Vantage™ M86 Nanofiltration Units: The Clear Advantage in Membrane Systems

Vantage™ M86 units are packaged, single-pass, 8-inch nanofiltration units designed for a variety of applications requiring high quality equipment with a fast delivery and competitive price. These pre-engineered, pre-assembled and factory tested units minimize installation and startup time. With simple utility connections and easy to set up controls, the unit is ready for quick on-line service.

The Vantage™ M86 unit comes in three models: the Plus (P), Deluxe (D), and Select (S)

- Plus (M86P) – Controlled by Siemens PLC and user friendly touch screen Human Machine Interface (HMI)
- Deluxe (M86D) – M86P controls plus Variable Frequency Drive (VFD) for flow control, pressure indicating transducers at critical process locations, electromagnetic flow transmitters, and pH monitoring
- Select (M86S) – A stainless steel (SS) "Deluxe" package including stainless steel frame, piping and control panel (72 and 90 membrane units only)

The Deluxe/Select unit also features membrane normalization calculations and data trending capabilities built into the controls and displayed on the HMI.

Vantage™ M86 Unit Benefits

- Compact footprint saves valuable floor space
- Quick equipment delivery keeps project moving fast
- Clean in place connections maximize system serviceability
- Comprehensive factory testing performed at our ISO9001 certified facility
- Optional product blend kit

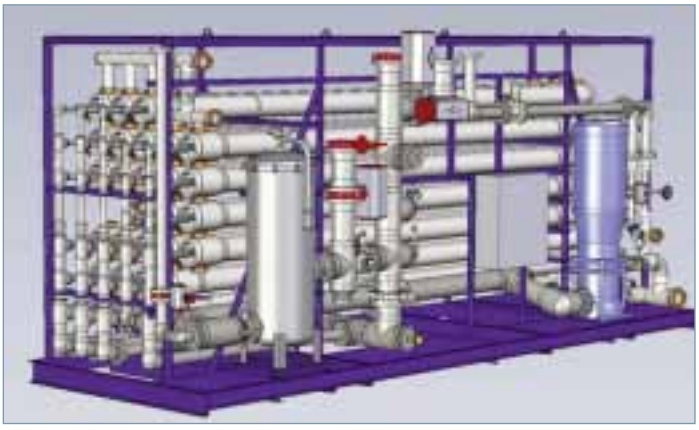
Standard M86 Unit Features

- FILMTEC® NF90-400 membranes
- High pressure 316 stainless steel vertical multistage feed pump
- ASME Code FRP, pressure vessels with ASME pressure relief protection
- PVC low pressure feed, product and reject piping (316L SS for Select package), 316L SS high pressure piping (all packages)
- Urethane coated carbon steel frame (304 SS for Select) rated for Seismic Zone 4 anchorage
- Dry contacts are provided for chemical feed, pretreatment equipment, storage tank levels, and pressure switches
- All alarm and shut down conditions are indicated on the control interface

Design Parameters:

Feed Water Source	Well or Softened
Maximum Turbidity	1 NTU
Maximum Free Chlorine and/or chloramine	<0.1 PPM
Feed Water Fouling Index	Silt Density Index (SDI) < 3
Inlet Temperature	50° F (10° C)
Inlet Pressure Requirements	30 PSIG minimum
Product Pressure Available	10 PSIG
System Recovery (Nominal)	75%
Performance Basis	A specific computer projection must be run for each individual application.

If any of the feed water parameters are not within the limits given, contact Siemens Water Technologies Technical Support.



Specifications

Model No**	Flow Rate Specifications GPM Nominal (m^3/hr)			Vessel Staging	Membrane/ Vessel	Membrane Quantity	Customer Connection Specifications			Utility Requirements***			Approx. Shipping Weight lb (kg)
	Product*	Feed	Reject				Feed	Product	Reject	High Voltage Service	High Voltage FLA	Pump HP	
M86N072	300 (68.1)	400 (90.8)	100 (22.7)	8:4	6	72	6″	6″	3″	460 VAC	79	60	11,100 (5035)
M86N090	350 (79.5)	467 (106.1)	117 (26.6)	10:5	6	90	6″	6″	3″	460 VAC	79	60	11,600 (5262)
M86N126	525 (119.2)	700 (159.0)	175 (39.7)	14:7	6	126	8″	6″	4″	460 VAC	10	125	14,200 (6441)
M86N162	700 (159.0)	933 (211.9)	233 (52.9)	18:9	6	162	8″	8″	4″	460 VAC	10	200	15,200 (6895)

*Product flow rates are based on a flux rate of 14-15 GFD and equipment design parameters listed below. Product flow rates may not be appropriate for other feed waters.
**The 8 designates 8" housing, the 6 designates 6 elements in length, and the -RXXX designates the number of membranes.
***Additional voltage options are available. Refer to equipment specifications.

Dimensions

	072 MEMBRANE	090 MEMBRANE	126 MEMBRANE	162 MEMBRANE
SKID LENGTH	279″ (7087 mm)		287″ (7747 mm)	
SKID WIDTH	66″ (1676 mm)		94″ (2438 mm)	
SKID HEIGHT	110″ (2845 mm)		128″ (3251mm)	

Model Features

Description	M86P (Plus)	M86D (Deluxe/Select)
Controls	Siemens PLC	Siemens PLC
HMI	10″ Color Touch Screen	10″ Color Touch Screen
Inputs/Outputs	Discrete 24 point (14 input/ 10 output) Analog 2 input and 1 output	Discrete 24 point (14 input/ 10 output) Analog 2 input and 1 output Analog 4 channel input (2) Analog 2 channel output (1)
I/O Expansion Capability	Yes	Yes
Communications	PLC-RS485 and Ethernet HMI-Ethernet	PLC-RS485 and Ethernet HMI-Ethernet
Flow Monitoring	Paddlewheel to PLC (feed/reject)	Electromagnetic Transmitter
Pressure	Gauges	Indicating Transducer
Conductivity	Signet Multiparameter	Signet Multiparameter
Auto-Flush (Standby)	Yes	Yes
Permeate Flush	Yes (dry contact)	Yes (dry contact)
Visual/Audible Alarm	Yes	Yes
Single Power Drop 072 and 090 Membrane units 126 and 162 Membrane units*	 460/575 VAC 120 VAC	 460/575 VAC 120 VAC
304LSS Pre-Filter Housing	Yes	Yes
Product Divert Kit	Yes	Yes
Variable Frequency Drive (VFD) Pump 072 and 090 Membrane units 126 and 162 Membrane units	 No No	 Yes (on skid) Yes (ordered separately)
pH with alarms	No	Yes
Product Blend Kit	Yes	Yes
ORP monitor with alarms	Optional	Optional
CL monitor with alarms	Optional	Optional

High voltage components are not provided on these models and will require a separate power drop (460/575) VAC by others.

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