

SPEED SENSORS AND TACHOMETERS

Reliable, Predictable, Cost Effective



**AI-TEK Speed Sensors and Tachometers
Power Is Useless Without Control.**


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SPEED SENSORS

Speed Sensors

AI-Tek Instruments manufactures hundreds of different designs of speed sensors. We have been developing sensors for over 40 years. Many of the hundreds of AI-Tek speed sensors we produce are designed for special applications which allow us to offer a highly versatile and flexible product line.

Designed to meet severe industrial, automotive and aerospace environments, AI-Tek speed sensors, will provide reliable, around-the-clock operation for many years under adverse conditions. Many of our speed sensors are specifically designed for high temperature, high or low speeds, various targets or for precise accuracy and timing applications. AI-Tek uses primarily the two technologies of variable reluctance, and Hall Effect to convert motion into an electronic signal. By selecting the best technology for a specific application we can assure years of reliable performance. AI-Tek Instruments will provide a superb price/performance ratio.

Passive Magnetic Sensors

With few components and no moving parts, the Passive Magnetic Speed Sensors can provide a signal from the inside of an aircraft engine at temperatures approaching 425° C or from the hub of an automobile wheel at high shock and vibration. The advantages of these sensors are:

- High reliability.
- Simple installation.
- Long life due to no moving parts or contacts.
- Self powered operation.
- Wide variety of shapes and sizes.
- Can be designed for almost any environment.

Due to their flexibility, you will find AI-Tek variable reluctance sensors in everything from low cost consumer products to highly-accurate automotive engine ignition systems to flight-worthy aircraft engine controls.

Hall Effect Sensors

AI-Tek has 40 years of experience of designing and manufacturing Hall Effect Sensors.

We offer the widest range of standard catalog sensors to meet your various design needs. The design is flexible to easily meet all of your application requirements.

The Hall Effect sensor can sense each change in target movement, regardless of speed, from near zero to 15 kHz frequency range, generating a steady pulse train of frequency proportional to target speed.

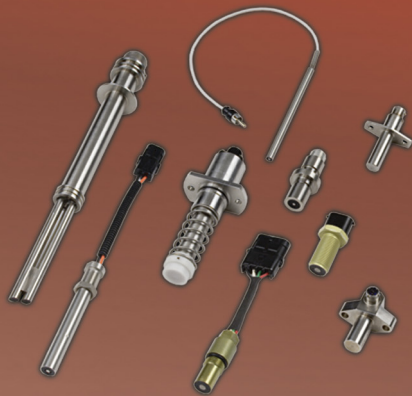
Key features to note are:

- Reverse voltage protection, up to -30 Vdc, to prevent damage if miswired.
- Higher temperature range of -40° C to +125° C.
- Wide range of supply voltage in single design of 4.5-24 Vdc.
- Two output options of Supply Tracking or TTL Compatible.
- Rugged design meeting IEC 77 Standards (European Railroad Applications).

If you have a unique, special requirement which cannot be met with any of the standard options, we will gladly review your specs and work with you on a special sensor design.

Our newest "RH series sensors:

- No longer require special alignment.
- Have improved duty cycle.
- Have improved fine pitch performance.
- Have increased air gaps



TACHOMETERS

New Generation Tachometer Line

The new generation TACHPAK and TACHTROL series tachometers have been designed with all of the functions and durability embodied in the previous tachometer series as well as improvements to extend performance, accuracy and function. Both TACHPAK and TACHTROL now share a common processing platform. This commonality allows both to perform identical tachometry functions, streamlines programming and minimizes the learning curve.

TACHPAK 10 & 30 Key Features:

- Wide range of AC or DC power (12-30 Vdc, 80-264Vac 50-60Hz)
- Greatly improved instrument accuracy, processing speed and response time.
- Frequency, period or counter modes.
- User-defined inputs for logic level, averaging, alarm set points and hysteresis.
- Signal normalization and math functions allow mathematical manipulation of input signals. Results can be displayed along with user-defined units.
- Accepts sinusoidal and square wave inputs as found in variable reluctance and digital output speed sensors.
- Accepts bi-directional sensor inputs and will decode quadrature or direction signal logic.
- 2 solid state relays (fast response time) and 2 mechanical relays (high power) (-30 Model Only).
- Analog output: 0-20mA, 4-20mA, -20-0-(+) 20mA (can be used with bi-directional sensor) (-30 Model Only).
- Two programming methods: Front panel on display or USB2.0 connectivity to PC / Windows-based GUI (Graphical User Interface).
- Utility RS485 communication allows full GUI function over longer distances (up to 8000 ft) (-30 Model Only).
- Drives up to 8 remote displays (TTplus). A single display can be up to 1000 ft away with a simple RJ11 (phone jack) connection. Longer runs, cable type and number of displays will affect distance.
- Security mode protects unauthorized access for programming or alarm resets (through display or GUI).
- Mounts to DIN rail. Power can be applied through special DIN bus when used with AI-TEK power supply (TP only).
- Environmentally hardened for temperature, vibration and shock. EMC / CE compliant to current BS EN directives.
- Designed and manufactured compliant with RoHS.

TACHTROL 10 & 30 Key Features:

- All the same features as TP10 & 30.
- Has integrated display and will mount in same panel opening as TACHTROL 3.
- Display capabilities include two independent output channels for speed, count period or equation results, alarm status / security, mode, User defined units for each channel, 128x64 LCD graphics display with backlight.

TACHTROL plus Key Features:

- An extension of the TACHPAK and TACHTROL lines. While this device has no intrinsic tachometer function, it is used as a remote display for TP10 & 30 and TT 10 & 30.
- Serves as a gateway with both TT and TP instruments for secure, remote programming and alarm reset.
- Use as a hub for multiplexing additional displays.



TACHPAK



TACHTROL



New Generation Tachometer Configuration Chart

	AC Voltage 80-264 Vac	DC Voltage 12-30Vdc	Utility RS485	USB / TACHLINK Compatible	Analog Output	Mechanical Relays (2)	Solid State Relays (2)	Infrared Remote Compatible**	Panel Mount	DIN Rail Mount	NEMA 4X	Explosion Proof / ATEX
TACHPAK 10												
T77510-10	X	X		X		X				X		
T77510-40	X	X		X		X					X	
T77510-70	X	X		X		X						X
TACHPAK 30												
T77530-10	X	X	X	X	X	X	X			X		
T77530-40	X	X	X	X	X	X	X				X	
T77530-70	X	X	X	X	X	X	X					X
TACHTROL 10												
T77610-10	X	X		X		X		X	X			
T77610-40	X	X		X		X		X			X	
T77610-70	X	X		X		X		X				X
TACHTROL 30												
T77630-10	X	X	X	X	X	X	X	X	X			
T77630-40	X	X	X	X	X	X	X	X			X	
T77630-70	X	X	X	X	X	X	X	X				X
TACHTROL plus												
T77810-10	TACHTROL plus is a remote display only. It is used to provide display and programming functions. Up to 8 displays can be connected to a single tachometer. ***							X	X			
T77810-40								X			X	
T77810-70								X				X

** Infrared remote included with TACHTROL -40 and -70 units only.

*** Seven TACHTROL plus displays for TACHTROL 10 & 30 / Eight TACHTROL plus displays for TACHPAK 10 & 30

New Generation Tachometer Cross Reference

NEW	OLD
TACHPAK 10	
T77510-10 80-264Vac, 12-30Vdc, Standard	T77130-11 120 Vac / 24Vdc, Standard
T77510-40 80-264Vac, 12-30Vdc, NEMA 4X	T77130-12 240 Vac / 24Vdc, Standard
T77510-70 80-264Vac, 12-30Vdc, Explosion Proof	T77130-41 120Vac / 24Vdc, NEMA 4X
	T77130-42 240Vac / 24Vdc, NEMA 4X
	T77130-71 120Vac / 24Vdc, Explosion Proof
	T77130-72 240Vac / 24Vdc, Explosion Proof
TACHPAK 30	
T77530-10 80-264Vac, 12-30Vdc, Standard	T77430-11 120Vac / 24Vdc, Standard
T77530-40 80-264Vac, 12-30Vdc, NEMA 4X	T77430-12 240Vac / 24Vdc, Standard
T77530-70 80-264Vac, 12-30Vdc, Explosion Proof	T77430-41 120Vac / 24Vdc, NEMA 4X
	T77430-42 240Vac / 24Vdc, NEMA 4X
	T77430-71 120Vac / 24Vdc, Explosion Proof
	T77430-72 240Vac / 24Vdc, Explosion Proof
TACHTROL 30	
No Cross Reference Offered	T77310-01 120Vac / 24Vdc, Less Enclosure
	T77310-02 240Vac / 24Vdc, Less Enclosure
T77630-10 80-264Vac, 12-30Vdc, Standard Panel Mount	T77310-11 120Vac / 24Vdc, Standard Panel Mount
	T77310-12 240Vac / 24Vdc, Standard Panel Mount
No Cross Reference Offered. Use T77630-40 for closest match.	T77310-21 120Vac / 24Vdc, Splash Proof Panel Mount
	T77310-22 240Vac / 24Vdc, Splash Proof Panel Mount
T77630-40 80-264Vac, 12-30Vdc, NEMA 4X	T77310-41 120Vac / 24Vdc, NEMA 4X
	T77310-42 240Vac / 24Vdc, NEMA 4X
T77630-70 80-264Vac, 12-30Vdc, Explosion Proof	T77310-71 120Vac / 24Vdc, Explosion Proof
	T77310-72 240Vac / 24Vdc, Explosion Proof
TACHTROL 10	
T77610-10 80-264Vac, 12-30Vdc, Standard	No "OLD" Versions. Refer to TACHTROL 3 for closest match.
T77610-40 80-264Vac, 12-30Vdc, NEMA 4X	
T77610-70 80-264Vac, 12-30Vdc, Explosion Proof	
TACHTROL plus	
T77810-10 Standard	No "OLD" Versions. Refer to old analog meter.
T77810-40 NEMA 4X	
T77810-70 Explosion Proof	

