M03-B Containerized Water Treatment System

The M03-B series treats fresh and brackish water for community supply, irrigation and project use. Pretreatment, BWRO and controls are integrated in a container. Treatment stages are matched to the source water and intended use, then a fixed-capacity model is selected to meet the required output.

1. Groundwater containing iron. Yellowish well water, deposits in storage tanks and reddish-brown staining may indicate iron, affecting appearance and facility cleanliness. Test results determine the need for iron or manganese removal. Add BWRO where desalination is required; pretreatment is selected for the measured water quality and intended use.
2. Irrigation with brackish well water. Excess salts can restrict crop water uptake, while sodium, chloride and boron can affect soils or sensitive crops. Set the desalination target and assess blending using EC, sodium adsorption ratio (SAR), chloride and boron, alongside crop, soil and irrigation requirements. Select the model by RO permeate demand; calculate blended irrigation supply separately.
3. Pipeline pressure testing and flushing. Construction projects, including data centers, need enough suitable water by a fixed date. Establish quality requirements from pipe materials and test specifications, then plan production around total demand, preparation time and storage. Use BWRO when desalination is needed. Projects requiring only filtration, UF and disinfection use the appropriate process, with capacity calculated separately.
4. Fixed models with a clear selection process. Choose treatment from the water analysis and end use, then match daily demand and productive operating hours to a standard model. Pretreatment addresses the relevant water-quality issues; RO removes dissolved salts. Provide the water analysis, target quality, daily demand, operating hours and available power to confirm the model, design conditions and site requirements.

Technical Specifications

Series:	M03-B
Rated output:	See model table; daily output assumes 24 h/day at rated conditions.
Source water:	Fresh surface water, groundwater and brackish water
Product water:	Specified for drinking, irrigation or process use, with suitable post-treatment and testing.
Salt rejection:	≥99% design target; subject to the specified feedwater conditions.
RO recovery:	Design value based on feedwater conditions and membrane configuration.
Filtration and RO:	Multimedia filtration, 5 μm cartridge filtration and BWRO membranes
Additional systems:	UF / iron / manganese removal as needed; flushing/CIP by model.
Feedwater basis:	TDS, ionic composition, pH and temperature defined for the design.
Power supply:	External supply or generator; voltage, frequency and load by model.
Container size:	Standard 20GP / 40GP containers; external dimensions on the next page.
System integration:	Integrated modules; external intake, storage and utilities arranged separately.

Model Selection

Model	Daily output (m³/d)	Hourly output (m³/h)	Container
M03-B-100	100	4.17	20GP
M03-B-200	200	8.33	20GP
M03-B-300	300	12.50	20GP
M03-B-400	400	16.67	40GP
M03-B-500	500	20.83	40GP
M03-B-600	600	25.00	40GP
M03-B-700	700	29.17	40GP
M03-B-800	800	33.33	40GP
M03-B-900	900	37.50	40GP
M03-B-1000	1000	41.67	40GP

Output basis: Figures show RO permeate, excluding feedwater and any blended supply. Hourly values are rounded to two decimal places. Daily ratings assume 24 hours of production at rated conditions; actual daily output depends on productive operating hours and site conditions.

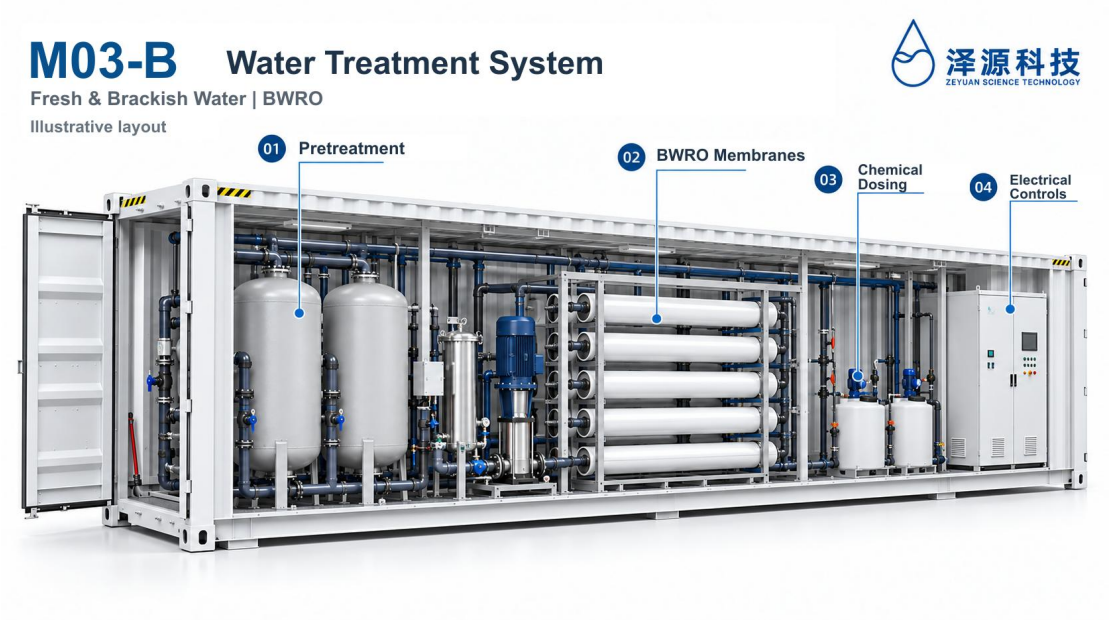
External dimensions (L × W × H): 20GP: 6058 × 2438 × 2591 mm; 40GP: 12192 × 2438 × 2591 mm. Allow additional site space for maintenance access, pipework and external equipment.

Configuration: The series starts at 100 m³/d. Container sizes are selection references; the final internal layout depends on pretreatment, membrane racks, service access and the equipment included.

Selection: Define the end use and target water quality, then select treatment from the water analysis. Divide daily RO water demand by productive operating hours to find the required hourly output. For example, 175 m³/day over 20 hours requires 8.75 m³/h. The 200 m³/day model provides about 8.33 m³/h, so assess the 300 m³/day model or above against the design conditions and supporting equipment.

Water balance: RO feed flow = permeate flow ÷ recovery (as a fraction). RO concentrate flow = feed flow − permeate flow. Total raw-water demand must also include pretreatment backwash and other water losses.

Product Images (M03 Series Reference)



M03-B illustrative layout | Fresh and brackish water

Irrigation in arid regions (application concept)

Community well-water supply (concept)

Remote camp water supply (concept)

Equipment Photos and Treatment Comparison (M03 Series)

Membranes and service aisle

Pumps and controls

Container exterior

Before treatment

After treatment

Treatment process: Raw-water storage → feed pump → multimedia filtration → cartridge filtration → high-pressure pump → BWRO → post-treatment and product-water storage. UF, iron/manganese removal and chemical dosing are selected from the water analysis. Output and salt rejection depend on the specified feedwater conditions and configuration. Drinking-water applications require appropriate post-treatment, disinfection and testing. UF-only system capacity is calculated separately.