

Motorized Butterfly Valve

Actuated butterfly valves

PRODUCT DATA



FEATURES

- Wide size range (DN 50...DN500) for PN16 type
- For On-Off Control
- Manual override non-clutch design. Manual operation can be operated without any lever, clutch or brake upon power voltage.
- Irreversible worm gear
- Visual mechanical position indicator for accurate visual reference of valve position.
- Anti-condensation heater and 2 aux. limit switches on standard model
- Enclosure IP67

SPECIFICATIONS

Valve

| | |
|--------------------|--------------------------------|
| Sizes | DN50...DN500 (Wafer Type) |
| Nominal pressure | PN16 |
| Tightness | Bubble tight |
| Medium Temperature | -10°C ~ +110°C Maximum |
| Body Material | IS: 210, FG 220 CI |
| Stem Material | ASTM A276, GR SS 410 |
| Disc Material | Epoxy coated ductile iron Disc |
| Liner Material | EPDM |
| Medium Type | Chilled and Hot water |
| Pipe Connection | ISO7005-2 |

Actuator

| | |
|---------------------|---|
| Power Supply | 220Vac, 50/60 Hz |
| Running time | See table (1) |
| Travel Angle | 90° ± 5° |
| Feedback | 2 Aux Switches |
| Enclosure | IP67 Waterproof |
| Ambient Temperature | -30°C to +65°C |
| Indicator | Continuous Position Indicator |
| Manual Override | Non-clutch design |
| Worm Gear | Permanently lubricated and self locking |
| Space Heater | 15W 220V Anti-condensation |
| Material | Aluminum Alloy |
| External Coating | Dry powder coating |
| Stall Protection | Built-in thermal protection |
| | Cut off at 125 ± 5°C |
| | Reset at 95 ± 5°C |

GENERAL

The BSBFW Actuated Wafer Type Butterfly Valves are suitable for heating and cooling applications.

The BSBFW series is equipped with standard On-Off control quarter-turn electric actuator.

The BSBFW series can also provide feedback output signal: Dry contact for On-Off version;

Table (1) Control Type and Valve Size Data

The below table is based on differential pressure of 10 bar.

| Valve Size | Actuator OS# | Valve OS# | Max Torque (Nm) | Run Time at 60Hz (sec) | Kvs (m ³ /h) |
|------------|--------------|--------------|-----------------|------------------------|-------------------------|
| DN50 | EM-0050 | BSBFW16-050U | 50 | 18 | 109 |
| DN65 | EM-0050 | BSBFW16-065U | 50 | 18 | 177 |
| DN80 | EM-0050 | BSBFW16-080U | 50 | 18 | 243 |
| DN100 | EM-0050 | BSBFW16-100U | 50 | 18 | 483 |
| DN125 | EM-0090 | BSBFW16-125U | 90 | 17.5 | 822 |
| DN150 | EM-0090 | BSBFW16-150U | 90 | 17.5 | 1,270 |
| DN200 | EM-0150 | BSBFW16-200U | 150 | 20 | 2,550 |
| DN250 | EM-0400 | BSBFW16-250U | 400 | 26 | 4,342 |
| DN300 | EM-0400 | BSBFW16-300U | 400 | 26 | 6,708 |
| DN350 | EM-1000 | BSBFW16-350U | 1,000 | 26 | 9,793 |
| DN400 | EM-1500 | BSBFW16-400U | 1,500 | 90 | 13,467 |
| DN450 | EM-2000 | BSBFW16-450U | 2,000 | 90 | 17,836 |
| DN500 | EM-2500 | BSBFW16-500U | 2,500 | 90 | 22,933 |

Note: More OS# Please refer to Figure (1) or contact Honeywell.

Figure (1) Product Identification System

Ordering Data — the numbering system for Honeywell motorized butterfly valves:

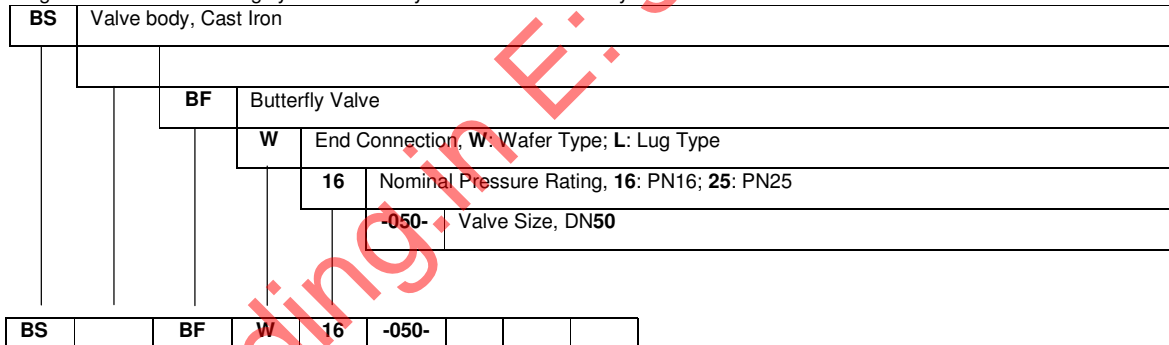


Table (2) Valve Dimensions (mm) and Weight

| PN | Size | | A | B | C | Ø D | L | H | Ø K | ØE | n-Ød | G | | ØD2 | N-Ø2 | | Weight (Kg) | | |
|-----|------|------|-----|-----|-------|-------|----|-----|-----|------|------|-------|-----|--------|--------|--------|-------------|------|--|
| | DN | Inch | | | | | | | | | | Wafer | Lug | | Wafer | Lug | Wafer | Lug | |
| | | | | | | | | | | | | | | | | | | | |
| 16 | 50 | 2" | 110 | 67 | 43 | 50.5 | 15 | 11 | 65 | 50 | 4-7 | 94 | 159 | 125 | 4-Ø18 | 4-M16 | 2.5 | 3.8 | |
| | 65 | 2.5" | 118 | 75 | 46 | 65 | 15 | 11 | 65 | 50 | 4-7 | 110 | 184 | 145 | 4-Ø18 | 4-M16 | 3.2 | 4.2 | |
| | 80 | 3" | 130 | 82 | 46 | 80 | 15 | 11 | 65 | 50 | 4-7 | 127 | 197 | 160 | 8-Ø18 | 8-M16 | 3.6 | 4.7 | |
| | 100 | 4" | 145 | 100 | 52 | 100 | 15 | 11 | 65 | 50 | 4-7 | 150 | 222 | 180 | 8-Ø18 | 8-M16 | 4.9 | 9 | |
| | 125 | 5" | 156 | 114 | 56 | 123 | 29 | 14 | 90 | 70 | 4-10 | 175 | 254 | 210 | 8-Ø18 | 8-M16 | 7 | 10.9 | |
| | 150 | 6" | 176 | 135 | 56 | 148.5 | 29 | 14 | 90 | 70 | 4-10 | 205 | 292 | 240 | 8-Ø22 | 8-M20 | 8 | 14.2 | |
| | 200 | 8" | 220 | 161 | 60 | 197 | 29 | 17 | 90 | 70 | 4-10 | 265 | 349 | 295 | 12-Ø22 | 12-M20 | 13.2 | 18.2 | |
| | 250 | 10" | 280 | 220 | 68 | 250.5 | 39 | 22 | 125 | 102 | 4-12 | 325 | 413 | 355 | 12-Ø26 | 12-M24 | 19.2 | 26.8 | |
| | 300 | 12" | 305 | 230 | 78 | 299.5 | 39 | 22 | 125 | 102 | 4-12 | 376 | 483 | 410 | 12-Ø26 | 12-M24 | 32.5 | 40 | |
| | 350 | 14" | 370 | 280 | 92 | 351 | 45 | 22 | 175 | 140 | 4-18 | 445 | 527 | 470 | 16-Ø26 | 16-M24 | 41.3 | 56 | |
| | 400 | 16" | 412 | 315 | 102 | 403 | 45 | 27 | 175 | 140 | 4-18 | 495 | 584 | 525 | 16-Ø30 | 16-M27 | 61 | 96 | |
| | 450 | 18" | 425 | 348 | 114 | 453 | 45 | 27 | 210 | 165 | 4-22 | 550 | 635 | 585 | 20-Ø30 | 20-M27 | 79 | 122 | |
| 500 | 20" | 470 | 380 | 127 | 503 | 45 | 36 | 210 | 165 | 4-22 | 610 | 705 | 650 | 20-Ø33 | 20-M30 | 128 | 202 | | |
| 600 | 24" | 550 | 445 | 154 | 603 | 45 | 36 | 210 | 165 | 4-22 | 705 | 832 | 770 | 20-Ø36 | 20-M33 | 188 | 270 | | |
| 25 | 50 | 2" | 110 | 67 | 43 | 50.5 | 15 | 11 | 90 | 70 | 4-10 | 94 | - | 125 | 4-Ø18 | 4-M16 | 3.5 | - | |
| | 65 | 2.5" | 118 | 75 | 46 | 65 | 15 | 11 | 90 | 70 | 4-10 | 110 | - | 145 | 8-Ø18 | 8-M16 | 4.5 | - | |
| | 80 | 3" | 130 | 82 | 46 | 80 | 15 | 14 | 90 | 70 | 4-10 | 127 | - | 160 | 8-Ø18 | 8-M16 | 5.1 | - | |
| | 100 | 4" | 145 | 100 | 52 | 100 | 15 | 14 | 90 | 70 | 4-10 | 150 | - | 190 | 8-Ø23 | 8-M20 | 6.8 | - | |
| | 125 | 5" | 156 | 114 | 56 | 123 | 29 | 17 | 90 | 70 | 4-10 | 175 | - | 220 | 8-Ø27 | 8-M24 | 9.8 | - | |
| | 150 | 6" | 176 | 135 | 56 | 148.5 | 29 | 17 | 90 | 70 | 4-10 | 205 | - | 250 | 8-Ø27 | 8-M24 | 10.9 | - | |
| | 200 | 8" | 220 | 161 | 60 | 197 | 29 | 22 | 125 | 102 | 4-12 | 265 | - | 310 | 12-Ø27 | 12-M24 | 18.5 | - | |
| | 250 | 10" | 280 | 205 | 68 | 250.5 | 39 | 22 | 125 | 102 | 4-12 | 325 | - | 370 | 12-Ø30 | 12-M27 | 26.9 | - | |
| 300 | 12" | 305 | 230 | 78 | 299.5 | 39 | 27 | 150 | 125 | 4-14 | 376 | - | 430 | 16-Ø30 | 16-M27 | 45.5 | - | | |

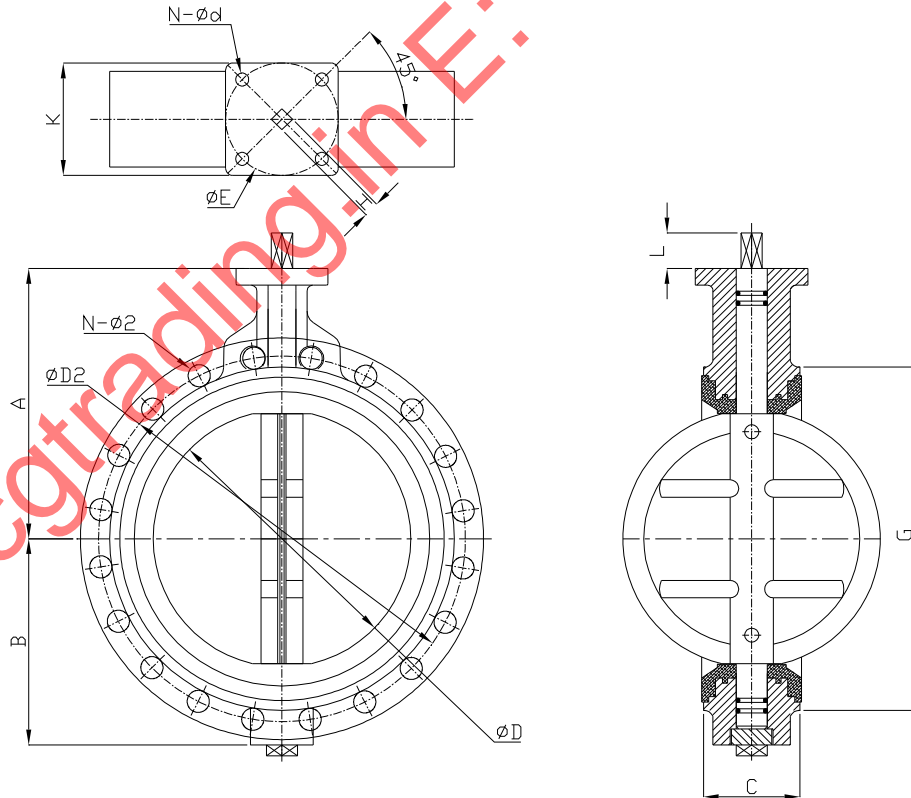


Table (3) Hydraulic Characteristics

The below table shows the Kvs at different opening angles:

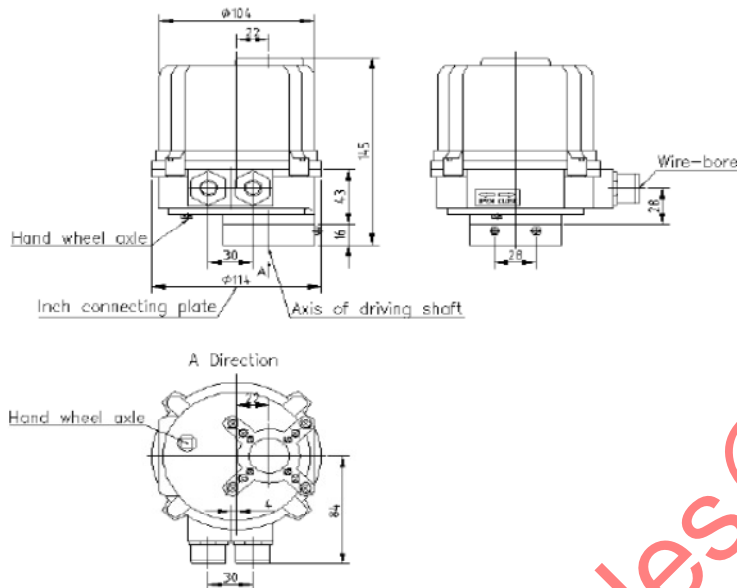
| Size | Kvs at Disk Opening Angle | | | | | | | | |
|------|---------------------------|-------|-------|-------|-------|--------|--------|--------|--------|
| | 10° | 20° | 30° | 40° | 50° | 60° | 70° | 80° | 90° |
| 50 | 0.08 | 4.0 | 10 | 19 | 36 | 51 | 72 | 101 | 109 |
| 65 | 0.16 | 6.4 | 16 | 30 | 52 | 79 | 116 | 164 | 177 |
| 80 | 0.24 | 9.7 | 18 | 31 | 56 | 93 | 147 | 221 | 243 |
| 100 | 0.40 | 14 | 29 | 63 | 112 | 185 | 293 | 439 | 483 |
| 125 | 0.64 | 23 | 49 | 107 | 191 | 315 | 499 | 748 | 822 |
| 150 | 1.6 | 36 | 76 | 165 | 294 | 487 | 771 | 1,156 | 1,270 |
| 200 | 2.4 | 72 | 153 | 332 | 591 | 977 | 1,547 | 2,321 | 2,550 |
| 250 | 3.3 | 123 | 260 | 564 | 1,006 | 1,664 | 2,634 | 3,951 | 4,342 |
| 300 | 4.1 | 190 | 402 | 872 | 1,554 | 2,571 | 4,070 | 6,104 | 6,708 |
| 350 | 4.7 | 278 | 588 | 1,273 | 2,269 | 3,754 | 5,941 | 8,911 | 9,793 |
| 400 | 6.2 | 381 | 808 | 1,750 | 3,120 | 5,162 | 8,170 | 12,255 | 13,467 |
| 450 | 8.6 | 505 | 1,070 | 2,319 | 4,132 | 6,837 | 10,821 | 16,231 | 17,836 |
| 500 | 11 | 650 | 1,376 | 2,981 | 5,313 | 8,791 | 13,913 | 20,869 | 22,933 |
| 600 | 17 | 1,004 | 2,126 | 4,606 | 8,209 | 13,582 | 21,495 | 32,242 | 35,431 |

Table (4) Actuator Data

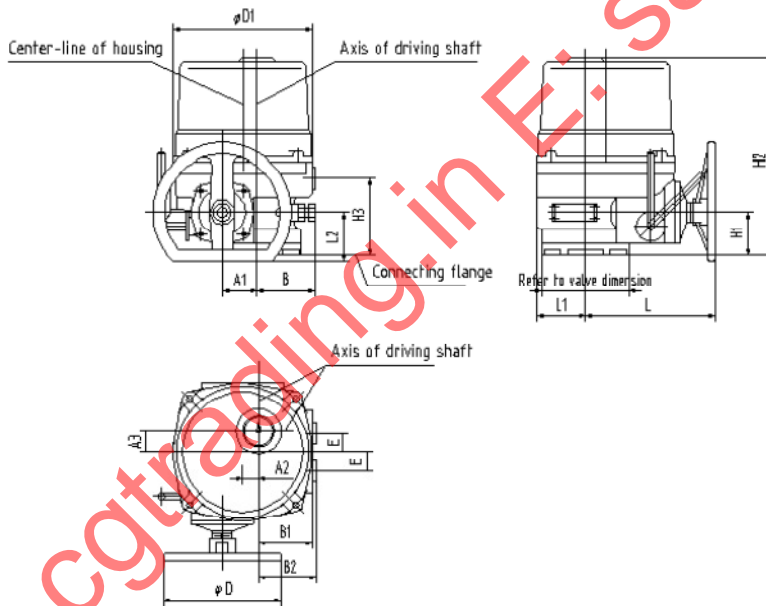
| OS# On-Off | Max Torque (Nm) | Speed (r/min) | Run Time at 60Hz (sec) | Power Consumption (Watts) | Manual Override | Weight (Kg) |
|---------------|-----------------------|------------------|------------------------------|---------------------------------|--------------------|----------------|
| EM-0050 | 50 | 0.8 | 18 | 10 | | 2 |
| EM-0090 | 90 | 0.86 | 17.5 | 25 | Hand-wheel | 10 |
| EM-0150 | 150 | 0.73 | 20 | 40 | Hand-wheel | 12 |
| EM-0400 | 400 | 0.57 | 26 | 60 | Hand-wheel | 18 |
| EM-1000 | 1000 | 0.57 | 26 | 200 | Hand-wheel | 25 |
| EM-1500 | 1500 | 0.17 | 90 | 90 | Hand-wheel | 48 |
| EM-2000 | 2000 | 0.17 | 90 | 180 | Hand-wheel | 50 |
| EM-2500 | 2500 | 0.17 | 90 | 200 | Hand-wheel | 50 |

Table (5) Actuator Dimensions (mm)

EM-0050



EM-0090 ~ EM-2500



| Model | A1 | A2 | A3 | B | B1 | B2 | D | D1 | E | H1 | H2 | L | L1 | L2 |
|-------------------------------|------|------|----|-----|------|----|-----|-----|------|-----|-----|-----|-----|-----|
| EM-0090 | 44 | 17 | 36 | 75 | 68 | 0 | 200 | 170 | 27.5 | 62 | 257 | 181 | 62 | 50 |
| EM-0150 | 49.5 | 22.5 | 30 | 85 | 77.5 | | 200 | 200 | | 64 | 263 | 190 | 85 | 76 |
| EM-0400 | 60 | 33 | 35 | 100 | 77 | | 200 | 220 | | 70 | 304 | 205 | 88 | 76 |
| EM-1000 | 70 | 43 | 38 | 115 | 92 | | 250 | 260 | | 78 | 342 | 228 | 106 | 110 |
| EM-1500 EM-2000 EM-2500 | 70 | 43 | 38 | 165 | 92 | | 250 | 260 | | 185 | 450 | 228 | 106 | 110 |

INSTALLATION

WARNING!

Remove power before the cover is dismantled!
The actuator must be handled with the utmost care when the cover is removed and the power connected!

MOUNTING ON VALVE

Operate the valve manually to fully open or fully closed position before the actuator is mounted.

Operate the actuator and valve stem to fully opened or fully closed position.

Check that the actuator and valve stem are in correct position. Please note, valve and actuator must be in the same mode (fully opened/fully closed) prior to the assembly.

Mount the actuator on the valve and check that the actuator and valve stem are centered and aligned.

Operate the valve manually with the aid of the actuator hand-wheel and check that the valve moves with normal resistance.

Check that all screws are correctly tightened.

ELECTRIC WIRING

Note:

Electric wiring must be carried out by qualified personnel only!

Wiring diagram is also shown on the label of top cover.

Loosen the screws on the cover and lift it off.

Check the voltage marked on the actuator label.

Connect according to the enclosed wiring diagram. The wiring diagram is drawn in unaffected position (inside of the actuator cover in the intermediate position).

Test run the actuator from intermediate position checking that the actuator turns in the correct direction.

Test run the actuator and check that the limit switches work correctly.

Check that the cable entries and possible blind plug are sealed.

Mount the cover.

Bolting

Number of bolts and nuts depends on nominal pressure PN. Please refer to Table (2) for more details.

