**Power**

- 9-30 VDC or 10-32 VAC

**Monitor AC Voltage or Current and Speed**

- Two Independent Channels with Full Isolation
- Zero and Span for Each Output
- Input and Output LoopTracker™ LEDs
- Output Test/Manual Override for Each Channel
- Built-In I/O Power Supplies

**Applications**

- Monitor AC Voltage or Current and Speed
- Convert/Isolate Dual Output Transmitters

**Channel 1 AC Input Range**

- Factory configured, please specify input type and range
  - Voltage: 0-50 mVAC to 0-300 VAC
  - Current: 0-1 mA to 0-1000 mA
- Measurement type: True RMS
- Frequency: 40 Hz to 100 Hz sinusoidal
- Voltage input impedance: 220 kΩ minimum
- Current input voltage burden: 1.0 V max

**Channel 2 Frequency Input Range**

- Factory configured, please specify input range
  - Frequency: 0-25 Hz to 0-2 kHz
  - Any waveform with 5 microsecond min. pulse, 100 mV min. amplitude change, 100 mV to 150 Vrms amplitude

**Channel 2 Sensor Power Supply**

- 15 VDC ±10%, regulated, 25 mA max, <10 mVrms max. ripple

**Channel 2 Characteristics**

- Impedance at max. sensitivity: 10 kΩ nom.
- Impedance at min. sensitivity: 100 kΩ nom.
- Sensitivity/hysteresis adjustment: Multi-turn potentiometer
- Sensitivity/hysteresis range: ±25 mV to ±2.5 V typical
- Normal mode protection: 20% of input rating
- Common mode protection: 600 V input to ground

**LoopTracker**

- Variable brightness LEDs indicate I/O levels for each channel

**Channel 1 and Channel 2 Output Ranges**

- Factory configured, please specify for each output
  - Voltage: 0-1 VDC to 0-10 VDC, 10 mA max up to 20 VDC with M19, M29, M39
  - Bipolar voltage: ±1 VDC to ±10 VDC
  - Current: 0-1 mA to 0-25 mA, 4-20 mA
- 20 V compliance, 1000 Ω at 20 mA

**Output Calibration**

- Multi-turn zero and span potentiometers for each output channel ±15% of span adjustment range typical

**Output Characteristics**

- Linearity: ±0.1% of span
- Temperature stability: Better than 0.04% span/°C
- Output ripple and noise: Less than 10 mVrms

**Isolation**

- Full 5-way, 1200 Vrms minimum

**Response Time**

- 70 milliseconds typical

**Output Loop Power Supplies**

- 20 VDC nominal, regulated, 25 mA max for each output channel
  - May be selectively wired for sinking or sourcing mA output

**Output Test**

- Front buttons set each output to test level when pressed
  - Each test level potentiometer adjustable 0-100% of span

**Installation Environment**

- Mount vertically to a 35 mm DIN rail
- For use in Pollution Degree 2 Environment
- IP 40 housing, requires installation inside an enclosure ~10°C to ~60°C operating ambient

**Connectors**

- Eight 4-terminal removable connectors, 14 AWG max wire size

**Power**

- 85-265 VAC, 50-60 Hz
- Universal Power

**Dimensions**

- 1.78” W x 4.62” H x 4.81” D
- 45 mm W x 117 mm H x 122 mm D

**Universal Power**

- Height includes connectors

**LoopTracker**

- Variable brightness LEDs indicate I/O levels for each channel

**Custom I/O Ranges**

- Output Sink/Source versatility

- Adjustable Output

- Test Function for Each Channel

**Description**

- The APD 2067 DuoPak accepts one AC voltage or current input and one frequency input and provides two optically isolated DC voltage or current outputs that are linearly related to the inputs. These inputs are the ranges for each channel (independent and can be specified as required). This provides an economical two channel solution in one device.

**Applications**

- Two channel AC-DC, Freq.-DC transmitter

**Output Test**

- An API exclusive feature includes output test buttons for each channel to provide a fixed output (independent of the input) when held depressed.

**Options and Accessories**

- API exclusive features include four LoopTracker LEDs (green for each input, red for each output) that vary in intensity with changes in the process input and output signals.

**How to Order**

- Models are factory ranged. See I/O ranges above left.
- Ranges and options for each channel must be specified on order

**APD 2067**

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>APD 2067</td>
<td>DuoPak 2 channel AC-DC, Freq.-DC converter/isolator/transmitter</td>
<td>85-265 VAC, 50/60 Hz or 60-300 VDC</td>
</tr>
<tr>
<td>APD 2067 D</td>
<td></td>
<td>9-30 VDC or 10-32 VAC</td>
</tr>
</tbody>
</table>
Precautions

WARNING! All wiring must be performed by a qualified electrician or instrumentation engineer. See diagram for terminal designations and wiring examples. Consult factory for assistance.

WARNING! Avoid shock hazards! Turn signal input, output, and power off before connecting or disconnecting wiring, or removing or installing module.

Précautions

ATTENTION! Tout le câblage doit être effectué par un électricien ou ingénieur en instrumentation qualifié. Voir le diagramme pour désignations des bornes et des exemples de câblage. Consulter l’usine pour assistance.

ATTENTION! Eviter les risques de choic! Ne pas installer le signal d’entrée, le signal de sortie et l’alimentation électrique avant de connecter ou de déconnecter le câblage, ou de retirer ou d’installer le module.

API maintains a constant effort to upgrade and improve its products. Specifications are subject to change without notice. See api-usa.com for latest product information. Consult factory for your specific requirements.

Electrical Connections

Polarity must be observed for signal wiring connections. If the input and/or output do not function, check wiring and polarity.

Each product is factory configured to your exact input and output ranges as indicated on the serial number label.

Outputs

For milliamp ranges determine if your devices provide power to the current loop or if the loop must be powered by the APD module. Typical voltage may be 9-24 VDC at your device’s terminals if it provides power to the loop.

Mounting to a DIN Rail

Install module vertically on a 35 mm DIN rail in a protective enclosure away from heat sources. Do not block air flow. Allow 1" (25 mm) above and below housing vents for air circulation.

1. Lift front of module down and loosen lower spring clips against the bottom edge of DIN rail.
2. Push front of module upward until upper mount snaps into place.

Removal

Avoid shock hazards! Turn signal input, output, and power off.

1. Push up on bottom back of module.
2. Lift front of module downward to release upper mount from top edge of DIN rail.
3. The module can now be removed from the DIN rail.

Calibration

Front-mounted Zero and Span potentiometers for each channel can be used to compensate for load and lead variations.

1. Apply power to the module and allow a minimum 30 minute warm up time.
2. Using an accurate calibration source, provide an input to the module equal to the minimum input required for the application.
3. Using an accurate measurement device for the input, adjust the Zero potentiometer for the exact minimum output. The Zero control should only be adjusted when the input signal is at its minimum. This will produce the corresponding minimum output signal. For example: 4 mA for a 4-20 mA output or –10 V for a ±10 V output.
4. Set the input at maximum, and then adjust the Span pot for the exact maximum output desired. The Span control should only be adjusted when the input signal is at its maximum. This will produce the corresponding maximum output signal. Example: for 4-20 mA output, set the Span control to 20 mA.
5. Repeat adjustments for both output channels for maximum accuracy.

Ch. 2 Sensitivity Adjustment

This multi-turn potentiometer provides an adjustable threshold level that the incoming signal must overcome before an output can be produced. This is used to limit noise and minimize false input signals that may cause erroneous readings.

Fully clockwise (max. sensitivity), input threshold is ±25 mV. Fully counterclockwise (min. sensitivity), input threshold is ±2.5 V.

Operation

The APD 2067 accepts one AC voltage or current input and one frequency input device powers the current loop. APD module provides the loop power.

Input 1, AC

Any polarity may be used for an AC input. A transmitter DC power supply is available at terminals 22 and 23, but is not commonly used with an AC input.

AC Input Channel 1

Device with an AC voltage or current polarity is required at the factory. No input calibration is necessary. The frequency input is compatible with most types of sensors that produce a 100 mV amplitude change and a minimum of 5 microsecond pulse width. A 15 VDC supply is available to power the sensor if required. Always refer to the latest product information. Consult factory for your specific requirements.

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Frequency Sensor Ch. 2

The frequency signal input is capacitively coupled to prevent any DC in the input. Some sensors, typically those without an internal load resistor, require a resistive load in order to function.

The resistor value may be specified by the sensor manufacturer as the “minimum resistive load” or calculated from the sensor manufacturer’s specified “load current range”.

The 15 VDC power supply is capable of providing 25 mA. A load current range of 3 mA to 25 mA would typically use a 5 kΩ to 500 Ω resistor.

Module Power Terminals

Check label for module operating voltage to make sure it matches available power. The power supplies are fuse protected and the unit may be returned to API for fuse replacement.

When using DC power, either polarity is acceptable, but for consistency, use positive (+) to terminal 25 and negative (–) to terminal 28.