



**PROFACTOR®**  
DER DEUTSCHE QUALITÄTSSTANDARD

EN

## TECHNICAL DATA SHEET AND USER MANUAL



### PRODUCT CODE

PF MB 848.20  
PF MB 848.25  
PF MB 848.32  
PF MB 849.20  
PF MB 849.25  
PF MB 849.32

**BALL VALVE  
WITH THERMOMETER  
FOR MANIFOLD GROUPS**

## 1. PURPOSE AND SCOPE

The ball valve is used as a shut-off device in pipelines of drinking, domestic, and industrial water systems, hot water supply, heating, compressed air, liquid hydrocarbons, as well as in process pipelines transporting liquids that are non-aggressive to the valve materials.

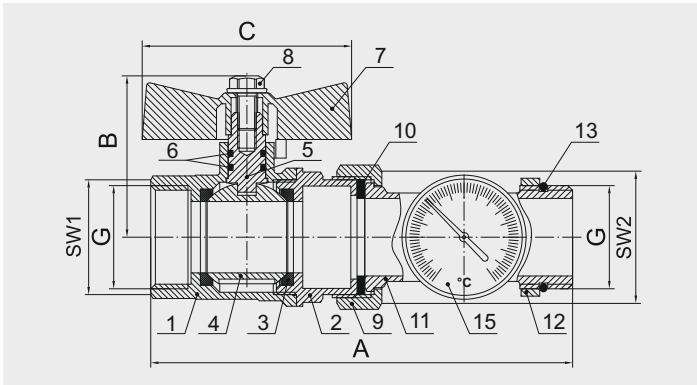
The ball valve with thermometer for manifold groups allows for the creation of easily detachable pipeline connections in plumbing systems and enables monitoring of the working medium temperature. The O-ring on the pipe ensures a tight and leak-proof connection to the pipeline. Such valves are most commonly used in heating systems, particularly in the construction of autonomous circulation systems with pump-and-mixing units and manifold groups to monitor the temperature of the heat carrier. The product is supplied as a set of two valves: one with a red handle and one with a blue handle.

## 2. TECHNICAL SPECIFICATIONS

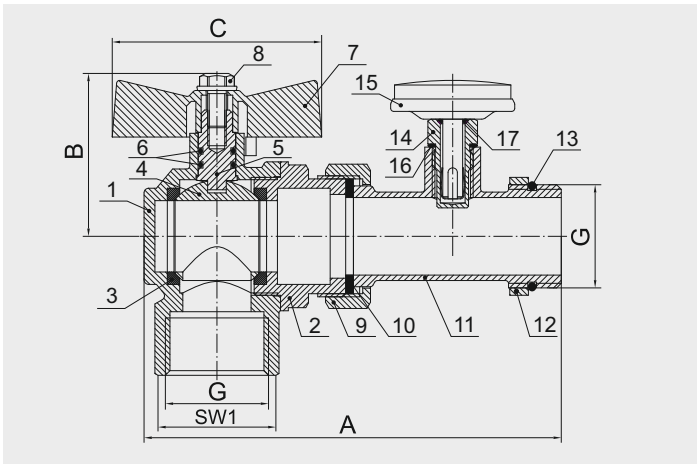
| Product Code                   | PF MB  | 848.20          | 848.25 | 848.32 | 849.20 | 849.25 | 849.32 |
|--------------------------------|--------|-----------------|--------|--------|--------|--------|--------|
| Valve type                     | —      | straight        |        |        | angled |        |        |
| Nominal size                   | DN     | 20              | 25     | 32     | 20     | 25     | 32     |
|                                | G      | 3/4"            | 1"     | 1¼"    | 3/4"   | 1"     | 1¼"    |
| Nominal pressure, PN           | bar    | 20              | 25     |        | 20     | 25     |        |
| Working medium temperature     | °C     | −20°C to +120°C |        |        |        |        |        |
| Thermometer scale range        | °C     | 0°C to +80°C    |        |        |        |        |        |
| Valve shut-off tightness class | —      | “A”             |        |        |        |        |        |
| A                              | mm     | 121             | 136    | 148    | 113,5  | 135    | 145    |
| B                              | mm     | 47,5            | 52,5   | 61     | 47,5   | 52,5   | 61     |
| C                              | mm     | 69              | 67,5   | 75     | 69     | 67,5   | 75     |
| Wrench size Sw1                | mm     | 30              | 37     | 47     | 30     | 38     | 47     |
| Wrench size Sw2                | mm     | 38              | 42,5   | 48     | 38     | 42,5   | 48     |
| Weight                         | g      | 450             | 582    | 891    | 480    | 738    | 1082   |
| Average service life (cycles)  | cycles | 30 000          |        |        |        |        |        |
| Average service life           | years  | 30              |        |        |        |        |        |

### 3. DESIGN

Straight valve:



Angled valve:



- |                        |                                |
|------------------------|--------------------------------|
| 1 – Body               | 10 – Branch pipe gasket        |
| 2 – Body bushing       | 11 – Branch pipe               |
| 3 – Ball seat rings    | 12 – Lock nut                  |
| 4 – Ball               | 13 – Branch pipe O-ring        |
| 5 – Stem               | 14 – Thermometer socket        |
| 6 – Stem sealing rings | 15 – Thermometer               |
| 7 – Butterfly handle   | 16 – Thermometer socket O-ring |
| 8 – Fixing screw       | 17 – Thermometer O-ring        |
| 9 – Branch pipe nut    |                                |

The body (1) has an internal cylindrical connection thread and an internal metric thread for screwing in the body bushing (2). The top of the body includes an outlet for the valve stem (5). The connection between the body (1) and the bushing (2) is secured with a polymer anaerobic adhesive that has WRAS approval (authorized for use in contact with drinking water).

The nickel-plated brass branch pipe (11) is connected to the body bushing via a nickel-plated brass branch pipe nut (9). The gasket (10) ensures tightness of the joint. The lock nut (12) and O-ring (13) ensure a tight connection of the valve branch pipe to the pipeline. Such a connection does not require additional sealing materials. This design provides an easily detachable assembly, which is highly convenient for both installation and maintenance.

The branch pipe (11) features a side outlet with a 1/4" internal cylindrical thread, into which the thermometer socket (14) is installed. The O-ring (16) provides sealing of the thermometer socket. The thermometer (15) is inserted directly into the socket and can be easily removed or replaced without interrupting system operation.

The body (1), body bushing (2), branch pipe nut (9), and branch pipe (11) are made of brass grade CW617N (according to DIN EN 12165-2011), with nickel-plated surfaces.

The shut-off mechanism consists of a chrome-plated brass ball (4), driven by a vertical brass stem (5) and sealed by ball seat rings (3). The seat rings (3) are made of high-temperature-resistant elastic PTFE (polytetrafluoroethylene). Stem sealing is achieved using two O-rings (6). The valve stem is non-blowout type, as it is inserted from inside the body (1) and features a retaining collar.

The ball (4), stem (5), lock nut (12), and thermometer socket (14) are made of brass CW614N (DIN EN 12165-2011). The ball has chrome-plated surfaces, and the lock nut is nickel-plated. On the protruding end of the stem, a butterfly handle (7) made of aluminum with a paint coating (DIN EN 1676-2010) is attached with a fixing screw (8) made of structural steel S235JR (DIN EN 10025-2005).

The sealing components (6, 10, 13, 16, 17) are made of ethylene-propylene rubber (EPDM).

All cylindrical pipe threads are in accordance with ISO 228-1:2000, DIN 259, and all metric threads are in accordance with ISO 261:1998.

#### 4. OPERATING PRINCIPLE

Flow shut-off is achieved by turning the handle 90° clockwise.

## 5. INSTALLATION INSTRUCTIONS

The valve can be installed in any mounting position. The valve must not be subjected to loads from the pipeline, such as bending, compression, tension, twisting, misalignment, vibration, or uneven tightening of fasteners. If necessary, supports or compensators should be provided to reduce the load transferred from the pipeline to the valve.

The misalignment of connected pipelines must not exceed 3 mm per 1 meter of length, plus 1 mm for each additional meter.

For threaded joints sealing, use PTFE-tape, polyamide thread with silicone, flax with special pastes, or other approved sealing materials that ensure tightness at the design temperature and working pressure of the medium.

After installation, plumbing system assemblies must be tested for tightness. They should undergo testing using hydrostatic (hydraulic) or bubble (pneumatic) methods.

## 6. OPERATING AND MAINTENANCE

The valve must be operated without exceeding the pressure and temperature values specified in the technical specifications table. It is not permitted to operate the valve with a loose handle fixing screw, as this may damage the stem tailpiece.

Use of the valve in media containing abrasive particles is not recommended, as this may reduce its service life. Therefore, when the valve is used in systems transporting media with a high content of mechanical impurities, a filtering device should be installed at the inlet.

To ensure reliable and long-term operation, it is recommended to open and close the valve once a month as preventive maintenance.

## 7. WARRANTY OBLIGATIONS

The warranty period is 24 months from the date of sale to the end consumer. Throughout the entire warranty period, the manufacturer guarantees the proper functioning of the product and its compliance with safety requirements, provided that the consumer follows the rules for storage, transportation, installation, operation, and maintenance of the product. The warranty covers all defects arising through the manufacturer's fault.

The warranty does not cover defects resulting from:

- Violation of storage, transportation, installation, operation, or maintenance conditions;
- Exposure to substances aggressive to the materials of the product;
- Signs of mechanical damage;
- Damage caused by fire, natural disasters, or other force majeure circumstances;
- Damage caused by improper actions of the user;
- Evidence of unauthorized interference with the product design.

The product described in this technical manual is a technically complex device that must be installed by a qualified specialist with appropriate experience working with this type of equipment.

Installation and commissioning must be carried out by an authorized and certified company.

Profactor Armaturen GmbH reserves the right to make changes to the product design that do not affect its technical characteristics or functional features.



# INTERNATIONAL WARRANTY CARD

NAME OF THE PRODUCT

PRODUCT CODE, SIZE

QUANTITY

SELLER NAME AND ADDRESS

DATE OF PURCHASE

SELLER STAMP

SELLER SIGNATURE

For the warranty term refer to the Warranty obligation clause in the technical manual

FOLD LINE

FOLD LINE

In case of any claims to the product quality the following documents should be submitted:

1. Application with customer and product details:

- Name of the customer, actual address and phone number
- Article of the product
- Reason for the claim and photo
- Plumbing system where installed (name, address, phone number)

2. Invoice copy and receipt

3. Warranty card

RETURN/EXCHANGE COMMENTS

DATE

SIGNATURE



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