DC to DC Transmitters, Isolated, Field Rangeable — APD 4380

Input: 0-10 mV to 0-130 VDC, ±5 VDC, ±10 VDC, 0-200 µA to 0-50 mADC
Output: 0-1 V to 0-10 VDC, ±5 VDC, ±10 VDC, 0-2 mA to 20 mADC

- *One Minute Setup for Hundreds of I/O Ranges*
- *External Switches & Tables for Range Selection*
- *Removable Plugs for Faster Installation*
- *Full 1200 V Input/Output/Power Isolation*
- *Input and Output LoopTracker® LEDs*
- *Output Test Button*
- *Built-In Loop Power Supplies for Sink/Source I/O*

Applications

- *Convert, Boost, and Rescale Process Signals*
- *Isolate Single-Ended (Common Ground) PLC Inputs*
- *Interface Process Signals with Panel Meters, PLCs, Recorders, Data Acquisition, DCS, & SCADA Systems*

Input Ranges
Field selectable ranges via switch settings
Voltage: 0-10 mVDC to 0-50 VDC
Bipolar Voltage: ±50 mVDC to ±10 VDC
Current: 0-200 µADC to 0-50 mADC

Input Impedance (Voltage)
Voltage: 1 MΩ minimum
Current: 50 Ω typical
Voltage Burden: 1 VDC at 20 mA current input

Input Loop Power Supply
15 VDC ±10%, regulated, 25 mADC
Max. ripple, less than 10 mV_{RMS}
May be selectively wired for sinking or sourcing mA input

LoopTracker
Variable brightness LEDs indicate I/O loop level and status

Output Ranges
Switch selectable, field rangeable
Voltage: 0-1 VDC to 0-10 VDC, 10 mA max
Bipolar Voltage: ±1 VDC to ±10 VDC
Current: 0-2 mADC to 0-25 mADC
20 V compliance, 1000 Ω at 20 mA
Output offset: ±100% in 15% increments

Output Linearity
Better than ±0.1% of span

Output Zero and Span
Multi-turn potentiometers to compensate for load and lead variations, ±15% of span adjustment range typical

Output Loop Power Supply
20 VDC nominal, regulated, 25 mADC
Max. ripple, less than 10 mV_{RMS}
May be selectively wired for sinking or sourcing mA output

Output Ripple and Noise
Less than 10 mV_{RMS}

Functional Test
Front button sets output to test level when pressed
Potentiometer adjustable 0-100% of span

Response Time
70 milliseconds typical
1 millisecond typical with DF option

Common Mode Rejection
120 dB minimum

Isolation
1200 V_{RMS} minimum
Full isolation: power to input, power to output, input to output

Ambient Temperature Range and Stability
–10°C to +60°C operating ambient
Better than ±0.02% of span per °C stability

Power
80-265 VAC or 48-300 VDC, 2 W maximum
D versions: 9-30 VDC or 10-32 VAC 50/60 Hz, 2 W maximum

Housing
Mounts to standard 35 mm DIN rail
IP 40

Connectors
Four 4-terminal removable connectors
14 AWG max wire size



Dimensions
0.89" W x 4.62" H x 4.81" D
22.5 mm W x 117 mm H x 122 mm D
Height includes connectors

Description
The APD 4380 accepts a DC voltage or current input and provides an optically isolated DC voltage or current output that is linearly related to the input.

Typical applications include signal isolation, conversion, boosting or a combination of the three. Full 3-way isolation (input, output, power) makes this module useful for ground loop elimination, common mode signal rejection or noise pickup reduction.

I/O Sink/Source Versatility
Standard on the APD 4380 is a 15 VDC loop excitation supply for the input and a 20 VDC loop excitation supply for the output. These power supplies can be used to power passive mA devices if required.

For maximum versatility the input and output can each be selectively wired for sinking or sourcing. This allows the APD 4380 to work with any combination of powered or unpowered mA inputs and powered or unpowered mA outputs.

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

Output Test
An API exclusive feature includes the test button to provide a fixed output (independent of the input) when held depressed. The test output level is potentiometer adjustable from 0 to 100% of output span.

The output test button greatly aids in saving time during initial startup and/or troubleshooting.

How to Order

All models are field rangeable. Please specify
Model APD 4380
Order APD 4380 D for operation on low voltage power
Options as required

I/O can be pre-set to your specifications. Please provide
Input range
Output range

Model	Input	Output	Power
APD 4380	Field configurable—specify range if factory is to set switches	Field configurable—specify range if factory is to set switches	80-265 VAC or 48-300 VDC
APD 4380 D			9-30 VDC or 10-32 VAC

Options–add to end of model number

M01	Input/output reversal, such as 4-20 mA input to 20-4 mA output
DF	Fast response time, consult factory
U	Conformal coating for moisture resistance

Accessories—order as separate line item

API TK36	DIN rail, 35 mm W x 39" L, aluminum
API BP4	Spare removable 4 terminal plug, black

Switch Settings for Voltage Inputs

Range Selection

See table below (voltage inputs) and on the next page (current inputs) to select I/O ranges for your application. It is generally easier to select ranges before installation.

The module side label lists common ranges.

See the model/serial number label for module information, options, or if a custom range was specified.

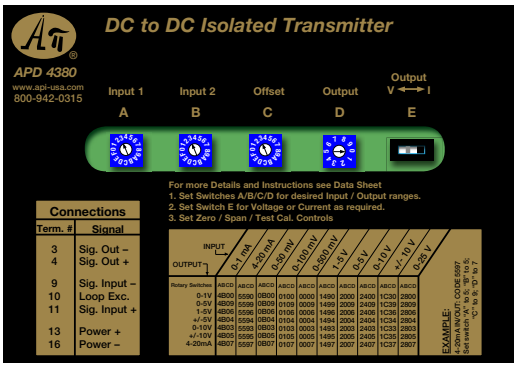
For ranges that fall between the listed ranges use the next highest setting and trim the output signal with the zero and span potentiometers.

APD 4380 Voltage Input Range Selection

Switches A & B: Input range
Switch C: Input offset
Switch D: Output offset
Switch E: Set to "V" for voltage output or set to "I" for current output

Note that when using a current shunt input, it measures a mV drop across a fixed resistance, typically 50 mV, 75 mV or 100 mV. The correct input setting would be the appropriate mV range for the shunt.

See next page for Current (mA) Input Switch Settings
See next page for Electrical Connections



Output	0-1 V	0-2 V	0-4 V	1-5 V	0-5 V	0-8 V	2-10 V	0-10 V	±5 V	±10 V	0-2 mA	0-4 mA	0-8 mA	2-10 mA	0-10 mA	0-16 mA	4-20 mA	0-20 mA
Switches	ABCDE	ABCDE	ABCDE	ABCDE	ABCDE	ABCDE	ABCDE	ABCDE	ABCDE	ABCDE	ABCDE	ABCDE	ABCDE	ABCDE	ABCDE	ABCDE	ABCDE	ABCDE
Input																		
0-10 mV	0300V	0308V	0301V	0306V	0309V	0302V	0307V	0303V	0304V	0305V	0300I	0308I	0301I	0306I	0309I	0302I	0307I	0303I
0-20 mV	0700V	0708V	0701V	0706V	0709V	0702V	0707V	0703V	0704V	0705V	0700I	0708I	0701I	0706I	0709I	0702I	0707I	0703I
0-40 mV	1300V	1308V	1301V	1306V	1309V	1302V	1307V	1303V	1304V	1305V	1300I	1308I	1301I	1306I	1309I	1302I	1307I	1303I
0-50 mV	0B00V	0B08V	0B01V	0B06V	0B09V	0B02V	0B07V	0B03V	0B04V	0B05V	0B00I	0B08I	0B01I	0B06I	0B09I	0B02I	0B07I	0B03I
0-80 mV	1700V	1708V	1701V	1706V	1709V	1702V	1707V	1703V	1704V	1705V	1700I	1708I	1701I	1706I	1709I	1702I	1707I	1703I
0-100 mV	0100V	0108V	0101V	0106V	0109V	0102V	0107V	0103V	0104V	0105V	0100I	0108I	0101I	0106I	0109I	0102I	0107I	0103I
0-130 mV	3300V	3308V	3301V	3306V	3309V	3302V	3307V	3303V	3304V	3305V	3300I	3308I	3301I	3306I	3309I	3302I	3307I	3303I
0-160 mV	9300V	9308V	9301V	9306V	9309V	9302V	9307V	9303V	9304V	9305V	9300I	9308I	9301I	9306I	9309I	9302I	9307I	9303I
0-200 mV	0500V	0508V	0501V	0506V	0509V	0502V	0507V	0503V	0504V	0505V	0500I	0508I	0501I	0506I	0509I	0502I	0507I	0503I
0-250 mV	0A00V	0A08V	0A01V	0A06V	0A09V	0A02V	0A07V	0A03V	0A04V	0A05V	0A00I	0A08I	0A01I	0A06I	0A09I	0A02I	0A07I	0A03I
0-260 mV	3700V	3708V	3701V	3706V	3709V	3702V	3707V	3703V	3704V	3705V	3700I	3708I	3701I	3706I	3709I	3702I	3707I	3703I
0-320 mV	9700V	9708V	9701V	9706V	9709V	9702V	9707V	9703V	9704V	9705V	9700I	9708I	9701I	9706I	9709I	9702I	9707I	9703I
0-400 mV	1100V	1108V	1101V	1106V	1109V	1102V	1107V	1103V	1104V	1105V	1100I	1108I	1101I	1106I	1109I	1102I	1107I	1103I
0-500 mV	0000V	0008V	0001V	0006V	0009V	0002V	0007V	0003V	0004V	0005V	0000I	0008I	0001I	0006I	0009I	0002I	0007I	0003I
0-520 mV	B300V	B308V	B301V	B306V	B309V	B302V	B307V	B303V	B304V	B305V	B300I	B308I	B301I	B306I	B309I	B302I	B307I	B303I
0-650 mV	3B00V	3B08V	3B01V	3B06V	3B09V	3B02V	3B07V	3B03V	3B04V	3B05V	3B00I	3B08I	3B01I	3B06I	3B09I	3B02I	3B07I	3B03I
0-800 mV	1500V	1508V	1501V	1506V	1509V	1502V	1507V	1503V	1504V	1505V	1500I	1508I	1501I	1506I	1509I	1502I	1507I	1503I
0-1 V	0400V	0408V	0401V	0406V	0409V	0402V	0407V	0403V	0404V	0405V	0400I	0408I	0401I	0406I	0409I	0402I	0407I	0403I
0-1.04 V	B700V	B708V	B701V	B706V	B709V	B702V	B707V	B703V	B704V	B705V	B700I	B708I	B701I	B706I	B709I	B702I	B707I	B703I
0-1.3 V	3100V	3108V	3101V	3106V	3109V	3102V	3107V	3103V	3104V	3105V	3100I	3108I	3101I	3106I	3109I	3102I	3107I	3103I
0-1.6 V	9100V	9108V	9101V	9106V	9109V	9102V	9107V	9103V	9104V	9105V	9100I	9108I	9101I	9106I	9109I	9102I	9107I	9103I
0-2 V	1000V	1008V	1001V	1006V	1009V	1002V	1007V	1003V	1004V	1005V	1000I	1008I	1001I	1006I	1009I	1002I	1007I	1003I
0-2.5 V	0800V	0808V	0801V	0806V	0809V	0802V	0807V	0803V	0804V	0805V	0800I	0808I	0801I	0806I	0809I	0802I	0807I	0803I
0-2.6 V	3500V	3508V	3501V	3506V	3509V	3502V	3507V	3503V	3504V	3505V	3500I	3508I	3501I	3506I	3509I	3502I	3507I	3503I
0-3.2 V	9500V	9508V	9501V	9506V	9509V	9502V	9507V	9503V	9504V	9505V	9500I	9508I	9501I	9506I	9509I	9502I	9507I	9503I
0-3.25 V	3A00V	3A08V	3A01V	3A06V	3A09V	3A02V	3A07V	3A03V	3A04V	3A05V	3A00I	3A08I	3A01I	3A06I	3A09I	3A02I	3A07I	3A03I
0-4 V	1400V	1408V	1401V	1406V	1409V	1402V	1407V	1403V	1404V	1405V	1400I	1408I	1401I	1406I	1409I	1402I	1407I	1403I
1-5 V	1490V	1498V	1491V	1496V	1499V	1492V	1497V	1493V	1494V	1495V	1490I	1498I	1491I	1496I	1499I	1492I	1497I	1493I
0-5 V	2000V	2008V	2001V	2006V	2009V	2002V	2007V	2003V	2004V	2005V	2000I	2008I	2001I	2006I	2009I	2002I	2007I	2003I
0-5.25 V	B100V	B108V	B101V	B106V	B109V	B102V	B107V	B103V	B104V	B105V	B100I	B108I	B101I	B106I	B109I	B102I	B107I	B103I
0-6.5 V	3000V	3008V	3001V	3006V	3009V	3002V	3007V	3003V	3004V	3005V	3000I	3008I	3001I	3006I	3009I	3002I	3007I	3003I
0-8 V	9000V	9008V	9001V	9006V	9009V	9002V	9007V	9003V	9004V	9005V	9000I	9008I	9001I	9006I	9009I	9002I	9007I	9003I
2-10 V	9090V	9098V	9091V	9096V	9099V	9092V	9097V	9093V	9094V	9095V	9090I	9098I	9091I	9096I	9099I	9092I	9097I	9093I
0-10 V	2400V	2408V	2401V	2406V	2409V	2402V	2407V	2403V	2404V	2405V	2400I	2408I	2401I	2406I	2409I	2402I	2407I	2403I
±5 V	2430V	2438V	2431V	2436V	2439V	2432V	2437V	2433V	2434V	2435V	2430I	2438I	2431I	2436I	2439I	2432I	2437I	2433I
0-10.4 V	B500V	B508V	B501V	B506V	B509V	B502V	B507V	B503V	B504V	B505V	B500I	B508I	B501I	B506I	B509I	B502I	B507I	B503I
0-13 V	3400V	3408V	3401V	3406V	3409V	3402V	3407V	3403V	3404V	3405V	3400I	3408I	3401I	3406I	3409I	3402I	3407I	3403I
0-16 V	9400V	9408V	9401V	9406V	9409V	9402V	9407V	9403V	9404V	9405V	9400I	9408I	9401I	9406I	9409I	9402I	9407I	9403I
0-20 V	1C00V	1C08V	1C01V	1C06V	1C09V	1C02V	1C07V	1C03V	1C04V	1C05V	1C00I	1C08I	1C01I	1C06I	1C09I	1C02I	1C07I	1C03I
±10 V	1C30V	1C38V	1C31V	1C36V	1C39V	1C32V	1C37V	1C33V	1C34V	1C35V	1C30I	1C38I	1C31I	1C36I	1C39I	1C32I	1C37I	1C33I
0-25 V	2800V	2808V	2801V	2806V	2809V	2802V	2807V	2803V	2804V	2805V	2800I	2808I	2801I	2806I	2809I	2802I	2807I	2803I
0-26 V	B000V	B008V	B001V	B006V	B009V	B002V	B007V	B003V	B004V	B005V	B000I	B008I	B001I	B006I	B009I	B002I	B007I	B003I
0-32.5 V	3800V	3808V	3801V	3806V	3809V	3802V	3807V	3803V	3804V	3805V	3800I	3808I	3801I	3806I	3809I	3802I	3807I	3803I
0-40 V	A300V	A308V	A301V	A306V	A309V	A302V	A307V	A303V	A304V	A305V	A300I	A308I	A301I	A306I	A309I	A302I	A307I	A303I
0-50 V	2C00V	2C08V	2C01V	2C06V	2C09V	2C02V	2C07V	2C03V	2C04V	2C05V	2C00I	2C08I	2C01I	2C06I	2C09I	2C02I	2C07I	2C03I
0-52 V	B400V	B408V	B401V	B406V	B409V	B402V	B407V	B403V	B404V	B405V	B400I	B408I	B401I	B406I	B409I	B402I	B407I	B403I
0-65 V	3C00V	3C08V	3C01V	3C06V	3C09V	3C02V	3C07V	3C03V	3C04V	3C05V	3C00I	3C08I	3C01I	3C06I	3C09I	3C02I	3C07I	3C03I
0-100 V	A800V	A808V	A801V	A806V	A809V	A802V	A807V	A803V	A804V	A805V	A800I	A808I	A801I	A806I	A809I	A802I	A807I	A803I
0-130 V	B800V	B808V	B801V	B806V	B809V	B802V	B807V	B803V	B804V	B805V	B800I	B808I	B801I	B806I	B809I	B802I	B807I	B803I

Switch Settings for Current Inputs, Wiring

Range Selection

See table below to select I/O ranges when using a current input. It is generally easier to select ranges before installation.

The module side label lists common ranges.

See the model/serial number label for module information, options, or if a custom range was specified.

APD 4380 Current Input Range Selection

Switches A & B: Input range
Switch C: Input offset
Switch D: Output offset
Switch E: Set to "V" for voltage output or set to "I" for current output

For ranges that fall between the listed ranges use the next highest setting and trim the output signal with the zero and span potentiometers.

Output	0-1 V	0-2 V	0-4 V	1-5 V	0-5 V	0-8 V	2-10 V	0-10 V	±5 V	±10 V	0-2 mA	0-4 mA	0-8 mA	2-10 mA	0-10 mA	0-16 mA	4-20 mA	0-20 mA
Switches	ABCDE	ABCDE	ABCDE	ABCDE	ABCDE	ABCDE	ABCDE	ABCDE	ABCDE	ABCDE	ABCDE	ABCDE	ABCDE	ABCDE	ABCDE	ABCDE	ABCDE	ABCDE
Input																		
0-200 µA	4300V	4308V	4301V	4306V	4309V	4302V	4307V	4303V	4304V	4305V	4300I	4308I	4301I	4306I	4309I	4302I	4307I	4303I
0-400 µA	4700V	4708V	4701V	4706V	4709V	4702V	4707V	4703V	4704V	4705V	4700I	4708I	4701I	4706I	4709I	4702I	4707I	4703I
0-800 µA	5300V	5308V	5301V	5306V	5309V	5302V	5307V	5303V	5304V	5305V	5300I	5308I	5301I	5306I	5309I	5302I	5307I	5303I
0-1 mA	4B00V	4B08V	4B01V	4B06V	4B09V	4B02V	4B07V	4B03V	4B04V	4B05V	4B00I	4B08I	4B01I	4B06I	4B09I	4B02I	4B07I	4B03I
0-1.6 mA	5700V	5708V	5701V	5706V	5709V	5702V	5707V	5703V	5704V	5705V	5700I	5708I	5701I	5706I	5709I	5702I	5707I	5703I
0-2 mA	4100V	4108V	4101V	4106V	4109V	4102V	4107V	4103V	4104V	4105V	4100I	4108I	4101I	4106I	4109I	4102I	4107I	4103I
0-2.6 mA	7300V	7308V	7301V	7306V	7309V	7302V	7307V	7303V	7304V	7305V	7300I	7308I	7301I	7306I	7309I	7302I	7307I	7303I
0-3.2 mA	D300V	D308V	D301V	D306V	D309V	D302V	D307V	D303V	D304V	D305V	D300I	D308I	D301I	D306I	D309I	D302I	D307I	D303I
0-4 mA	4500V	4508V	4501V	4506V	4509V	4502V	4507V	4503V	4504V	4505V	4500I	4508I	4501I	4506I	4509I	4502I	4507I	4503I
0-5 mA	4A00V	4A08V	4A01V	4A06V	4A09V	4A02V	4A07V	4A03V	4A04V	4A05V	4A00I	4A08I	4A01I	4A06I	4A09I	4A02I	4A07I	4A03I
0-5.2 mA	7700V	7708V	7701V	7706V	7709V	7702V	7707V	7703V	7704V	7705V	7700I	7708I	7701I	7706I	7709I	7702I	7707I	7703I
0-6.4 mA	D700V	D708V	D701V	D706V	D709V	D702V	D707V	D703V	D704V	D705V	D700I	D708I	D701I	D706I	D709I	D702I	D707I	D703I
0-8 mA	5100V	5108V	5101V	5106V	5109V	5102V	5107V	5103V	5104V	5105V	5100I	5108I	5101I	5106I	5109I	5102I	5107I	5103I
2-10 mA	5190V	5198V	5191V	5196V	5199V	5192V	5197V	5193V	5194V	5195V	5190I	5198I	5191I	5196I	5199I	5192I	5197I	5193I
0-10 mA	4000V	4008V	4001V	4006V	4009V	4002V	4007V	4003V	4004V	4005V	4000I	4008I	4001I	4006I	4009I	4002I	4007I	4003I
0-10.4 mA	F300V	F308V	F301V	F306V	F309V	F302V	F307V	F303V	F304V	F305V	F300I	F308I	F301I	F306I	F309I	F302I	F307I	F303I
0-13 mA	7B00V	7B08V	7B01V	7B06V	7B09V	7B02V	7B07V	7B03V	7B04V	7B05V	7B00I	7B08I	7B01I	7B06I	7B09I	7B02I	7B07I	7B03I
0-16 mA	5500V	5508V	5501V	5506V	5509V	5502V	5507V	5503V	5504V	5505V	5500I	5508I	5501I	5506I	5509I	5502I	5507I	5503I
4-20 mA	5590V	5598V	5591V	5596V	5599V	5592V	5597V	5593V	5594V	5595V	5590I	5598I	5591I	5596I	5599I	5592I	5597I	5593I
0-20 mA	4400V	4408V	4401V	4406V	4409V	4402V	4407V	4403V	4404V	4405V	4400I	4408I	4401I	4406I	4409I	4402I	4407I	4403I
0-20.8 mA	F700V	F708V	F701V	F706V	F709V	F702V	F707V	F703V	F704V	F705V	F700I	F708I	F701I	F706I	F709I	F702I	F707I	F703I
0-26 mA	7100V	7108V	7101V	7106V	7109V	7102V	7107V	7103V	7104V	7105V	7100I	7108I	7101I	7106I	7109I	7102I	7107I	7103I
0-32 mA	D100V	D108V	D101V	D106V	D109V	D102V	D107V	D103V	D104V	D105V	D100I	D108I	D101I	D106I	D109I	D102I	D107I	D103I
0-40 mA	5000V	5008V	5001V	5006V	5009V	5002V	5007V	5003V	5004V	5005V	5000I	5008I	5001I	5006I	5009I	5002I	5007I	5003I
0-50 mA	4800V	4808V	4801V	4806V	4809V	4802V	4807V	4803V	4804V	4805V	4800I	4808I	4801I	4806I	4809I	4802I	4807I	4803I

Electrical Connections

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.

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

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

Type of Device for Output	– Terminal	+ Terminal
Measuring/recording device accepts a voltage input.	3 (–)	4 (+) switch E set to "V"
Measuring/recording device accepts a mA (current) input and the input is unpowered or passive. APD module provides the loop power.	3 (–)	4 (+20 V) switch E set to "I"
Measuring/recording device accepts a mA (current) input and provides power to the current loop.	2 (–)	3 (+) switch E set to "I"

Type of Input Device	– Terminal	+ Terminal
Sensor or transmitter with a voltage output.	9 (–)	11 (+)
Transmitter with a mA (current) output that provides power to the current loop. Typically a 3 or 4-wire device.	9 (–)	11 (+)
Transmitter with mA (current) output that is unpowered. Typically a 2-wire device. APD module provides loop power.	11 (–)	10 (+15 V)

APD 4380 Voltage Output

Set switch E to "V" for a voltage output.

If your receiving device (such as a PLC or a display) uses a voltage input, use terminals 3 and 4 as shown at right.

APD 4380 Current Output

Set switch E to "I" for a current output.

Determine if your receiving device (such as a PLC or a display) provides 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 input terminals if it provides power to the loop.

If your device does not power the current loop, the APD can provide power using terminals 3 and 4 as shown at right.

If it provides power to the loop or an external supply provides power to the loop, use terminals 2 and 3 as shown at upper right.

APD 4380 Current Input

Determine if your transmitter provides 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 transmitter's output terminals if it provides power to the loop.

If your transmitter or an external supply provides power to the loop, use terminals 9 and 11 as shown below right.

If your transmitter does not power the current loop, the APD can provide power using terminals 10 and 11 as shown far right.

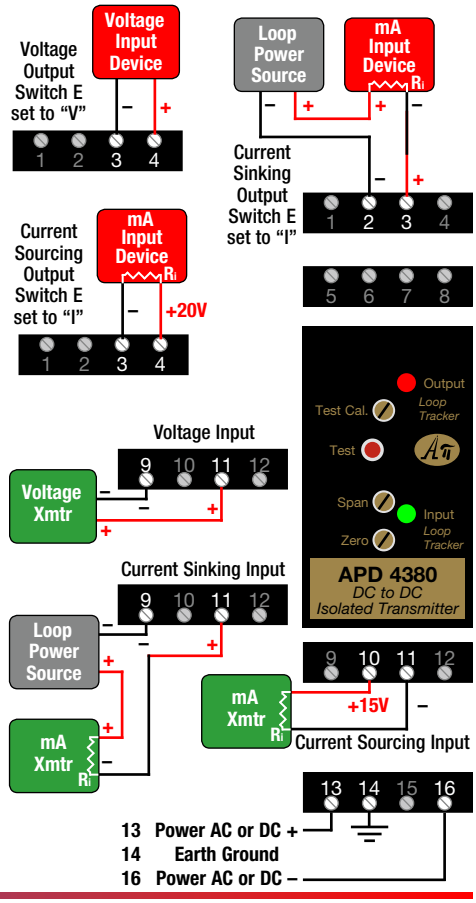
APD 4380 Voltage Input

If your transmitter provides a voltage output, use terminals 9 and 11 as shown at right.

Module Power Terminals

Check white model/serial number label for module operating voltage to make sure it matches available power.

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.

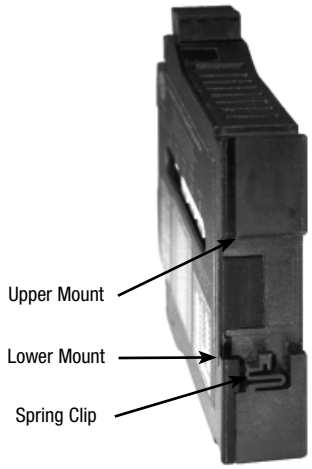


Precautions

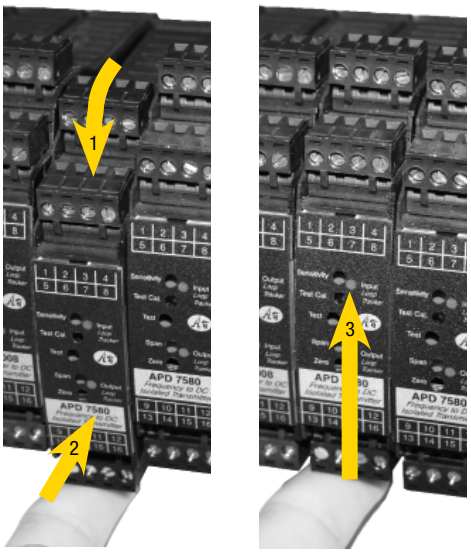
WARNING! Avoid shock hazards! Turn signal input, output, and power off before connecting or disconnecting wiring, or removing or installing module.

Installation Location

The housing clips to a standard 35 mm DIN rail. The housing is IP40 rated and should be mounted inside a panel or enclosure.



Installation

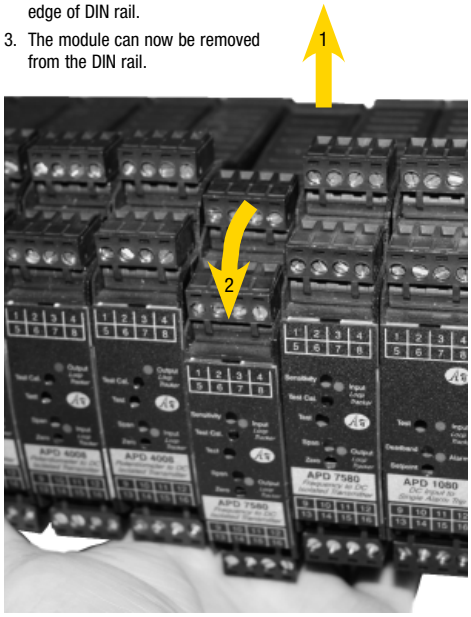


1. Tilt front of module downward and position against DIN rail.
2. Clip Lower Mount to bottom edge of DIN rail.
3. Push front of module upward until Upper Mount snaps into place.

Removal

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

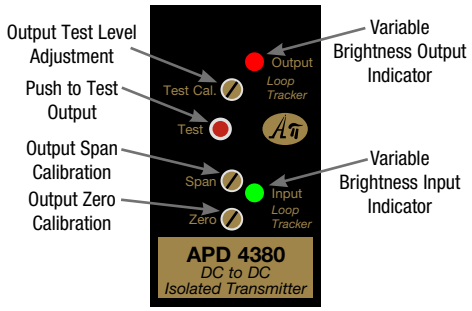
1. Push up on bottom back of module.
2. Tilt front of module downward to release Upper Mount from top edge of DIN rail.
3. The module can now be removed from the DIN rail.



Calibration

Front-mounted Zero and Span potentiometers are 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. Example: for 4-20 mA output, the Zero control will provide adjustment for the 4 mA or low end of the signal.
4. Set the input at maximum and 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.



Output Test Function

When the Test button is depressed it will drive the output with a known good signal that can be used as a diagnostic aid during initial start-up or troubleshooting. When released, the output will return to normal.

The Test Cal. potentiometer is factory set to approximately 50% output. It can be adjusted to set the test output from 0 to 100% of the output span. Press and hold the Test button and adjust the Test Cal. potentiometer for the desired output level.

Operation

The APD 4380 accepts a DC voltage or current input and provides an optically isolated DC voltage or current output that is linearly related to the input.

The green LoopTracker® input LED provides a visual indication that a signal is being sensed by the input circuitry of the module. It also indicates the input signal strength by changing in intensity as the process changes from minimum to maximum.

If the LED fails to illuminate, or fails to change in intensity as the process changes, check the module power or signal input wiring. Note that it may be difficult to see the LEDs under bright lighting conditions.

The red LoopTracker output LED provides a visual indication that the output signal is functioning. 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.

Service

We service what we sell! Please obtain a Return Materials Authorization number (RMA#) by calling Customer Service at 800-794-5883 or following instructions for service at www.mod-tronic.com/API_products.html. Include the RMA# and the return reason along with the product.

Shipping costs to us must be prepaid by the customer. For your protection, items must be carefully packed to prevent damage in shipment and insured against possible damage or loss. API will not be responsible for damage resulting from careless or insufficient packing or loss in transit.

API will evaluate in-warranty products at no charge. API will evaluate out of warranty products for a nominal charge.

If API determines that the returned product is under warranty, it will repair the product or warranted parts thereof at no charge, or if unrepairable, replace it with the same or functionally equivalent product whenever possible.

Products or parts thereof not covered by warranty will be repaired or replaced at customer expense upon customer authorization.

API will return the warrantied product at its expense and non-warranty product at customer expense.

API will use a shipping method (carrier to be at sole discretion of API) equal to or faster than the method used by the customer.

Warranty

Products manufactured or sold by Absolute Process Instruments Inc. (API) are warranted to be free from significant deviations in material and workmanship for the time period from date of purchase according to the product category below. During this time, and within the boundaries set forth in this warranty statement, API will, at its sole discretion, correct the product problem or replace the product.

API signal conditioners, alarms, transmitters:
Lifetime under terms stated herein.

This warranty shall not apply to product problems resulting from improper application, installation, incorrect wiring, operation outside of product specifications, abuse, misuse, unauthorized modification, accidents, power surges, power disruptions, power outages, static electricity, improper voltages or currents, inadequate site maintenance or preparation, acts of God, weather and its effects, lightning, floods, fire, earthquake, war, riots, military action, etc.

API products are not for use for, with, or in any medical devices or applications including, but not limited to, patient care, life support systems or medical research. API assumes no responsibility or liability for any loss or damages resulting from use of a API product in a medical or life support application. API products are not for use for, with, or in any hazardous environments.

This warranty is in lieu of all other warranties, expressed or implied, including but not limited to any implied warranty of merchantability, fitness, or adequacy for any particular purpose or use. API shall not be liable for any special, incidental, or consequential damages, whether in contract, tort, or otherwise. In no event shall API be liable for direct, indirect, special, incidental or consequential damages (including loss of profits or loss of time) resulting from the performance of an API product. In all cases, API liability will be limited to the original cost of the product in question.

API reserves the right to make improvements in design, construction, and appearance of products without notice. API may at its sole discretion discontinue support, warranty, or repair of products which it deems are obsolete or for which repair parts are no longer available.

No employee or agent of API has the authority to modify the terms of this warranty in any manner whatsoever without the express written permission of API.

API maintains a constant effort to upgrade and improve its products. Specifications are subject to change without notice. Consult factory for your specific requirements.