VONTECH®



ALL-IN-ONE · PRODUCTION-READY

Magnus

All-in-One 3 GPM Reverse Osmosis System Production-ready · 210-gal tank on one rack

> Pure water for your whole property, produced, stored, disinfected and delivered from one rack.

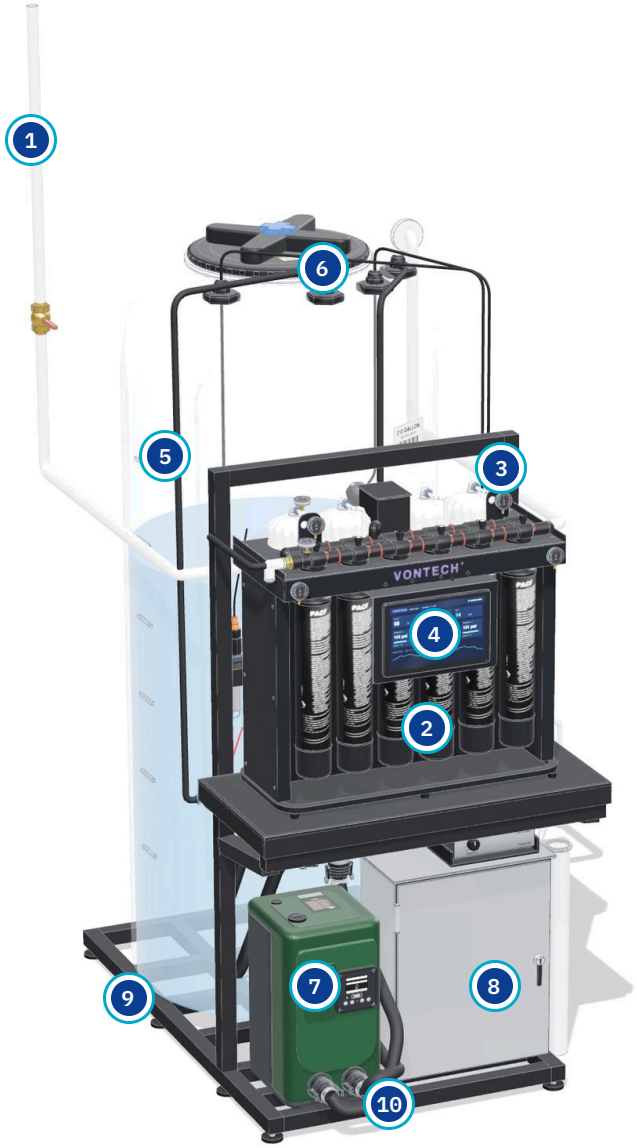
TECHNICAL DATASHEET
VT-MAG-DS-001 · REV. A · NOV 2026

3.17 GPM	210 gal	≈66 min	0–100	≈86 %
≈ 4,565 GPD at 77 °F	Food-grade storage tank	Tank full at 77 °F	Membrane Health included	Recovery, two-stage RO

01 · SYSTEM OVERVIEW

One rack. Everything on it.

Magnus arrives as a complete water plant: reverse osmosis, pretreatment, storage, disinfection, delivery pump and controls, already plumbed and wired on a freestanding steel rack. On site you connect four things, feed water, drain, house line and power.



1. **Feed water in**
   City or well supply to the pretreatment manifold.
2. **6 × PACF pre-filter cartridges**
   Food-grade PP + coconut-shell activated carbon, in parallel.
3. **RO unit**
   4 × 1,200 GPD membranes, each with its own booster pump, in a two-stage arrangement (≈ 86% recovery); gauges on inlet and every membrane.
4. **VONTECH Guardian touchscreen**
   Live status, alarms, local history and Membrane Health (included) on the unit.
5. **210-gal pure-water tank**
   Vertical food-grade polyethylene, ≈ 30 in Ø × 71 in.
6. **Float + level sensor (double safety)**
   Electric float, wired to the 110 V inlet solenoid, shuts off the supply when full; 4–20 mA level sensor (gallons and %) locks out the supply if the float fails.
7. **DAB Esybox Mini3 delivery pump**
   Constant pressure with built-in variable-speed drive.
8. **Stainless control panel**
   CLICK PLC: production, tank level, flushing, ozone schedule. Ozone generator mounted above it.
9. **Black steel rack**
   Freestanding, leveling feet; RO shelf at ~32 in, tank behind on the same base.
10. **To the house / building**
    Pure water at constant pressure.

ON SITE YOU CONNECT FOUR THINGS

IN
Feed water
PEX, PEX-A or NPT · ¾″ or 1″

OUT
House line
PEX, PEX-A or NPT · ¾″ or 1″

DRAIN
Concentrate drain
RO reject water to drain

POWER
One 120 V plug
Single power connection for the whole system

Built for uptime. Every membrane has its own booster pump, so the system keeps producing at reduced capacity if one needs service.

Fully automatic. The PLC runs production, tank level, flushing and the ozone cycle. Guardian watches all of it, 24/7.

02 · THE REAL SYSTEM

What arrives at your site.

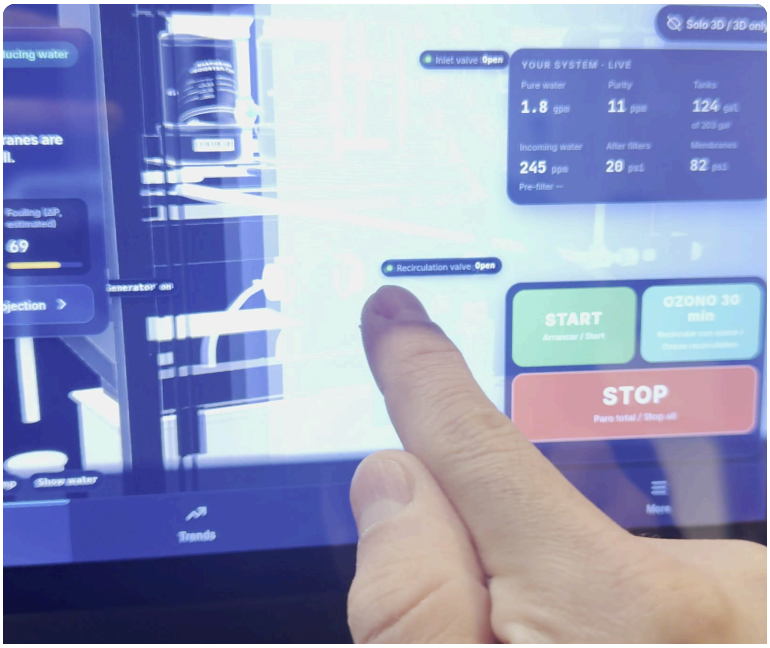
The 3D drawings in this datasheet show what is inside; these photos show the production Magnus, same rack, cartridges, Guardian screen, pump, control panel and 210-gal tank, shipped pre-assembled, plumbed and wired.



Three-quarter view: RO unit on the upper shelf, DAB pump and stainless panel below, 210-gal tank behind.



Pressure gauges on the inlet and every membrane; tank connections on top.

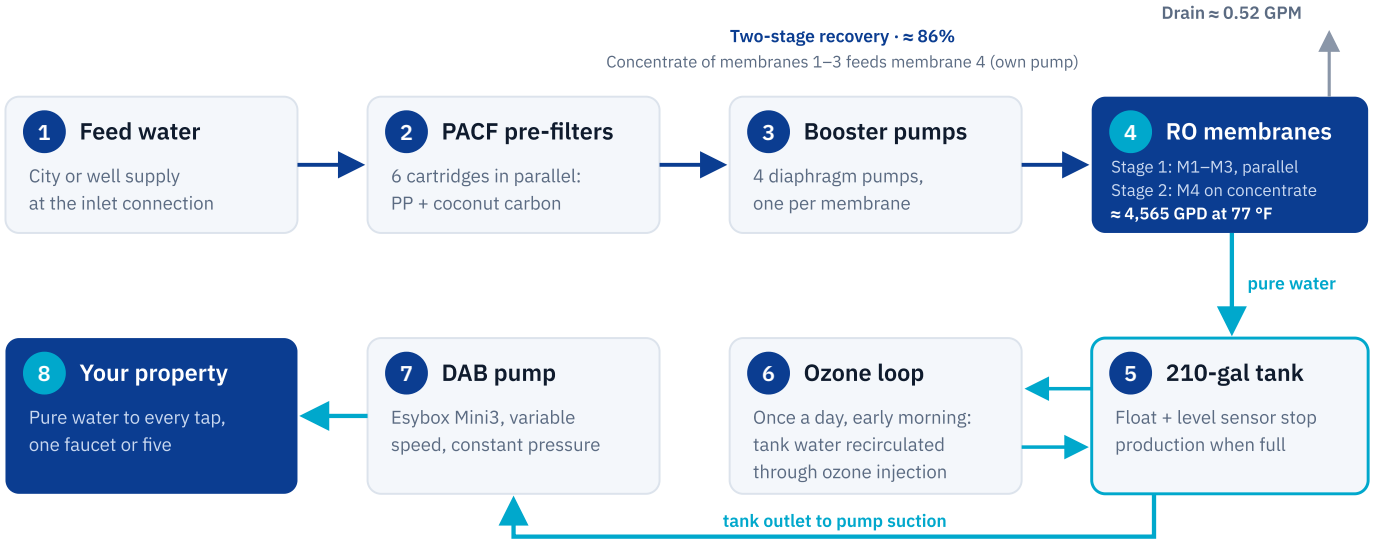


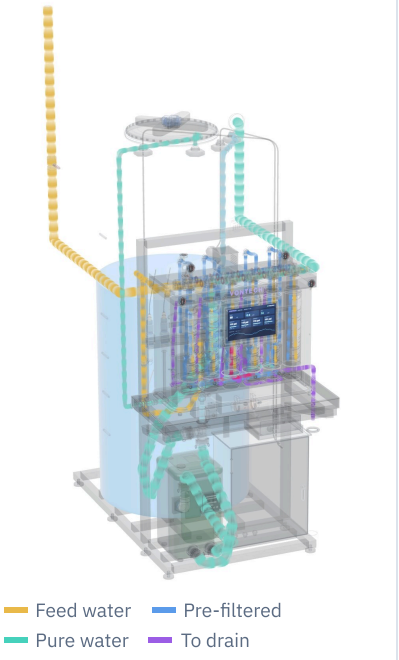
Guardian touchscreen: Membrane Health score, live readings, the system in 3D and START / STOP.

03 · PROCESS

How it works

Water moves through eight stages, from the street to your taps. Production starts and stops by itself, based on the level in the tank.





Tank fill time & daily capacity

FEED WATER	PRODUCTION	210 GAL, EMPTY → FULL
77 °F (rated)	≈ 3.17 GPM	≈ 66 min
~50 °F (cold winter)	≈ 35% less	≈ 1 h 40 min

Daily capacity ≈ 4,565 gal at 77 °F. Colder feed water lowers output; the tank simply refills a little slower.

Performance

Salt rejection	≈ **97% TDS**
Recovery	≈ **86%** ≈ 3.17 GPM pure water · ≈ 0.52 GPM to drain
Min. inlet pressure	**40 psi** (normal city pressure)
Higher-TDS / well water	**Water analysis recommended; well water only after a VONTECH analysis**

Automation by PLC. A CLICK PLC in the stainless control panel runs the whole sequence on its own: it starts production when the tank calls for water, closes the water supply when the tank is full, flushes the membranes and launches the daily ozone cycle. Guardian monitors every step, 24/7.

DOUBLE OVERFLOW PROTECTION

1 · Primary: an electric float, wired to the 110 V inlet solenoid valve, shuts off the water supply when the tank is full. **2 · Backup:** the 4–20 mA level sensor watches the level in real time and triggers a safety lockout that shuts off the supply if the float ever fails.

04 · SPECIFICATIONS

Components & specifications

A RO unit

Model	Magnus 3 GPM
Membranes	4 × 1,200 GPD
Rated production	≈ 3.17 GPM ≈ 4,565 GPD at 77 °F
Booster pumps	4 diaphragm pumps, one per membrane, keeps producing at reduced capacity if one needs service
Arrangement	Two-stage: membranes 1–3 in parallel; their concentrate feeds membrane 4
Recovery / drain	≈ 86% · ≈ 0.52 GPM to drain
Instrumentation	Pressure gauges; flow meters and TDS sensors in & out
Fittings	Quick-connect
RO frame	27¼ × 12 in

B Pretreatment

Cartridges	6 × PACF, in parallel
Media	Food-grade polypropylene + coconut-shell activated carbon
Inlet	Clack 1″ bypass (in + out), 110 V solenoid

C Storage tank & level

Capacity	210 gal
Construction	Vertical, food-grade polyethylene; sealed bulkhead fittings
Size / lid	≈ 30 in Ø × 71 in; 16 in lid
Full-tank shutoff (primary)	Electric float switch wired to the 110 V inlet solenoid valve
Level & backup lockout	Submersible 4–20 mA sensor: live gallons and %; shuts off the supply if the float fails
Overflow protection	**Double safety**, two independent shutoffs

D Delivery pump

Model	DAB Esybox Mini3, constant pressure
Drive	Built-in variable-speed drive (VFD)
Flow	Up to ~22 GPM
Pressure setpoint	Adjustable 15–79 psi
Motor	1.1 HP (0.85 kW)
Electrical	115 V, ~4.8 A
Integrated	Display and expansion tank

Pump data per manufacturer, verify against nameplate.

E Control panel & PLC

Enclosure	Stainless steel, 16 × 20 × 8 in
Controller	CLICK PLC
Functions	Automatic production, tank level control, flushing, ozone schedule

F Ozone disinfection

Method	Daily loop through ozone injector
Generator model / output	OZOTECH Poseidon 200 · 0–220 mg/h
Run time per cycle	30 min once a day (configurable)

G VONTECH Guardian

Interface	Touchscreen on the unit
Offline	Local alarm and process history
Connected	Free owner app; SMS alerts & 24/7 fault follow-up with Guardian Connect (internet required)
Analytics	Membrane Health 0–100 · included

H Overall system

Rack	Freestanding black steel, leveling feet
Footprint	≈ 30 in W × 46.5 in D TBD — to be confirmed · estimate
Power	Single 120 V connection (one plug)
Ships	Assembled on one rack, tank included
Assembly	Assembled in the USA
Warranty	10 years · factory defects

05 · MONITORING

Membrane Health & monitoring

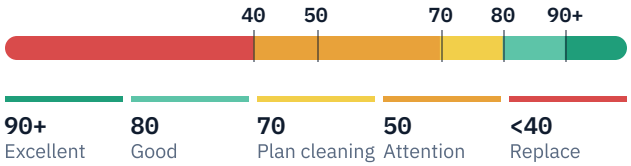
Magnus never depends on the internet to make water. Connect it, and VONTECH can see what Guardian sees, and act before you notice anything.

Membrane Health

INCLUDED WITH EVERY MAGNUS · THE VONTECH DIFFERENCE

Guardian scores the membranes from 0 to 100, normalized for water temperature and pressure (ASTM D4516), so a cold morning is never mistaken for a failing membrane.

- Tracks normalized product flow, salt passage and pressure drop against the baseline recorded at commissioning
- Identifies the likely cause: fouling, scaling, biofouling or damage
- **Alarms preset** at score 70 (cleaning) and 40 (replacement), with the days left projected ahead



Score bands as shown on the Guardian panel.

Works without internet

- Runs fully automatically on its PLC
- Alarm and process history kept locally on the Guardian panel
- Live readings on the touchscreen

Requires internet at the site (Wi-Fi / Ethernet)

- Magnus owner app, **free** with every Magnus
- Guardian Connect: SMS alerts & 24/7 fault follow-up by VONTECH Central

Guardian Connect

OPTIONAL PLAN

SMS alerts & fault follow-up

SMS alerts when there is an alarm or a service requirement · 24/7 fault monitoring and follow-up by VONTECH Central · complete history of all system events. The owner app is free and not part of this plan.

Filter & Membrane Supply

OPTIONAL PLAN

Filters & membranes

The 6 PACF pre-filter cartridges when they are due, and new RO membranes every 2 years, shipped automatically.

Plans are optional. **No internet on site?** Add Starlink satellite internet + antenna (with Guardian Connect).

Why ozone? Stored pure water stays fresh



RO water has no chlorine left, so it needs protection while it is stored. Once a day, in the early-morning hours when nobody is using water, the PLC runs a 30-minute ozone recirculation (configurable): tank water is circulated through the ozone injection and back into the tank, disinfecting the stored water and the tank walls so bacteria, algae and biofilm can't grow.

Ozone (O_3) is a powerful oxidizer that leaves no chemical residue. It naturally reverts to oxygen (O_2) within about an hour. By morning the water is fresh, with no taste or odor.

06 · OWNER APP

Magnus owner app, free

Your system, live on your phone: membrane health, the pressures and purity along the water's path, how full the tank is and how much water you made and used, readings refresh every 30 seconds.

Screens shown with sample data



HOME At a glance

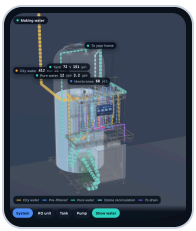
- **Membrane health** score 0–100 with salt rejection, production (gpm) and days to the next cleaning
- **Your water's journey:** city water → 6 filters → membranes → your water, with live psi and ppm
- **Pure-water tank** in gallons and %, filling or paused, made and used today
- Online status; active alarms shown at the top

HEALTH Membrane health

- Current score, band and monthly trend
- Scale from *Replace* to *Clean 70* to 90+: below 70 it's time to plan a cleaning
- Score chart for the last 90 days
- Salt rejection, production at water temperature, pressure drop (fouling) and projected next cleaning

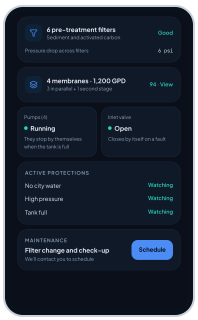
HISTORY Water & events

- Gallons made vs. used at home per day, 7 days, 30 days or year
- Totals, purity (ppm), health and average gallons used per day
- Event log with date and time: alarms, tank full, low city pressure, VONTECH remote checks



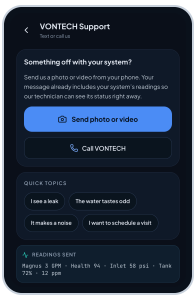
Your system in 3D

Rotate the rack and tap any part. Live labels show city water, membrane pressure, tank level and pure-water ppm; views for the RO unit, tank and pump, and a *Show water* flow view.



My system

Filter condition from the pressure drop across the 6 cartridges (Good / Soon / Replace), pumps running or paused, inlet valve, and the protections being watched: no city water, high pressure, tank full.



Talk to VONTECH

Opens a text message from your phone to VONTECH, pre-filled with your system's current readings, so you can attach a photo or video of what you see. Quick topics and a call button.

Settings: language English / Español, your account, and how to install. Works on iPhone and Android as an installable web app, add it to the home screen from Safari or Chrome; no app store needed.

Free with every Magnus, no plan required; it only needs internet at the site (Wi-Fi / Ethernet). Without internet, Magnus keeps running and Guardian keeps its history locally.

07 · ORDERING

Installation, delivery & ordering

Site requirements

Power	One 120 V outlet (single connection)
Drain	Drain for RO concentrate
Internet	Wi-Fi or Ethernet
Location	Garage, basement, utility room or covered outdoor area
Floor space	≈ 30 × 46.5 in TBD — to be confirmed · estimate
Door / access width	TBD — to be confirmed
Feed water	Min. 40 psi; well / high-TDS: analysis first

Connections, chosen at order

	PEX	PEX-A (expansion)	NPT
Inlet (feed)	¾" · 1"	¾" · 1"	¾" · 1"
Outlet (house)	¾" · 1"	¾" · 1"	¾" · 1"

Pick one type and one size for the inlet and one for the outlet. Magnus ships fully assembled on one rack, tank included: on site you connect inlet, outlet, drain and one 120 V plug.

Included

- ✓ Complete rack, pre-assembled, plumbed and wired
- ✓ RO unit: 4 membranes + 4 booster pumps
- ✓ 6 PACF pre-filter cartridges
- ✓ 210-gal tank with double overflow protection (float + level-sensor lockout)
- ✓ DAB Esybox Mini3 delivery pump
- ✓ Stainless control panel with CLICK PLC · ozone generator
- ✓ VONTECH Guardian touchscreen
- ✓ Delivery: ships fully assembled on one rack

Not included

- — Installation: quoted on request, by location (ships ready for quick, easy installation)
- — Site plumbing, drain, 120 V outlet and internet service
- — Optional plans (Guardian Connect, Filter & Membrane Supply)
- — Optional water analysis

Delivery: 3–5 days when a unit is ready to ship; otherwise **3–5 weeks** (manufacturing + delivery). Ships fully assembled on one rack, tank included. **Shipping included anywhere in the USA.**

Water analysis service · optional, available on its own

An analysis of your feed water before the system is configured. **Magnus capacities can be customized** to your feed water and target production/storage, the analysis comes back with a tailored proposal.

01 Request
Contact VONTECH to request the analysis.

02 Instructions
Receive instructions to bottle your water sample.

03 Mail the sample
VONTECH, 4315 S Charles Dr, West Valley City, UT 84120.

04 Results + proposal
Within 1 week, by email, with a work proposal.

ORDERING & TECHNICAL SUPPORT

(801) 251-6610

Document VT-MAG-DS-001 · rev. A · Nov 2026
Please quote this code with any request.

sales@vontech.info
vontechsolutions.com
West Valley City, UT

Warranty

10 years against factory defects and manufacturing failures.

Inspect the system at delivery and note any shipping damage on the freight receipt.