Global Leader of Membrane Technology

AMESTEC

AMESTEC MBR-DBM SERIES MEMBRANE BIO-REACTORS

Performance Characteristics

Membrane Bio-Reactor (MBR) is a new type of wastewater treatment system that combines membrane micropore separation technology with biological treatment technology. The membrane filtration system replaces terminal secondary sedimentation tank of the traditional biological treatment technology, utilizes the membrane separation and interception performance to increase the activated sludge concentration of the biochemical system, prolongs the biological reaction time, increases the organic load of biological treatment, and thereby reducing the sewage treatment facility floor space, effectively reducing the amount of excess sludge.

Based on years of innovative development and investment, AMESTEC membrane products (MBR-DBM series) has produced on a large scale. In the continuous development process, AMESTEC MBR products have a large number of installation and actual operation cases, which are widely used in sewage treatment plant upgrades, high-concentration wastewater treatment, landfill leachate treatment and other fields.

AMESTEC MBR Technology

AMESTEC MBR-BR series membrane bio-reactor adopts the thermally induced phase separation process to prepare PVDF reinforced hollow fiber membrane, which has large flux, chemical washing resistance and so on. At the same time, its mechanical strength is greatly improved, and the design of uniform membrane filament distribution and module device is combined, thereby reducing sludge deposition and the risk of filament break. The elements, membrane box, aeration and water collection are optimally integrated into a complete filtration system, and the operating energy consumption is reduced. The membrane pool area is saved by 1/3 compared with the conventional MBR, and the installation and maintenance are more convenient.

AMESTEC MBR-BR series membrane bioreactor employs intermittent vacuum draw, supporting uninterrupted gas scrubbing operation mode to filter and produce water, periodic physical and chemical cleaning methods to remove pollutants to ensure long-term stable operation of membrane system.

Table 1 Product Series

Model	MWCO (Da)	Operating temperature	Acid and base resistance
Product capacity (m^3/d)	200-350	400-700	600-1000
Quantity of membrane sheet	20	36	54
Membrane area (m^2)	600	1080	1620
Overal dimension (mm)	1080*1300*3080	1800*1300*3080	2700*1300*3080
Collecting tube size	DN150	DN150	DN150
Aerated pipe size	DN100	DN100	DN100

Table 2 Membrane Module Specifications

Membrane modules	Membrane model	DBM-R30
	Membrane material	PVDF
	Membrane area (m^2)	30
	Average aperture (μm)	0.1
	Internal and external diameter of membrane filament (mm)	1.2/1.8
Membrane modules dimensions	Nominal dimension of membrane modules (mm)	30*1250*2000
	Dimension of connecting port	DN25
Materials used	End materials of membrane	ABS
	Sealing casting material	Polyurethane

Table 3 Membrane Specifications

Model	DBM-R30-S
Main body material of membrane rack	316L SS
Fixed material of membrane sheet	UPVC
Fixed mode	Upper hanging
Aeration setting	Equipped in the box
Collecting tube size (UPVC)	DN125
Aerated pipe size (UPVC)	DN100

Table 4 Application and Operating Parameters

Temperature range	5-40℃
Continuous operating pH range	1-11
Maximum tolerance of NaClO concentration	5000ppm
Chemical cleaning pH range	1-13
Operating flux	15-25L/(m^2·hr)
Air flow of backwashing	4-8Nm^3/(h per membrane)
Operating transmembrane pressure difference	0-0.03MPa
Maximum transmembrane pressure difference	0.055MPa
SDI of product water (SDI15)	≤3.0