DIGITSTROBE®
Models 1965/1967
Stroboscopes/Tachometers

- Easy-To-Use, Multi-Function, Digital Instruments
  - Stroboscope
  - Analog Tachometer
- Drift-Free Operation
- No Calibration Required
- Automatic Brightness Control
- Accuracy: \( \pm 0.01\% \pm \text{LSD} \)
- Wide Range of Operation
  - FLASH: 20.0 to 29,999 FPM
  - TACH: 120.0 to 99,999 RPM
- Uses Magnetic or Photoelectric Pickups

PRODUCT DESCRIPTION

The AMETEK DIGISTROBE Series are easy-to-use, multi-function digital instruments that provide both stroboscope and tachometer functionality in one unit. With a flash rate of 20.0 to 29,999 FPM and a tachometer range of 120.0 to 99,999 RPM, these instruments are ideal for most speed measurement applications. They have an accuracy of \( \pm 0.01\% \pm \text{LSD} \). Available in two models:

- Model 1965
- Model 1967

The Model 1967 is distinguished from the Model 1965 by its brighter flash. The Model 1967 is nearly seven times brighter than the Model 1965 with power output of 40 watts and a peak flash energy of 300 millijoules. The Model 1967 is ideal for applications where there exists a need to counter high ambient light.

The DIGISTROBE Series may both use either magnetic or photoelectric pickups.

The Model 1965 may be powered by the AMETEK Model 996 Power Pack. Both models may be powered using 115Vac line voltage or optional factory-installed 230Vac.
SPECIFICATIONS

TRIGGERING MODES

Internal Mode
Flash Rate Range: 20.0 to 29,999 FPM
Oscillator Stability: \( \pm 100 \text{ ppm from } 32\text{ to }120^\circ\text{F} \) (0 to 50°C)
Oscillator Accuracy: \( \pm 0.01\% \pm 1 \text{ LSD} \)
Oscillator Control Keys: Coarse and Fine Increase Coarse and Fine Decrease Doubler (X2) and Divider (/2)

External Mode
Tachometer Range: 120.00 to 99,999 RPM
Trigger Requirement: One pulse per revolution (event) supplied by transducer connected to the trigger input.
Maximum Flash Power:
- Model 1965: 6 watts @ 24,300 FPM
- Model 1967: 40 watts @ 18,300 FPM
Maximum Flash Energy:
- Model 1965: 135 mJ @ 20 FPM
- Model 1967: 300 mJ @ 20 FPM
Flash Tube Timing: Direct flash up to 31,250 FPM on every other pulse for rates from 31,250 and 62,500 FPM; on every third pulse for rates from 62,500 FPM to 93,750 FPM; on every fourth pulse for rates above 93,750 FPM.
Tachometer Accuracy: \( \pm 0.01\% \pm 1 \text{ LSD} \)
Line: Specification identical to External Mode except that trigger pulses are supplied by power line.

MEMORY MODE
EPROM-based storage capable of saving one complete setup, e.g. mode and flash rate or mode and delay angle.

DISPLAY
LCD-type, 8-character, alphanumeric with adjustable viewing angle. Measurements indicated using five digits with floating decimal.

CALIBRATION
No calibration required.

POSITION CONTROL CARD (Part No. E80-392)
Optional plug-in card capable of delaying the flash. The delay angle may be controlled using the unit’s INCREASE and DECREASE keys. The delay angle is adjustable in 2° increments from 0° to 328°. The card is activated only from the Line or External Triggering Modes.

SLAVE OUTPUT
The negative transition of this output is synchronized with the flash.
Waveform: Normally high (+5Vdc) swings low to ground, negative edge active, pulse width approximately 1mS.

STROBE SELECTION
Maximum Flash Rate: 31,250 FPM
Flash Duration: 70 - 100 microseconds
Flash Tube:
- Model 1965: “U” shaped, Xenon filled, 6500° color temperature (Part No. E10-028)
- Model 1967: Helical, Xenon filled, 6500° color temperature (Part No. E10-030)
Flash Tube Life:
- Model 1965: 100 million flashes at room temperature.
- Model 1967: 50 million flashes at room temperature.

Note: Flash tube life will significantly decrease when the instrument is used in applications with high ambient temperatures.

Duty
Continuous

Power
115Vac +10%, 50/60Hz
230Vac +10%, 50/60Hz (factory wired option)

Note: The Model 1965 may be used in conjunction with the AMETEK Model 996 Portable Power Pack.
SPECIFICATIONS

FUSE

- Model 1965: 1A/250V, 5 x 20mm
  Part No. E09-409
- Model 1967/115Vac: 1A/250V, 5 x 20mm
  Part No. E09-409
- Model 1967/230Vac: 0.5A/250V, 5 x 20mm
  Part No. E09-556

ENVIRONMENTAL

- Operating Temperature Range: 32 - 120°F (0 - 50°C)
- Note: Operating at temperatures above 95°F (35°C) significantly reduces the life of the flash tube.
- Humidity: 95% R.H. maximum, noncondensing

ENCLOSURE

- Molded case of high temperature-resistant NORYL.

MAGNETIC PICKUPS

The magnetic pickup will produce a voltage output when any magnetic material moves near the pole piece at the end of the pickup. The generated voltage is proportional to the rate of change of flux in the pole piece, and therefore, is proportional to the speed of flux build up or decrease. The magnetic material may be steel or iron which is attracted to the magnet. When the rotating object is made of brass or aluminum, or other type of non-magnetic material, a steel screw or rod may be inserted in the material to actuate the pickup.

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Case Construction</th>
<th>Resistance Ohms</th>
<th>Voltage P-P</th>
<th>Connector or Terminal SXA</th>
<th>Thread Size</th>
<th>Pickup Length</th>
<th>Pickup Diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>813</td>
<td>Stainless Steel</td>
<td>120</td>
<td>40.0</td>
<td>Yes</td>
<td>5/8&quot; - 18</td>
<td>2½&quot; (60.3mm)</td>
<td>-</td>
</tr>
<tr>
<td>1800</td>
<td>Stainless Steel</td>
<td>90.0</td>
<td>Yes</td>
<td>Yes</td>
<td>5/8&quot; - 18</td>
<td>2½&quot; (60.3mm)</td>
<td>-</td>
</tr>
<tr>
<td>863</td>
<td>Stainless Steel</td>
<td>400</td>
<td>40.0</td>
<td>Yes</td>
<td>3/8&quot; - 24</td>
<td>1¼&quot; (38.1mm)</td>
<td>-</td>
</tr>
<tr>
<td>892</td>
<td>Brass Nickel Plated</td>
<td>120</td>
<td>40.0</td>
<td>Yes</td>
<td>5/8&quot; - 18</td>
<td>2&quot; (50.8mm)</td>
<td>-</td>
</tr>
<tr>
<td>1800</td>
<td>Brass Nickel Plated</td>
<td>90.0</td>
<td>Yes</td>
<td>Yes</td>
<td>5/8&quot; - 18</td>
<td>2&quot; (50.8mm)</td>
<td>-</td>
</tr>
<tr>
<td>923</td>
<td>Stainless Steel</td>
<td>250</td>
<td>6.0</td>
<td>Yes</td>
<td>-</td>
<td>7/8&quot;</td>
<td>0.19&quot; (4.8mm)</td>
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</table>

PHOTOELECTRIC PICKUPS

These transducers provide a signal voltage output corresponding to a change in light from a target object. AMETEK Pickups provide both the light source and sensing photocell. All AMETEK Pickups use silicon cell sensors that generate voltage when they "see" light.

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Built-In Amplifier</th>
<th>Application Distance</th>
<th>Max. Pulse Rate</th>
<th>Connector or Terminal SXA</th>
<th>Thread Size</th>
<th>Pickup Length</th>
<th>Pickup Diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>836</td>
<td>Yes</td>
<td>1/2&quot; (12.7mm)</td>
<td>100,000</td>
<td>No</td>
<td>3/4&quot; - 20</td>
<td>3.5&quot; (88.9mm)</td>
<td>-</td>
</tr>
<tr>
<td>995</td>
<td>No</td>
<td>1/4 to 12&quot; (6.4 - 304.8mm)</td>
<td>100,000</td>
<td>Yes</td>
<td>-</td>
<td>3.5&quot; (88.9mm)</td>
<td>7/8&quot; (22.2mm)</td>
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</tbody>
</table>
ORDERING INFORMATION

MODEL 1965/1967 STROBOSCOPE/TACHOMETER

Order Number Description

<table>
<thead>
<tr>
<th>Base Number</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>1965</td>
<td>Model 1965 Stroboscope/Tachometer, 6W @ 24,300 FPM</td>
</tr>
<tr>
<td>1967</td>
<td>Model 1967 Stroboscope/Tachometer, 40W @ 18,300 FPM</td>
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Power Requirements

<table>
<thead>
<tr>
<th>Power Requirements</th>
<th>Volts</th>
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<tbody>
<tr>
<td>/115</td>
<td>115Vac</td>
</tr>
<tr>
<td>/230</td>
<td>230Vac</td>
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Options

<table>
<thead>
<tr>
<th>Options</th>
<th>Description</th>
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<tbody>
<tr>
<td>/PS</td>
<td>with Phase Shift (Model 1967 only)</td>
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</tbody>
</table>

Certification

<table>
<thead>
<tr>
<th>Certification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>/C</td>
<td>NIST Certificate with Data</td>
</tr>
</tbody>
</table>

1965/115 Sample Order Number

Model 1965 Stroboscope, 115Vac. NIST Certificate not required.

Magnetic Types

<table>
<thead>
<tr>
<th>Model</th>
<th>Range</th>
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</thead>
<tbody>
<tr>
<td>813/SXC-1800</td>
<td>0.005-inch (0.127mm)</td>
</tr>
<tr>
<td>813/SXA-1800</td>
<td>0.005-inch (0.127mm)</td>
</tr>
<tr>
<td>892/SXA-1800</td>
<td>0.005-inch (0.127mm)</td>
</tr>
<tr>
<td>892/SXC-1800</td>
<td>0.005-inch (0.127mm)</td>
</tr>
</tbody>
</table>

Photoelectric Types

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>995/SXA</td>
<td>Low Level Output</td>
<td>1 to 12-inch (25.4 to 304.8mm)</td>
</tr>
<tr>
<td>995/SXC</td>
<td>Low Level Output</td>
<td>1 to 12-inch (25.4 to 304.8mm)</td>
</tr>
<tr>
<td>836/SXA</td>
<td>Amplified Output</td>
<td>0.5-inch (12.7mm)</td>
</tr>
<tr>
<td>836/SXB</td>
<td>Amplified Output</td>
<td>0.5-inch (12.7mm)</td>
</tr>
<tr>
<td>836/SXC</td>
<td>Amplified Output</td>
<td>0.5-inch (12.7mm)</td>
</tr>
</tbody>
</table>

AMETEK is a leading global manufacturer of electrical and electromechanical products for niche markets. Listed on the New York Stock Exchange (AME) since 1930, AMETEK’s annual sales are approaching $1 billion. Operations are in North America, Europe and Asia, with about one-third of sales to markets outside the United States.