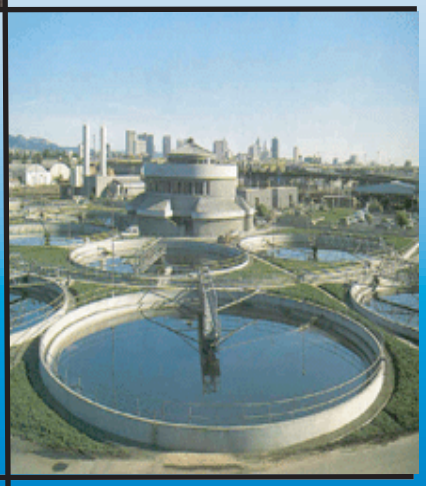
California Motor Controls

Featuring Pump Controls for All Industries

PUMP Vision™



PUMP Vision™ TS350

SMART LEVEL CONTROL SERVER

California Motor Controls specializes in the manufacture of lift station and booster station pump controls. We have more than 25 years experience in manufacturing digital level controllers. We now offer the ability to monitor pump and motor operating conditions and serve all data to event recording logs and to remote SCADA systems.

We have taken level control to a new level, providing access to real time and historical data regarding pump status and performance. This information will give a clear picture into the operation of the pumps and motors, and allow informed decisions about any actions that are necessary.

PUMP Vision™

DIGITAL LEVEL CONTROLS OPTIMIZED TO OPERATE AND MONITOR PUMP SYSTEMS

PUMP Vision TS350

MOTOR Vision™

"SMART" MOTOR STARTERS NETWORK CONNECTED TO PUMP Vision TO MONITOR PUMP OPERATING CONDITIONS.

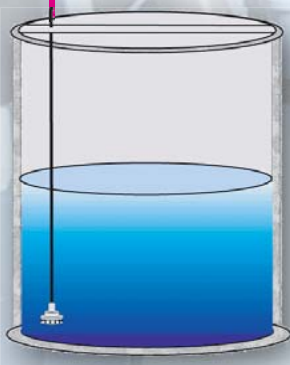

VFD


RVSS


Insight


Tesys U-Line

Use the 0-10V or the 4-20ma input to connect any type of level sensing device such as:



Submerged transducer
Bubbler
Trapped air
Ultrasonic
Resistive tape

MOTOR Vision starters can be across-the-line, VFD, or RVSS. They connect to the PUMP Vision with an RS485 Modbus network and provide important motor operation data such as:

Thermal overload
Short-circuit
Ground fault
Low or high voltage
Low current (pump running dry)
Mechanical jam
Long start
Phase failure and reversal
Contactor failure
Amps per phase, average amps, and current imbalance
Volts per phase, average volts, and voltage imbalance
Frequency

The data is displayed on the PUMP Vision screen and the PUMP Vision serves the data to the SCADA Vision system.

The PUMP Vision control provides an easy to use, intuitive, user interface that gives access to:

Level control - display of level and set points
Pump control- monitor pump conditions
Elapsed time, start counter, duration timer
Trending graph
Fault log on screen
Downloadable event log
E-mail and text message notification of alarms
Web server
MOTOR Vision server
SCADA Vision server

California Motor Controls

The PUMP Vision Ethernet port can be connected to the remote SCADA Vision system with the following methods:

Hard-wired CAT5e Ethernet to LAN/WAN
WiFi to wireless access point to LAN/WAN
900MHz or 2.4GHz radio Ethernet bridge to LAN/WAN
License band radio Ethernet bridge to LAN/WAN
Cellular router to Internet or VPN tunnel

Optionally, the Ethernet port can be replaced with an RS232/RS485 serial port for connection to a network such as:

Modbus
Bacnet
Lonworks

SCADA Vision

COMMUNICATION SYSTEMS CONNECTED TO PUMP Vision
TO REMOTELY MONITOR SYSTEM OPERATING CONDITIONS.

Use any Internet browser to access the PUMP Vision web server. Use a desktop or laptop computer, and even a smart phone.

Monitor PUMP Vision parameters
Monitor MOTOR Vision data
Remotely control the pumps
Change operational set points

Use the Remote Access software to operate the PUMP Vision as if you are standing at the panel. You will have complete access to the PUMP Vision screens.

Use any of the connection methods to transfer the PUMP Vision and MOTOR Vision data into SCADA Vision. Or use your existing SCADA system. Connect with a variety of protocols including Modbus IP, DDE, and OPC.

PUMP Vision™ TS350

Technical Specifications

Power Supply	
Input voltage	24 VDC
Permissible range	20.4 VDC to 28.8VDC with
Max. current consumption	335 ma

Digital Inputs	
Number of inputs	22
Input type	24VDC
Function	Pump 1-4 HOA in Auto Pump 1-4 run feedback Pump 1-4 moisture Pump 1-4 high temperature Redundant HWA and LWA float Power failure

Digital Outputs	
Number of outputs	12
Output type	Relay, 3A
Function	Pump 1-4 run Pump 1-4 out-of-service indicator Purge solenoid Horn, general fault light and contact

Transducer Inputs		
Number of inputs	Two	
Input type	(1) 0-10V, (1) 4-20mA	
Input range	4-20mA	0-10VDC

Graphic Display Screen	
Screen type	TFT, touch resistive analog
Illumination backlight	White LED, software-controlled
Display resolution	320x240 pixels
Viewing area	3.5"
Colors	256
Touch indication	Via buzzer
Keypad	Displays virtual keyboard when the application requires data entry.

Keys	
Number of keys	5 direct function keys
Key type	Metal dome, sealed membrane switch
Function	Pump 1 control Pump 2 control Pump 3 control Pump 4 control Main screen

Environment	
Operational temperature	0 to 50°C (32 to 122°F)
Relative humidity	10% to 95% (non-condensing)
Environmental rating	IP65/NEMA4X

Dimensions	
Size	109x114.1x68mm (4.29x4.49x2.67")
Weight	227g (8 oz)

Miscellaneous	
Battery back-up	7 years typical at 25°C, battery back-up for RTC and system data, incl. variable data
Battery replacement	Yes. Coin-type 3V, lithium battery, CR2450

Communication Ports	
Port 1	1 channel, RS232/RS485
Port 2 (optional)	Available port types: RS232/RS485, Ethernet

Removable Memory	
Micro SD card	Optional - Up to 16GB (or higher as available) Store event log, trend data

System Configuration	
Password protected	Level 2 password
Number of pumps	One, two, three or four
Type of starter	FVNR, VFD, or RVSS
VFD modes	Proportion, PID
Operating direction	Pump up, pump down
Level transducer	Zero and scale are user settable

Alarm Configuration	
Password protected	Level 1 password
Each of the alarm conditions can be set to:	High level - transducer Low level - transducer
Enable/disable	High level - float switch
Manual or auto reset	Low level - float switch
Stop pump(s)	Seal failure
Sound horn	High temperature
Illuminate general fault light	Pump failure
Flash the general fault light	VFD fault
Trigger fault contact	MOTOR Vision fault
Send e-mail	Power failure
Time delay	Transducer failure

Level Configuration	
Password protected	Level 1 password
Lead pump	Stop and start set points
Lag pump(s)	Separate start and stop for each
High level alarm	Set point
Low level alarm	Set point

Data Logging	
On screen general fault and warning	1000 faults, FIFO memory All faults listed in Alarm Configuration above Under voltage, over voltage Under current, over current Thermal overload, short-circuit Phase failure, phase reversal Mechanical jam Long start
On screen VFD fault and warning	250 faults, FIFO memory For each VFD Records all fault that the VFD reports

Trend Graph	
On screen	Graphs for level, no. of pumps running, VFD speed
Record capacity	1 second x 3840
To SD Card	1 sec. interval stored in file for month. 64 mo. total Files are downloadable, importable to Excel

Event log	
Store event information to SD Card	All pump start and start times, plus run duration All system alarm events All MOTOR Vision warning and alarm events > 20 years of data can be stored File is downloadable, importable to Excel

E-mail	
Send alarm notification E-mail or text message	Send to SMTP server 4 recipient numbers Ethernet port option required

Web Server	
Page for system info Page for each pump Page for set points	Pump status, system alarm status, level, station ID Status, alarms, all MOTOR Vision data, soft HOA Set start/stop for each pump, HWA and LWA Auto configures for enabled features and alarms Use Internet browser, password protected Ethernet port option required

Language	
User selectable	English, Spanish (others on request)

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