



MAGNETROL®

AMETEK®
LEVEL MEASUREMENT
SOLUTIONS

Side Mounting Liquid Level Switches

DESCRIPTION

Magnetrol® side mounting controls mount horizontally to any tank or vessel through a threaded or flanged pipe connection. Standard models are normally equipped with a single switch mechanism for high or low level alarm or control applications. Tandem models, with two switch mechanisms, are available for two-stage applications.

FEATURES

- Body material of cast iron, carbon steel or stainless steel
- 300 series stainless steel float and trim
- Threaded or flanged mounting
- Specific gravity ratings down to 0.50
- Process temperatures to +1000° F (+538° C)
- Choice of float size:
 - 2½" (64 mm)
 - 2½" × 4" (64 × 102 mm)
 - 3" (76 mm)
 - 3½" (89 mm)
 - 3" × 5" (76 × 127 mm)
- Field-adjustable level differential
- Choice of switch mechanism:
 - Dry contact Hermetically sealed
 - Pneumatic
- Choice of switch mechanism enclosure:
 - NEMA 1 carbon steel for pneumatic
 - TYPE 4X/7/9, Class I, Div. 1, Group C & D, polymer coated aluminum
 - TYPE 4X/7/9, Class I, Div. 1, Group B, polymer coated aluminum

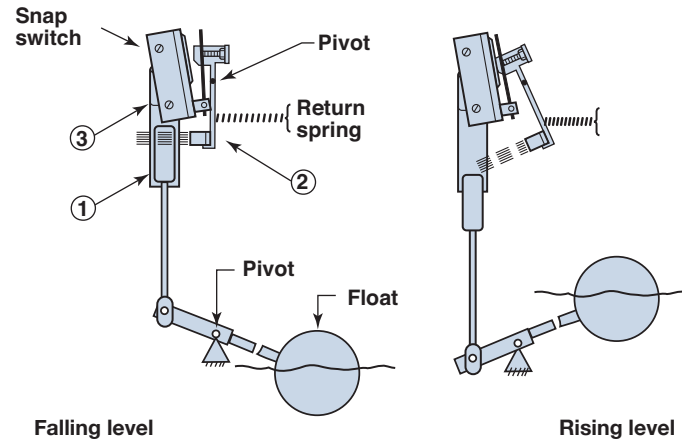


APPLICATIONS





- Fuel tanks
- Day tanks
- Flash tanks
- Scrubbers
- Cooling towers
- Dump valve controls
- Condensate receivers
- Boilers
- Deaerators
- Holding tanks

TECHNOLOGY

Side mounting units employ permanent magnetic force as the only link between the float and the switching element. As the pivoted float follows liquid level changes, it moves a magnetic sleeve (1) into or out of the field of a switch actuating magnet (2) causing switch operation. A non-magnetic barrier tube (3) effectively isolates the switch mechanism from the controlled liquid.



AGENCY APPROVALS

| AGENCY | APPROVED MODEL | APPROVAL CLASSES |
|---|---|---|
| FM  | All with an electric switch mechanism and a housing listed as TYPE 4X/7/9 All with an electric switch mechanism and a housing listed as TYPE 4X/7/9 Class I, Div 1, Group B | Class I, Div 1, Groups C & D Class II, Div 1, Groups E, F & G Class I, Div 1, Groups B, C & D Class II, Div 1, Groups E, F & G |
| CSA  | All with a Series HS, F, 8 or 9 electric switch mechanism and a housing listed as CSA TYPE 4X All with an electric switch mechanism and a housing listed as TYPE 4X/7/9 All with an electric switch mechanism and a housing listed as TYPE 4X/7/9 Class I, Div 1, Group B | Class I, Div 2, Groups A, B, C & D Class I, Div 1, Groups C & D Class II, Div 1, Groups E, F & G Class I, Div 1, Groups B, C & D Class II, Div 1, Groups E, F & G |
| ATEX / IEC Ex ②  | All with an electric switch mechanism and an ATEX housing ① | ATEX II 2 G EEx d IIC T6 94/9/EC IEC Ex Ex d IIC T6 IP 66 |
| CE  | Low Voltage Directives 2006/95/EC Per Harmonized Standard: EN 61010-1/1993 & Amendment No. 1 | Installation Category II Pollution Degree 2 |

① Dual stage units with “HS” switches are not ATEX approved

② IEC Installation Instructions:

The cable entry and closing devices shall be Ex d certified suitable for the conditions of use and correctly installed.

For ambient temperatures above +55° C or for process temperatures above +150° C, suitable heat resistant cables shall be used.

Heat extensions (between process connection and housing) shall never be insulated.

Special conditions for safe use:

When the equipment is installed in process temperatures higher than +85° C the temperature classification must be reduced according to the following table as per IEC60079-0.

| Maximum Process Temperature | Temperature Classification |
|-----------------------------|----------------------------|
| < 85° C | T6 |
| < 100° C | T5 |
| < 135° C | T4 |
| < 200° C | T3 |
| < 300° C | T2 |
| < 450° C | T1 |

These units are in conformity with IECEx KEM 05.0020X
 Classification Ex d IIC T6
 T_{ambient} -40° to +70° C

SPECIFICATIONS

SWITCH MECHANISMS AND ENCLOSURES



SERIES B, C, D & R DRY CONTACT SWITCHES

- Designs for AC and DC current applications
- Process temperatures to +1000° F (+538° C)



SERIES F, HS, 8 & 9 HERMETICALLY SEALED SWITCHES

- Ideal for use in salt and other corrosive atmospheres
- HS is a positively pressurized capsule for entire mechanism and contacts
- Process temperatures to +1000° F (+538° C)



SERIES J & K PNEUMATIC SWITCHES

- Suited for applications where electrical power is not available
- Bleed and non-bleed designs
- Process temperatures to +400° F (+204° C)



SWITCH ENCLOSURES

- TYPE 4X/7/9 aluminum enclosures
- Designed to meet Class I, Div. 1, Groups C & D and Class I, Div. 1 Group B
- Optional housing heaters and drains available for some enclosures
- Pneumatic switch mechanisms available with a NEMA 1 enclosure

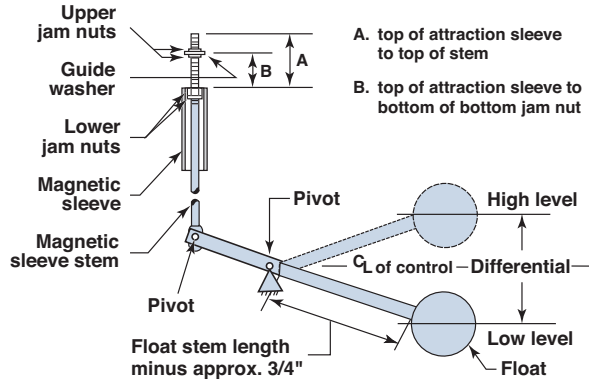
BASIC ELECTRICAL RATINGS

| Voltage | Switch Series and Non-Inductive Ampere Rating | | | | | | | |
|---------|---|-------|-------|------|------|------|------|------|
| | B | C | D | F | HS | R | 8 | 9 |
| 120 VAC | 15.00 | 15.00 | 10.00 | 2.50 | 5.00 | 1.00 | 1.00 | — |
| 240 VAC | 15.00 | 15.00 | — | — | 5.00 | 1.00 | — | — |
| 24 VDC | 6.00 | 6.00 | 10.00 | 4.00 | 5.00 | 1.00 | 3.00 | 0.50 |
| 120 VDC | 0.50 | 1.00 | 10.00 | 0.30 | 0.50 | 0.40 | — | — |
| 240 VDC | 0.25 | 0.50 | 3.00 | — | 0.25 | — | — | — |

LEVEL DIFFERENTIAL ADJUSTMENT

INCHES (MM)

The level differential may be adjusted by repositioning the jam nuts on the magnetic sleeve stem as shown below. Refer to the charts at right for the minimum and maximum levels obtainable.



Notes:

- ① All models are factory set at minimum differential unless otherwise specified.
- ② To maintain maximum differential, nozzle length "L" (Fig. 3) must not exceed: 2.38" (60 mm) model T52; 1.19" (30 mm) model T63; 2.50" (64 mm) model T62 threaded; or 3.50" (89 mm) model T62 flanged.
- ③ Dimensions given are approximate and will vary slightly with each unit.
- ④ Consult factory for differentials of models not shown.

Inches

| Model ① | | Differentials Obtainable ② ④ | | | | Approx. Jam Nut Setting ③ | |
|----------------|------|------------------------------|-------|-------|-------|---------------------------|------|
| | | Float Stem Length | | | | A | B |
| | | 8.00 | 12.00 | 18.00 | 26.00 | | |
| T52 | Min. | 1.25 | 1.75 | 2.50 | 3.50 | 0.81 | 0.03 |
| | Max. | 4.75 | 7.00 | 10.25 | 14.50 | 1.31 | 1.06 |
| T63 | Min. | 1.00 | 1.75 | 2.50 | 3.50 | 0.81 | 0.03 |
| | Max. | 2.62 | 5.00 | 7.38 | 10.50 | 1.31 | 1.06 |
| T62 (Threaded) | Min. | 1.25 | 2.00 | 2.88 | 4.00 | 0.81 | 0.03 |
| | Max. | 5.81 | 8.12 | 11.56 | 16.12 | 1.31 | 1.06 |
| T62 (Flanged) | Min. | 1.25 | 1.62 | 2.62 | 3.75 | 0.62 | 0.03 |
| | Max. | 3.50 | 5.12 | 7.50 | 10.75 | 1.12 | 0.69 |

Millimeters

| Model ① | | Differentials Obtainable ② ④ | | | | Approx. Jam Nut Setting ③ | |
|----------------|------|------------------------------|-----|-----|-----|---------------------------|-----|
| | | Float Stem Length | | | | A | B |
| | | 230 | 305 | 457 | 660 | | |
| T52 | Min. | 32 | 44 | 64 | 89 | 21 | 0.8 |
| | Max. | 121 | 178 | 260 | 368 | 33 | 27 |
| T63 | Min. | 25 | 44 | 64 | 89 | 21 | 0.8 |
| | Max. | 67 | 127 | 187 | 267 | 33 | 27 |
| T62 (Threaded) | Min. | 32 | 51 | 73 | 102 | 21 | 0.8 |
| | Max. | 148 | 206 | 294 | 409 | 33 | 27 |
| T62 (Flanged) | Min. | 32 | 41 | 67 | 95 | 16 | 0.8 |
| | Max. | 89 | 130 | 191 | 273 | 28 | 18 |

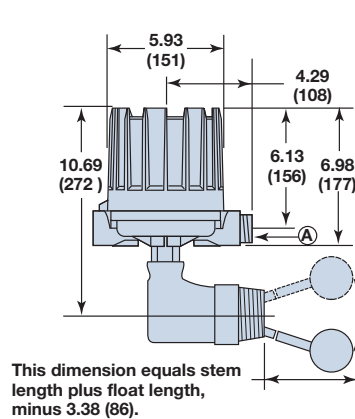
DIMENSIONAL SPECIFICATIONS

INCHES (MM)

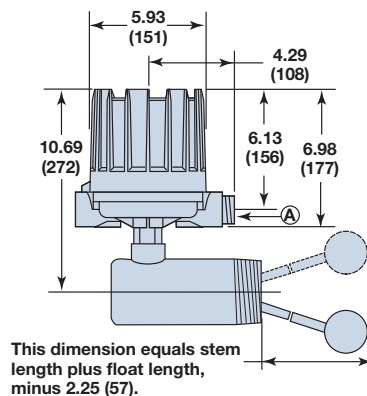
Single switch models only

| Conduit Connections A | |
|-----------------------|----------|
| Electrical Switches | |
| TYPE 4X/7/9: | 1" NPT |
| Group B: | 1" NPT |
| Pneumatic Switches | |
| NEMA 1: | 1/4" NPT |

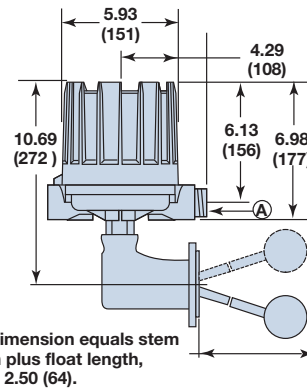
Note: Allow 8.00 (203) overhead clearance for cover removal.



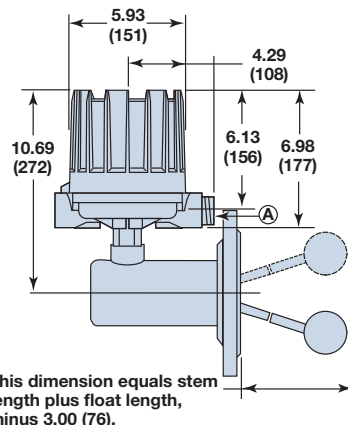
Model T63 with Threaded Body



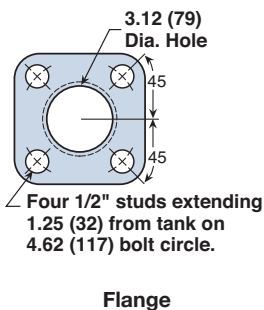
Model T62 with Threaded Body



Model T52 with Flanged Body

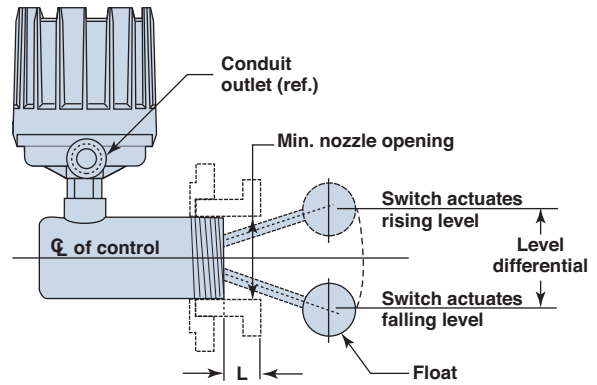


Model T62 with Flanged Body



LEVEL DIFFERENTIAL VS. MOUNTING NOZZLE LENGTH

The tables below may be used to determine the maximum level travel (differential) available between “Switch on” and “Switch off” actuations with mounting nozzles of different lengths. The differentials given occur with the minimum tank opening diameter listed for each model and are applicable to standard controls.



Inches

| Nozzle Length (Dim. L) ① | Maximum Level Differential Available with Several Nozzle Lengths ⑤ | | | | | | | | | | | | | | | |
|-----------------------------|--|-------|-------|-------|---|-------|-------|-------|--|-------|-------|-------|---|-------|-------|-------|
| | Model T52 with 3.12" Diameter Minimum Tank Nozzle Opening ② | | | | Model T63 with 2.31" Diameter Minimum Tank Nozzle Opening ② | | | | Model T62 Threaded with 3.06" Diameter Minimum Tank Nozzle Opening ③ | | | | Model T62 Flanged with 2.88" Diameter Minimum Tank Nozzle Opening ④ | | | |
| | Float Stem Length | | | | Float Stem Length | | | | Float Stem Length | | | | Float Stem Length | | | |
| | 8.00 | 12.00 | 18.00 | 26.00 | 8.00 | 12.00 | 18.00 | 26.00 | 8.00 | 12.00 | 18.00 | 26.00 | 8.00 | 12.00 | 18.00 | 26.00 |
| 2.00 | 4.75 | 7.00 | 10.25 | 14.50 | 2.62 | 5.00 | 7.38 | 10.50 | 5.81 | 8.12 | 11.56 | 16.12 | 3.50 | 5.12 | 7.50 | 10.75 |
| 4.00 | 4.00 | 5.62 | 8.12 | 11.62 | 1.88 | 3.50 | 5.25 | 7.50 | 4.38 | 6.12 | 8.69 | 12.19 | 3.25 | 4.75 | 7.00 | 10.00 |
| 6.00 | — | 4.25 | 6.25 | 8.88 | — | 2.75 | 4.12 | 5.88 | 1.50 | 4.69 | 6.69 | 9.31 | — | 3.75 | 5.38 | 7.75 |
| 8.00 | — | 3.50 | 5.12 | 7.25 | — | 2.38 | 3.38 | 4.88 | — | 3.81 | 5.44 | 7.56 | — | 3.00 | 4.50 | 6.25 |
| 10.00 | — | 2.88 | 4.25 | 6.00 | — | 2.00 | 2.88 | 4.12 | — | 3.19 | 4.56 | 6.38 | — | 2.50 | 3.75 | 5.38 |
| 12.00 | — | — | 3.62 | 5.12 | — | — | 2.50 | 3.50 | — | — | 3.94 | 5.44 | — | — | 3.25 | 4.62 |

Millimeters

| Nozzle Length (Dim. L) ① | Maximum Level Differential Available with Several Nozzle Lengths ⑤ | | | | | | | | | | | | | | | |
|-----------------------------|--|-----|-----|-----|--|-----|-----|-----|---|-----|-----|-----|--|-----|-----|-----|
| | Model T52 w/79 mm Diameter Minimum Tank Nozzle Opening ② | | | | Model T63 w/59 mm Diameter Minimum Tank Nozzle Opening ② | | | | Model T62 Threaded w/78 mm Diameter Minimum Tank Nozzle Opening ③ | | | | Model T62 Flanged w/73 mm Diameter Minimum Tank Nozzle Opening ④ | | | |
| | Float Stem Length | | | | Float Stem Length | | | | Float Stem Length | | | | Float Stem Length | | | |
| | 203 | 305 | 457 | 660 | 203 | 305 | 457 | 660 | 203 | 305 | 457 | 660 | 203 | 305 | 457 | 660 |
| 51 | 121 | 178 | 260 | 368 | 67 | 127 | 187 | 267 | 148 | 206 | 294 | 409 | 89 | 130 | 191 | 273 |
| 102 | 102 | 143 | 206 | 295 | 48 | 89 | 133 | 191 | 111 | 155 | 221 | 310 | 83 | 121 | 178 | 254 |
| 152 | — | 108 | 159 | 226 | — | 70 | 105 | 149 | 38 | 119 | 170 | 236 | — | 95 | 137 | 197 |
| 203 | — | 89 | 130 | 184 | — | 60 | 86 | 124 | — | 97 | 138 | 192 | — | 76 | 114 | 159 |
| 254 | — | 73 | 108 | 152 | — | 51 | 73 | 105 | — | 81 | 116 | 162 | — | 64 | 95 | 137 |
| 305 | — | — | 92 | 130 | — | — | 64 | 89 | — | — | 100 | 138 | — | — | 83 | 117 |

Notes:

- ① Nozzle length is dimension L from end of standard control body to opening in tank having minimum diameter listed for each model.
- ② Minimum diameter given is I.D. of float switch body.
- ③ Minimum diameter given is I.D. of 3" schedule 40 pipe.
- ④ Minimum diameter given is I.D. of 3" schedule 80 pipe.
- ⑤ Consult factory for maximum differential available for models T57, T64, T67, and T68 .

MODEL NUMBER

Models available for quick shipment, usually within one week after factory receipt of a complete purchase order, through the Expedite Ship Plan (ESP).

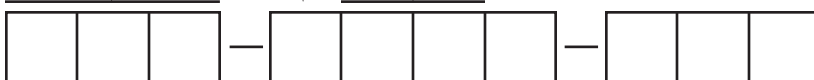
MODEL NUMBER, MATERIAL OF CONSTRUCTION AND TANK CONNECTION

| Model | Set Points | Material of Construction | | Tank Connection | | Pressure Rating ^① | | | | | | | | | |
|-------|----------------------|--------------------------|---|-----------------|----------------------------|------------------------------|-----|-----|-----|------|----------|-----|-----|-----|-----|
| | | Code | Description | Code | Description | psig @ °F | | | | | bar @ °C | | | | |
| | | | | | | 100 | 450 | 750 | 900 | 1000 | 38 | 232 | 399 | 482 | 538 |
| T52 | 1 | 1 | Cast Iron body, 300 Series SS trim, 400 Series SS sleeve | E3 | 4" Cast Iron Square Flange | 250 | 150 | — | — | — | 17 | 10 | — | — | — |
| | | 2 | Cast Iron body, 316 SS trim and sleeve | | | | | | | | | | | | |
| T62 | 1 | 1 | Carbon Steel body, 300 series SS trim, 400 Series SS sleeve | F2 | 3" NPT | 500 | — | 377 | 353 | 144 | 34 | — | 26 | 24 | 23 |
| | | 2 | Carbon Steel body, 316 SS trim and sleeve | G3 | 3" 150 lb. RF Flange | ANSI RF Flange Ratings | | | | | | | | | |
| | | 3 | 304 SS body, 300 Series SS trim and sleeve | G4 | 3" 300 lb. RF Flange | | | | | | | | | | |
| | | 4 | 316 SS body, trim and sleeve | G5 | 3" 600 lb. RF Flange | | | | | | | | | | |
| | | | | H3 | 4" 150 lb. RF Flange | | | | | | | | | | |
| | | H4 | 4" 300 lb. RF Flange | | | | | | | | | | | | |
| T63 | 1 | 1 | Cast Iron body, 300 Series SS trim, 400 Series SS sleeve | E2 | 2½" NPT | 250 | 150 | — | — | — | 17 | 10 | — | — | — |
| | | 4 | 316 SS body, trim and sleeve | | | | | | | | | | | | |
| T64 | 1 | 1 | Carbon Steel body, 300 Series SS trim, 400 Series SS sleeve | H3 | 4" 150 lb. RF Flange | ANSI RF Flange Ratings | | | | | | | | | |
| | | | | H4 | 4" 300 lb. RF Flange | | | | | | | | | | |
| | | | | H5 | 4" 600 lb. RF Flange | | | | | | | | | | |
| T67 | 2 | 1 | Carbon Steel body, 300 Series SS trim, 400 Series SS sleeve | F2 | 3" NPT | 500 | — | 377 | 353 | 144 | 34 | — | 26 | 24 | 23 |
| | | | | G3 | 3" 150 lb. RF Flange | ANSI RF Flange Ratings | | | | | | | | | |
| | | | | G4 | 3" 300 lb. RF Flange | | | | | | | | | | |
| | | | | G5 | 3" 600 lb. RF Flange | | | | | | | | | | |
| H3 | 4" 150 lb. RF Flange | | | | | | | | | | | | | | |

FLOAT AND FLOAT STEM LENGTH

| Float Size All Models Excluding T64 | | Float Stem Length and Specific Gravity Rating | | | | | | | | Pressure/Temperature Ratings | | | | | | | |
|---|------------------------|---|------|--------|------|--------|------|--------|------|------------------------------|-----|-----|------|-----------|-----|-----|-----|
| | | Inches | mm | Inches | mm | Inches | mm | Inches | mm | PSIG @ ° F | | | | Bar @ ° C | | | |
| Inches | mm | S.G. | Code | S.G. | Code | S.G. | Code | S.G. | Code | 100 | 750 | 900 | 1000 | 38 | 399 | 482 | 538 |
| 2.50 | 64 | 0.80 | A | 0.80 | B | 0.90 | C | 0.90 | D | 350 | 282 | 271 | 268 | 24 | 19 | 19 | 18 |
| 2.50 x 4.00 | 64 x 102 | 0.52 | E | 0.55 | F | 0.60 | G | 0.66 | H | 100 | 81 | 78 | 77 | 7 | 6 | 5 | 5 |
| 3.00 ^③ | 76 ^③ | 0.55 | J | 0.55 | K | 0.60 | L | 0.60 | M | 250 | 201 | 194 | 191 | 17 | 14 | 13 | 13 |
| 3.50 ^{②④} | 89 ^{②④} | 0.50 | N | 0.50 | P | 0.55 | Q | 0.55 | R | 400 | 322 | 310 | 306 | 28 | 22 | 21 | 21 |
| 3.00 x 5.00 ^{③④} | 76 x 127 ^{③④} | 0.65 | S | 0.65 | T | 0.70 | V | 0.70 | W | 500 | 377 | 353 | 335 | 34 | 26 | 24 | 23 |
| Model T64 Only | | | | | | | | | | | | | | | | | |
| 3.50 | 89 | 0.40 | N | — | — | — | — | — | — | 1200 | 936 | 876 | 794 | 83 | 65 | 60 | 58 |

- ① Compare with float rating and use lower value for selection.
- ② Float cannot pass through 3" NPT opening.
- ③ To pass float, tank nozzle internal bore diameter must not be less than 3.06 (78).
- ④ 3.50 (89) diameter and 3.00 x 5.00 (76 x 127) floats not available in models T52 and T63.
- ⑤ Process temperature based on +100° F (+38° C) ambient.
- ⑥ Dual switches available only with tandem model T67.
- ⑦ CSA approval does not apply to Series HE switches.
- ⑧ On condensing applications, temperature down-rated to +400° F.
- ⑨ Pneumatic switches not available on models T64 or T67.



(Select from Next Page)

ELECTRIC SWITCH MECHANISM AND ENCLOSURE

| Switch Description | Process ⁵ Temperature Range °F (°C) | Contacts | Set ⁶ Points | All models with Material of Construction Code 1, except model T64 | | | All models with Material of Construction Codes 2, 3 & 4, except model T64 | | | Model T64 only | | |
|---|--|----------|-------------------------|---|---------------------------|-----------------------------|---|---------------------------|-----------------------------|---------------------------|---------------------------|-----------------------------|
| | | | | TYPE 4X/7/9 Aluminum Enclosure | | | | | | | | |
| | | | | Class I, Div 1 Groups C&D | Class I, Div 1 Group B | ATEX Ex II 2 G EEx d IIC T6 | Class I, Div 1 Groups C&D | Class I, Div 1 Group B | ATEX Ex II 2 G EEx d IIC T6 | Class I, Div 1 Groups C&D | Class I, Div 1 Group B | ATEX Ex II 2 G EEx d IIC T6 |
| Series B Snap Switch | -40 to +250 (-40 to +121) | SPDT | 1 | BKP | BKT | BAC | BKQ | BKS | BA9 | BKA | BKJ | BCC |
| | | | 2 | BLA | BLJ | BDC | — | | | — | | |
| | | DPDT | 1 | BNP | BNT | BBC | BNQ | BNS | BB9 | BNA | BNJ | BFC |
| | | | 2 | BOA | BOJ | BGC | — | | | — | | |
| Series C Snap Switch | -40 to +450 (-40 to +232) | SPDT | 1 | CKP | CKT | CAC | CKQ | CKS | CA9 | CKA | CKJ | CCC |
| | | | 2 | CLA | CLJ | CDC | — | | | — | | |
| | | DPDT | 1 | CNP | CNT | CBC | CNQ | CNS | CB9 | CNA | CNJ | CFC |
| | | | 2 | COA | COJ | CGC | — | | | — | | |
| Series D DC Current Snap Switch | -40 to +250 (-40 to +121) | SPDT | 1 | — | | | DKQ | DKS | DA9 | DKB | DKK | DC9 |
| | | DPDT | 1 | — | | | DNQ | DNS | DB9 | DNB | DNK | DF9 |
| Series F Hermetically Sealed Snap Switch | -50 to +750 (-46 to +399) | SPDT | 1 | FKP | FKT | FAC | FKQ | FKS | FA9 | FKA | FKJ | FCC |
| | | | 2 | FLA | FLJ | FDC | — | | | — | | |
| | | DPDT | 1 | FNP | FNT | FBC | FNQ | FNS | FB9 | FNA | FNJ | FFC |
| | | | 2 | FOA | FOJ | FGC | — | | | — | | |
| Series HS Hermetically Sealed 5-amp Snap Switch with Wiring Leads | -50 to +550 ⁸ (-46 to +288) | SPDT | 1 | — | | | HMC | HEK ⁷ | — | HMJ | HMK | — |
| | | DPDT | 1 | — | | | HMF | HET ⁷ | — | HMS | HMT | — |
| Series HS Hermetically Sealed 5-amp Snap Switch with Terminal Block | -50 to +550 ⁸ (-46 to +288) | SPDT | 1 | — | | | HM3 | HM4 | HA9 | HM3 | HM4 | HA9 |
| | | DPDT | 1 | — | | | HM7 | HM8 | HB9 | HM7 | HM8 | HB9 |
| Series R High Temperature Snap Switch | -40 to +750 (-40 to +399) | SPDT | 1 | — | | | RKB | RKK | RC9 | RKB | RKK | RC9 |
| | | DPDT | 1 | — | | | RNB | RNK | RF9 | RNB | RNK | RF9 |
| Series 8 Hermetically Sealed Snap Switch | -50 to +750 (-46 to +399) | SPDT | 1 | 8KP | 8KT | 8AC | 8KQ | 8KS | 8A9 | 8KA | 8KJ | 8CC |
| | | | 2 | 8LA | 8LJ | 8DC | — | | | — | | |
| | | DPDT | 1 | 8NP | 8NT | 8BC | 8NQ | 8NS | 8B9 | 8NA | 8NJ | 8FC |
| | | | 2 | 8OA | 8OJ | 8GC | — | | | — | | |
| Series 9 High Temperature Hermetically Sealed Snap Switch | -50 to +750 (-46 to +399) | SPDT | 1 | 9KP | 9KT | 9AC | 9KQ | 9KS | 9A9 | 9KA | 9KJ | 9CC |
| | | | 2 | 9LA | 9LJ | 9DC | — | | | — | | |
| | | DPDT | 1 | 9NP | 9NT | 9BC | 9NQ | 9NS | 9B9 | 9NA | 9NJ | 9FC |
| | | | 2 | 9OA | 9OJ | 9GC | — | | | — | | |
| Switch Description | Process ⁵ Temp. Range °F (°C) | Contacts | Set ⁶ Points | CS/ Aluminum | Cast Iron | | CS/ Aluminum | Cast Iron | | CS/ Aluminum | Cast Iron | |
| | | | | NEMA 4X | Class I, Div 1 Groups C&D | Class I, Div 1 Group B | NEMA 4X | Class I, Div 1 Groups C&D | Class I, Div 1 Group B | NEMA 4X | Class I, Div 1 Groups C&D | Class I, Div 1 Group B |
| Series R High Temperature Snap Switch | -40 to +1000 (-40 to +538) | SPDT | 1 | — | | | R1M | RKM | RKW | R1M | RKM | RKW |
| | | | 2 | — | | | — | | | — | | |
| | | DPDT | 1 | — | | | RDM | RNM | RNW | RDM | RNM | RNW |
| | | | 2 | — | | | — | | | — | | |
| Series 9 High Temperature Hermetically Sealed Snap Switch | -50 to +1000 (-46 to +538) | SPDT | 1 | 9AR | 9KR | PKV | 9AY | 9KY | 9KW | 9AD | 9KD | 9KV |
| | | | 2 | 9BD | 9LD | 9LV | — | | | — | | |
| | | DPDT | 1 | 9DR | 9NR | 9NV | 9DY | 9NY | 9NW | 9DD | 9ND | 9NV |
| | | | 2 | 9ED | 9OD | 9OV | — | | | — | | |

PNEUMATIC SWITCH MECHANISM AND ENCLOSURE ⁹

| Switch Description | Maximum Supply Pressure | | Maximum Process Temperature | | Bleed Orifice Diameter | | All Models with Material of Construction Code 1 | All Models w/Material of Construction Codes 2, 3 or 4 |
|-------------------------|-------------------------|-----|-----------------------------|-----|------------------------|-----|---|---|
| | PSIG | Bar | ° F | ° C | Inches | mm | NEMA 1 | NEMA 1 |
| Series J Bleed Type | 100 | 7 | 400 | 204 | 0.63 | 1.6 | JDG | JDE |
| | 60 | 4 | 400 | 204 | 0.94 | 2.3 | JEG | JEE |
| Series K Non-Bleed Type | 100 | 7 | 400 | 204 | — | — | — | KOE |
| | 40 | 3 | 400 | 204 | — | — | KOG | — |



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.

ESP

Expedite Ship Plan

Several Liquid Level Switches are available for quick shipment, usually within one week after factory receipt of a complete purchase order, through the Expedite Ship Plan (ESP).

To take advantage of ESP, match the color coded model number codes in the selection charts (standard dimensions apply).

ESP service may not apply to orders of ten units or more. Contact your local representative for lead times on larger volume orders, as well as other products and options.

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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Performance specifications are effective with date of issue and are subject to change without notice.

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