

1 Input: 0-10 mV to 0-100 V, ± 50 mV to ± 10 V, 0-1 mA to 0-50 mA, 4-20 mA**2 Outputs:** 0-1 V to 0-10 V, ± 1 V to ± 10 V, 0-1 mA to 20 mA, 4-20 mA[Quick Link: api-usa.com/4930](http://api-usa.com/4930)

- One Input to Two Outputs with Full Isolation
- Zero and Span Output Calibration Potentiometers
- Full 1200 V Input/Output /Power Isolation
- Output LoopTracker® LEDs
- Output Test/Manual Override for Each Channel
- Built-In Loop Power Supply for Sink/Source Input

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 Acq., 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 BurdenVoltage: 200 k Ω minimumCurrent: 50 Ω typical

Voltage burden: 1.25 VDC max. at 20 mA current input

Input Loop Power Supply15 VDC $\pm 10\%$, regulated, 25 mADC

May be selectively wired for sinking or sourcing mA input

LoopTrackerVariable 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 mA 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
 $\pm 15\%$ 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

LinearityBetter than $\pm 0.1\%$ of span**Ambient Temperature Range and Stability** -10°C to $+60^{\circ}\text{C}$ operating ambientBetter than $\pm 0.04\%$ of span per $^{\circ}\text{C}$ stability**Response Time**

70 milliseconds nominal

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**Free Factory I/O Setup!**

Custom I/O Ranges

DC Input: Voltage or Sink/Source mA

Output LoopTracker LED

Zero and Span for Each Output

2 Output Channels; Voltage or mA with Sink or Source Options

Universal Power



Removable Plugs

See Wiring Diagrams on Next Page

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) make 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	85-265 VAC or 60-300 VDC
APD 4930 D		specify output ranges and type for channel 1 and channel 2	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

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.

Ranges

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

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.

Electrical Connections

See wiring diagrams at right. Observe polarity. If the output does not function, check wiring and polarity.

* Do not make any connections to unused terminals or use them as wiring junctions for external devices. This may cause permanent damage to the module!

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.

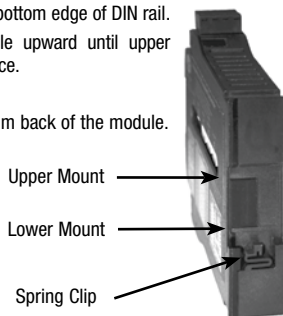
1. Tilt front of module downward and position against DIN rail.
2. Clip lower mount to bottom edge of DIN rail.
3. Push front of module upward until upper mount snaps into place.

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.

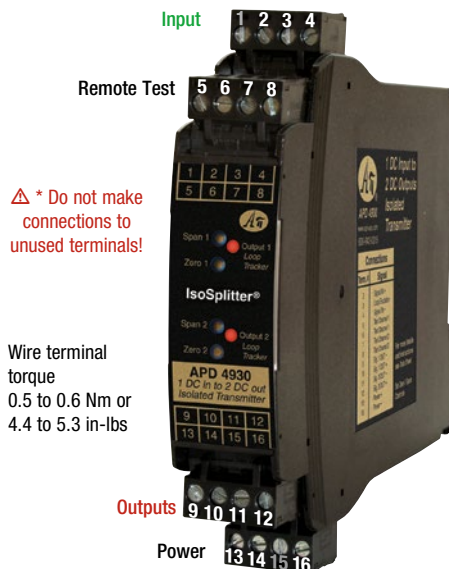
Operation

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



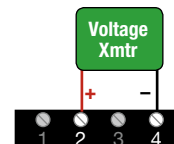
△ * Do not make connections to unused terminals!

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 leave any unused mA outputs disconnected. Use a 1000 Ohm 1/2 Watt resistor across terminals 9 & 10 or 11 & 12 if any are not being used.

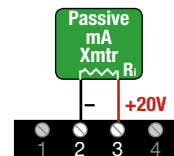
△ * Do not make connections to unused terminals!

Voltage Input



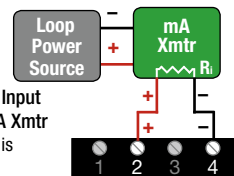
Current Sourcing Input

+20 V at terminal 3
Module powers mA input loop

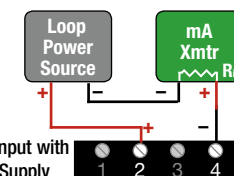


Current Sinking Input

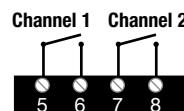
with powered mA Xmtr
Module mA input is unpowered



Current Sinking Input with External Loop Supply



Customer-supplied external contacts for Output Test Function Switch closure sets output to approx. 50% of span

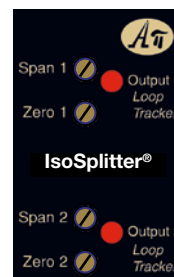


Output 1 Span

Output 1 Zero

Output 2 Span

Output 2 Zero

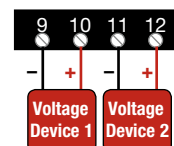


Output 1

Voltage output

Output 2

Voltage output



Output 1

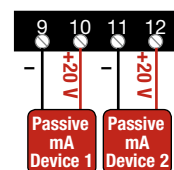
Sourcing mA output

+20 V at terminal 10

Output 2

Sourcing mA output

+20 V at terminal 12

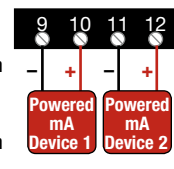


Output 1

Sinking mA output with EXT1 or EXT3 option

Output 2

Sinking mA output with EXT2 or EXT3 option



13 Power AC or DC +
14 Earth Ground
16 Power AC or DC –
Cu 60/75°C conductors
14 AWG max.

To maintain full isolation avoid combining power supplies in common with input, outputs, or unit power.

△ * Do not make connections to unused terminals!