

# IntelliSpark® Ignition Controller System

The IntelliSpark 32/16/8 series ignition systems are capacitive discharge, low-tension type designs. The system is capable of generating precise spark timing that improves fuel economy, load balance and ignition stability. The controller design incorporates a state-of-the-art 16-bit microcontroller. This technology provides users with a highly flexible solution to meet their ignition needs.

The user can choose from one of five methods of crankshaft sensing for a 4-stroke engine and two methods for a 2-stroke engine.

FW Murphy's smart ignition coils used with this product incorporate a sense lead connection for real-time spark plug demand voltage measurements by the ignition controller. This allows the controller to:

- Measure demand on each cylinder's plug for diagnostic purposes;
- Automatically control the energy delivered to the smart coils to optimize spark plug life;
- Use the measured demand in the unique camless crank method to determine the compression stroke, eliminating the need for a camshaft sensor.

Several smart coil designs are available to accommodate specific ignition requirements including: remote mount coils and plug-mounted (integral) coils, non-hazardous or CSA Class I, Div. 2 rated versions.

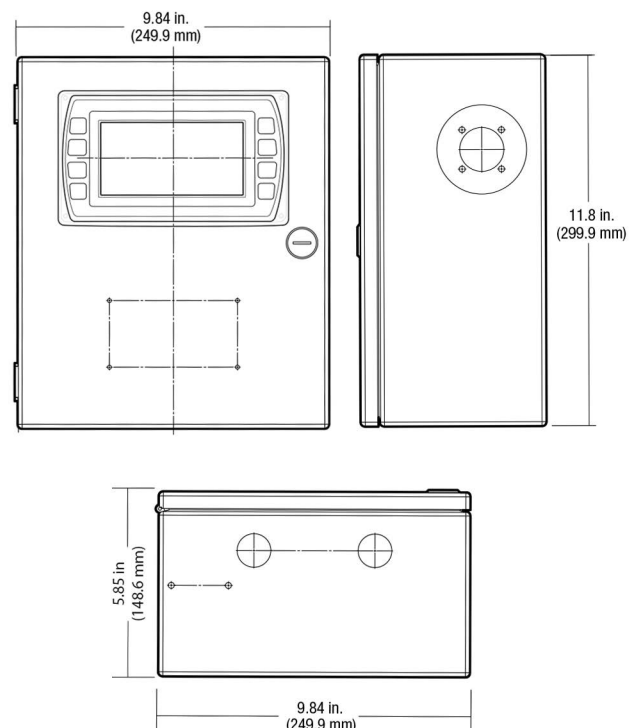
This system also includes the PV450 full-color screen display for control functions, monitoring, programming and diagnostic testing. The eight-button display includes comprehensive built-in help files and wiring information for the coil harness and a database of common engines for ease of configuration.

## Features

- Crankshaft-referenced 16-bit microprocessor based system
- Patented Smart Coil™ technology
- Automatic energy control
- Five timing reference options including camless operation
- Two field-adjustable timing schedules
- Optimized engine combustion and performance
- True primary and secondary diagnostics



## Dimensions



# Specifications

## Power Requirements:

**IS-16/8:** 10-30 VDC (12/24 VDC nominal) 3.0 Amps max

**IS-32:** 10-30 VDC, 6.0 Amps max

**Note:** The input current is dependent on firing rate

## Environment:

**Temperature Operating Range:** -4° to +158° F  
(-20° to +70° C)

**Enclosure Rating:** IP66 with display mounted in the enclosure box;  
Type 4 without display mounted in the enclosure box

## Third Party Approvals:

CSA Certified for Class I, Div 2, Groups B, C, D

**IS-8:** Fires 8 outputs

**IS-16:** Fires 16 outputs

**IS-32:** Fires 32 outputs, 2 outputs can fire simultaneously

## Energy Storage:

**IS-32/16/8:** 180 mJ max, per tank capacitor

## Communications:

**IS-32/16/8:** An auxiliary comm port is available, RS-485 interface,  
Modbus protocol

**Note:** This port has a user programmable slave ID, runs at  
9600 baud or 19.2K.

All parameters available can be modified in parallel using the main  
front panel display.

## Output Electrical Specifications:

**IS-8:** Single tank capacitor

**IS-16:** Dual, alternately fired tank capacitors

**IS-32:** Quad, alternately fired pairs of tank capacitors

Ignition Outputs are High-side firing referenced to the T pin  
on the output harness

**Note:** These outputs are not ground referenced unless the T lead is  
grounded. Recommend careful adherence to installation instructions.

**Maximum Output Current Pulse Rating:** 40 Amps

**Note:** Current pulse amplitude is dependent on the coils in use  
and the tank capacitor voltage.

**IT-230 Series coils:** 7 Amp pulse @ 230Volts

**IT-150 Series coils:** 35 Amps @ 150 Volts

**IT-250 series coils:** 20 Amps @ 250 Volts

## 4/20 mA Inputs:

**4/20mA A:** This input retards timing (if programmed) when  
schedule A is active.

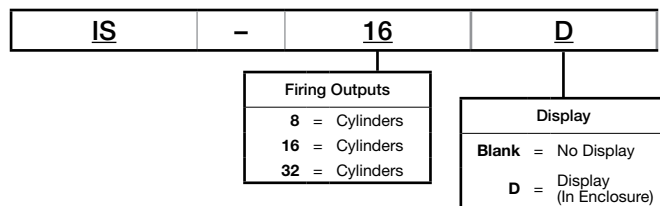
**4/20mA B:** This input retards the timing (if programmed) when  
schedule B is active.

# How to Order

Options listed below. All configurations may not be available. Call your sales representative or FW Murphy for more information.

Choose an ignition module for the firing outputs required, add D for display built into the enclosure.

**Example IS-16D:** ignition module, 16 outputs, with display



### DISPLAY NOTE:

You may either choose **D** for a display built into the enclosure or leave blank and order a loose display and cables for remote mount from the chart below.

| Part Number | Model and Description                                    | Notes               |
|-------------|--|---------------------|
| 72700249    | Display Module, PV450NV-03-CSA-IS                        | Remote Display Unit |
| 78001106    | Cable, Remote Power 50 ft., PVW-450-PWR-50 ft.           |                     |
| 78001107    | Cable, Remote Communication 50 ft., PVW-450-RS485-50 ft. |                     |

| Approximate Shipping Weight and Dimensions |              |                           |
|--|--------------|---------------------------|
| Model                                      | Weight       | Dimension                 |
| IS-8, 16, 32, (D) Ignition modules         | 20 lbs.      | 16 x 16 x 11in.           |
| PV450 Display                              | 1 lbs. 7 oz. | 4-1/2 x 4-1/2 x 4-1/2 in. |
| Power Cable 50 ft.                         | 2 lbs.       | Bundled cable             |
| Communication Cable 50 ft.                 | 2 lbs.       | Bundled cable             |

Please contact your local FW Murphy Sales Representative for a complete IntelliSpark Ignition System and FW Murphy products.

A local distributor can be found at [www.fwmurphy.com/wheretobuy/us-sales-distributors](http://www.fwmurphy.com/wheretobuy/us-sales-distributors).