Applications

Split, Convert, Boost, and Rescale Process Signals
Split Process Signals for Control and Validation
Interface a Process Signal with Multiple Panel Meters, PLCs, Recorders, Data Aqm., DCS, & SCADA Systems

DC Input Range
Factory ranged, please specify
Voltage: 0-10 mVDC to 0-100 VDC
Bipolar voltage: ±50 mVDC to ±10 VDC
Current: 0-1 mADC to 0-50 mADC, 4-20 mADC

Input Impedance and Burden
Voltage: 200 kΩ minimum
Current: 50 kΩ typical
Voltage burden: 1.25 VDC max. at 20 mA current input

Input Loop Power Supply
15 VDC ±10%, regulated, 25 mADC
May be selectively wired for sinking or sourcing mA input

LoopTracker
Variable brightness LEDs indicate output loop level and status
One red LED for each output

Channel 1 and Channel 2 DC Output Ranges
Factory configured, please specify for each output channel
Outputs are independent and do not need to be the same
Voltage: 0-1 VDC to 0-10 VDC, 10 mADC max
Up to 20 VDC with M19, M29, M39
Bipolar voltage: ±1 VDC to ±10 VDC
Current: 0-1 mADC to 0-20 mADC, 4-20 mADC
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 Loop Power Supplies
20 VDC nominal, regulated, 25 mADC for each output channel
May be selectively ordered for sinking mA output

Output Test/Manual Override
Terminals for customer-supplied external contacts to manually set output levels for each channel
Output test level factory set to 50 % of span
Specify if special output percentage levels are required

Output Ripple and Noise
Less than 10 mVrms ripple and noise
Linearity
Better than ±0.1% of span
Ambient Temperature Range and Stability
−10°C to +60°C operating ambient
Better than ±0.04% of span per °C stability

Response Time
70 milliseconds typical

Isolation
Full 4-way, 1200 Vrms minimum

Installation Environment
IP 40, requires installation in panel or enclosure with adequate ventilation
For use in Pollution Degree 2 Environment
Mount vertically (as shown in picture) to a 35 mm DIN rail allowing minimum 1” (25 mm) above and below housing vents for air circulation

Power
85-265 VAC, 50/60 Hz or 60-300 VDC, 6 W maximum
D versions: 9-30 VDC or 10-32 VAC 50/60 Hz, 6 W maximum

Dimensions and Connectors
0.89” W x 4.62” H x 4.81” D
22.5 mm W x 117 mm H x 122 mm D
Four 4-terminal removable connectors, 14 AWG max wire size

Applications Link
api-usa.com/apps

Description
The APD 4930 IsoSplitter accepts a DC voltage or current input and provides two optically isolated DC voltage or current outputs that are linearly related to the input. The input range and each output range are independent and can be specified as required. This provides an economical solution when one signal must be sent to two different devices. Typical applications include isolation, output splitting, output device separation and redundancy (i.e. to prevent failure of the entire loop if one device fails), or a combination of these. The input signal is filtered, amplified, split, and then passed through an opto-coupler to the output stages. Full 4-way isolation (input, output 1, output 2, power) makes this module useful for ground loop elimination, common mode signal rejection and noise pickup reduction.

Independent Outputs
Each output channel is factory ranged to your specifications and provides an optically isolated DC voltage or current output that is linearly related to the input. Sourcing mA outputs are standard. Sinking milliamp or high voltage outputs are optional.

Isolation
The full 4-way (input, output 1, output 2, power) isolation makes this module useful for ground loop elimination, common mode signal rejection or noise pickup reduction.

LoopTracker
API exclusive features include two LoopTracker LEDs (one for each output channel) that vary in intensity with changes in the process output signals. These provide a quick visual picture of your process loop at all times and can greatly aid in saving time during initial startup and/or troubleshooting.

Model | Input | Output | Power
--- | --- | --- | ---
APD 4930 | Factory configured specify input range and type | Factory configured specify output ranges and type for channel 1 and channel 2 | 85-265 VAC or 60-300 VDC
APD 4930 D | | | 9-30 VDC or 10-32 VAC

Options—add to end of model number
M19 Channel 1 high voltage output
M29 Channel 2 high voltage output
M39 Channel 1 and channel 2 high voltage output
EXT1 Sinking mA output channel 1
EXT2 Sinking mA output channel 2
EXT3 Sinking mA output channel 1 and 2
U Conformal coating for moisture resistance

Accessory—order as separate line item
API BP4 Spare 4-terminal plug, black

Absolute Process Instruments
1220 American Way Libertyville, IL 60048
Phone: 800-942-0315 Fax: 800-949-7502
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Installation and Setup

**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!** Éviter les risques de choc! Fermez 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.

**WARNING:** This product can expose you to chemicals including nickel, which are known to the State of California to cause cancer or birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

**Ranges**

See the model/serial number label for information, options, and I/O range information. The voltage and/or milliamp I/O ranges are factory set for each channel to your exact specifications.

**Signal Input Terminals**

Polarity must be observed when connecting the signal input. Terminal 3 provides 20 VDC to power a passive mA Transmitter if required.

The APD 4930 splits and converts a single input signal into two outputs. See the wiring diagrams at right.

**Signal Output Terminals**

Polarity must be observed when connecting the signal outputs. See the module label for the voltage or milliamp output range for each channel. The standard milliamp output is sourcing. It provides 20 VDC power to your device.

Optional sinking mA output(s) will be indicated on the module label as EXT1 for channel 1, EXT2 for channel 2, or EXT3 for both channel 1 and channel 2.

If the output does not function, check wiring and polarity for both input and outputs. See note about terminating an unused mA output channel.

**Module Power Terminals**

Check model/serial number label for module operating voltage to make sure it matches available power. The power supply is fuse protected and the unit may be returned to API for fuse replacement.

When using DC power, either polarity is acceptable, but for consistency with similar API products, positive (+) can be wired to terminal 13 and negative (–) can be wired to terminal 16.

**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. Tilt front of module downward and position against DIN rail.
2. Clip lower mount to bottom edge of DIN rail.
3. Push front of module upward until upper mount snaps into place.

**Removal**

1. Push up on the bottom back of the module.
2. Tilt 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**

Input and output ranges are pre-configured at the factory as specified on your order. Front-mounted, Zero and Span potentiometers for each channel can be used to calibrate the output to compensate for load and lead variations.

1. Apply power to the module and allow a minimum 20 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 output, adjust the Zero potentiometer for the exact minimum output desired. 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. Next, set the input at maximum, 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, the Span control will provide adjustment for the 20 mA or high end of the signal.
5. Repeat adjustments for maximum accuracy.

**Operation**

The APD 4930 is factory configured to your exact input and output requirements. The voltage or milliamp input is filtered, either amplified or attenuated as required, then passed through an optical coupler to the output stage.

A red LoopTracker output LED provides a visual indication that the output signal is functioning for each channel. It becomes brighter as the input and the corresponding output change from minimum to maximum.

For current outputs, the red LED will only light if the output loop current path is complete. For either current or voltage outputs, failure to illuminate or a failure to change in intensity as the process changes may indicate a problem with the module power or signal output wiring.

**Terminal Identification**

**Remote Test**

To avoid damage to the module, do not make any connections to unused terminals.

**Outputs**

Wire terminal torque
0.5 to 0.6 Nm or 4.4 to 5.3 in-lbs

**To avoid damage to the module, do not make any connections to unused terminals.

<table>
<thead>
<tr>
<th>Channel</th>
<th>Voltage Xmt</th>
<th>Power AC or DC</th>
<th>Earth Ground</th>
<th>Power AC or DC</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>–</td>
</tr>
<tr>
<td>14</td>
<td>–</td>
<td>–</td>
<td>+</td>
<td>–</td>
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<tr>
<td>16</td>
<td>–</td>
<td>+</td>
<td>–</td>
<td>–</td>
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</tbody>
</table>

**Outputs**

<table>
<thead>
<tr>
<th>Output 1</th>
<th>Voltage output</th>
<th>+20V at terminal 10</th>
<th>Sourcing mA output</th>
<th>+20V at terminal 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Powered</td>
<td>powered mA Xmt</td>
<td>+20V</td>
<td>Powered mA Xmt</td>
<td>+20V</td>
</tr>
<tr>
<td>Device 1</td>
<td>Device 1</td>
<td>Loop Tracker</td>
<td>Device 2</td>
<td>Loop Tracker</td>
</tr>
<tr>
<td>9</td>
<td>10</td>
<td>11</td>
<td>12</td>
<td>13</td>
</tr>
</tbody>
</table>

**Inputs**

<table>
<thead>
<tr>
<th>Input 1</th>
<th>Voltage input</th>
<th>+20V at terminal 3</th>
<th>Current Sourcing Input</th>
</tr>
</thead>
<tbody>
<tr>
<td>Powered</td>
<td>powered mA Xmt</td>
<td>Loop Power Source</td>
<td>+20V</td>
</tr>
<tr>
<td>Device 1</td>
<td>Device 1</td>
<td>Xmt</td>
<td>Device 1</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

**Inputs**

<table>
<thead>
<tr>
<th>Input 1</th>
<th>Voltage input</th>
<th>+20V at terminal 3</th>
<th>Current Sinking Input</th>
</tr>
</thead>
<tbody>
<tr>
<td>Powered</td>
<td>powered mA Xmt</td>
<td>Loop Power Supply</td>
<td>+20V</td>
</tr>
<tr>
<td>Device 1</td>
<td>Device 1</td>
<td>Xmt</td>
<td>Device 1</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

**Outputs**

<table>
<thead>
<tr>
<th>Output 2</th>
<th>Voltage output</th>
<th>+20V at terminal 10</th>
<th>Sourcing mA output</th>
<th>+20V at terminal 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Powered</td>
<td>powered mA Xmt</td>
<td>Loop Tracker</td>
<td>Powered mA Xmt</td>
<td>Loop Tracker</td>
</tr>
<tr>
<td>Device 2</td>
<td>Device 2</td>
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<td>Device 2</td>
<td>Xmt</td>
</tr>
<tr>
<td>5</td>
<td>6</td>
<td>7</td>
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<td>Xmt</td>
<td>Device 1</td>
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