



HENNLICH

MERES

# PLOVÁKOVÉ SPÍNAČE HLADINY S JÍMKOU

## DESCRIPTION

The models included in this bulletin are sealed external cage liquid level switches selected specifically for use in power generation plants. All models are float-activated and provide highly reliable control in critical applications. Finned cooling extensions and a selection of dry contact switches are available for use in installations with process temperatures as high as +1200° F (+649° C). Magnetrol float level switches are designed to ensure a long service life with little required maintenance.

## FEATURES

- Process pressures up to 3300 psi (228 bar)
- Process temperatures up to +1000° F (+538° C) with standard models
- Finned temperature extensions for applications to +1200° F (+649° C)
- Specific gravity ratings as low as 0.59
- Numerous snap switches to choose from
- Gold contact switch options available
- Carbon steel, stainless steel, and chrome-moly float chambers
- All stainless steel floats & trim parts

## APPLICATIONS

- Drip legs
- Hot wells
- Deaerators
- Feedwater heaters
- Steam drums
- Flash tanks



Model B73

Model B75



Model B40

# MODEL NUMBER

## MODEL NUMBER CODE

| Model    | Minimum S.G. | Pressure Ratings – psi (bar) |                   |                   |                   |                     |                      |
|----------|--------------|------------------------------|-------------------|-------------------|-------------------|---------------------|----------------------|
|          |              | +100° F (+38° C)             | +450° F (+232° C) | +550° F (+288° C) | +750° F (+399° C) | +900° F (+482° C) ① | +1000° F (+538° C) ① |
| B73-1B30 | 0.59         | 400 (28)                     | 275 (19)          | —                 |                   |                     |                      |
| B72-1B20 | 0.76         | 500 (34)                     | 465 (32)          | 435 (30)          | 400 (28)          | —                   |                      |
| B75-1B20 | 0.67         | 1000 (69)                    | 930 (64)          | 870 (60)          | 716 (49)          | 357 (25)            | 138 (10)             |
| V75-1B20 | 0.74         | 2240 (154)                   | 1980 (137)        | 1913 (132)        | 1455 (100)        | 728 (50)            | —                    |
| Z75-1B20 | 0.68         | 2193 (151)                   | 1980 (137)        | 1913 (132)        | 1425 (98)         | 713 (49)            | —                    |
| B40-5C20 | 0.65         | 2085 (144)                   | 1845 (127)        | 1794 (124)        | 1350 (93)         | 665 (46)            | 165 (11)             |
| B40-1B60 | 0.65         | 2067 (143)                   | 1793 (124)        | 1751 (121)        | 1670 (115)        | 1268 (87)           | 651 (45)             |
| B40-4C40 | 0.65         | 3300 (228)                   | 3221 (222)        | 3132 (216)        | 2956 (204)        | 2824 (195)          | 2735 (189)           |

| Model    | Minimum S.G. |            |                     | Process ② Connections  |
|----------|--------------|------------|---------------------|------------------------|
|          | Chamber      | Float      | Trim                |                        |
| B73-1B30 | Carbon steel | 316/L SS   | 300 & 400 Series SS | 1" NPT/SW, side/bottom |
| B72-1B20 | Carbon steel | 316/L SS   | 300 & 400 Series SS | 1" NPT/SW, side/bottom |
| B75-1B20 | Carbon steel | 316/L SS   | 300 & 400 Series SS | 1" NPT/SW, side/bottom |
| V75-1B20 | Carbon steel | 17-7 ph SS | 300 & 400 Series SS | 1" NPT/SW, side/bottom |
| Z75-1B20 | Carbon steel | 17-7 ph SS | 300 & 400 Series SS | 1" NPT/SW, side/bottom |
| B40-5C20 | Carbon steel | 321/347 SS | 300 & 400 Series SS | 1" SW, top/bottom      |
| B40-1B60 | Chrome-moly  | 321/347 SS | 300 & 400 Series SS | 1" SW, top/bottom      |
| B40-4C40 | 316 SS       | 321/347 SS | 300 & 400 Series SS | 1½" SW, top/bottom     |

## ELECTRIC SWITCH MECHANISM AND ENCLOSURE

| Switch Description  | Process Temp. Range °F (°C) | Contacts | Models B73 & B72 only |           | Model B75 only |           | Models V75 and Z75 only |           | Model B40-1 and B40-4 only |           | Model B40-5 only |           |
|---|-----------------------------|----------|-----------------------|-----------|----------------|-----------|-------------------------|-----------|----------------------------|-----------|------------------|-----------|
|   |                             |          | Nema 4X               | ATEX IP66 | Nema 4X        | ATEX IP66 | Nema 4X                 | ATEX IP66 | Nema 4X                    | ATEX IP66 | Nema 4X          | ATEX IP66 |
| Series B Snap Switch ③                                    | -40 to +250 (-40 to +121)   | SPDT     | BAR                   | BAC       | BAD            | BCC       | BAM                     | BC9       | —                          |           |                  |           |
|   |                             | DPDT     | BDR                   | BBC       | BDD            | BFC       | BDM                     | BF9       | —                          |           |                  |           |
| Series C Snap Switch                                      | -40 to +450 (-40 to +232)   | SPDT     | CAR                   | CAC       | CAD            | CCC       | CAM                     | CC9       | —                          |           | CAM              | CC9       |
|   |                             | DPDT     | CDR                   | CBC       | CDD            | CFC       | CDM                     | CF9       | —                          |           | CDM              | CF9       |
| Series F Hermetically Sealed Snap Switch ③                | -50 to +750 (-46 to +399)   | SPDT     | FAR                   | FAC       | FAD            | FCC       | FAM                     | FC9       | FAM                        | FC9       | FAM              | FC9       |
|   |                             | DPDT     | FDR                   | FBC       | FDD            | FFC       | FDM                     | FF9       | FDM                        | FF9       | FDM              | FF9       |
| Series HS Herm. Sealed 5 amp Snap Switch w/Terminal Block | -50 to +400 (-46 to +208)   | SPDT     | HS2                   | HA9       | HS2            | HA9       | HS2                     | HA9       | —                          |           | HS2              | HA9       |
|   |                             | DPDT     | HS6                   | HB9       | HS6            | HB9       | HS6                     | HB9       | —                          |           | HB6              | HB9       |
| Series R High Temperature Snap Switch                     | -40 to +1000 (-40 to +538)  | SPDT     | —                     |           | R1M            | RC9       | R1M                     | RC9       | R5M                        | RW5 ④     | R1M              | RU5 ④     |
|   |                             | DPDT     | —                     |           | —              |           | —                       |           | —                          |           |                  |           |
| Series S High Temperature Snap Switch                     | -40 to +550 (-40 to +288)   | SPDT     | —                     |           | —              |           | —                       |           | SAM                        | SA9       | —                |           |
|   |                             | DPDT     | —                     |           | —              |           | —                       |           | SDM                        | SB9       | —                |           |

① Use caution when specifying carbon and stainless steels for temperature greater than +800° F (+427° C), as it becomes sensitized.

② Other types and sizes of process connections available. Consult factory.

③ Standard contacts are silver. Gold contacts available. Consult Factory.

④ The ATEX housing provided with codes RW5 and RU5 is cast iron. All other ATEX codes specify cast aluminum enclosures.

## CONSTRUCTION OPTIONS

- Most models available designed, built and certified to ASME B31.1 power piping code. Consult factory.
- Model B40-1B60 is available in high pressure design rated for 2533 psi @ +100° F (175 bar @ +38° C) or 1200 psi @ +1000° F (83 bar @ +538° C). Consult factory.
- Other process connection types and sizes available. Consult factory.
- Series B, F and HS switch available with gold contacts. Consult factory.
- Second switch mechanism available on models B75, V75, and Z75. Consult factory.

## PROCESS TEMPERATURE RATING OF SWITCH

| Switch Series | Number of Finned Extensions Required ① |                    |                    |                    |                    |
|---------------|--|--------------------|--------------------|--------------------|--------------------|
|               | 0                                      | 1                  | 2                  | 3                  | 4                  |
| <b>B</b>      | +250° F (+121° C)                      | —                  | —                  | —                  | —                  |
| <b>C</b>      | +450° F (+232° C)                      | +500° F (+260° C)  | +550° F (+288° C)  | +600° F (+316° C)  | +650° F (+343° C)  |
| <b>F</b>      | +750° F (+399° C)                      | +850° F (+454° C)  | +950° F (+510° C)  | +1050° F (+566° C) | +1150° F (+621° C) |
| <b>HS</b>     | +400° F (+204° C)                      | —                  | —                  | —                  | —                  |
| <b>R</b>      | +1000° F (+538° C)                     | +1150° F (+621° C) | +1200° F (+649° C) | —                  | —                  |
| <b>S</b> ②    | +550° F (+288° C)                      | +600° F (+316° C)  | +700° F (+371° C)  | +750° F (+399° C)  | +800° F (+427° C)  |

① For model B40s with one standard finned extension, the number of required extensions is in addition to the one standard finned extension

② Applies to the S Series switch for AC Applications only (codes SA, SD, SK, and SN).



**Finned Heat Extensions**

## SWITCH ENCLOSURES

- NEMA 4X blue polymer coated carbon steel, weather resistant for non-hazardous areas
- ATEX, IP66, NEMA 4X/7/9 blue polymer coated aluminum and cast iron enclosures



**ATEX, IP66, NEMA 4X/7/9  
Aluminum Enclosure**



**NEMA 4X  
Carbon Steel Enclosure**






**ATEX, IP66, NEMA 4X/7/9  
Cast Iron Enclosure**

## BASIC ELECTRICAL RATINGS

| Voltage | Switch Series and Non-inductive Ampere Rating |        |       |      |        |      |         |      |       |
|---------|---|--------|-------|------|--------|------|---------|------|-------|
|         | B   | Gold B | C     | F    | Gold F | HS   | Gold HS | R    | S     |
| 120 VAC | 15.00   | 1.00   | 15.00 | 2.50 | —      | 5.00 | 1.00    | 1.00 | 15.00 |
| 240 VAC | 15.00   | —      | 15.00 | —    | —      | 5.00 | —       | 1.00 | 15.00 |
| 24 VDC  | 6.00  | 1.00   | 10.00 | 4.00 | 1.00   | 5.00 | 1.00    | 1.00 | —     |
| 120 VDC | 0.50  | —      | 1.00  | 0.30 | —      | 0.50 | —       | 0.40 | 1.00  |
| 240 VDC | 0.25  | —      | 0.50  | —    | —      | 0.25 | —       | —    | 0.50  |

# AGENCY APPROVALS

| AGENCY   | MODEL APPROVED  | APPROVAL CLASSES   |
|--|---|--|
| <b>FM</b><br><br>FM<br>APPROVED | All with an electric switch mechanism and a housing listed as NEMA 4X     | Non-hazardous<br>NEMA 4X   |
| <b>CSA</b><br>                  | All with an electric switch mechanism and a housing listed as NEMA 4X/7/9 | Non-hazardous CSA<br>Type 4X   |
| <b>ATEX</b>  | All with an electric switch mechanism and an ATEX housing                 | ATEX II 2 G EEx d IIC T6<br>94/9/EC<br>IP66  |
| <b>CE</b><br>                   | All models  | Installation Category II<br>Pollution Degree 2<br><br>Low Voltage Directives<br>2006/95/EC<br>per Harmonized Standard<br>EN 61010-1/1993 & Amendment No. 1 |

## QUALITY



The quality assurance system in place at Magnetrol guarantees the highest level of quality throughout the company. Magnetrol is committed to providing full customer satisfaction both in quality products and quality service.

The Magnetrol quality assurance system is registered to ISO 9001 affirming its commitment to known international quality standards providing the strongest assurance of product/service quality available.

## WARRANTY



All Magnetrol mechanical level and flow controls are warranted free of defects in materials or workmanship for three 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 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 equipment. There are no other warranties expressed or implied, except special written warranties covering some Magnetrol products.



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