SmartVue™

Measurement, Display & Control - *Anytime, Anyplace*

SmartVue™ is an LCD graphical display touch screen process controller. It consolidates & displays critical data from multiple sources, and it's right at home in the most challenging environments.

BHD
TEST AND MEASUREMENT
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DYCOR™
The Intersection of Innovation and Technology

Tap Into Your Data.

SmartVue™ was designed to meet industrial applications requiring a wide temperature range -40°F to +158°F (-40°C to +70°C), ruggedized panel meter, for both monitoring and process control applications, in standard or hazardous locations.

Precise Measurement

SmartVue™ accepts a wide variety of inputs, including digital and analog multipurpose I/O types, RTD sensors, and hardware counters. SmartVue™ can then read a specific input type and convert it to a scaled output type to provide signal conversion.

SmartVue™ logs all of the data collected, and can stream the data over a built-in Ethernet connection for easy access anywhere in the world. As a Modbus slave, SmartVue™ readily integrates into existing Modbus networks.

Configurable Display

SmartVue™ can display scaled input signals in your choice of engineering units, or alternatively, show a graphical representation of the variable chosen. The display screen in SmartVue™ can be configured to display the current scaled value of 1 to 4 variables within your process.
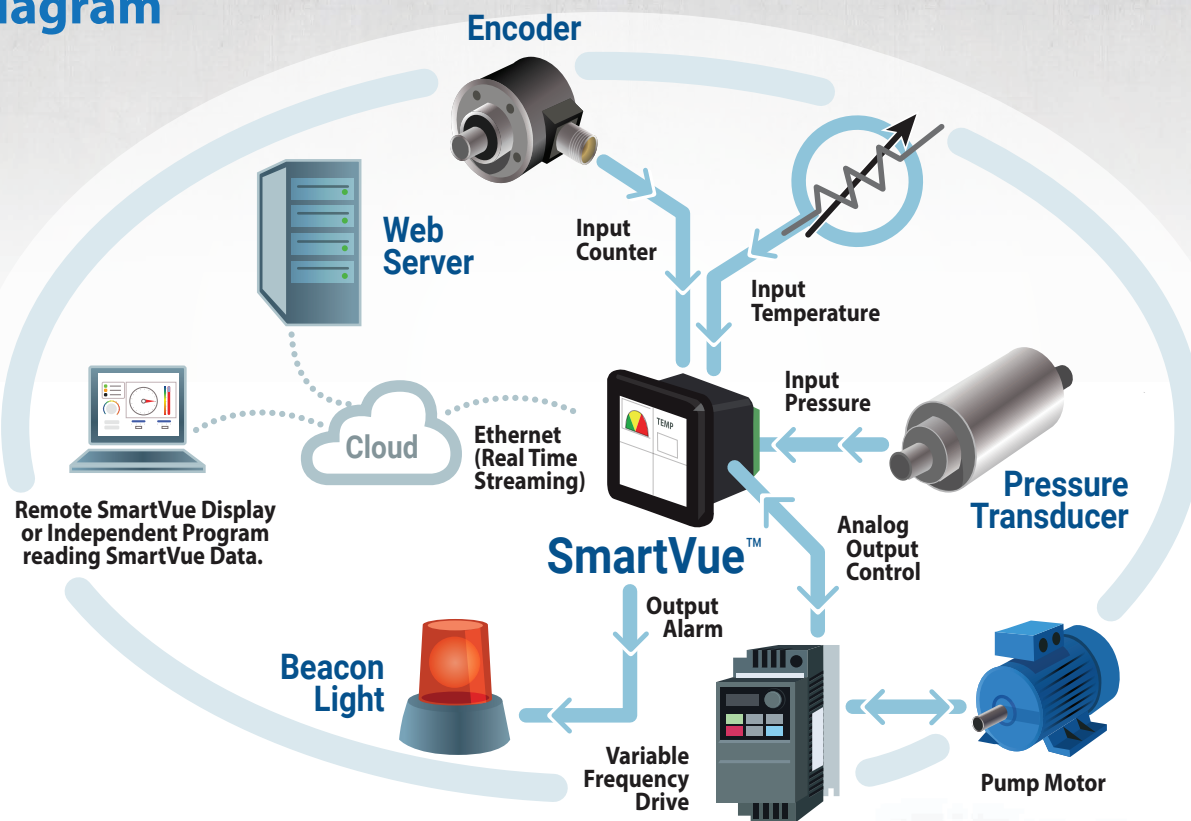
The 3.6" LCD display is sunlight readable with a NEMA 4 rating, and the non-capacitive touchscreen can be operated with gloved fingers, and is armored glass for rugged environments, including CSA/UL Class I Div. 2 hazardous locations.
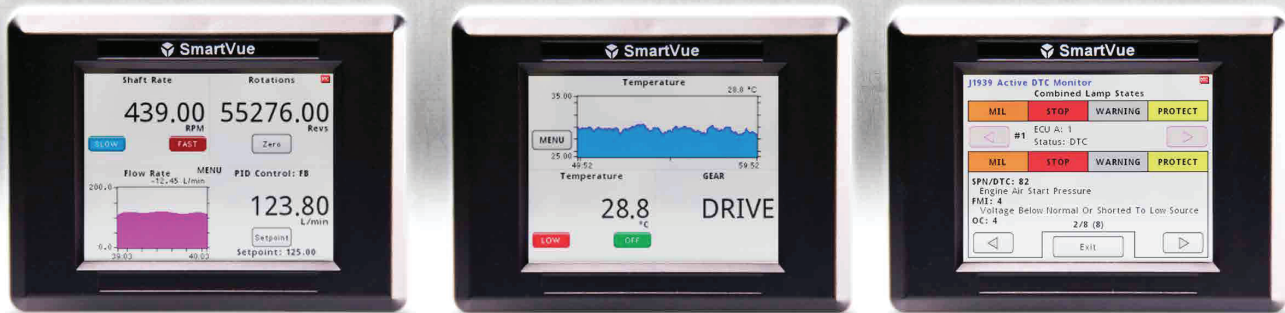
Smart Control

SmartVue™ can provide decision based control by adjusting an analog or digital output dependent upon the value of an input, and up to 8 distinct processes can be controlled. SmartVue™ also allows the configuration of two individual PID loops for process control. These loops can be used to control independent processes in your system.

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SmartVue™

SmartVue Application Diagram

Encoder

Web Server

Input Counter

Input Temperature

Input Pressure

Cloud

Ethernet (Real Time Streaming)

Remote SmartVue Display or Independent Program reading SmartVue Data.

SmartVue™

Pressure Transducer

Analog Output Control

Output Alarm

Beacon Light

Variable Frequency Drive

Pump Motor

Flexible Inputs/Outputs

The device supports a variety of configurable inputs and outputs:

- 2 dedicated analog inputs
- 4 dedicated analog outputs
- 1 RTD input
- 6 user configurable shared analog inputs or digital IO
- 5 user configurable counters/tachometer inputs/quadrature encoders

Feature List

- Approved for CSA/UL Class I Div. 2 Hazardous Locations
- Supports J1939 and ISO 11783 Implement Bus, and data streaming over Ethernet
- 6 multipurpose inputs and outputs (AI, DI, DO)
- 2 frequency outputs
- 2 current loop inputs & outputs, 2 voltage outputs
- Up to 5 counters (2 tachometers and 3 hardware counters – two of which can be configured for quadrature encoder input)
- Data logging – over 14 million data points
- Display up to 4 points at one time
- User configurable screens
- 32-bit CMOS microprocessor and DSP

- Modbus Slave over RS-232/RS-485
- Ethernet output for streaming
- Field upgradeable via USB 2.0
- Equipped with 512 MB Industrial SD Card
- Save and load setup files via USB 2.0
- ¼ VGA color LCD daylight viewable with LED backlighting (heated for low-temperature use)
- Armored glass touch screen
- Robust, ruggedized, weatherproof design
- Power and input/output connections by removable screw terminal blocks
- Operating Temperature Range: : -40°F to +158°F (-40°C to +70°C)

Operational Specifications

CURRENT LOOP Inputs
Two Dedicated 16-bit, 4-20 mA
- Isolation: 500 Volts
- High frequency analog filtering

Analog Outputs
Two 14-bit linear (isolated) analog outputs
- 4-20 mA up to 33 V max., or output for PID control

Two 14-bit voltage outputs
- 0 – 10 V with 100 Ω output impedance
- Maximum current of 10 mA

Two Frequency outputs
- 0.00Hz – 6250 Hz

Multipurpose I/O
Six Multipurpose I/O, configured as DI, DO, or VI
- DI: 0-30 VDC; configurable pull-up; adjustable threshold voltage
- DO: 0-30 VDC; configurable pull-up; open collector; output rating
- 70mA max (hold), 140mA trip, 1A peak, 50Ω impedance
- VI: 12bit with full scale 0 - 25 VDC; 100kΩ impedance

Hardware Counters
Two Tachometers, 80,000 Counts/second
Three Counters, 300,000 Counts/second
- Configurable as 2 quadrature encoders

RTD Sensor Channel
One 16-bit (non-isolated) RTD
- Pt 100 or 500 Ω DIN, IEC
- Measurement range: -328°F to +1562°F (-200°C to +850°C)

MODBUS
- Modbus Slave communications over RS-232/485
- Supports Modbus RTU and Modbus ASCII protocols
- Support for Function Codes 2 & 4
- User configurable register mapping for all Process & Control Process data
- Includes preassigned registers for J1939 SPN & DTC data

DATA LOGGING
- 450MB data storage, >14 million data points
- Selectively log process, control, I/O, J1939 data
- Configurable sampling period: 1 second to 24 hours
- Auto file/log creation on power up or config change
- User configurable sequence names
- Export data to USB (CSV format)
- User configurable export - complete data sequence or time interval subset
- Overwrite (looping) feature for continuous logging
- J1939 diagnostic trouble codes stored separately

J1939
- 16 selectable J1939 parameter display screens
- Support DM1 active diagnostic codes
- Support for PGN requests
- Supports VIN requests
- ISOBUS support
- Ability to disable transmit
- Fixed and arbitrary addressable

User-Configurable
- Inputs mapped to outputs
- Control Loops: PID, signal conversion/retransmission
- Threshold triggers, latching or momentary
- Direct output control from touchscreen

Physical & Environmental Specifications

- **Case color:** Black
- **Dimensions:** 3.6" (90 mm) High × 4.7" (119 mm) Wide × 4.8" (123 mm) Deep
- **Weight:** 1.04 lbs (580 g)
- Input Power Range 10 – 30 VDC, reverse polarity protected (external fuse recommended)
- **Power Consumption:** < 1A (no load), < 1.5A (max load)
- **Operating Temperature Range:** -40°F to +158°F (-40°C to +70°C)
- **Storage Temperature Range:** -40°F to +176°F (-40°C to +80°C)
- **Relative Humidity:** 0 to 95%, non-condensing
- **Vibration:** 4.4 G, 3 axis, frequency swept 5-2000 Hz
- **Emissions Compliance:** FCC part 15 Class A, Industry Canada
- Hazardous location certified – Class I Div. 2, CSA/UL
- NEMA4 weatherproof panel-mount design

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