

PHOTO-CONTACT TACHOMETERS

Features Model ST-6234B:

- Non-contact measurement of rpm of rotating objects facilitated by integral light beam
- Recalls Max/Min & last values
- Large, easy to read display
- Autoranging with 0.05% accuracy
- Includes battery and carrying case

Features Model ST-6236B:

- Dual function unit with both contact and non-contact capabilities
- Supplied with adapters for fpm, rpm and surface speed measurements
- Non-contact function utilizes laser light beam for improved accuracy
- Recalls Max/Min and last values
- Large, easy to read display
- Autoranging with 0.05% accuracy
- Includes battery and carrying case

Specifications:

Ranges: **ST-6234B:** 2.5 to 99,999 rpm;
ST-6236B: Photo: 5 to 99,999 rpm; Contact: 5 to 19,999 rpm; Surface: 0.05 to 1,999 mpm

Resolution: 0.1 rpm
 Accuracy: $\pm(0.05\% + 1 \text{ digit})$
 Update Time: 1/second
 Display: 5-digit LCD
 Dimensions: 6.3 x 2.8 x 1.5"
 Weight: 7.9 oz



Model	Description	Price
ST-6234B	Photo Tachometer	\$195.00
ST-6236B	Photo-Contact Tachometer	\$250.00
ST-WHEEL	Replacement Wheel	\$13.00
ST-CONE	Replacement Contact Adapter	\$11.00

PHOTO-CONTACT TACHOMETER



Features:

- New patented design incorporates both a photo and a contact tachometer into one precision instrument
- Ranges from 0.5 to 20,000 RPM in contact mode; from 5 to 99,999 RPM in photo mode; linear surface speed measurements are 0.2 to 6560 ft/min. or 0.05 to 1999.9 m/min
- Automatically holds last reading for 5 minutes and recalls minimum and maximum readings
- Characters on the large 5-digit display reverse direction depending on which measurement mode you are in
- Microcomputer LSI circuitry provides accuracy to 0.05% and permits readings to a resolution of 0.1 RPM in either photo or contact mode
- ABS plastic housing assures years of maintenance free performance. Designed to fit comfortably in either hand.

Specifications:

Reading Range:
 Photo Mode: 5 to 99,999 rpm
 Contact Mode: 0.5 to 20,000 rpm
 Surface Speed: 0.05 to 1,999.9 mpm/0.2 to 6,560 fpm
 Resolution:
 0.1 rpm < 999.9 rpm,
 1 rpm > 1000 rpm;
 0.1 mpm < 99.99 mpm;
 0.1 fpm < 99.99 fpm,
 1 fpm > 1000 fpm
 Accuracy: $\pm(0.5\% + 1 \text{ digit})$
 Sampling Time:
 Photo: 1 sec. > 6 rpm
 Contact: 1 sec. > 60 rpm
 Detecting Distance: 50 to 150 mm (2" to 6") typically;
 300 mm (12") max.
 Display: 5 digit LCD 10 mm high
 Power Supply: (4) 1.5V L "AA" batteries
 Time Base: Quartz Crystal
 System Control: Single chip micro computer LSI circuit
 Operating Temp.: 0° to 50°C
 Dimensions: 215 x 65 x 38 mm
 Weight: 300g

Model	Description	Price
K4010	Photo-Contact Tachometer	\$439.00
AS-35A	Replacement Contact Adapter	\$3.00

TACHOMETER



Features:

- Photo tachometer & contact tachometer in one precision instrument
- Ranges: from 0.5 to 19,999 RPM in contact mode; from 10 to 99,999 RPM in photo mode
- Surface speed measurements in ft/min. or m/min.
- Automatic reverse display direction depending on which measurement mode you are in
- Long detecting distance for photo tachometer; fast sampling time for low RPM contact measurement

Model	Description	Price
DT-1236L	Photo/Contact Tachometer w/ Laser	\$439.00

TACHOMETER

This precision speed indicator is a high precision indicator for the accurate measurement of revolutions per minute or linear speeds in feet per minute. Being of the chronometric type, with a built-in timing element operating over a fixed period of three seconds, this speed indicator is especially suitable for accurate measurements of constant speeds. Accuracy is $\pm 0.5\%$ over a range of 0 to 10,000 rpm and 0 to 3,000 fpm..

The instrument operates in a totally automatic fashion. Once the start button is depressed, the indicator will begin to register revolutions over a fixed period of three seconds. The hands then stop and the reading may be taken from the dial at leisure. The pointer remains in a fixed position until returned to zero by depressing the reset button.

The instrument has a large, easy-to-read dial, with black figures indicating revolutions per minute and red figures on the inner circle indicating feet per minute readings, without any calculations.



Model	Description	Price
H	Precision Speed Indicator	\$495.00

TACHOMETERS

Features:

- Safe, non-contact operation to 30" and 30° from reflective target
- Ergonomic design allows viewing target and display simultaneously
- Time/stopwatch function
- Contact tip measures rotational speed and linear speeds
- 30 functions - English/Metric
- Fits in shirt pocket, 2.4"W x 5.8"H x 1.2"D
- Weighs only 6 oz.

POCKET-TACH 100 Tachometer:

Non-contact, 5 to 100,000 rpm (± 1 rpm). Last measurement memory. Includes 9V battery, reflective tape and padded carrying case.

POCKET-TACH Plus KIT 30-Function Tachometer/Totalizer/Counter/Timer:

Non-contact, 5 to 100,000 rpm (± 0.0001 rpm). *Contact*, 2.5 to 100,000 rpm. Min, Max, last measurement memory, linear speed wheel for inches, feet, yards, miles, centimeters, meters.

Totalizer, 1 to 999,999 counts. *Timer*, 0.01 seconds to 99 hours. Includes 9V battery, contact tip with linear speed wheel, 5' reflective tape and plastic carrying case that also accepts optional optical sensor with 5' cable.



Model	Description	Price
PT-100	POCKET-TACH 100 Tachometer	\$317.00
PT-PLUS	POCKET-TACH Plus Kit	\$437.00
ROS-9P	Remote Sensor for Above Kit	\$178.00

TACHOMETERS

Features Models DT-105A & DT-107A:

Multi-mode Speed Selection: One rotary switch selects specific operating mode for measurement of rotational, linear and surface speeds; per minute, per second, or per hour, as well as *total length* in meters, centimeters, inches, feet and yards.

Direct Length Measurement: Offers versatility via added applications.

Total Revolutions Display: Enables rotation counting during process analysis.

Wide Measuring Range: Maximizes use in limitless applications.

Expanded Memory Capacity: Provides 13 readings - gives last reading, maximum, minimum and 10 intermediate speed readings - automatically or by selection to 5 minutes or more.

Overspeed Protection: Single-range low inertia drive system results in minimum shaft loading and eliminates the possibility of instrument damage due to overspeed on too low a range setting.

High Visibility Display: Oversized 5-digit display. LCD (*DT-105A*) for easy reading in direct sunlight and LED (*DT-107A*) for easy reading in dim environments.

Extended Battery Life: Longer life with fewer batteries!

Rugged Aluminum Construction: For years of maintenance-free performance.

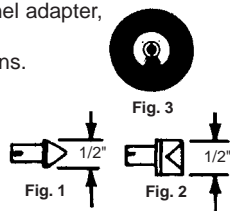
Accessories Included: 2 cone adapters, 1 funnel adapter, 3-1/2" extension shaft, 1 measuring wheel (6" circ.), carrying case, and operating instructions.

Accessories Available:

Cone Adapter (Fig. 1)

Funnel Adapter (Fig. 2)

Measuring Wheel (Fig. 3) 6" circ.



Features Models DT-205L & DT-207L:

Measurement without Contact: Directly displays RPM measurements sensed from an easy-to-aim visible light beam directed toward a rotating shaft without mechanical contact.

Laser Accuracy: New laser beam allows accurate and safe measurement of RPM from distances as great as 14 feet!

Expanded Measuring Range: Of up to 99,000 rpm covers a wider range of applications.

Length and Rate Functions: Offers expanded measurement capabilities; multi-mode speed selection allows maximum versatility.

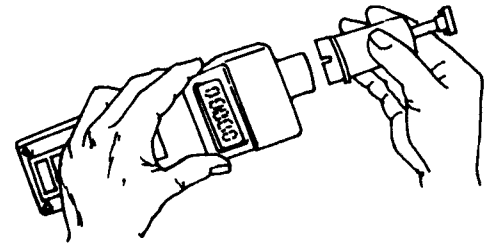
Expanded Memory Capability: Ten independent readings plus last, maximum and minimum enables larger quantities of information to be stored.

High Visibility Display: Oversized 5-digit display. LCD (*DT-205L*) for easy reading in direct sunlight, and LED (*DT-207L*) for easy reading in dim environments.

Extended Battery Life: Permits longer operating time while requiring fewer batteries.

Added Functions: Included contact adapter enables the measurement of five additional rate functions (RPM, YPM, mPM, FPM and IPM) as well as four length functions (yards, meters, feet and inches).

Rugged Aluminum Housing: Provides exceptional durability.



Contact Adapter:

Included with Tachometer:

Slips on photo tachometer over optical eye, converting it for direct contact operation.

Model	Description	Price
DT-105A	Contact Tachometer, LCD	\$439.00
DT-107A	Contact Tachometer, LED	\$439.00
CONE	Cone Adapter	\$11.00
FUNNEL	Funnel Adapter	\$15.00
FPM-6	6" Measuring Wheel	\$59.00

Model	Description	Price
DT-205L	Laser Non-contact/Contact Tachometer, LCD	\$460.00
DT-207L	Laser Non-contact/Contact Tachometer, LED	\$460.00
TAB-SHEET	1 Sheet Reflective Tabs (35)	\$7.00

Model	DT-105A	DT-107A	DT-205L	DT-207L
Display Range	0.10 to 25,000 rpm w/ floating decimal		6 to 99,999 rpm	
Accuracy	±0.06 rpm: 0.10 to 999.9 rpm ±0.6 rpm: 1,000.0 to 9,999.9 rpm ±0.006% of reading ±1 digit (or ±2 rpm max.): 10,000 to 25,000 rpm		±1 rpm; 6 to 8,300 rpm ±2 rpm; 8,300 to 25,000 rpm ±0.006% of reading ±1 digit: (or ±6 rpm max.) 25,000 to 99,999 rpm	
Measuring Units	Revolutions: RPH, RPM; Feet: FPH, FPM; Miles: MPH; Yards: YPH, YPM; Inches: IPM; Meters: MPH, mPM; Length: m, cm, in, ft, yrd; Total Revs.		RPM using contact adapter, included YPM, mPM, FPM, IPM & Length: yrd, m, ft & in, using 6" circ. wheel w/ 200L adapter	
Memory System	13 readings are stored in memory and retained for 5 minutes (last, max, min & 10 intermediate readings.)		13 readings are stored in memory and retained for 5 minutes (last, max, min & 10 intermediate readings.)	
Detection	Optical Coupler, 60 pulse/rev.		Laser diode	
Over Range	Flashing numerals		Flashing numerals	
Update Time	Typically 1 second		Typically 1 second	
Operating Temp.	32°F to 113°F (0° to 45°C)		32°F to 113°F (0° to 45°C)	
Display	5-digit 0.47" (12mm) high LCD	5-digit 0.4" (10mm) high LED	5-digit 0.47" (12mm) high LCD	5-digit 0.4" (10mm) high LED
Power Supply	2 1.5V size "AA" batteries		2 1.5V size "AA" batteries	
Battery Life	65 hrs. continuous use typically	40 hrs. continuous use typically	40 hrs. continuous use typically	25 hrs. continuous use typically
Low Voltage	Flashing "LO BAT" display	"B" display	Flashing "LO BAT" display	"B" display
Dimensions	7.2 x 2.4 x 1.8" (182.5 x 60 x 46mm)	7.3 x 2.4 x 1.8" (182.5 x 60 x 46mm)	6.6 x 2.4 x 1.8" (167.5 x 60 x 46mm)	6.6 x 2.4 x 1.8" (167.5 x 60 x 46mm)
Weight	0.9 lb (400 g)		0.8 lb (365 g)	

TACHOMETERS

Model HT-3100 Includes:

- KS-300 Cone-shaped Contact Tip (two, one of which is stored inside unit)
- KS-200 Circumferential Speed Ring (m/min)
- 3 type "AAA" batteries



Features:

• Wide Measuring Range

Two modes are provided: a low range covering 1.5 to 2000.0 rpm, and a high range covering 15 to 10,000 rpm.

• Measures Tangential Speed

Simply replace the rpm measurement contact tip with a disc-shaped circumferential speed ring to measure tangential speeds in m/min or mm/s.

• Data Hold Function

The last measured value is automatically held for 1 minute, enabling easy checking and recording of measurements.

• Convenient Storage Compartment

To enable tangential speed measurements at any time, just slip the circumferential speed ring along with an rpm measurement contact tip, into the storage compartment provided inside the **HT-3100**. When using the circumferential speed ring, two rpm measurement contact tips can be stored.

• Compact, Lightweight Design

With its display positioned for easy reading and its easy-to-hold curved design, the compact **HT-3100** is truly designed for simple operation.

• Low Battery Warning

To ensure accurate measurements at all times, the **HT-3100** warns the user when a battery replacement is required with a "B" indicator in the display.

Specifications:

	Low Mode	High Mode
Range:	1.5 to 2,000 rpm	15 to 10,000 rpm
Accuracy:	±0.1 rpm (1.5/1499.9 rpm) ±0.2 rpm (1500/2000 rpm)	±1 rpm (15/10,000 rpm)
Sampling Time:	Automatically repeated every 1s (2s in the range 1.5 to 3.0 rpm)	Automatically repeated every 1s (2s in the range 15 to 30 rpm)
Display:	5 digit LCD	
Power Supply:	(3) type "AAA" batteries	
Battery Life:	Approx. 50 hrs. continuous	
Ambient Temperature:	0° to 40°C	
Dimensions:	171.5 x 38 x 60 mm WHD	
Weight:	200 g	

Model	Description	Price
HT-3100	Digital Contact Tachometer	\$436.00

Model HT-4100 Includes:

- 1 sheet of 25 reflective marks measuring 12 x 12 mm,
- 3 type "AAA" batteries
- soft carrying case



Features:

• Wide Measuring Range:

The **HT-4100** covers a wide measurement range of 30 to 50,000 rpm, with measured values indicated on an easy-to-read 5-digit liquid crystal display (LCD).

• Measurement Without Contact:

The unit emits an easy-to-aim visible red light beam enabling rapid verification of the position of the light on the rotating body being measured. Measurement is as simple as applying a reflective mark to the rotating body, directing the light beam at the mark and directly reading the rpm measurement displayed.

• Extremely Safe:

Measurement is possible at a distance of 20 to 300 mm between the reflective mark and the detector, simplifying measurements under difficult conditions.

• Data Hold Function:

The last measured value is automatically held for 1 minute, enabling easy checking and recording of measurements.

• Compact, Lightweight Design:

Small and lightweight enough to fit in your pocket for use anywhere. Comes with soft case with belt loop as standard.

• Low Battery Warning:

To ensure accurate measurements at all times, the **HT-4100** warns the user when a battery replacement is required with a "B" indicator in the display.

Specifications:

Range:	30 to 50,000 rpm
Accuracy:	±1 rpm: 30 to 11,999 rpm; ±2 rpm: 12,000 to 29,999 rpm; ±4 rpm: 30,000 to 50,000 rpm
Sampling Time:	Automatically repeated every 1s (2s in the range 30 to 60 rpm)
Display:	5 digit LCD
Power Supply:	(3) type "AAA" batteries
Battery Life:	Approx. 20 hrs. continuous
Ambient Temp.:	0° to 40°C
Dimensions:	123 x 23 x 58 mm WHD
Weight:	110 g

Model	Description	Price
HT-4100	Digital Non-Contact Tachometer	\$384.00

STROBOSCOPE

As a stroboscope, this unit has a wide measurement range of 100 to 100,000 rpm. It features a digital display with high accuracy. Highly visible, long life light and solid state circuitry make this unit virtually maintenance free.

When checking speed, care must be taken to insure that the strobe is flashing in unison (one to one) with the object being monitored. A stroboscope will also stop motion at 2:1, 3:1, 4:1, etc., this is normally referred to as harmonics. To be sure of unison, turn the dial until two images appear (this will be double the actual speed), then lower the flashing rate until a single, stationary image appears - this will be the actual true speed.

For motion analysis, simply locate the actual speed as mentioned above and then turn the dial slowly up or down. This will give a slow motion effect, allowing complete inspection.

As a photo-tachometer, this meter offers non-contact rpm measurement. Highly visible LCD display gives accurate rpm readings over a wide measuring range of 0.5 to 100,000 rpm with 0.1 rpm resolution. No guesswork or errors. The last value, max and min values can be stored in memory automatically and recalled at the touch of a button.



Specifications:

STROBOSCOPE

Flash Range:	100 to 100,000 fpm/rpm
Resolution:	0.1 fpm/rpm: < 1,000 fpm/rpm; 1 fpm/rpm: ≥ 1,000 fpm/rpm
Flash Adjust Range:	Range A: 100 to 1,000 fpm; Range B: 1,000 to 10,000 fpm; Range C: 10,000 to 100,000 fpm
Flash Tube:	High efficiency orange LED lamp
Flash Duration:	Approx. 60 to 1,000 msec

TACHOMETER

Measurement Range:	5 to 99,999 rpm
Resolution:	0.1 rpm < 1,000 rpm: 1 rpm ≥ 1,000 rpm
Detecting Distance:	50 to 150 mm (2 to 6"); typically 300mm (12") max. depending on ambient light

GENERAL

Display:	5-digit, 10mm (0.4") high LCD
Accuracy:	±(0.1% + 2 digits)
Sampling Time:	1 second (≥ 60 rpm)
Time Base:	Quartz crystal
Ambient Conditions:	0 to 50°C (32 to 122°F); < 80% RH
Power Supply:	4 x 1.5V "AA" batteries
Dimensions:	215 x 65 x 38 mm (8.5 x 2.6 x 1.5")
Weight:	300 g (0.66 lb.)

Model	Description	Price
K4040	Photo Tachometer/Stroboscope	\$525.00

STROBOSCOPE

Features:

- World's smallest, hand-held stroboscope
- Fits in pocket or can be worn on belt
- Precise digital readout shows flash rate with resolution of ±1 digit
- Internal rechargeable battery
- Low battery indicator
- External trigger capabilities
- Designed to meet UL, CSA and IEC safety guidelines
- N.I.S.T. traceable calibration procedures
- Includes: fast 2-hour battery charger, carrying case and owner's manual



Specifications:

FLASH TUBE PARAMETERS

Longevity:	100 million flashes @ 6,000 fpm @ 70°F
Flash Energy:	800 lux
Flash Duration:	<20 μs
Flash Colour:	6500 K white Xenon

DISPLAY PARAMETERS

Display:	4.5 digit LCD
Range:	30 to 12,500 fpm
Resolution:	±1 fpm over the entire range
Accuracy:	±0.01% of reading over the entire range
Update Time:	0.5 second

ELECTRICAL

External Trigger:	DTL/TTL compatible 1/8" standard jack
Line Power Input:	120V, 60 Hz
Battery Rating:	1 hr. continuous use on full charge
Battery Recharge:	14 hr. recharge maximum
Fast Recharge:	2 hr. recharge w/ optional charger

MECHANICAL

Tripod Mount:	1/4" UNC female insert
Reflector:	Aluminum
Operating Temp.:	32 to 104°F (0 to 40°C); <80% RH
Dimensions:	220 x 63 x 40mm
Weight:	500g including internal battery

Model	Description	Price
PK2	Battery-powered Stroboscope	\$1045.00

STROBOSCOPE

Features:

- Direct reading of RPMs
- Exclusive one-chip micro-computer LSI circuit and crystal control time-base assures accuracy of $\pm 1\%$
- Duty cycles from 5 to 30 minutes (depending on RPM range)
- Tripod mountable AC operated with 6-foot power cord



This digital strobo-tachometer freezes the motion and measures the speed of a rotating object, without contact, simply by aiming and synchronizing its flash rate (fpm) with the speed (rpm) of the object. Ideal for quality control, motion analysis, maintenance procedures, production line checks, examination and speed measurement of motor rotors under various loads, gear movement and engagement, cams, propellers, fan blades, centrifuges, spindles, turbines and other machinery exhibiting repetitive motion.

Specifications:

Flash/Speed Rate:	100 to 10,000 fpm/rpm
Resolution:	1 fpm/rpm
Accuracy:	$\pm 1\%$ (100 to 5000 fpm/rpm); $\pm 0.05\%$ (over 5000 fpm/rpm)
Sampling Time:	1 second
Calibration:	Crystal time base and microprocessor circuit, does not necessarily take any external calibration procedure
Display:	0.3" LED, 4 digits
Housing:	Plastic injection case. Plastic lens. Mirror type reflector.
Power Supply:	110V AC $\pm 15\%$, 50/60 Hz
Operating Conditions:	0° to 50°C; Less than 80% R.H.
Dimensions:	8.3" x 4.8" x 4.8" (201 x 120 x 120 mm)
Weight:	2.2 lbs. (1 kg)

Model	Description	Price
K4020	Strobette, 110 VAC	\$417.00
1300C	Deluxe Carrying Case	\$102.00

STROBOSCOPE

Features:

- External trigger capability;
- Synchronous output signal to drive other equipment, including other stroboscopes of its own kind;
- Push on, push off power switch;
- Push button selector for FPM (phase shift) in degrees or delay time in ms;
- Push button that doubles the flashing and display rate with just one activation;
- Push button that divides the flashing and display rate in half with a single touch;
- Push buttons that increase or decrease the phase shift by one degree per excitation all the way from 0° to 359° or 0 to 333 ms.



A movement of 80° clockwise or counter clockwise of the outer control knob gets the operator quickly to the approximate desired rate. The knob returns to its "rest" position when released. Then through a continuous control mechanism the flashing rate is set at exactly the right number.

The **DT-311** strobe can be externally triggered through an **RS220H** photo sensor or **SE-G** proximity switch. It provides a 12VDC output to power most applicable sensors. The unit incorporates a 5-digit LED display which updates every 0.2 seconds in the internal mode and every 1 second when it is externally triggered. The **DT-311** is microprocessor-controlled which guarantees operational stability in temperature varying environments. Top operating range is 30,000 FPM which covers almost all applications in the industrial market place. The resolution is 0.1 FPM from 100 to 2000 FPM (floating decimal point) and 1 FPM from 2000 to 30,000 FPM. The combination of a Xenon flash tube and a parabolic reflector provide maximum natural light output.

Specifications:

INTERNAL MODE

Flashing Range:	100 to 30,000 FPM
Accuracy:	$\pm 0.01\%$ of reading
Drift:	$\pm 0.01\%$ per degree C
Update Time:	0.2 seconds
Decimal Point:	Floating, 100.0 to 1999.9, 2000 to 30,000
Output:	Synchronous 400 μ s. pulse output, 0 to +12 VDC amplitude (approx.) 1 K Ω impedance
Display Rate:	Divide by 2 or multiply by 2 through push button activation

EXTERNAL MODE

Flashing Range:	100 to 30,000 FPM
Phase Shift:	0 to 359° with 1° resolution or 0 to 333 ms from 200 to 3,000 FPM
Accuracy:	$\pm 0.01\%$ ± 1 digit
Update Time:	1 second
Input Signal:	5 to 24V p-p (not to exceed 35V with respect to GND), pulse width 50 μ s min., rise time less than 0.2 ms
Impedance:	10K Ω

GENERAL

Display:	5 digits, 0.39" (10mm) high LED
Flashtube:	Xenon, 10W maximum
Flash Duration:	10-30 microseconds
Power Supply:	12VDC $\pm 0.6V$ (40ma)
Power Requirements:	115VAC $\pm 10\%$, 50/60Hz, 30VA
Operating Temp.:	32 to 104°F (0 to 40°C)
Dimensions:	4.72"W x 4.72"H x 7.19"L (120 x 120 x 182.5 mm)
Weight:	2.6 lbs. (1.2 kg)

Model	Description	Price
DT-311	Digital Stroboscope, 110 VAC	\$979.00

STROBOSCOPE

The **Nova-Strobe Series** is the standard for high intensity portable stroboscopes. Models are available with digital or analog displays, battery or AC power, and a useful range of features and benefits to meet every requirement of performance and cost. Four models range from the **Nova DB Plus**, the versatile battery-powered digital stroboscope with internal phase shifting, to the **Nova-Strobe AA**, the most cost effective AC powered analog stroboscope.

Features:

- Battery models employ rechargeable sealed lead acid type that will operate in excess of 60 minutes at 6,000 fpm
- Electronic switching provides continuous cool operation
- High intensity Xenon flash tube provides 20% brighter white light than comparable units
- Easy to read backlit display
- Splash-proof protective cover (*DB Plus* and *AB* only)
- All models packaged as kits consisting of your choice of stroboscope, spare lamp packed in a rugged, impact resistant, foam-lined, attaché-style carrying case
- Internal battery model kits include a fast 3-hour recharger

DIGITAL STROBOSCOPES

- Internal phase shifting for easy reference target viewing
- Tachometer mode for speed measurement up to 200,000 rpm
- Power for optional sensors
- TTL compatible input and output jacks are provided for "daisy chaining" of multiple strobes, triggering from an external source, or providing a trigger signal
- Times 2 and divide by 2 capability for distinguishing actual rpm from harmonic frequencies
- Six user presettable memory flash rates for repetitive measurements and storage of the last flash rate measured
- Power for optional sensors
- Battery charge indicator (*DB Plus* only)
- N.I.S.T. Traceable Certificate of Calibration included



Model	Description	Price
NOVA-BA	Nova Strobe BA, Analog, AC	\$382.00
NOVA-BB	Nova Strobe BB Kit, Analog, Batter	\$950.00
NOVA-DA	Nova Strobe DA Plus Kit, Digital, AC	\$934.00
NOVA-DB	Nova Strobe DB Plus Kit, Digital, Battery	\$995.00
L-1902	Analog Replacement Lamp	\$47.00
825-1-1903	Digital Replacement Lamp	\$122.00

Specifications:

Model	Nova-Strobe BA Analog, AC Power	Nova-Strobe BB Analog, Battery	Nova-Strobe DA Plus Digital, AC Power	Nova-Strobe DB Plus Digital, Battery
Range FPM	100 - 8,000 fpm/rpm	100 - 8,000 fpm/rpm	30 - 14,000 fpm/rpm	30 - 14,000 fpm/rpm
Display	Quasi-digital drum	Quasi-digital drum	Digital LCD	Digital LCD
Accuracy/Resolution	±2% of setting	±2% of setting	±0.01% rdg./0.1 fpm	±0.01% rdg./0.1 fpm
Average power (watts)	7W	7W	15W	10W
Flash tube	Xenon, 6500°K	Xenon, 6500°K	Xenon, 6500°K	Xenon, 6500°K
Flash energy (typical)	120 mJoule	100 mJoule	180 mJoule	220 mJoule
Flash duration	20-50 msec	20-50 msec	20-50 msec	20-50 msec
Flash tube life (typical)	50 million flashes	50 million flashes	100 million flashes	100 million flashes
Power supply	115V AC, 50 - 400 Hz	6VDC internal rechargeable	115V AC, 50 - 400 Hz	6VDC internal rechargeable
Operating time	N/A	60 mins. at 6000 fpm	N/A	60 mins. at 6000 fpm
Weight	1.5 lbs.	2.5 lbs.	1.5 lbs.	2.5 lbs.
Dimensions	Body: 3.66" wide x 3.56" high x 9" long, Reflector housing: 4.8" diameter, Handle: 4.25" long			

STROBOSCOPE

Features:

- Push button that doubles and one that divides in half the flashing and display rate with just one activation
- Coarse and Fine adjustment buttons to synchronize flash to exactly the right rate
- Duty cycles from 10 minutes to 2 hours depending on RPM range
- Exclusive one-chip micro-computer LSI circuit and crystal control time-base
- External trigger input
- RS232 serial interface



Specifications:

Flash Range: 10 to 10,500 rpm
 Resolution: 0.1 rpm: 5 to 999.9 rpm; 1 rpm: 1,000 to 9,999 rpm; 10 rpm: \geq 10,000 rpm
 Accuracy: $\pm(0.15\%$ rdg. $+0.2$ rpm) $<$ 1,000 rpm; $\pm(0.5\%$ rdg. $+1$ rpm): 1,000 to 3,300 rpm; $\pm 1\%$ f.s.: 3,301 to 10,500 rpm
 Stability: 1 digit within 10 min.
 External Trigger Input: 5 to 30 Vrms, 0.083 to 175 Hz
 Power Supply: 110 VAC 15%, 50/60 Hz
 Dimensions: 8.3 x 4.8 x 4.8" (210 x 120 x 120mm)
 Weight: 2.2 lb. (1 kg)
FLASH TUBE
 Type: Xenon white lamp, 6500°K
 Flash Duration: Approx. 60 to 1000 μ s
 Flash Energy: 4 Watt-seconds (joules)

Model	Description	Price
K4030	Digital Stroboscope	\$638.00

STROBOSCOPE

Features:

- Measures rpm without special markings
- Manual flash rate control
- Rotary pulse indicator enables strobe to be set at the exact flash rate with no drift
- Push button that doubles and one that divides in half the flash rate with just one activation
- Push buttons increase or decrease phase shift by one degree from -360° to +360°
- LED digital display with floating decimal point
- External trigger input
- Continuous duty flash bulb
- Kit includes strobe, extra flash bulb and charger, all in a rugged carrying case



Specifications:

Flash Range: 40.0 to 12,500 fpm
 Resolution: 0.1 fpm: 40.0 to 4,999.9 fpm; 0.2 fpm: 5,000 to 7,999.8 fpm; 0.5 fpm: 8,000.0 to 9,999.5 fpm; 1 fpm: 10,000 to 12,500 fpm
 Accuracy: $\pm 0.02\%$ of reading
 External Trigger: 12 to 24VDC thru 3-wire NPN output sensor; 12VDC thru 2-wire proximity sensor; Switch or relay contact
 Flash Tube Type: Xenon, 10W max., 100 million flashes
 Flash Duration: 10 to 15 msec
 Display: 5-digit, 0.3" (8mm) high LED
 Power Supply: **DT-721**: 115 VAC $\pm 10\%$, 50/60 Hz; **DT-725**: Internal battery pack
 Dimensions: 9.0 x 4.3 x 8.5" (228 x 110 x 217mm)
 Weight: **DT-721**: 1.5 lb. (0.7kg); **DT-725**: 2.75 lb. (1.25kg)

Model	Description	Price
DT-721	Digital Stroboscope Kit, AC	\$723.00
DT-725	Digital Stroboscope Kit, DC	\$722.00

STROBOSCOPE

Features:

- User adjustable flash rates
- Push buttons rapidly increase (x2) or decrease ($\div 2$) flash rate
- Phase Shift feature allows user to advance or retard flash timing by degrees of angle, without changing actual fpm
- Continuous display update
- Crystal oscillator timebase
- External trigger and clock output
- One-hand operation for right- or left-handed operators
- Removable battery with built-in charge electronics
- Includes AC adapter extra flash bulb



Specifications:

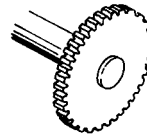
Ranges: 40.0 - 12,500 fpm; 40 - 59,000 rpm
 Resolution: 0.1 fpm: 100 to 9,999 fpm; 1 fpm: 10,000 to 12,500 fpm
 Accuracy: ± 0.5 fpm/rpm or $\pm 0.01\%$ rdg., whichever is greater
 External Trigger: 0-5V TTL via stereo phone jack
 Flash Tube Type: Xenon, 10W max., 100 million flashes
 Flash Duration: 9 to 15 μ sec
 Display: 8 character x 2-line LCD, alphanumeric
 Power Supply: NiMH rechargeable battery
 Weight: 650g (1 lb, 7 oz)

Model	Description	Price
DT-900	Digital Stroboscope	\$936.00

PANEL TACHOMETERS



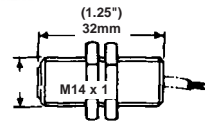
Model 3030AN



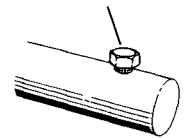
Model RS220H



Model DJ2-G



Sensor will detect any metal object on shaft



The **Model DT-5TS** panel mount tachometer is one of the most advanced microprocessor-controlled instruments on the market today. All membrane push button controls are located on the front panel of the unit for easy accessibility. The unit can be excited by a variety of signals such as a contact closure, open collector output, square wave or sine wave. The "Data Set" button locks in the number of pulses per revolution and the decimal point, which can be positioned anywhere on the display. To mount the unit, just snap it in to place. It fits a standard 1/8 DIN cutout, no hardware of any kind is necessary.

This tachometer offers two modes -- the standard measuring mode and the self-test mode. The standard mode enables the user to measure RPM. The self-test mode enables the user to test the display and electronics of the instrument itself. The **DT-5TS** also provides a 12 volt regulated power output for sensor power supply.

Specifications:

Display Range:	0.0000-9.9999; 0.000-99.999; 0.00-999.99; 0.0-9999.9; 0-99999
Measuring Range:	0-99,999 rpm (10-99,999 rpm at 1 ppr); 0.2-30,000 rpm (at 60 ppr)
Measuring System:	CPU controlled
Update Time:	1 second typically for higher than 60 rpm
Display:	LED, 0.56" (14.2 mm) high
Time Base:	Controlled by a 4.194304 MHz crystal
Accuracy:	±0.008% ±1 digit
Input No. of PPR:	1-9999 (programmable)
Waveform:	Sine wave. Max. frequency 10 KHz Square wave. Max. frequency 30 KHz. Contact closure. Max. frequency 20 Hz. Open collector with pulse width 20µs min.
Signal Amplitude:	Sine wave (0.3-3.0 Vp-p depending on frequency) Square wave: LO: 0-1.5V; HI: 4-30V
Impedance:	10KΩ for magnetic pickup, contact switch closure
Voltage Output:	12 VDC ±5% (50 mA max.) to power sensors
Ambient Temp.:	32° to 113°F (0° to 45°C)
Power Consumption:	1 Watt
Power Supply:	85-265 VAC (50/60Hz)
Dimensions:	3.46" x 1.88" x 3.78" (88 x 48 x 96 mm), includes bezel and fits a 1/8 DIN cutout
Weight:	0.55 lbs. (250g)

Features:

- Highly accurate
- Accepts many different types of sensors
- Immune to electrically noisy environments
- Tolerates a wide variation of line voltages
- Easy for panel mounting. It just snaps right into place.
- Front panel access to membrane push buttons for programming

Optional Sensors:

Model DJ2-G Proximity Switch: Designed to detect metal when placed in front of a sensing surface. Metal object positioned adjacent to or behind the unit will not normally be detected. Features include a pre-wired 10 ft. cable assembly, zero sensing capability, lightweight and compact package size.

SPECIFICATIONS:

Activating Frequency:	Max. 1 kHz
Cable Length:	18 ft.
Mounting thread:	M14 x 1

Model RS220H Retro-Reflective Sensor: Wide operating range up to 500 Hz. Consists of LED infrared light source, sensing device and amplifier which are contained in a heavy duty housing. There is a small indicator lamp for initial alignment purposes.

SPECIFICATIONS:

Operational Range:	1.18" to 7.87" (30 to 200 mm) with 1/2" sq. reflective tape
Activating Frequency:	500 Hz (max.)
Output Impedance:	4.7 kΩ
Cable Length:	6'6" (200 cm)
Mounting:	2 mounting holes in housing

Model 3030AN Magnetic Pick-up: Comes with Amphenol connector. Requires sensor cable assembly. Designed to be mounted in a 5/8"-18 threaded hole and is provided with a jam nut for securing the sensor.

Model	Description	Price
DT-5TS	Panel Tachometer	\$332.00
3030AN	Magnetic Pick-up Sensor	\$194.00
DJ2-G	Proximity Switch Sensor	\$78.00
RS220H	Retro-reflective Photo Sensor	\$312.00

PANEL TACHOMETERS

The **Model DT-4RL** panel mount tachometer is a 4 digital LED unit designed to fit a 1/8 DIN panel cutout. The meter is scalable, which enables it to read and display both rotational (rpm) and linear speeds.

The **DT-4RL** is capable of accepting 1, 10, 20, 30, 60 and 120 PTR (pulses per revolution) by removing the front panel and change just one, easily accessible, jumper wire. It also has a 3-digit rate multiplier (three rotary switches) behind the front panel for scaling. A+ 12 VDC supply is available to power various sensors. All selected functions are protected via front cover.

Features:

- Scalable
- Selectable PPR (pulses per revolution)
- Autorange decimal point
- Available in 110 or 220 VAC (50/60 Hz)
- Highly accurate (0.01% f.s.)
- Overrange indication
- No input signal indication

Specifications:

Measuring Range: 0-9,999 (16-9,999 rpm at 1 p/r:
0.2-833 rpm at 120 p/r)

Display Range: 0.0-999.9, 1000-9999 (auto decimal)

Update Time: 1 second

Accuracy: 0.01% F.S.

Input # of P/R: 1, 10, 20, 30, 60, 120 (jumper selectable)

Power Supply: 120/230 VAC $\pm 10\%$ (50/60 Hz)
Optional: 12, 24 or 48 VDC

Voltage Output: 12 VDC $\pm 10\%$, 40 mA maximum



Model	Description	Price
DT5RL-1	Panel Tachometer, TTL Signal	\$213.00
DT5RL-2	Panel Tachometer, NPN Signal	\$213.00
DT5RL-3	Panel Tachometer, 1-60 VAC Signal	\$213.00
RE1B-60C	Rotary Pulse Generator, 60 p/rpm, 5,000 rpm maximum	\$366.00
B12-S12	Proximity Switch	\$156.00
SE-G	Proximity Gear Sensor	\$234.00
RS220H	Retro-reflective Photo Sensor, 6.5' cable	\$312.00
3030AN	Magnetic Pick-up Sensor, 10' cable	\$194.00

LINEAR SPEED & LENGTH SENSORS

The **LSL-3A** series of sensors offers the user the capability of measuring linear speed and length when working in conjunction with a rate meter or counter. By changing the wheels on the main body, lengths and rates can be measured in different engineering units.

Models LSL-3A1 and **LSL-3A2** provide a single output, whereas **Model LSL-3A3** provides a dual "phase shift" output signal which is required by a special family of electronic counters. The sensors are compact, made of steel, and are designed for continuous use. The meter wheels for all three models are 300 mm $\pm 0.1\%$ in circumference and the the yard wheels are 0.3 yd $\pm 0.1\%$ in circumference. **Models LSL-3A2** and **LSL-3A3** produce 3 pulses per 1 revolution while **Model LSL-3A1** produces 1 pulse per 3 revolutions regardless of which wheels are used.

Specifications:

Supply Voltage: 12 VDC

Current Consumption: 40mA max.

Output Impedance: 4.7 k Ω

Frequency Response: 10 kHz (electronic circuitry)

Operating Temp.: -10 to 60°C

Output Waveform: Pulse (0.5V to Vcc-1V)

LSL-3A1: Single output, 1 yd/m (1 pp 3-1/2 r)

LSL-3A2: Single output, 0.11 yd/m (3 ppr)

LSL-3A3: Dual output, 0.1 yd/m (3 ppr)



Model	Description	Price
LSL-3A2	Linear Speed and Length Sensor	\$256.00
LSL-3A3	Linear Speed and Length Sensor	\$256.00