

# APAX-5017PE APAX-5040PE APAX-5060PE

IEC 61850-3 Certified 12-ch Analog Input Module

IEC 61850-3 Certified 24-ch Digital Input Module

IEC 61850-3 Certified 12-ch Relay Output Module



## Specifications

### General

- Certification** CE, FCC class A  
Dielectric Strength and Impulse Tests: IEC 60255-5:2000  
EMC Immunity:  
Electronic Discharge: IEC 61000-4-2:2001, level3  
Radiated RF Immunity: IEC 61000-4-3:2002, 10 V/m,  
IEEE C37.90.2-1995, 35 V/m  
Fast Transient, Burst Immunity: IEC 61000-4-4:1995 +  
A1:2001, 4kV @ 2.5KHz  
Surge Immunity: IEC 61000-4-5:2001, 2kV line to line, 4kV  
line to earth  
Conducted RF Immunity: IEC 61000-4-6:2004, 10 Vrms  
Magnetic Field Immunity: IEC 61000-4-8:2001, 1000 A/m  
for 3 seconds, 100 A/m for 1 minute  
DOMF: IEC 61000-4-10:2001, 30 A/m @ 100KHz and 1 MHz  
EMC Emissions  
Conducted Emissions: EN 55022:2002, Class A  
Radiated Emissions: EN 55022:2002, Class A
- Dimensions (W x H x D)** 30 x 139 x 100 mm
- Enclosure** ABS+PC
- Weight** 180 g
- Power Consumption** 2 W @ 5 V<sub>DC</sub> (Typical)

### Analog Input

- Channels** 12 (Differential)
- Input Type** V, mV, mA
- Input Impedance** Voltage >10 MΩ
- Voltage/Current Range** ±150 mV, ±500 mV, ±1 V, ±5 V,  
±10 V, ±20 mA, 0 ~ 20 mA,  
4 ~ 20 mA
- Resolution** 16-bit with accuracy ±0.1%  
or better of Full Scale Range  
(Voltage)
- Sampling Rate** 12 samples/second (total)
- Noise Rejection** Hardware Filter (50/60 Hz)
- Wire Burn-out Det.** Yes (4 ~ 20 mA only)
- Common Mode V.** 300 V<sub>DC</sub>

### Environment

- Operating Temperature** -20 ~ 70°C (-4 ~ 158°F)
- Storage Temperature** -40 ~ 85°C
- Relative Humidity** 5 ~ 95% (non-condensing)

### Protection

- 2,500 V<sub>DC</sub> Isolation Between Channels and Backplane**
- Over Voltage Protection**

Note: for current mode, customers should add external resistance

## Ordering Information

- APAX-5017PE** IEC 61850-3 Compliant 12-ch Analog Input Module
- APAX-5002L** 2-slot Backplane Module

## Specifications

### General

- Certification** CE, FCC class A  
Dielectric Strength and Impulse Tests: IEC 60255-5:2000  
EMC Immunity:  
Electronic Discharge: IEC 61000-4-2:2001, level3  
Radiated RF Immunity: IEC 61000-4-3:2002, 10 V/m,  
IEEE C37.90.2-1995, 35 V/m  
Fast Transient, Burst Immunity: IEC 61000-4-4:1995 +  
A1:2001, 4kV @ 2.5KHz  
Surge Immunity: IEC 61000-4-5:2001, 2kV line to line, 4kV  
line to earth  
Conducted RF Immunity: IEC 61000-4-6:2004, 10 Vrms  
Magnetic Field Immunity: IEC 61000-4-8:2001, 1000 A/m  
for 3 seconds, 100 A/m for 1 minute  
DOMF: IEC 61000-4-10:2001, 30 A/m @ 100KHz and 1 MHz  
EMC Emissions  
Conducted Emissions: EN 55022:2002, Class A  
Radiated Emissions: EN 55022:2002, Class A
- Dimensions (W x H x D)** 30 x 139 x 100 mm
- Enclosure** ABS+PC
- Weight** 160 g
- Power Consumption** 2 W @ 24 V<sub>DC</sub> (Typical)
- Status Display** LED per channel; On: Logic level 1; Off: Logic level 0

### Digital Input

- Channels** 24
- Points per Common** 12
- Type** Sink or Source Load  
Rated Value: 24 V<sub>DC</sub>  
For "0" signal: -5 ~ 5 V<sub>DC</sub>  
For "1" signal: 15 ~ 30 V<sub>DC</sub> and  
-15 ~ -30 V<sub>DC</sub>
- Input Voltage**
- Input Impedance** 10 kΩ
- Input Delay** From logic level 0 to 1: 0.2 ms;  
From logic level 1 to 0: 0.2 ms
- Operating Frequency** 3 kHz
- Input Filter** 3 ms

### Protection

- 2,500 V<sub>DC</sub> Isolation Between Channels and Backplane**
- Over Voltage Protection**

### Environment

- Operating Temperature** -20 ~ 70°C (-4 ~ 158°F)
- Storage Temperature** -40 ~ 85°C
- Relative Humidity** 5 ~ 95% (non-condensing)

## Ordering Information

- APAX-5040PE** IEC 61850-3 Compliant 24-ch Digital Input Module
- APAX-5002L** 2-slot Backplane Module

## Specifications

### General

- Certification** CE, FCC class A  
Dielectric Strength and Impulse Tests: IEC 60255-5:2000  
EMC Immunity:  
Electronic Discharge: IEC 61000-4-2:2001, level3  
Radiated RF Immunity: IEC 61000-4-3:2002, 10 V/m,  
IEEE C37.90.2-1995, 35 V/m  
Fast Transient, Burst Immunity: IEC 61000-4-4:1995 +  
A1:2001, 4kV @ 2.5KHz  
Surge Immunity: IEC 61000-4-5:2001, 2kV line to line, 4kV  
line to earth  
Conducted RF Immunity: IEC 61000-4-6:2004, 10 Vrms  
Magnetic Field Immunity: IEC 61000-4-8:2001, 1000 A/m  
for 3 seconds, 100 A/m for 1 minute  
DOMF: IEC 61000-4-10:2001, 30 A/m @ 100KHz and 1 MHz  
EMC Emissions  
Conducted Emissions: EN 55022:2002, Class A  
Radiated Emissions: EN 55022:2002, Class A
- Dimensions (W x H x D)** 30 x 139 x 100 mm
- Enclosure** ABS+PC
- Weight** 195 g
- Power Consumption** 2 W @ 24 V<sub>DC</sub> (Typical)
- Status Display** LED per channel  
On: Logic level 1  
Off: Logic level 0

### Relay Output

- Channels** 12
- Relay Type** Form A (SPST)
- Contact Rating** 5 A @ 250 V<sub>AC</sub>/30 V<sub>DC</sub>  
(Resistive load)  
VDE: 30,000 operations  
(5 A @ 250 V<sub>AC</sub>, 10 operations/  
minute at 8°C)  
70,000 operations  
(5 A @ 30 V<sub>DC</sub>,  
10 operations/ minute at 85°C)  
UL: 60,000 operations  
(5 A @ 250 V<sub>AC</sub>)  
100,000 operations  
(5 A @ 30 V<sub>DC</sub>)  
Mechanism: 20,000,000  
operations  
(no load, 300 operations/min)
- Contact Resistance** 30 mΩ (max.)
- Insulation Resistance** 1 GΩ (min.) at 500 V<sub>DC</sub>
- Protection** 2,500 V<sub>DC</sub> Isolation Between Channels and Backplane

### Environment

- Operating Temperature** -20 ~ 70°C (-4 ~ 158°F)
- Storage Temperature** -40 ~ 85°C
- Relative Humidity** 5 ~ 95% (non-condensing)

## Ordering Information

- APAX-5060PE** IEC 61850-3 Compliant 12-ch Relay Output Module
- APAX-5002L** 2-slot Backplane Module