



# Model BFV-250 Butterfly Valve Wafer Style Available in Russia Only

### IMPORTANT

Refer to *Technical Data Sheet TFP2300* for warnings pertaining to regulatory and health information.

Scan the QR code or enter the URL in a web browser to access the most up-to-date electronic version of this document. Data rates may apply.



[docs.jci.com/tycofire/TFP1517](https://docs.jci.com/tycofire/TFP1517)

## General Description

The TYCO Model BFV-250 Wafer Style Butterfly Valves are indicating type valves designed for use in fire protection systems where a visual indication is required as to whether the valve is open or closed. They are used, for example, as system, sectional and pump water control valves, and are suitable for installation between ANSI Class 125/150 flanges as well as PN10/16 flanges without the need for flange gaskets.

For applications requiring supervision of the open position of the valve, the Gear Operators for the Model BFV-250 Butterfly Valves are provided with two sets of factory installed internal switches each having SPDT contacts, see Figure 3. The supervisory switches transfer their electrical contacts when there is movement from the open disc position during the first two revolutions of the handwheel.

### NOTICE

The TYCO Model BFV-250 Wafer Style Butterfly Valves described herein must be installed and maintained in compliance with this document, as well as with the applicable standards of the NATIONAL FIRE PROTECTION ASSOCIATION, in addition to the standards of any other authorities having jurisdiction. Failure to do so may impair the performance of these devices.

The owner is responsible for maintaining their fire protection system and devices in proper operating condition. Contact the installing contractor or product manufacturer with any questions.

## Technical Data

### Approvals

FM Approved  
EAC Approved

See Table A for applicability.

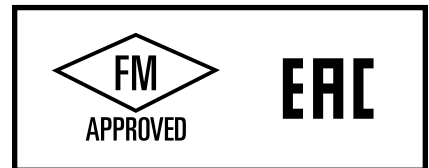
All laboratory listings and approvals are for indoor and outdoor use.

### Sizes

2 in. – 12 in. (DN50 – DN300)

### Maximum Working Pressure

2 in.–8 in. (DN50–DN200) . . . . .250 psi (17,3 bar)  
10 in.–12 in. (DN250–DN300) . . . 175 psi (12,1 bar)



### Maximum Working Temperature

212°F (100°C) in accordance with UL 1091

### Materials of Construction

2 in., 10 in. and 12 in.  
(DN50, DN250 and DN300):

Body . . . . . Ductile Iron  
Body Coating . . . . . RILSAN PA11 Black  
Body Gasket . . . . . EPDM  
Disc . . . . . Ductile Iron, EPDM Encapsulated  
Upper & Lower Stem. . . . . Stainless Steel  
Handwheel . . . . . Ductile Iron

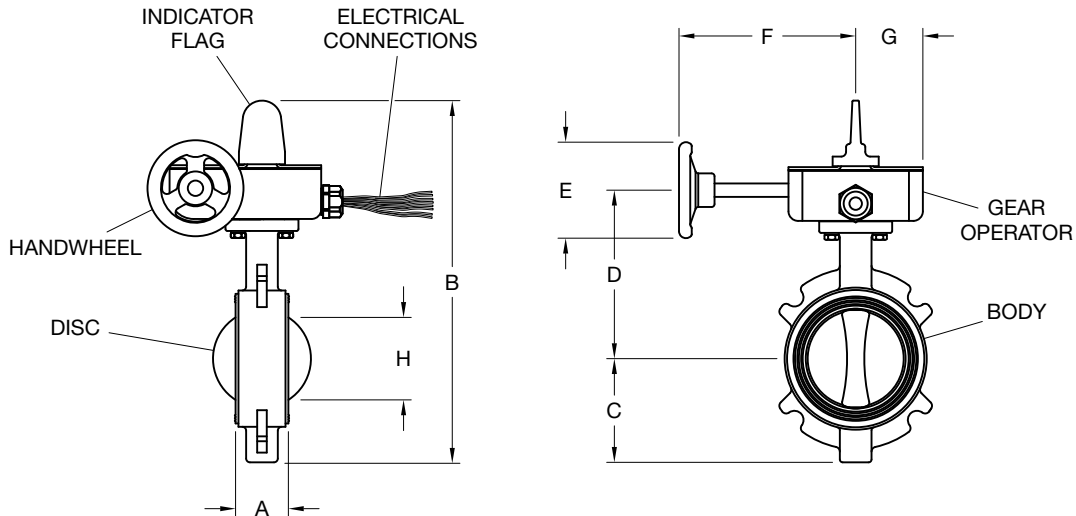
2-1/2 in.–8 in. (DN65–DN200):

Body . . . . . Ductile Iron  
Body Coating . . . . . EPDM Encapsulated  
Disc . . . . . Ductile Iron, Nickel Chrome Plated  
Upper & Lower Stem. . . . . Stainless Steel  
Handwheel . . . . . Ductile Iron

Actuator, 2 in.–12 in. (DN50–DN300):

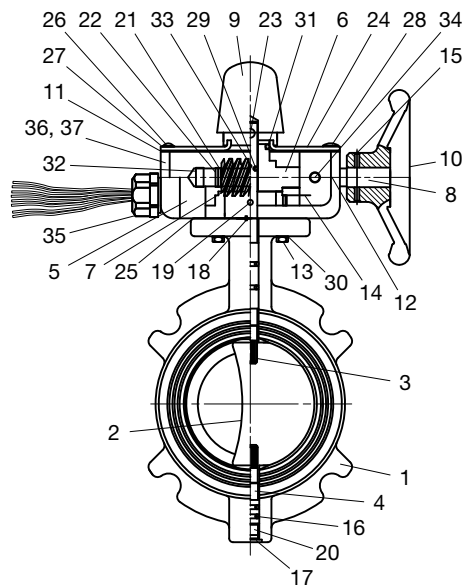
IP65, segmented gearbox, internal dual switch, ductile iron housing

Nominal Valve Sizes Inches (DN)	Nominal Dimensions Inches (mm)								Weight Lbs. (kg)
	A	B	C	D	E	F	G	H	
2 (DN50)	1.5 (38)	10.6 (270)	2.85 (72,5)	4.90 (124,5)	4.92 (125)	4.28 (108,6)	1.99 (50,5)	1.34 (34,0)	13.45 (6,1)
2-1/2 (DN65)	1.93 (49)	12.99 (330)	3.35 (85)	5.91 (150)	4.92 (125)	6.61 (168)	2.76 (70)	1.68 (42,7)	17.24 (7,8)
3 (DN80)	1.93 (49)	13.54 (344)	3.62 (92)	6.18 (157)	4.92 (125)	6.61 (168)	2.76 (70)	2.39 (60,7)	18.52 (8,4)
— (DN80)	1.93 (49)	13.54 (344)	4.25 (108)	6.18 (157)	4.92 (125)	6.61 (168)	2.76 (70)	2.39 (60,7)	18.52 (8,4)
4 (DN100)	2.16 (55)	14.88 (378)	4.25 (108)	6.89 (175)	4.92 (125)	6.61 (168)	2.76 (70)	3.42 (86,8)	19.40 (8,8)
5 (DN125)	2.32 (59)	16.33 (415)	4.72 (120)	7.93 (201,5)	8.86 (225)	8.19 (208)	2.76 (70)	4.52 (114,8)	23.94 (10,9)
6 (DN150)	2.32 (59)	17.72 (450)	5.71 (145)	8.27 (210)	8.86 (225)	8.19 (208)	2.76 (70)	5.29 (134,3)	28.48 (12,9)
8 (DN200)	2.48 (63)	19.65 (499)	6.69 (170)	9.21 (234)	8.86 (225)	8.19 (208)	2.76 (70)	7.35 (186,6)	36.82 (16,7)
— (DN200)	2.48 (63)	19.65 (499)	6.69 (170)	9.21 (234)	8.86 (225)	8.19 (208)	2.76 (70)	7.35 (186,6)	36.82 (16,7)
10 (DN250)	2.91 (74)	23.01 (584,5)	8.27 (210)	11.1 (282)	11.14 (283)	8.19 (208)	2.91 (74)	9.05 (230)	63.9 (29)
12 (DN300)	3.03 (77)	25.16 (639)	9.5 (241,5)	12.2 (310)	11.14 (283)	8.19 (208)	2.91 (74)	11.53 (292,8)	86.42 (39,2)

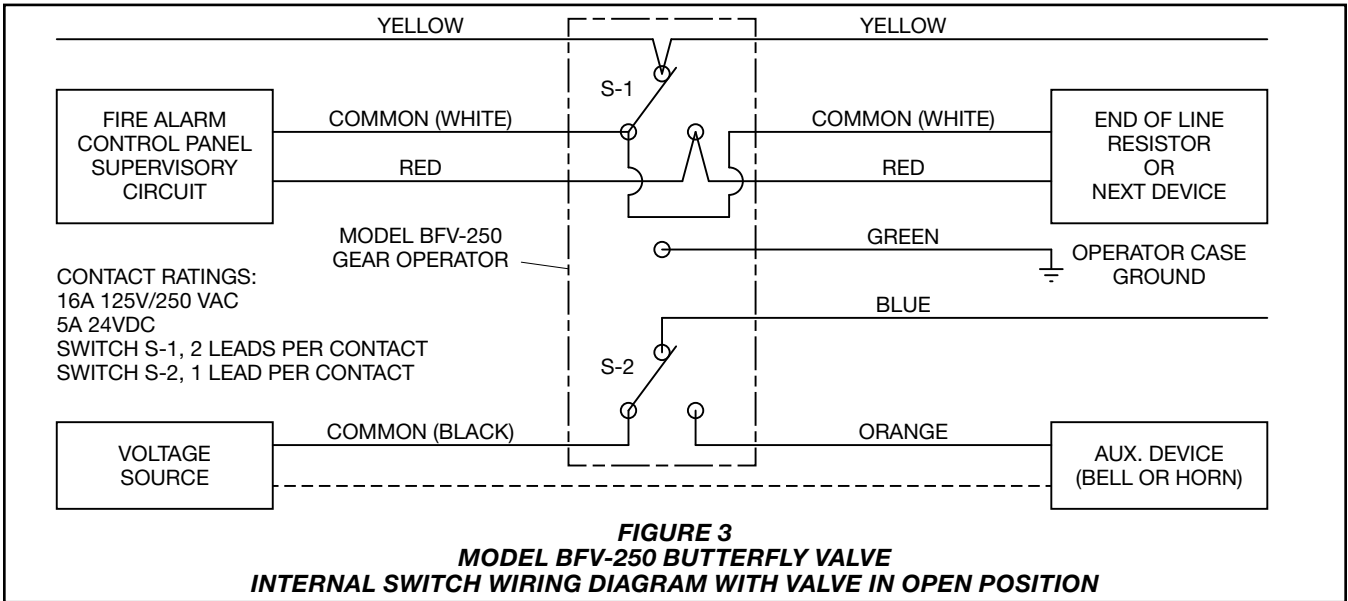
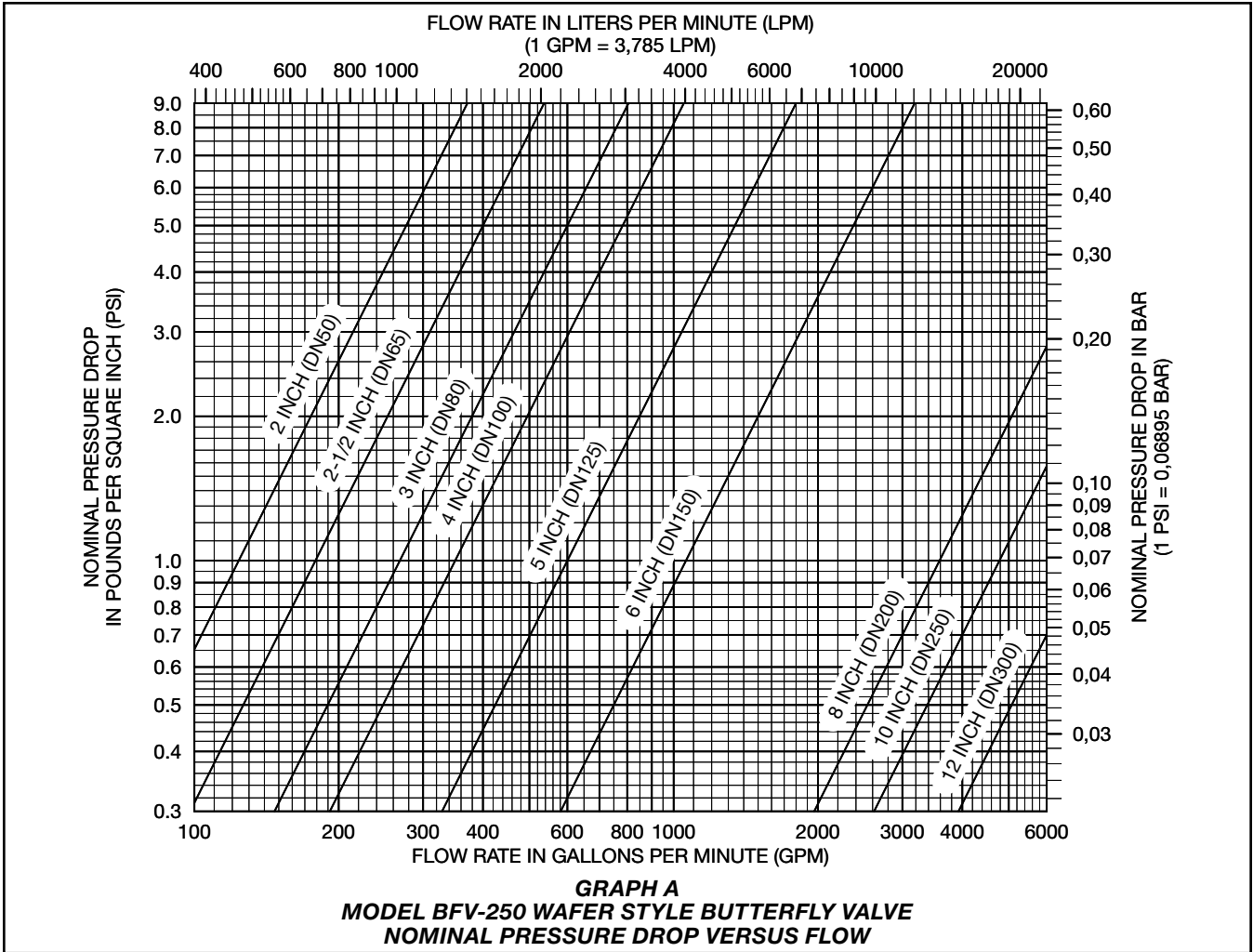


**FIGURE 1**  
**MODEL BFV-250 WAFER STYLE BUTTERFLY VALVE**  
**NOMINAL DIMENSIONS**

No.	Part	Material	Qty.	No.	Part	Material	Qty.	No.	Part	Material	Qty.
01	Body	ASTM A-536	1	14	Switch Plate	ASTM A-619	1	27	Washer	AISI 304	2
02	Disc	Ni-Cr PLATED	1	15	Spring Pin	ASTM A-228	1	28	T/R Bolt	ASTM A-307	2
03	Upper Stem	AISI 410	1	16	Stem O-Ring	EPDM	4	29	O-Ring	EPDM	1
04	Lower Stem	AISI 410	1	17	End Cap	EPDM	1	30	Spring Washer	AISI 304	4
05	Gear Box	ASTM A-536	1	18	Spring Pin	ASTM A-228	1	31	O-Ring	EPDM	1
06	Segment Gear	ASTM A-536	1	19	Shear Pin (S.O.W.)	ASTM A-510	1	32	Oiless Bearing		2
07	Worm Gear	AISI 410	1	20	Oiless Bearing		4	33	Spring Pin	ASTM A-228	1
08	Worm Shaft	AISI 410	1	21	Washer	ASTM B-36	2	34	Stopper Bolt	ASTM A-290	2
09	Indicator	ASTM A-536	1	22	Washer	PTFE	2	35	Connector		1
10	Handle	ASTM A-536	1	23	Headless Wrench Bolt	ASTM A-307	1	36	Sticker		1
11	Gasket		1	24	Cover	ASTM A-619	1	37	Sticker		1
12	Worm Shaft O- Ring	EPDM	1	25	Gasket		1				
13	Hex Bolt	AISI 304	4	26	Bolt	AISI 304	2				



**FIGURE 2**  
**MODEL BFV-250 WAFER STYLE BUTTERFLY VALVE**  
**ASSEMBLY**



CONTACT RATINGS:  
 16A 125V/250 VAC  
 5A 24VDC  
 SWITCH S-1, 2 LEADS PER CONTACT  
 SWITCH S-2, 1 LEAD PER CONTACT

Nominal Valve Size Inches (DN)	Max. PSI (bar)	Flange Face	Part Number	Agency Listing/Approval	
				FM	EAC Approved
2 (DN50)	250 (17,2)	ANSI 16.5, PN16	59250W020WS		✓
2-1/2 (DN65)	250 (17,2)	ANSI 16.5, PN16	59250W025WS	✓	✓
3 (DN80)	250 (17,2)	ANSI 16.5	59250W030WS	✓	✓
— (DN80)	250 (17,2)	BS PN16	59250W036WS	✓	✓
4 (DN100)	250 (17,2)	ANSI 16.5, BS PN16, AS 2129 Table E	59250W040WS	✓	✓
5 (DN125)	250 (17,2)	ANSI 16.5, BS PN16	59250W050WS	✓	✓
6 (DN150)	250 (17,2)	ANSI 16.5, BS PN16, AS 2129 Table E	59250W060WS	✓	✓
8 (DN200)	250 (17,2)	ANSI 16.5	59250W080WS	✓	✓
— (DN200)	250 (17,2)	BS PN16	59250W086WS	✓	✓
10 (DN250)	175 (12,1)	PN10/ANSI 16.5/ BS PN16	59250W100WS	✓	✓
12 (DN300)	175 (12,1)	PN10/ANSI 16.5/ BS PN16	59250W120WS		✓

**TABLE A**  
**MODEL BFV-250 WAFER STYLE BUTTERFLY VALVE**  
**WITH INTERNAL SUPERVISORY SWITCHES**  
**PART NUMBER SELECTION AND AGENCY LISTINGS/APPROVALS**

## Installation

The TYCO Model BFV-250 Wafer Style Butterfly Valves may be installed with flow in either direction and can be positioned either horizontally or vertically. They are designed for installation between the faces of ANSI Class 125 and 150 flanges as well as PN10/16 flanges without the need for flange gaskets. The Series BFV-250 are self-sealing between mating flanges; therefore, they do not require the use of additional gaskets.

The Model BFV-250 may be installed with any pressure class or schedule of pipe or tubing no greater than schedule 40 that is listed or approved for fire protection service and installed in accordance with the manufacturers instructions.

The wafer bodies have locating lugs to ensure proper centering of the valve body when flange bolts are installed. See Figure 2 for bolt diameter. Bolts and studs must meet the minimum

strength requirements of ASTM A307 (Grade B), and the nuts must meet the minimum strength requirements of ASTM A563 (Grade A).

Prior to installation, close the valve. Spread the flanges apart to allow the valve to slip easily between the flanges. Make sure the pipe flange faces are clean of any foreign material such as scale, metal shavings, or welding slag. Insert the valve between the flanges (without flange gaskets). Do not apply lubricant to the seat faces as this may damage the seat material. Be sure to center the valve and do not damage the liner. Relax the separation of the flanges, install, and hand-tighten all flange bolts. Slowly open the valve, checking for free movement of the disc. If valve opens freely, leave the valve in the open position, and using a cross-draw sequence, tighten all flange bolts until the valve is metal-to-metal with both mating flanges.

Be certain to keep flange faces as parallel as possible during and after tightening bolts or studs. After final tightening, again check the valve for full opening and closing.

As applicable, see Figure 3 for the internal switch wiring diagram.

Conduit and electrical connections are to be made in accordance with the authority having jurisdiction and/or the National Electrical Code. With reference to Figure 3, the supervisory switch is intended for connection to the supervisory circuit of a fire alarm control panel in accordance with NFPA 72. The auxiliary switch is intended for the unsupervised connection to auxiliary equipment in accordance with NFPA 70, National Electric Code.

**Note:** For outdoor applications with internal supervisory switches, it is recommended that wiring connections be made at a temperature above 15°F (-9°C), in order to insure sufficient flexibility of the wire lead insulation.

## Care and Maintenance

The TYCO Model BFV-250 Wafer Style Butterfly Valves must be maintained and serviced in accordance with this section.

Before closing a fire protection system control valve for maintenance or inspection work on either the valve or fire protection system which it controls, permission to shut down the affected fire protection systems must be obtained from the proper authorities and all personnel who may be affected by this decision must be notified.

The owner is responsible for the inspection, testing, and maintenance of their fire protection system and devices in accordance with the applicable standards of the NATIONAL FIRE PROTECTION ASSOCIATION such as NFPA 25, in addition to the standards of any authority having jurisdiction. Contact the installing contractor or product manufacturer with any questions. Any impairment must be immediately corrected.

It is recommended that automatic sprinkler systems be inspected, tested, and maintained by a qualified Inspection Service.

## Limited Warranty

For warranty terms and conditions, visit [www.tyco-fire.com](http://www.tyco-fire.com).

## Ordering Procedure

Contact your local distributor for availability. When placing an order, indicate the full product name and Part Number (P/N).

### Butterfly Valves

#### Model BFV-250 With Internal Open Supervisory Switches

Specify: (specify size) Model BFV-250 Wafer Style Butterfly Valve, Internal Open Supervisory Switches, P/N (specify per Table A)

### Replacement Parts

**Note:** Only items described in this section are offered as replacement parts. See Figure 2 to identify the part described below.

#### Handwheel

Replacement handwheel includes pin. See Table B for part numbers.

#### Model BFV-250

Specify: Handwheel, (specify size) Model BFV-250 Wafer Style Butterfly Valve, P/N (specify)

Nominal Valve Size Inches (DN)	Part Number
2-4 (DN50-DN100)	59300SPHWHEEL10
5-6 (DN125-DN150)	59300SPHWHEEL20
8 (DN200)	59300SPHWHEEL30
10-12 (DN250-DN300)	59300SPHWHEEL40

**TABLE B  
BFV-250 WAFER STYLE  
BUTTERFLY VALVE  
REPLACEMENT HANDWHEEL  
PART NUMBER SELECTION**



Worldwide  
Contacts | [www.tyco-fire.com](http://www.tyco-fire.com)

## **TFP1517 Change History Appendix**

ISSUE DATE	NOTES
09-22	Page 1, added QR code and URL to allow convenient access to electronic version from printed document; Page 1, Approvals sub-section, Page 5, Table A, added EAC Approved; Page 6, changed corporate address and telephone number to 1467 Elmwood Avenue, Cranston, RI 02910   Telephone +1-401-781-8220, formerly 1400 Pennbrook Parkway, Lansdale, PA 19446   Telephone +1-215-362-0700.
04-21	Added note indicating BFV-250 available in Russia only.
01-21	Updated replacement Handwheel part numbers and valve size applicability.
07-20	Corrected spelling error in pressure scale of Graph A Friction Loss vs. Flow.
08-18	Updated Tyco® branding and document format; Added Johnson Controls copyright; Added disclaimer stating specifications and information subject to change without notice; Added reference to Regulatory and Health Warning Technical Data Sheet TFP2300.
04-17	Removed CE Certification.
06-16	New Technical Data Sheet TFP1517 describes the Model BFV-250 Wafer Butterfly Valve.