



HENNLICH

MERES

VYSOKOTEPLOTNÍ SPÍNAČ HLADINY B40 PRO PARNÍ BOJLERY

DESCRIPTION

Magnetrol's B40 liquid level switch is specifically designed and constructed for high pressure, high temperature service conditions. B40 type level switches are completely self-contained units designed for side mounting to a tank or vessel with welded or flanged pipe connections.

FEATURES

- Cr Mo (Chrome - moly), carbon steel or stainless steel welded float cages
- Process temperature up to 540 °C (1000 °F)
- Single switch level
- Specific gravity as low as 0,65
- Process pressure up to 207 bar @ 370 °C (3000 psi @ 700 °F)
- Standard anti corrosive protection

Optional:

- Special tank connections
- Extreme temperature modifications
- Class 1, Group B explosion proof electrical enclosure

APPLICATIONS

- Accumulators
- Flash tanks
- Receivers
- Knock out drums
- Flare pots
- Storage tanks
- Scrubbers
- Separators

Standard & tailor made designs



AGENCY APPROVALS

| Agency | Approval |
|---|---|
| ATEX | II 2G EEx d II C T6, explosion proof |
| CCE ① | R1 (1) 136/MI/433, explosion proof |
| FM | Class I, Div. 1, Groups C & D Class II, Div. 1, Groups E, F & G, Type NEMA 7/9 |
| FM/CSA ② | Non-Hazardous area Explosion proof area – Groups B, C, D, E, F & G Type NEMA 4X/7/9 |
| SAA ② | Explosion proof area |
| LRS | Lloyds Register of Shipment (marine applications) |
| GOST/ GOSGORTECHNADZOR ② | Russian Authorisation Standards |
| Other approvals are available, consult factory for more details | |

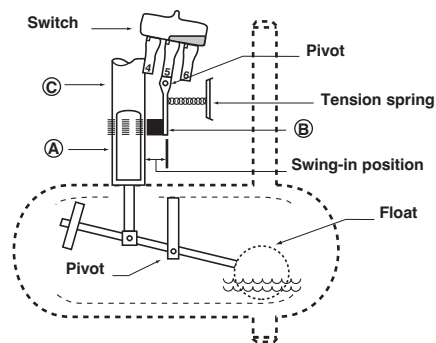
① For CCE approved units, use the ATEX explosion proof model numbers.

② Consult factory for proper model numbers.

PRINCIPLE OF OPERATION

B40 level switches 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 (A) into or out of the field of a switch actuating magnet (B) causing switch operation.

A non-magnetic barrier tube (C) effectively isolates the switch mechanism from the controlled liquid.



AVAILABLE SWITCH MECHANISMS

| Type of switch module ^① | Max. Process Temp. ^② | Switch ratings – A res. ^③ | | | Code |
|------------------------------------|---------------------------------|--------------------------------------|----------|----------|------|
| | | 24 V DC | 240 V AC | 120 V AC | |
| Micro switch - AC current | max 290 °C (550 °F) | 10 | 15 | 15 | S |
| Micro switch - DC current | max 200 °C (400 °F) | 10 | – | 10 | S |
| Hermetically sealed micro switch | max 400 °C (750 °F) | 4 | – | 2,5 | F |
| Mercury switch | max 540 °C (1000 °F) | 10 | 6,5 | 13 | L |

^① For applications with heavy vibration, consult factory for suited switch modules.

^② Max process temperature is specified at 40 °C (100 °F) ambient temperature.

^③ For more details - see bulletin 42-120.



Type S



Type L



Type F

AVAILABLE HOUSINGS



- For Non Ex use with F&S type switches
- IP 66
- Die cast Aluminium
- 2 Entries (one plugged)
- Standard blue anti corrosive coating
- Housing drain available, consult factory



- For Ex d use with F&S type switches
- IP 66
- Die cast Aluminium
- 2 Entries (one plugged)
- Standard blue anti corrosive coating
- ATEX II 2G EEx d II C T6
- FM Class I, Div. 1, Groups C & D
- FM Class II, Div. 1, Groups E, F & G



- For Non Ex use with L type switches
- IP 65
- Alu base / cold rolled steel cover
- One entry
- Standard blue anti corrosive coating
- Housing drain available, consult factory



- For Ex d use with L type switches
- IP 66 (NEMA 7/9)
- Cast Iron
- One entry
- Standard blue anti corrosive coating
- Housing drain available, consult factory
- Class I, Groups C & D
- Class II, Groups E, F & G

SELECTION DATA

A complete measuring system consists of:

- Order code for high temperature / high pressure liquid float level switch in an external cage

BASIC MODEL NUMBER

| | | |
|-------|---|-------------------|
| B 4 0 | cage mounted float switch for high temperature / high pressure applications | Down to S.G. 0,65 |
|-------|---|-------------------|

MATERIALS OF CONSTRUCTION

| Code | Cage | Float | Tank connections | Pressure & temperature ratings |
|---------|------------------------|---|--------------------|---|
| R F 3 0 | Cr Mo (Chrome-moly) | 347 SST (1.4550) or 321 SST (1.4541) | 1" welding nipples | 115 bar @ 425°C - 59,8 bar @ 540°C max (1668 psi @ 800°F - 867 psi @ 1000°F max) |
| R B 6 0 | | | 1" socket weld | |
| C F 3 0 | 304 SST (1.4301) | 316 SST (1.4401) | 1" welding nipples | 85,5 bar @ 425°C max (1240 psi @ 800°F max) |
| C B 6 0 | | | 1" socket weld | |
| A C 3 0 | Carbon steel | 347 SST (1.4550) or 321 SST (1.4541) | 1 1/2" socket weld | 103 bar @ 340°C - 75,9 bar @ 425°C max (1500 psi @ 650°F - 1100 psi @ 800°F max) |
| D C 4 0 | | | | 316 SST (1.4401) |

SWITCH MECHANISM & ENCLOSURE

| qty and switch type | | Weather proof (IP 66) | | ATEX (IP 66) | | FM (IP 66) |
|---------------------|----------|-----------------------|--------|---------------------|--------|------------|
| | | cast Aluminium | | II 2G EEx d II C T6 | | NEMA 7/9 |
| | | M20 x 1,5 | 1" NPT | cast Aluminium | | cast Alu. |
| | | M20 x 1,5 | 1" NPT | M20 x 1,5 | 1" NPT | 1" NPT |
| F | 1 x SPDT | FCB | FAB | FK9 | FC9 | FKB |
| | 1 x DPDT | FGB | FDB | FN9 | FF9 | FNB |
| S for AC current | 1 x SPDT | S2B | SAB | SH9 | SA9 | SKB |
| | 1 x DPDT | S8B | SDB | SJ9 | SB9 | SNB |
| S for DC current | 1 x SPDT | S2R | SBR | SK9 | SC9 | SLB |
| | 1 x DPDT | S8R | SEB | SN9 | SF9 | SOB |

| qty and switch type | | Weather proof (IP 65) | | NEMA 7/9 (IP 66) | |
|---------------------|----------|------------------------------------|--|------------------|--|
| | | Alu base / cold rolled steel cover | | cast Iron | |
| | | 3/4" NPT | | 1" NPT | |
| L | 1 x SPDT | LAM | | LKM | |
| | 1 x DPDT | LDM | | LNM | |

B 4 0 0 complete order code for B40 models

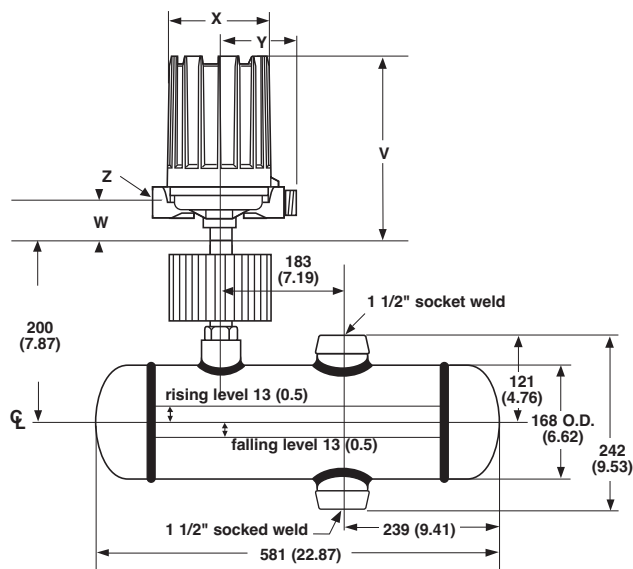
DIMENSIONS in mm (inches)

| | Switch Types | V | | W | | ø X | | Y | | Z |
|---|--------------|-----|--------|----|--------|-----|--------|-----|--------|---|
| | | mm | inches | mm | inches | mm | inches | mm | inches | |
| Weatherproof- ATEX - FM (NEMA 7/9) - (Cast Aluminium) | F or S | 257 | 10.12 | 42 | 1.66 | 151 | 5.93 | 109 | 4.29 | M20 x 1,5 ^(*) or 1" NPT (2 entries - 1 plugged) ^(*) not for FM (NEMA 7/9) |
| Weatherproof- (Alu/Steel) | L | 216 | 8.50 | 39 | 1.54 | 118 | 4.65 | 83 | 3.27 | 3/4" NPT (single entry) |
| NEMA 7/9- (Cast Iron) | | 246 | 9.68 | 42 | 1.66 | 143 | 5.63 | 100 | 3.94 | 1" NPT (single entry) |

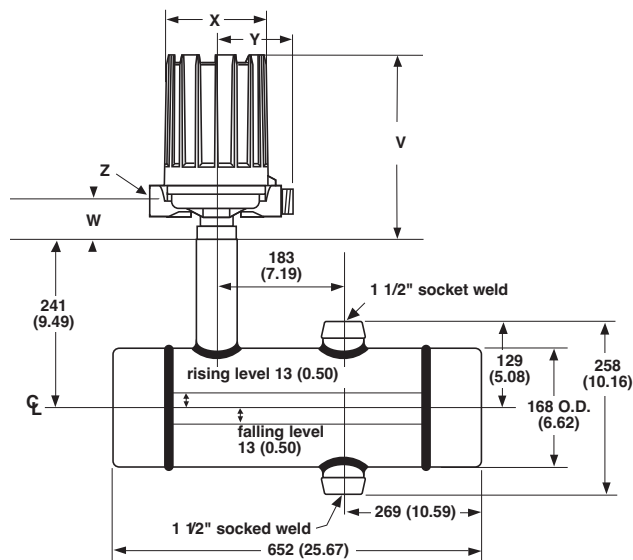
Allow 200 mm (7.87") overhead clearance / All housings are 360 ° rotatable

DIMENSIONS in mm (inches)

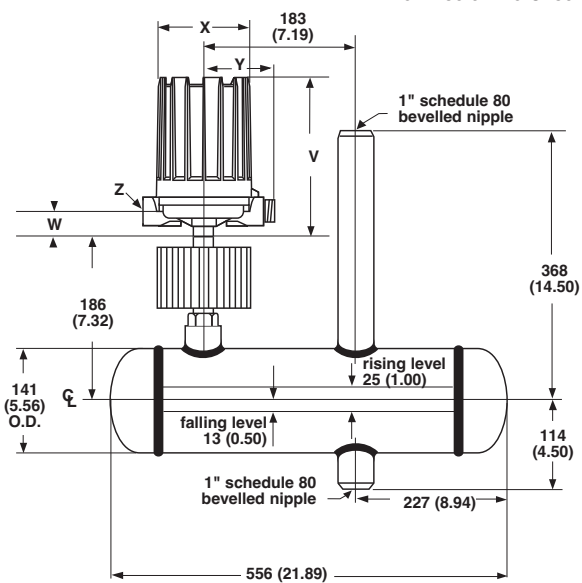
B40-AC30



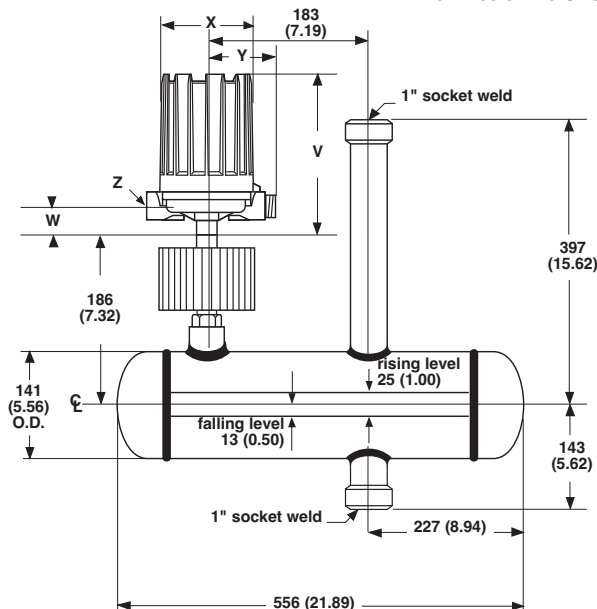
B40-DC40



B40-RF30 & B40-CF30



B40-RB60 & B40-CB60



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

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