KISTLER
measure. analyze. innovate.

# K-Beam® Power Supply

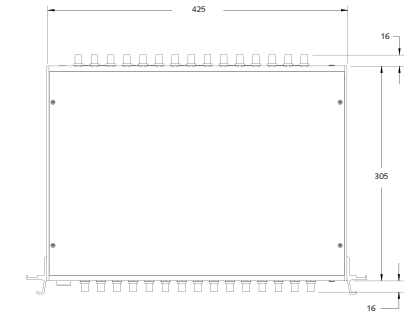
**Type 5146A15**

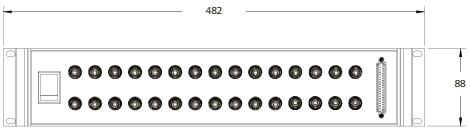
## 15-Channel Capacitive Accelerometers Power Supply

A convenient, simple to use power supply that provides an interface between single-ended, differential, one-axis or triaxial output capacitive accelerometers and measuring instruments. This 15-channel unit is powered from an external AC-DC adapter that provides +12VDC to the chassis, and operates with a power input over 100-240 VAC or from another +12VDC power source, such as a vehicle.

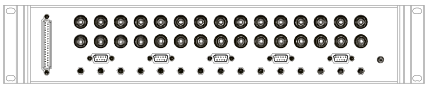
- For K-Beam accelerometers: Single or triaxial, single-ended or differential output
- Powering up to 15 single axis and up to 5 triaxial sensors
- Breakout box function with BNC connectors outputs to the front and rear panel
- Unit power over 100-240 VAC power supply or +12VDC battery
- Conforming to CE

**Dimensions**




FRONT VIEW



REAR VIEW

### Description

The Kistler Type 5146A15 15-Channel K-Beam Power Supply is intended for the K-Beam line of capacitive accelerometers. The unit can provide power for up to 15 single axis K-Beam sensors or 5 triaxial K-Beam sensors. Type 5146A15 also functions as a breakout box by routing sensor outputs to the front and rear panel BNC connectors. Each channel receives a positive and negative BNC connector to allow for differential output. An output through a 37-pin D-sub connector on the front and rear panel is also available.
Single axis sensors are connected to Type 5146A15 unit using the 4-pin ¼ – 28 panel mount connectors on the rear panel; triaxial sensors are connected to the 9-pin D-sub connectors, also located on the rear panel. The supply is powered from a provided external AC-DC adapter that provides +12VDC to the chassis and operates with a power input over 100-240 VAC. Alternately, the supply can be powered from a vehicle power source or a battery allowing for operation in diverse power situations.

### Application

The primary use for Type 5146A15 is to provide excitation power and serve as a junction box for capacitive accelerometer family types 8315A... and 8395A... It is a rugged and universal unit that provides excellent portability to a vibration measurement system, both in the laboratory and in the field.

The K-Beam® measuring chain is optimized for low frequency applications common to Aviation/Aerospace, Automotive, Civil Engineering Structures, Seismic, Railway and other R&D studies. Specifically, Aviation/Aerospace ground and flight testing often evaluates dynamics and structural vibration to assess performance parameters, reliability and integrity. Automotive laboratory and road testing often evaluates system parameters such as vehicle ride, dynamics and structural analysis to assess performance parameters, reliability and durability. Civil engineering structures, such as bridges, are often evaluated for structural response to assess the integrity of the bridge to ensure safety. Seismic ground and structural testing are often performed to measure the effect of earthquakes and other natural phenomena. The differential versions are additionally used for railway comfort or conditional maintenance monitoring applications where halogen free cables are requested. Other R&D studies include human motion, robotics and platform motion control systems.

003-113e-10.17

KISTLER
measure. analyze. innovate.

## Technical Data

| | Unit | Type 5146A15 |
|---|---|---|
| Channels | | 15 |
| Power Input/Sensor Supply Voltage | VDC | 12±1 |
| Channel Isolation (min) | dB | 74 |
| **Environmental** | | |
| Operating Temp Range | °C | 0 ... 40 |
| Relative Humidity | % | <85 |
| **Input/Output Connectors** | | |
| **Sensor Inputs for Single Axis Sensors*** | | **See Connector Allocation Drawing Ref (A)** |
| Type | | 4-pin male Comtronic ¼ – 28 |
| Pin 1 | | +12 V |
| Pin 2 | | Pwr/Signal Return |
| Pin 3 | | Out- |
| Pin 4 | | Out+ |
| Qty/Location/Identification | | 15/rear panel/Channel 1-15 |
| **Sensor Inputs for Triaxial Sensors*** | | **See Connector Allocation Drawing Ref (B)** |
| Type | | DB9 female |
| Pin 1 | | +12 V |
| Pin 2 | | Pwr/Signal Return |
| Pin 3 | | X Axis Out+ |
| Pin 4 | | Y Axis Out+ |
| Pin 5 | | Z Axis Out+ |
| Pin 6 | | X Axis Out- |
| Pin 7 | | Y Axis Out- |
| Pin 8 | | Z Axis Out- |
| Pin 9 | | No Connection |
| Qty/Location/Identification | | 5/rear panel/Channel 1-3, 4-6, 7-9, 10-12, 13-15 |
| **Sensor Output - BNC Connectors** | | **See Connector Allocation Drawing Ref (C) and (D)** |
| Type | | BNC female |
| Center pin | | Channel 1-15 Out+ (top row),<br>Channel 1-15 Out± (bottom row) |
| Shield | | Pwr/Signal Return |
| Qty/Location/Identification | | 30/front panel/Ch 1-15 Out+, Ch 1-15 Out-<br>30/rear panel/Ch 1-15 Out+, Ch 1-15 Out- |
| **Sensor Output - D-Sub Connectors** | | **See Connector Allocation Drawing Ref (E) and (F)** |
| Type | | DB37 female |
| Pin 1 | | Ch1 Out+ |
| Pin 2 | | Ch2 Out+ |
| Pin 3 | | Ch3 Out+ |
| Pin 4 | | Ch4 Out+ |
| Pin 5 | | Ch5 Out+ |
| Pin 6 | | Ch6 Out+ |
| Pin 7 | | Ch7 Out+ |
| Pin 8 | | Ch8 Out+ |

003-113e-10.17

KISTLER
measure. analyze. innovate.

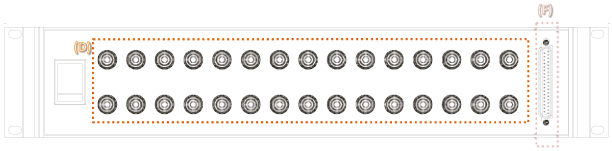
**Technical Data (cont...)**

| | Unit | Type 5146A15 |
|---|---|---|
| **Sensor Output - D-Sub Connectors** | | **See Connector Allocation Drawing Ref (E) and (F)** |
| Type | | DB37 female |
| Pin 9 | | Ch9 Out+ |
| Pin 10 | | Ch10 Out+ |
| Pin 11 | | Ch11 Out+ |
| Pin 12 | | Ch12 Out+ |
| Pin 13 | | Ch13 Out+ |
| Pin 14 | | Ch14 Out+ |
| Pin 15 | | Ch15 Out+ |
| Pin 16 | | Power Return/Signal Return |
| Pin 17 | | No Connection |
| Pin 18 | | No Connection |
| Pin 19 | | No Connection |
| Pin 20 | | Ch1 Out- |
| Pin 21 | | Ch2 Out- |
| Pin 22 | | Ch3 Out- |
| Pin 23 | | Ch4 Out- |
| Pin 24 | | Ch5 Out- |
| Pin 25 | | Ch6 Out- |
| Pin 26 | | Ch7 Out- |
| Pin 27 | | Ch8 Out- |
| Pin 28 | | Ch9 Out- |
| Pin 29 | | Ch10 Out- |
| Pin 30 | | Ch11 Out- |
| Pin 31 | | Ch12 Out- |
| Pin 32 | | Ch13 Out- |
| Pin 33 | | Ch14 Out- |
| Pin 34 | | Ch15 Out- |
| Pin 35 | | No Connection |
| Pin 36 | | No Connection |
| Pin 37 | | No Connection |
| Qty/Location/Identification | | 1/front panel/Ch 1-15 Out±<br>1/rear panel/Ch 1-15 Out± |
| **Power Supply General Information** | | |
| Power Supply | | 100-240 VAC 50-60Hz or +12 VDC |
| Safety Approvals | | UL/cUL, GS, RCM, CCC, PSE |
| EMI/EMC | | FCC class B, EN55022, CE |
| **Physical Characteristics** | | |
| Size (Width x Height x Depth) | mm | 425 x 88 x 305 |
| Mass | Kg | 3,55 |
| Case Material | | Aluminum |

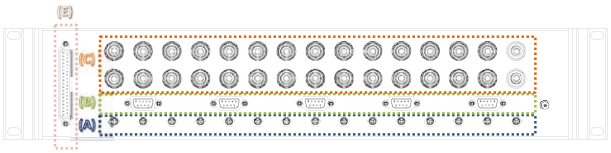
***NOTE: Sensor inputs between the two types of connectors are wired in parallel. Only one sensor should be connected to each channel input at a time.**

KISTLER
measure. analyze. innovate.

## Connector Allocation Drawing




FRONT VIEW




REAR VIEW

## Mounting

Type 5146A15 is housed in a two unit high, half depth, 19″ rack-mounted aluminum enclosure that is designed for integration into multiple unit assemblies, supporting applications which require many channels of waveform monitoring.

## Measuring Chain

| | Measure | Connect | Power / Amplify Type 514A615 | | | Connect | Analyze |
|---|---|---|---|---|---|---|---|
| | | | Inputs | BNC Outputs | D-Sub Output | | |
| Single axis / single-ended output | 8315AxAxTA<br>8315AxBxTA | 1592A... | (A) | + (C), (D) | (E), (F) | Type 1511<br>BNC pos.<br>BNC pos.<br>OR<br>Customer supplied | Read-out<br>Customer supplied |
| Single axis / differential output | 8315AxC0TA<br>8315AxD0TA | | | + -<br>(C), (D) | | | |
| Triaxial / single-ended output | 8395AxATTA00<br>8395AxBTTA00 | 1792A... K01 | (B) | + (C), (D) | | | |
| Triaxial / differential output | 8395AxCTTA00<br>8395AxDTTA00 | | | + -<br>(C), (D) | | | |

## Included Accessories:

5752 AC-DC power adaptor 100-240 VAC 50-60 Hz input / +12 VDC output

## Optional Accessories:

704-2068-001 DC Power Cable with pigtails

## Ordering Key

**Type 5146A** ☐

**Number of Channels**

| | |
|---|---|
| 15-Channels | **15** |

003-113e-10.17