side / bottom  
NPT & Socket weld



Upper side / bottom  
Flanged



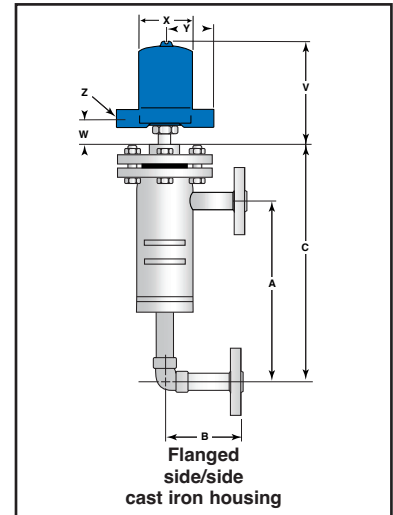
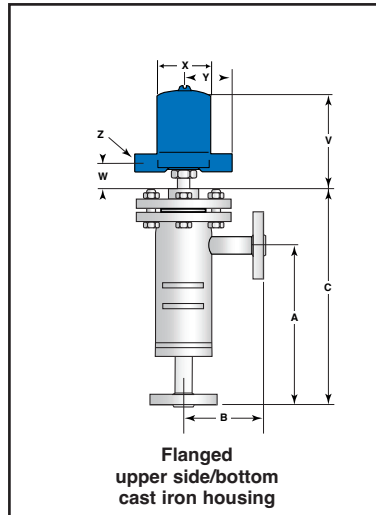
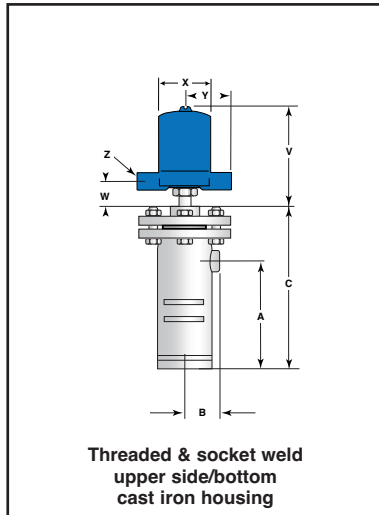
Side / Side  
Flanged

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

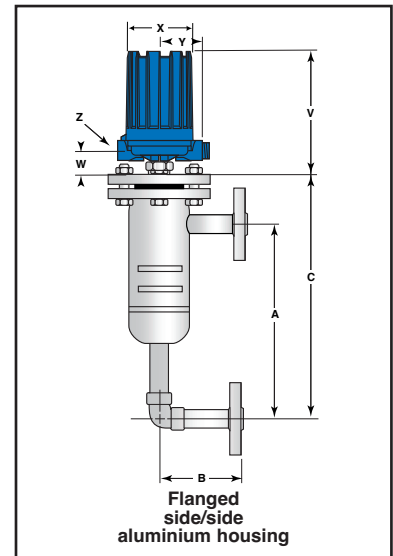
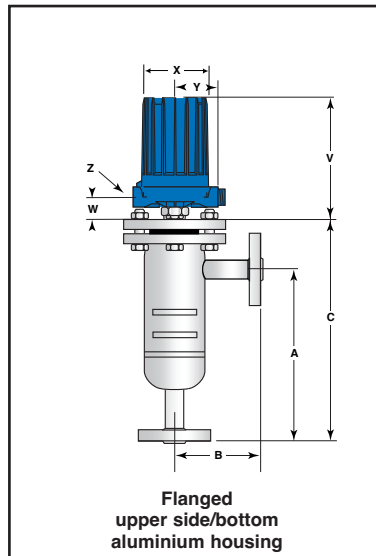
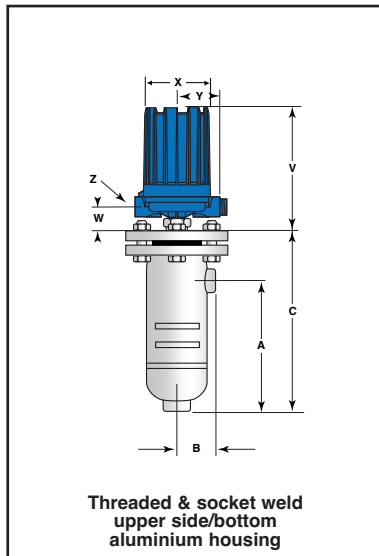
| Model | 1" / DN 25      |                |                      |                | 1 1/2" / DN 40  |                |                      |                | 2" / DN 50      |                |                      |                |
|-------|-----------------|----------------|----------------------|----------------|-----------------|----------------|----------------------|----------------|-----------------|----------------|----------------------|----------------|
|       | 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-<br>FM (NEMA 7/9) -<br>ATEX (Cast Alu) | B41 with HS-switch<br>All other models | 257 | 10.12  | 42 | 1.66   | 151 | 5.93   | 109 | 4.29   | M20 x 1,5 (*) or 1" NPT<br>(2 entries - 1 plugged)<br>(*) not for FM (NEMA 7/9) |
|                                                     | B41 excl. HS-switch                    | 202 | 7.94   |    |        |     |        |     |        |                                                                                 |
| Weatherproof<br>(CS/Aluminium)                      | All<br>(B41, J31: not applicable)      | 216 | 8.50   | 39 | 1.54   | 118 | 4.65   | 83  | 3.27   | 3/4" NPT<br>(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<br>(single entry - 2 entries at request)                  |
| Pneumatics<br>Switch Module J                       | All                                    | 165 | 6.50   | 39 | 1.54   | 118 | 4.65   | 110 | 4.33   | 1/4" NPT                                                                        |
| Pneumatics<br>Switch Module K                       |                                        |     |        |    |        |     |        | 130 | 5.12   |                                                                                 |

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

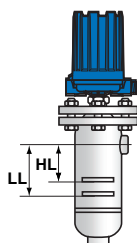
# FLANGED CAGE MODELS - DIMENSIONS in mm (inches)

| 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  |         |                |        |     |        |     |        |

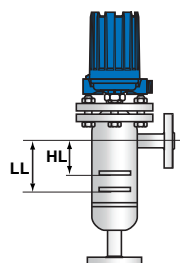
(\*) Add 33 mm (1.3") to 'C'-dimension for cast iron Ex d housings

## ACTUATING LEVELS

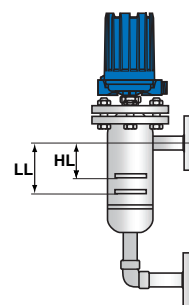
Actuating levels shown are for single switch units at minimum specific gravity only. Levels will change for multistage units. Consult factory for these units.



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)      | -               | -              | -                    | -              | -               | -              | -                    | -              |

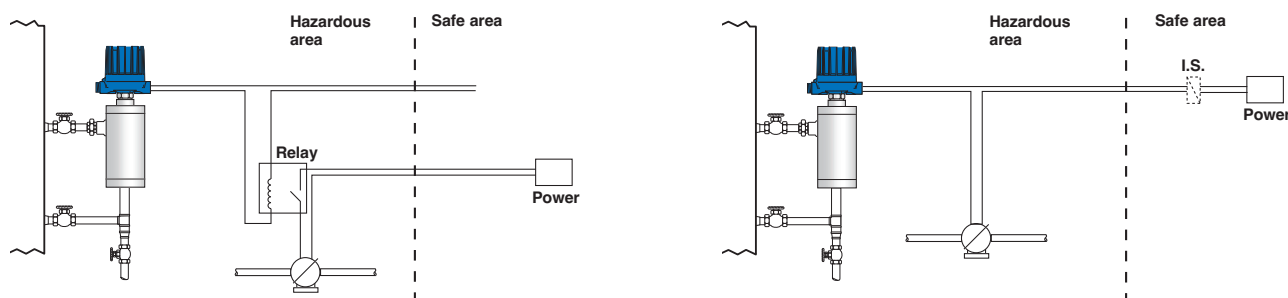
## PHYSICAL SPECIFICATIONS

| 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<br>(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)<br>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.

MAGNETROL SHALL NOT BE LIABLE FOR MISAPPLICATION, LABOR CLAIMS, DIRECT OR CONSEQUENTIAL DAMAGE OR EXPENSE ARISING FROM THE INSTALLATION OR USE OF THE EQUIPMENT. THERE ARE NO OTHER WARRANTIES EXPRESSED OR IMPLIED, EXCEPT, SPECIAL WRITTEN WARRANTIES COVERING SOME MAGNETROL PRODUCTS.

UNDER RESERVE OF MODIFICATIONS

BULLETIN N°: BE 46-116.10  
EFFECTIVE: AUGUST 2021  
SUPERSEDES: March 2002

