

# MICRO SWITCH™

## BAF/DTF Series

### High Capacity Enclosed Switches



#### DESCRIPTION

MICRO SWITCH BAF1 high capacity enclosed switches offer elastomer boot on sealed actuator versions that protects the actuating mechanism and the internal basic switch from contaminants. There is a seal gasket between the cover plate and the enclosures on all versions. The cover plate is removed for ease of wiring and switch replacement without demounting the switch. The actuator position is designated “right” or “left,” when looking at the nameplate.

#### FEATURES

- Up to 20 ampere capacity
- Cast aluminum housing with three-hole mounting
- Right or left-handed (sealed or unsealed) actuators
- Cover seal, captive cover screws
- Momentary or maintained contact
- UL recognized, file #E12252
- CSA certified, file #LR41372
- Sealed to NEMA 1, 3, 4 and 13 requirements
- Grounding screw

#### POTENTIAL APPLICATIONS

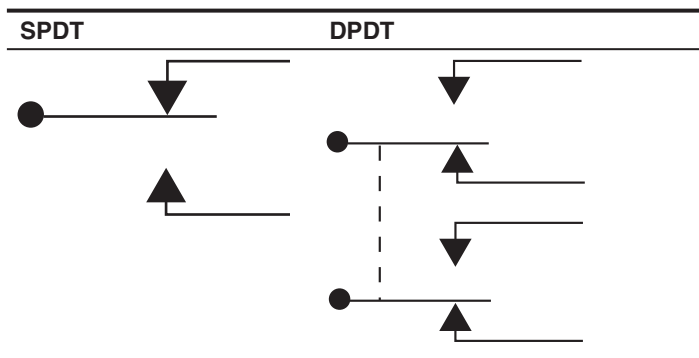
- Packaging equipment
- Special machinery
- Agricultural machinery
- Conveyors
- Overhead cranes and hoists

# MICRO SWITCH™ BAF/DTF Series

## SPECIFICATIONS

| Characteristic        | Parameter                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description           | High capacity enclosed switch                                                                                                                                                                                                                                                                                                                                                                       |
| Actuators             | <ul style="list-style-type: none"> <li>• Straight plunger (with boot seal)</li> <li>• Top roller plunger (without boot seal)</li> <li>• Flexible rod (with boot seal)</li> <li>• Manually operated (with boot seal)</li> <li>• Roller arm, adjustable (with boot seal)</li> <li>• One-way roller lever (with boot seal)</li> <li>• NMAintained contact (reset) plunger (with boot seal)=</li> </ul> |
| Conduit               | 1/2 in-14 NPT                                                                                                                                                                                                                                                                                                                                                                                       |
| Switching options     | 1NO/1NC SPDT maintained<br>1NO/1NC SPDT snap-action<br>2NO/2NC DPDT snap-action                                                                                                                                                                                                                                                                                                                     |
| Sealing               | NEMA 1, 3, 4 and 13                                                                                                                                                                                                                                                                                                                                                                                 |
| Operating temperature | -32 °C to 71 °C [-25 °F to 160 °F] (standard)                                                                                                                                                                                                                                                                                                                                                       |
| Housing material      | Zinc die-cast                                                                                                                                                                                                                                                                                                                                                                                       |
| Approvals             | UL, CSA                                                                                                                                                                                                                                                                                                                                                                                             |

## SWITCHING



## ELECTRICAL RATINGS

| Rating Code | Electrical rating                                                                                                                                 |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>B</b>    | UL/CSA Rating:<br>10 A, 125 Vac or 250 Vac<br>0.3 A, 125 Vdc; 0.15 A, 250 Vdc                                                                     |
| <b>D</b>    | UL/CSA Rating:<br>20 A, 125 Vac, 250 Vac or 480 Vac<br>1 HP, 125 Vac; 2 HP, 250 Vac<br>1/2 A, 125 Vdc; 1/4 A, 250 Vdc<br>Lamp load, 10 A, 125 Vac |

# High Capacity Enclosed Switches

|                    |                 |           |                 |                                                | Straight Plunger                                                                   |                                         | Maintained Contact Straight Plunger (Reset) Switch                                  |
|--------------------|-----------------|-----------|-----------------|------------------------------------------------|------------------------------------------------------------------------------------|-----------------------------------------|-------------------------------------------------------------------------------------|
| Description        |                 |           |                 |                                                |  |                                         |  |
| Pretravel          |                 |           |                 |                                                | 2,39 mm [0.094 in]                                                                 | 3,59 mm [0.141 in]                      | 2,39 mm [0.094 in]                                                                  |
| Different. travel  |                 |           |                 |                                                | 0,26 mm [0.010 in]                                                                 | 1,53 mm [0.060 in]                      | –                                                                                   |
| Overtravel         |                 |           |                 |                                                | 5,56 mm [0.219 in]                                                                 | 3,96 mm [0.156 in]                      | 4,45 mm [0.219 in]                                                                  |
| Operating force    |                 |           |                 |                                                | 11,2 N [2.5 lb]                                                                    | 11,2 N [2.5 lb]                         | 7,79 N [1.75 lb]                                                                    |
| Operating position |                 |           |                 |                                                | 53,19 mm ±0,76 mm<br>[2.094 in ±0.030 in]                                          | 52,07 mm ±1,0 mm<br>[2.05 in ±0.040 in] | –                                                                                   |
| Actuator Position  | Electric Rating | Seal boot | Switching       | Options                                        |                                                                                    |                                         |                                                                                     |
| Right              | D               | Yes       | SPDT            |                                                | BAF1-2RN-RH                                                                        |                                         |                                                                                     |
| Left               | D               | Yes       | SPDT            |                                                | BAF1-2RN-LH                                                                        |                                         |                                                                                     |
| Right              | B               | Yes       | DPDT            |                                                |                                                                                    | DTF2-2RN-RH                             |                                                                                     |
| Left               | B               | Yes       | DPDT            |                                                |                                                                                    | DTF2-2RN-LH                             |                                                                                     |
| Right              | D               | Yes       | Maintained SPDT | with boot seal on both top and bottom plungers |                                                                                    |                                         | BAF1-3RNX1                                                                          |

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| Roller Plunger |                    |                     |                     |                     |
|----------------|--------------------|---------------------|---------------------|---------------------|
| Description    |                    |                     |                     |                     |
|                | Pretravel          | 2,39 mm [0.094 in]  | 3,18 mm [0.125 in]  |                     |
|                | Different. travel  | 0,25 mm [0.010 in]  | 1,53 mm [0.060 in]  | 0,19 mm [0.0075 in] |
|                | Overtravel         | 3,96 mm [0.156 in]  | 3,18 mm [0.125 in]  | 4,75 mm [0.187 in]  |
|                | Operating force    | 11,1 N [2.5 lb]     |                     | 35,6 N [8 lb]       |
|                | Operating position | 64,69 mm [2.547 in] | 63,88 mm [2.515 in] | 64,69 mm [2.547 in] |

| Actuator Position | Electric Rating | Seal boot | Switching | Options                                                      |              |              |               |               |
|-------------------|-----------------|-----------|-----------|--------------------------------------------------------------|--------------|--------------|---------------|---------------|
| Right             | D               | No        | SPDT      | field adjustable 360° horizontally                           | BAF1-2RQ9-RH |              |               |               |
| Left              | D               | No        | SPDT      | field adjustable 360° horizontally                           | BAF1-2RQ9-LH |              |               |               |
| Right             | D               | No        | DPDT      | field adjustable 360° horizontally                           |              | DTF1-2RQ9-RH |               |               |
| Left              | D               | No        | DPDT      | field adjustable 360° horizontally                           |              | DTF1-2RQ9-LH |               |               |
| Right             | D               | No        | SPDT      | has o-ring actuator seal; field adjustable 360° horizontally |              |              | BAF1-2RQN8-RH |               |
| Left              | D               | No        | SPDT      | has o-ring actuator seal; field adjustable 360° horizontally |              |              | BAF1-2RQN8-LH |               |
| Right             | D               | No        | DPDT      | has o-ring actuator seal; field adjustable 360° horizontally |              |              |               | DTF1-2RQN8-RH |
| Left              | D               | No        | DPDT      | has o-ring actuator seal; field adjustable 360° horizontally |              |              |               | DTF1-2RQN8-LH |

# High Capacity Enclosed Switches

|                           | Roller Lever                                                                       | One-Way Roller Lever                                                                | Flexible Rod                                                                        |
|---------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| <b>Description</b>        |  |  |  |
| <b>Pretravel</b>          | 5,56 mm [0.219 in]                                                                 | 7,93 mm [0.312 in]                                                                  | 5,56 mm [0.219 in]                                                                  |
| <b>Different. travel</b>  | 0,51 mm [0.020 in]                                                                 | 3,05 mm [0.120 in]                                                                  | 0,51 mm [0.020 in]                                                                  |
| <b>Overtravel</b>         | 6,35 mm [0.250 in]                                                                 | 5,56 mm [0.219 in]                                                                  | 6,35 mm [0.250 in]                                                                  |
| <b>Operating force</b>    | 8,90 N [2 lb]                                                                      | 11,1 N [2.5 lb]                                                                     | 8,90 N [2 lb]                                                                       |
| <b>Operating position</b> | –                                                                                  | –                                                                                   | –                                                                                   |

| Actuator Position | Electric Rating | Seal boot | Switching | Options                                                |                     |                     |                      |                      |
|-------------------|-----------------|-----------|-----------|--------------------------------------------------------|---------------------|---------------------|----------------------|----------------------|
| Right             | D               | Yes       | SPDT      | field adjustable 360° horizontally and 225° vertically | <b>BAF1-2RN2-RH</b> |                     |                      |                      |
| Left              | D               | Yes       | SPDT      | field adjustable 360° horizontally and 225° vertically | <b>BAF1-2RN2-LH</b> |                     |                      |                      |
| Right             | D               | Yes       | DPDT      | field adjustable 360° horizontally and 225° vertically |                     | <b>DTF1-2RN2-RH</b> |                      |                      |
| Left              | D               | Yes       | DPDT      | field adjustable 360° horizontally and 225° vertically |                     | <b>DTF1-2RN2-LH</b> |                      |                      |
| Right             | D               | Yes       | SPDT      | field adjustable 360° horizontally and 180° vertically |                     |                     | <b>BAF1-2RN28-RH</b> |                      |
| Left              | D               | Yes       | SPDT      | field adjustable 360° horizontally and 180° vertically |                     |                     | <b>BAF1-2RN28-LH</b> |                      |
| Right             | D               | Yes       | SPDT      | operates from any direction, except direct pull        |                     |                     |                      | <b>BAF1-2RN18-RH</b> |
| Left              | D               | Yes       | SPDT      | operates from any direction, except direct pull        |                     |                     |                      | <b>BAF1-2RN18-LH</b> |

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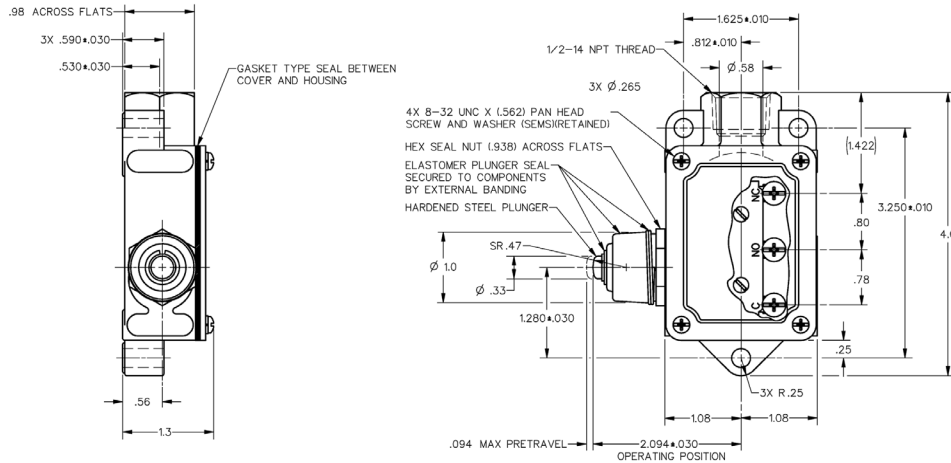
|                           | Manually Actuated Palm Button | Roller Arm Adjustable (Reset) Switch | Coil Wobble (Reset) Switch                                                          |
|---------------------------|-------------------------------|--------------------------------------|-------------------------------------------------------------------------------------|
| <b>Description</b>        |                               |                                      |  |
| <b>Pretravel</b>          | –                             | 5,56 mm [0.219 in]                   | 15°                                                                                 |
| <b>Different. travel</b>  | –                             | –                                    | –                                                                                   |
| <b>Overtravel</b>         | –                             | 6,35 mm [0.25 in]                    | –                                                                                   |
| <b>Operating force</b>    | 8,90 N [2 lb]                 | 6,67 N [1.5 lb]                      | –                                                                                   |
| <b>Operating position</b> | –                             | 60,71 mm [2.390 in]                  | –                                                                                   |

| Actuator Position | Electric Rating | Seal boot | Switching        | Options                                                |                     |                      |                     |
|-------------------|-----------------|-----------|------------------|--------------------------------------------------------|---------------------|----------------------|---------------------|
| Right             | D               | Yes       | SPDT             | field adjustable 360° horizontally and 180° vertically | <b>BAF1-2RN4-RH</b> |                      |                     |
| Left              | D               | Yes       | SPDT             | field adjustable 360° horizontally and 180° vertically | <b>BAF1-2RN4-LH</b> |                      |                     |
| Right             | D               | Yes       | Main-tained SPDT | with boot seals on roller arm and plunger              |                     | <b>BAF1-3RNX2-RH</b> |                     |
| Left              | D               | Yes       | Main-tained SPDT | with boot seals on roller arm and plunger              |                     | <b>BAF1-3RNX2-LH</b> |                     |
| Right             | D               | Yes       | Main-tained SPDT | with boot seals on wobble and plunger                  |                     |                      | <b>BAF1-3CN18X1</b> |

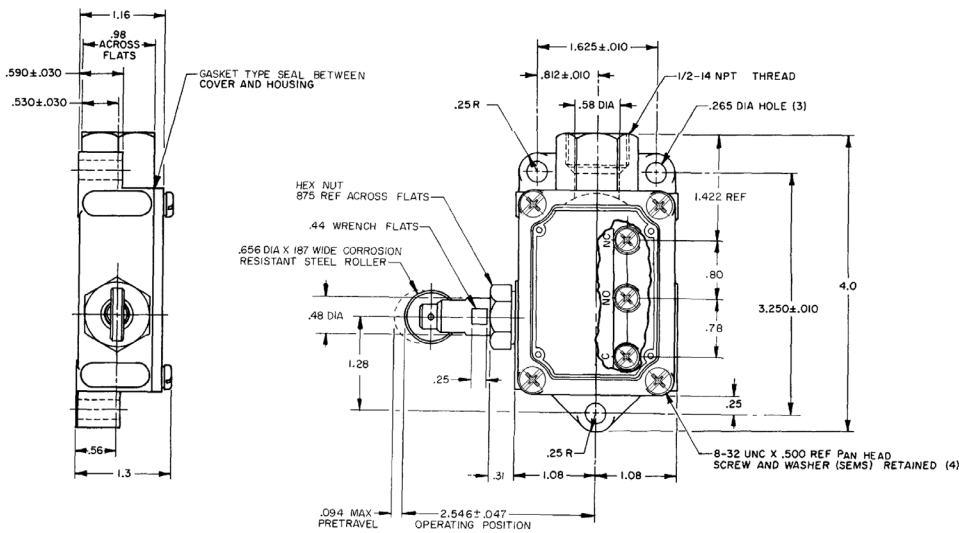
# High Capacity Enclosed Switches

## DIMENSIONS

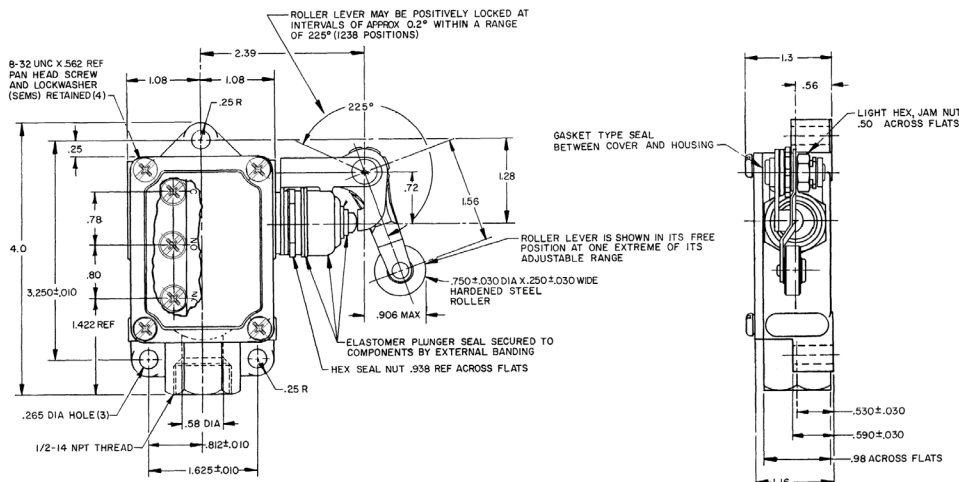
**Figure 1. Pin Plunger: BAF1/DTF1-2RN-XX (left-hand version shown)**



**Figure 2. Roller Plunger: BAF1/DTF-2RQ9-XX (left-hand version shown)**



**Figure 3. Roller lever: BAF1/DTF1-2RN2-XX (left-hand version shown)**



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Figure 4. Maintained Contact Straight Plunger (Reset): BAF1-3RNX1

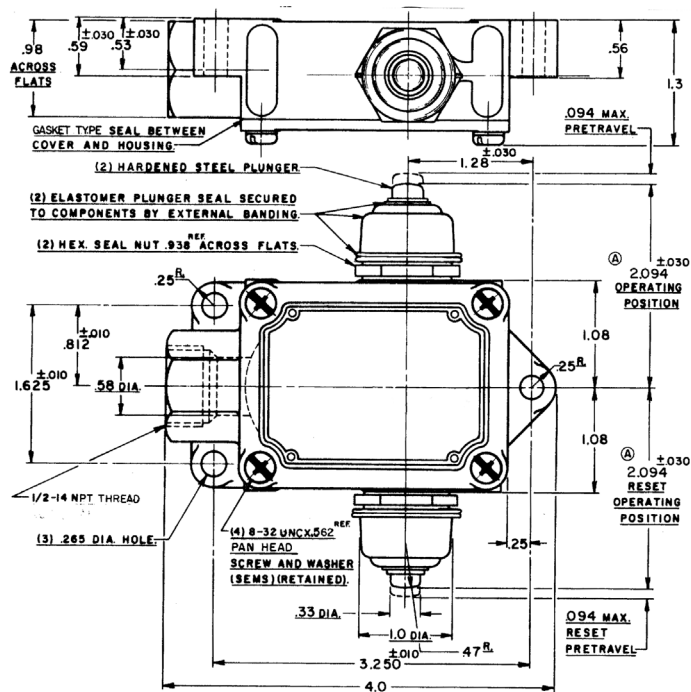


Figure 5. Roller plunger: BAF1/DTF1-2RQN8-XX (left-hand version shown)

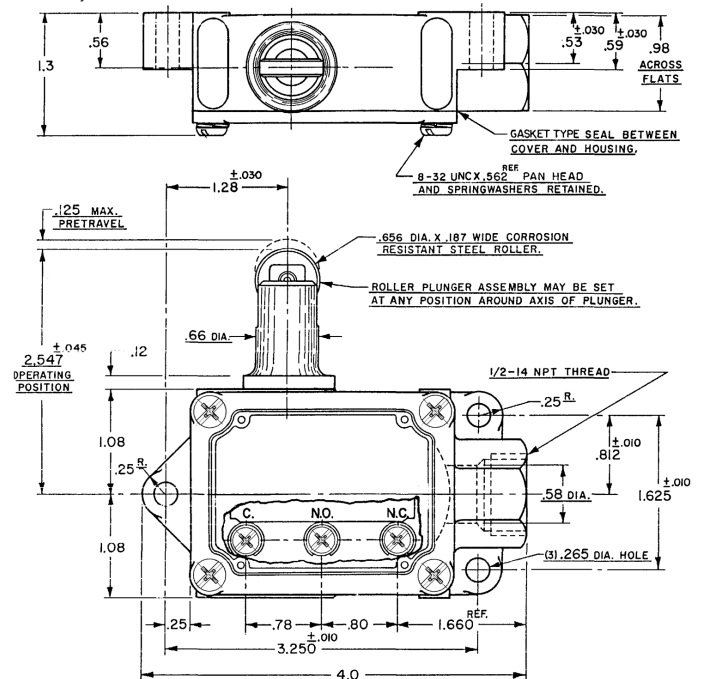


Figure 6. Flexible rod: BAF1/DTF1-2RN18-XX (left-hand version shown)

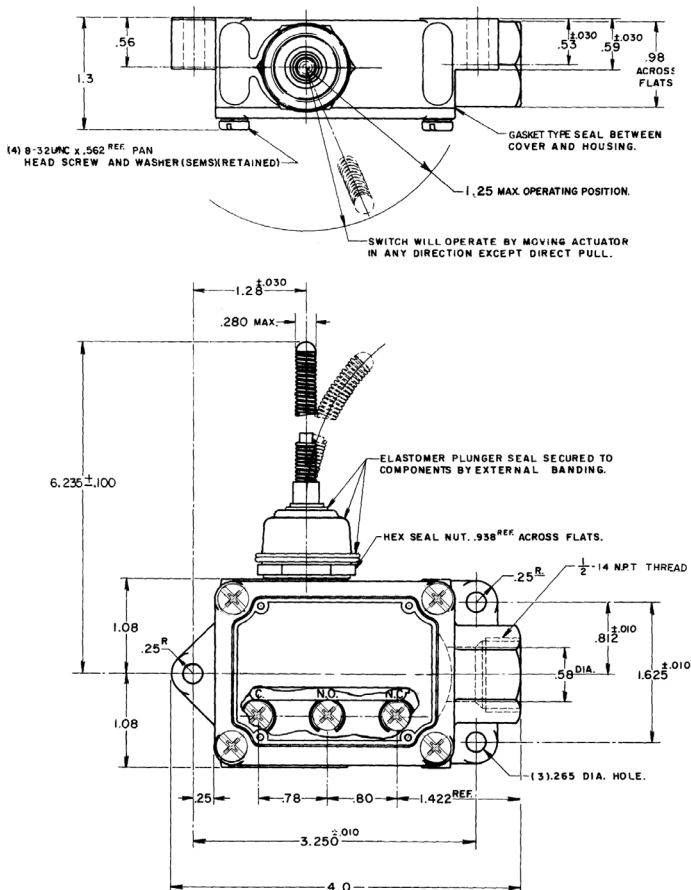
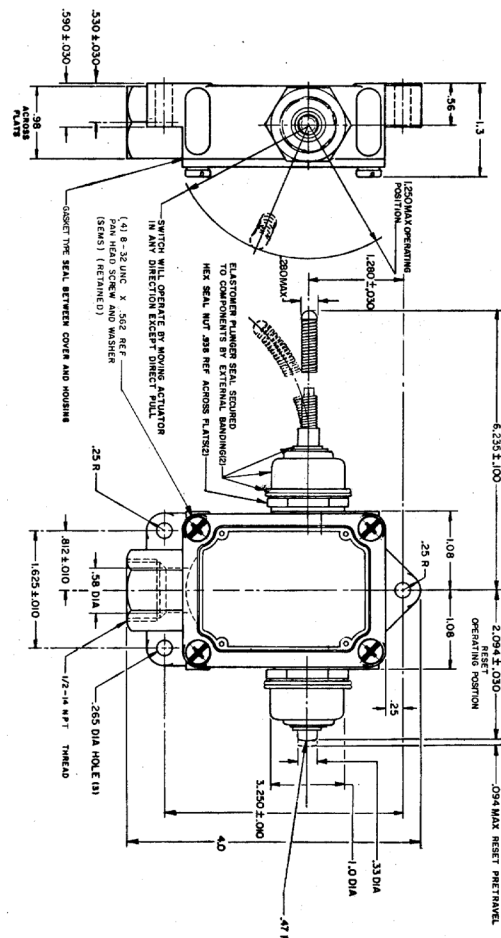


Figure 7. Coil Wobble (Reset) Switch: BAF1/DTF1-3CN18X1-XX (left-hand version shown)



# High Capacity Enclosed Switches

Figure 8. One-way roller lever: BAF1/DTF1-2RN28-XX (left-hand version shown)

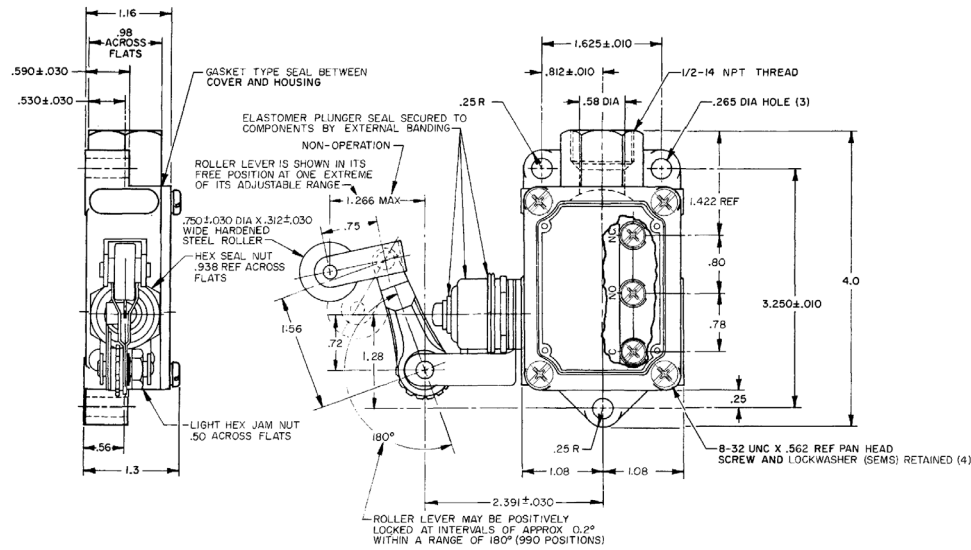


Figure 9. Manually Actuated Palm Button: BAF1/DTF1-2RN4-XX (left-hand version shown)

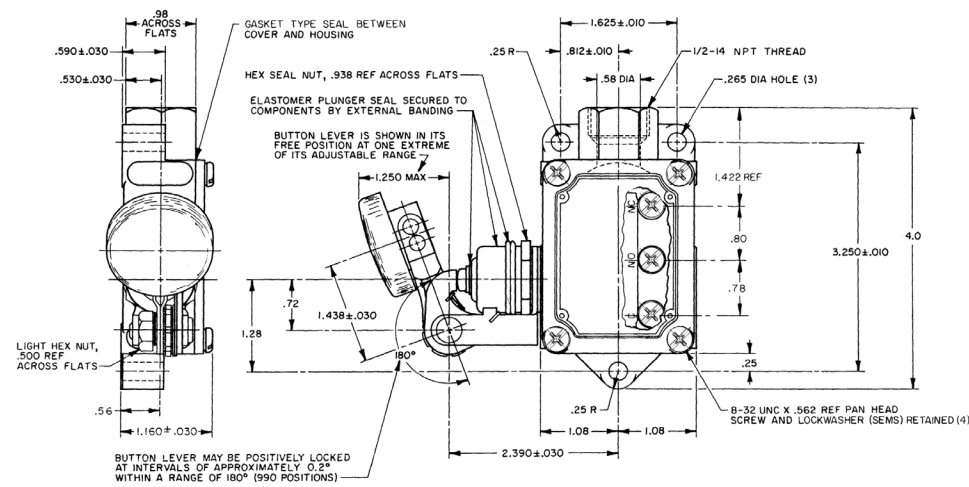
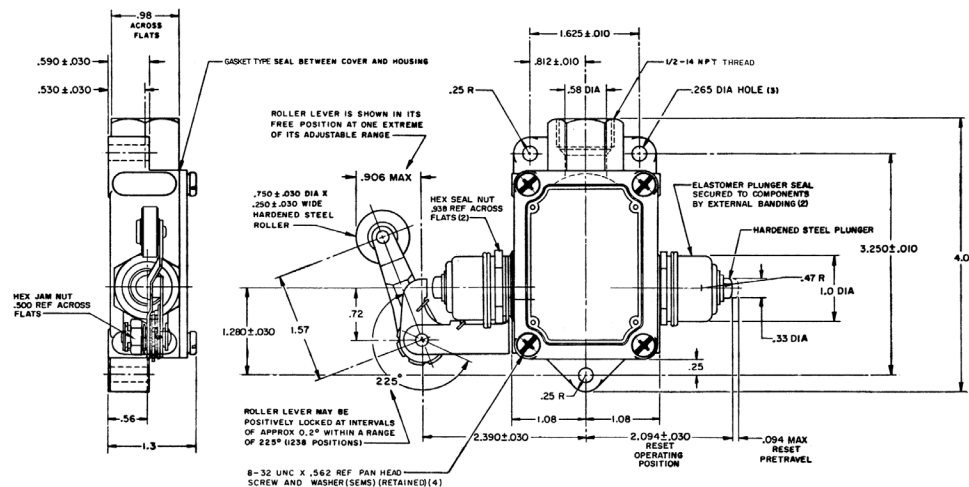


Figure 10. Roller Arm Adjustable (Reset) Switch: BAF1/DTF1-3RNX2-XX (left-hand version shown)



# MICRO SWITCH™ BAF/DTF Series

## PRODUCT NOMENCLATURE

| BA                                                         | F1                                                | — | 2                               | R                 | N                  |                                                                    |                                                           |
|------------------------------------------------------------|---------------------------------------------------|---|---------------------------------|-------------------|--------------------|--------------------------------------------------------------------|-----------------------------------------------------------|
| Switch Type                                                | Enclosure Type                                    |   | Contact Gap                     | Contact           | Plunger Type       | Actuator Modifications                                             | Additional Modifications                                  |
| <b>BA</b> Series<br>Enclosed<br>Basic Switch<br>SPDT, 20 A | <b>F1</b> 3-hole,<br>side mount,<br>die-cast zinc |   | <b>2</b> 0.020 in               | <b>R</b> Standard | <b>N</b> Seal boot | Pin<br>plunger                                                     | <b>LH</b> Plunger<br>located to<br>the left <sup>2</sup>  |
|                                                            |                                                   |   | <b>3C</b> 0.036 in <sup>1</sup> |                   |                    | <b>X1</b> Maintained<br>contact with<br>reset plunger <sup>1</sup> | <b>RH</b> Plunger<br>located to<br>the right <sup>2</sup> |
|                                                            |                                                   |   |                                 |                   |                    | <b>2</b> Adjustable<br>roller lever                                |                                                           |
|                                                            |                                                   |   |                                 |                   |                    | <b>4</b> Manual, palm<br>button                                    |                                                           |
|                                                            |                                                   |   |                                 |                   |                    | <b>18</b> Coil spring<br>wobble stick                              |                                                           |
|                                                            |                                                   |   |                                 |                   |                    | <b>28</b> One-way<br>roller lever                                  |                                                           |

This Honeywell datasheet supports the following MICRO SWITCH™ E6/V6 Series Enclosed Basic Switch Listings

BAF1-2RN18-LH  
BAF1-2RN18-RH  
BAF1-2RN28-LH  
BAF1-2RN28-RH  
BAF1-2RN2-LH  
BAF1-2RN2-RH  
BAF1-2RN4-LH  
BAF1-2RN4-RH  
BAF1-2RN-LH  
BAF1-2RN-RH  
BAF1-2RQ3-LH  
BAF1-2RQ9-LH  
BAF1-2RQ9-RH  
BAF1-2RQN8-LH  
BAF1-2RQN8-RH  
BAF1-3CN18X1  
BAF1-3CNX1  
BAF1-3RN2X-LH  
BAF1-3RN2X-RH  
BAF1-3RNX1  
DTF2-2RN2-LH  
DTF2-2RN2-RH  
DTF2-2RN-LH  
DTF2-2RN-RH  
DTF2-2RQ9-LH  
DTF2-2RQ9-RH  
DTF2-2RQN8-LH  
DTF2-2RQN8-RH

**Warranty.** Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Honeywell's standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgement or consult your local sales office for specific warranty details. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace, at its option, without charge those items it finds defective. **The foregoing is buyer's sole remedy and is in lieu of all warranties, expressed or implied, including those of merchantability and fitness for a particular purpose. In no event shall Honeywell be liable for consequential, special, or indirect damages.**

While we provide application assistance personally, through our literature and the Honeywell web site, it is up to the customer to determine the suitability of the product in the application.

Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this printing. However, we assume no responsibility for its use.

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### WARNING

#### MISUSE OF DOCUMENTATION

- The information presented in this datasheet is for reference only. DO NOT USE this document as product installation information.
- Complete installation, operation and maintenance information is provided in the instructions supplied with each product.

**Failure to comply with these instructions could result in death or serious injury.**

### WARNING

#### PERSONAL INJURY

DO NOT USE these products as safety or emergency stop devices or in any other application where failure of the product could result in personal injury.

**Failure to comply with these instructions could result in death or serious injury.**

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