



## CLINOMETER APPLICATIONS



Specifications subject to change without notice.

Matrix Product Development, Inc.  
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## Features/Advantages

Dual axis sensor

100% burn in under load

Optional full encapsulation to keep out unwanted moisture and debris

Optional universal mounting plate with leveling hardware

Optional bubble level or leveling LEDs

Electronic damping available

Tamper proof factory set trip points on relay output

Relay output can either sink or source

No mercury contacts

Custom termination available upon request

Alternate lead style and gauge available

## Customization

The circuit board assembly can be purchased separately as a component. The unit can be ordered with an enclosure with and without encapsulation material. The range of angle can be specified separate for each axis. Analog, TTL, or relay outputs can be specified.

## Typical Applications

Drilling and mining equipment

Construction equipment

Laser instruments

Antenna positioning

Camera stabilization systems

Automotive wheel alignment

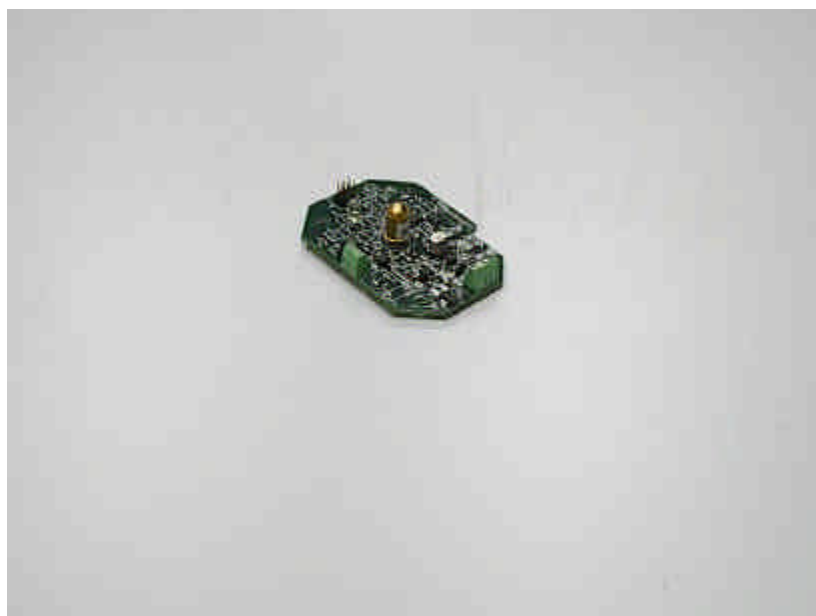
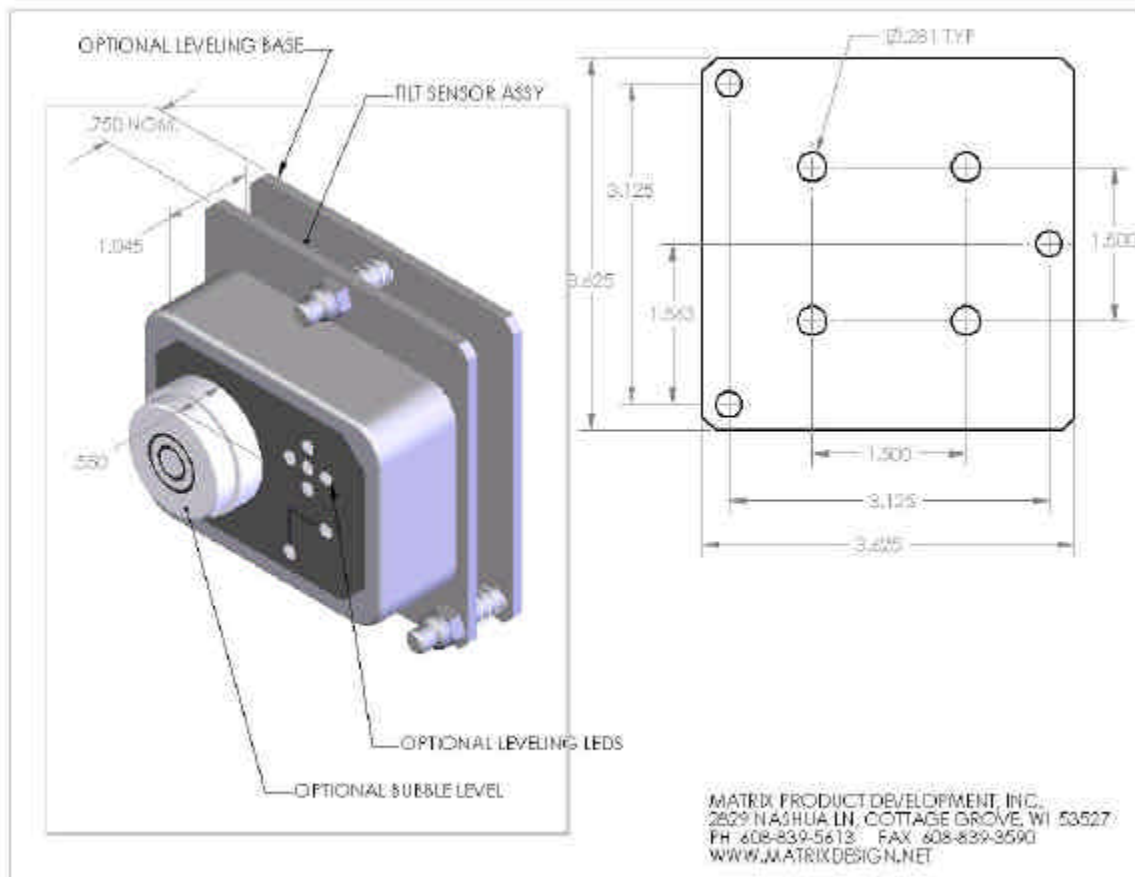
Virtual Reality games

Ships, buoys, ROVs, towfish

Navigation and GPS Compensation

Automotive Roll Over

Medical and Physical Feedback Instruments



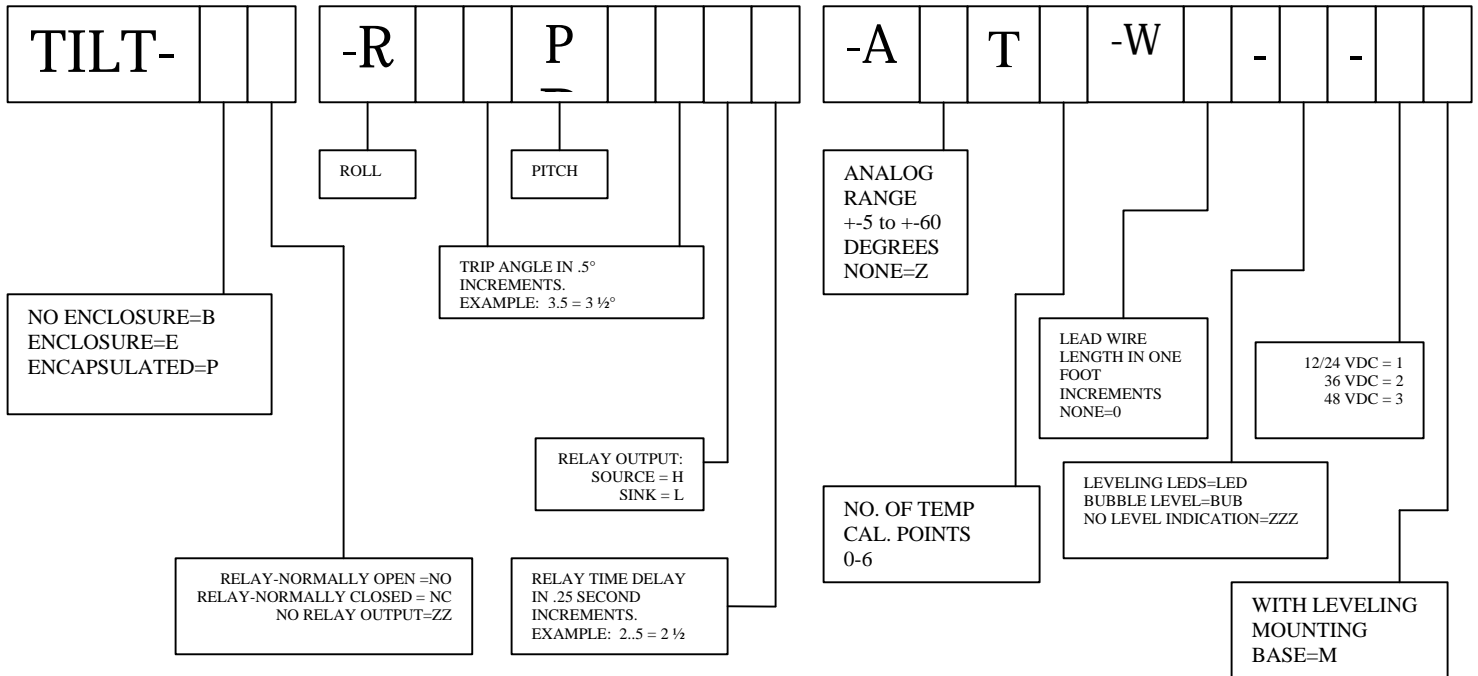
## Specifications

OUTPUT CHANNELS*	0.25 – 4.75 VDC per channel (single-ended)
ANGULAR RANGE	±10 degrees (20 degrees span) to ±50
LINEARITY*	1% over half span; 2.5% over full span.
TEMPERATURE COEF.*	+0.05% of reading per °C typical
RESOLUTION*	0.05 degree of arc.
REPEATABILITY*	0.1 degree of arc at constant temperature
SCALE FACTORS*	4 degrees/Volt typical with a 20° span Temp: 0.1°C/mV, ± 0.75°C accuracy
HYSTERESIS*	0.1 degree of arc
NATURAL FREQUENCY	10 Hz
RELAY DELAY	0-10 SECONDS
POWER REQUIREMENTS	+12 to +48 VDC
ENVIROMENTAL	-40° to +50°C operating, -40° to +85°C storage, 0-90% humidity, non-condensing for non-encapsulated units
OUTPUT IMPEDANCE	270 ohms, short circuit protected
SIZE AND WEIGHT	3.625 X 3.625 X 1.192 inches (92.075 X 92.075 mm), 0.6875 oz (19.5 grams)
MATERIALS	Liquid filled metal or glass sensor, G10 fiberglass PCB, silicone, aluminum plate
MOUNTING	Aluminum mounting plate w/ three 9/32 inch (7.14 mm) mounting holes

Note: For TTL or RS232 output, please consult factory.  
If different specifications are required, consult factory.

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## ORDERING GUIDE



**Example 1:** A 12 volt encapsulated unit with leveling LEDES, leveling mount base, a trip point of 3.5 degrees roll, 10 degrees pitch with a normally open relay output that switches the output to ground with a 1 second time delay, 4 foot lead wires would be:

**TILT-PO-R3.5P10L-AZT0-W4-LED-1M**

**Example 2:** A 36 volt non-encapsulated unit with a +-20 degree analog output without leveling LEDs would be:

**TILT-BZZ-A20T0-W0-2**

**Example 3:** A 48 volt encapsulated unit with leveling LEDES, leveling mounting base, a trip point of 4.5 degrees roll, 6.0 degrees pitch with a normally closed relay output that switches the output to the supply voltage with a 1.75 second delay, 3 foot lead wires, and an analog output with a +-10 degree range calibrated at 4 temperatures for more precise readings:

**TILT-PC-R4.5P6.0-A10T4-W3-LED-3M**

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