



NEW!

Matrix II

MICROPROCESSOR™ CONTROL PANEL



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RVS Corporation, Bryan, TX.

The RVS Matrix II Microprocessor™ Control Panel (MMP) is now faster and more powerful than ever before and uses the latest technology to provide a total control solution for Liquid Recirculator Packages. RVS was the first in the industry to integrate all of the recirculator functions into a single microprocessor control panel and has raised the bar of performance and capability with the new MMP!

Standard features include vessel level controls and safeties, pump controls, pump and motor safeties, data collection, trouble shooting screens, communications, and the patented minimum pump flow control (US Patent No. 7,437,880). The Matrix can be packaged as a stand-alone panel without integrated motor starters or as a fully complete panel with starters, disconnect and optional VFD controls. All Matrix panels are UL/cUL listed in a NEMA-4 enclosure.

The Matrix is easy to use and includes Factory Set Points based on the actual conditions of service. The large color graphic touch screen display provides easy operator interface into mode screens. Set point entry and calibration require only a few basic touch tabs to navigate.

Factory packaging and wiring assures a fully tested and functional unit, ready-to-go, without expensive field wiring and complicated PLC logic.



New and Improved Features

- Faster Processor
- Control More Pumps, Higher Total Horsepower
- Integrated Pump Bearing Wear Monitor
- Large, Color, Touch Screen Display
- Optional Internally Mounted VFD's



Matrix II Microprocessor Enclosure Options

MMP-A (Alpha): Stand-alone panel without starters or disconnect – electronics only, one or two I/O boards available, with color graphic HMI touch screen display mounted in the enclosure door, 20”W x 24”H x 10”D enclosure dimensions.



MMP-B (Bravo): Small standard enclosure panel for two pumps maximum with starters and disconnect, one I/O board, with color graphic HMI touch screen display mounted in the enclosure door, 24”W x 24”H x 10”D enclosure dimensions.



MMP-C (Charlie): Medium standard enclosure panel for up to three pumps plus one transfer pump maximum with starters and disconnect, one I/O board, with color graphic HMI touch screen display mounted in the enclosure door, 24”W x 36”H x 10”D enclosure dimensions.

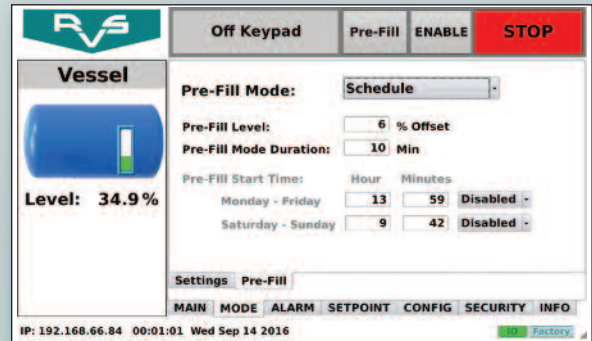
MMP-D (Delta): Large standard enclosure panel for up to six pumps plus one transfer pump maximum with starters and disconnect, one or two I/O boards available, with color graphic HMI touch screen display mounted in the enclosure door, 24”W x 48”H x 10”D enclosure dimensions.

Total Control Solution for Liquid Recirculators

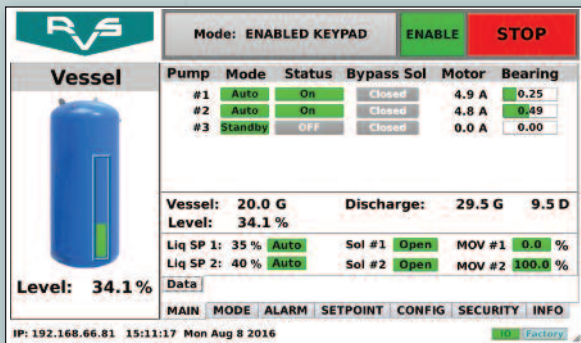
Matrix II Microprocessor Control Features

Vessel Liquid Level Control

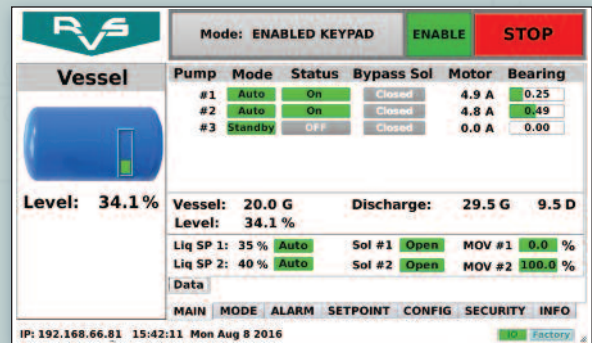
- Accepts 4-20 mA Signal From Level Probe
- Low Level Alarms and Failures
- Operating Level Set Points
- Pre-fill Set Point for Blast Freezers
- High Level Alarms and Failures
- Controls Two Different Liquid Feed Assemblies
- Motorized Valve Dynamic Proportional Control
- Vertical and Horizontal Vessel Color Graphic Images



Pre-fill Set Point



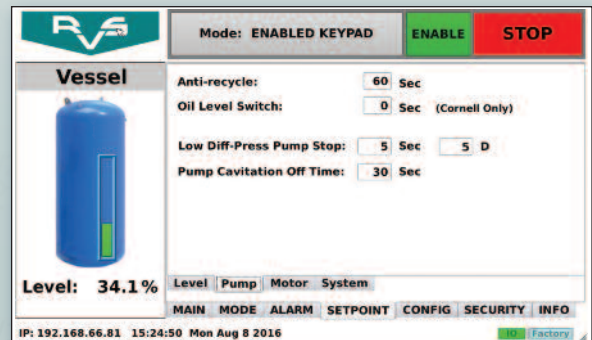
Vertical Vessel Image



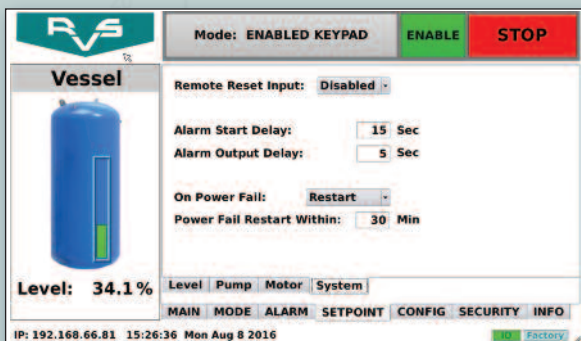
Horizontal Vessel Image

Integrated Pump Control

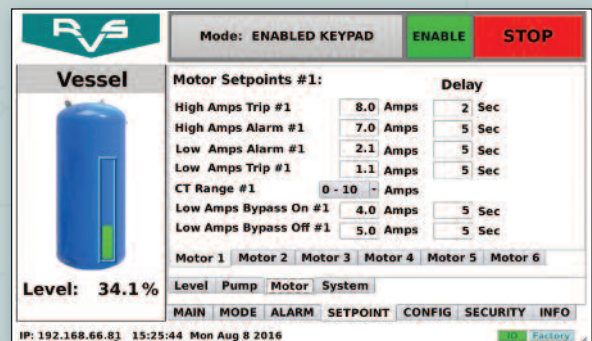
- **NEW!** VFD Control Option
- Low Flow Alarms and Failures
- Cavitation Control and Shutdown
- High Flow Alarms and Failures
- Minimum Flow Bypass Control (US Patent No. 7,437,880)
- Available With or Without Starters



Pump Setpoints



System Alarm Setpoints



Motor Setpoints

NEW Pump Feature! Matrix Bearing Wear Monitoring System

- Matrix Panel Displays Bearing Wear on Screen
- Indicates Rotational Direction
- Works in Parallel With Teikoku Pump Bearing Meter (shown at right)
- Alarms and Failures



Teikoku Bearing Meter

Pump	Mode	Status	Bypass Sol	Motor	Bearing
#1	Auto	On	Open	4.4 A	0.46
#2	Auto	ALARM	Closed	4.8 A	0.57
#3	Standby	OFF	Closed	0.0 A	0.00

Vessel: 20.5 G Discharge: 29.5 G 9.0 D
Level: 22.0 %
Liq SP 1: 35 % Auto Sol #1 Open MOV #1 100.0 %
Liq SP 2: 40 % Auto Sol #2 Open MOV #2 100.0 %

Alarm Annunciator Screen

Pump	Mode	Status	Bypass Sol	Motor	Bearing
#1	Auto	On	Open	4.4 A	0.46
#2	Auto	On...	Closed	4.8 A	0.75
#3	Standby	26 sec	Closed	0.0 A	0.00

Vessel: 20.6 G Discharge: 29.5 G 8.8 D
Level: 22.0 %
Liq SP 1: 35 % Auto Sol #1 Open MOV #1 100.0 %
Liq SP 2: 40 % Auto Sol #2 Open MOV #2 100.0 %

Bearing Wear Monitoring System

Communications and Data Logging

- Ethernet Communications
- MODBUS TCP
- Alarm and Failure History Logs
- Secure Passcode Entry

Ethernet
IP ADDRESS: 192.168.66.81
SUBNET MASK: 255.255.255.0
GATEWAY: 192.168.66.1
Set IP

Date/Time Comm I/O Test Pumps Utilities System
Cal 1 Sensor 1 Out 1 Cal 2 Sensor 2 Out 2 Panel

Ethernet Communications

Event	Time	Date
Trips Cleared	15:02:52	Mon Aug 8 2016
Low Vessel Level Shutdown	14:56:58	Mon Aug 8 2016
Alarms Cleared	14:56:53	Mon Aug 8 2016
Pump 1 High Amps Alarm	14:56:43	Mon Aug 8 2016
Low Vessel Level Shutdown	14:55:50	Mon Aug 8 2016
Alarms Cleared	14:55:46	Mon Aug 8 2016
Pump Cavitation Alarm	14:55:11	Mon Aug 8 2016
Pump 3 Bearing Alarm	14:55:11	Mon Aug 8 2016
Low Vessel Level Shutdown	14:54:55	Mon Aug 8 2016
Enable Button Pressed	03:47:54	Tue Aug 9 2016
Enable Button Pressed	03:47:51	Tue Aug 9 2016

Alarm History

Current Security Level: Factory
PassCode: 0#####
Log In Log Out
Edit Passcodes

Secure Passcode Entry

Matrix II Microprocessor Hardware Specifications

Input Power

- 88-125 VAC 47-63 Hz

Environmental

- Operating Temperature -20°F to 140°F (-29°C to 60°C)
- Storage Temperature -40°F to 185°F (-40°C to 70°C)

Display

- Size 10.1" Diagonal – Wide Format
- Dot Format 1280 x 800 WVGA
- Backlight LED
- Touchscreen 5-Wire Resistive

CPU

- Type ARM Processor, Running Linux

Certifications

- Agency Approvals UL 508A, cUL

Digital Output Modules

- Continuous Operating Current 3 Amps Maximum
- Voltage 12 to 140 VAC

Digital Input Modules

- Voltage 90 to 140 VAC

Analog Inputs

- Type 0-5 VDC, 0-10 VDC, 4-20 mA, ICTD, RTD

Analog Outputs

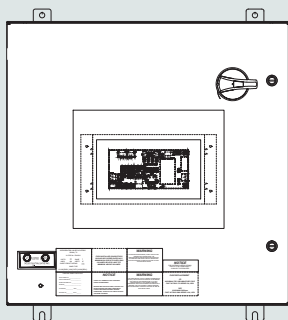
- Type 4-20 mA

Motor Current Sensor

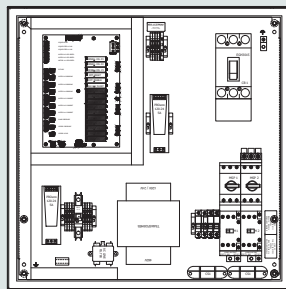
- Technology 4-20 mA Transmitter

External Communications Ports

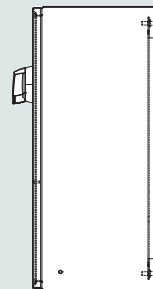
- Ethernet 10/100 Mb/s
- Protocol MODBUS TCP
- USB USB-2.0 Compliant



FRONT VIEW



SUBPLATE VIEW



RIGHT SIDE VIEW





EVAPCO PRODUCTS ARE MANUFACTURED WORLDWIDE.



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