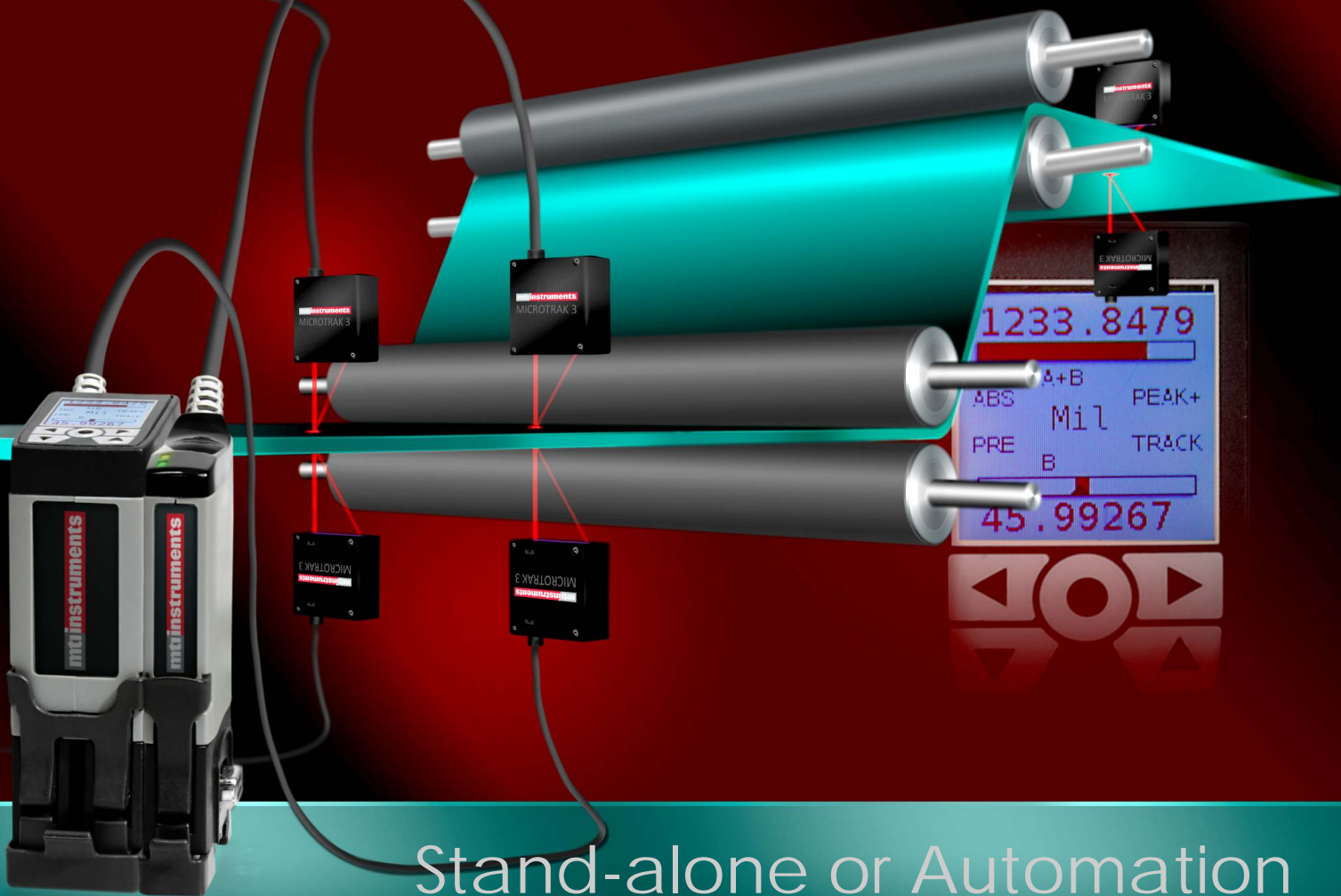


# MICROTRAK™ 3 TGS

## Thickness Gauge System



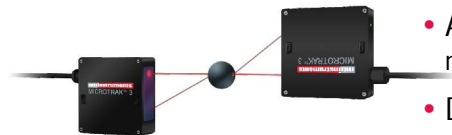
## Integral Readout with color LCD Display and Keypad



- Sealed Membrane Keypad
- Color LCD Display
  - Analog - Bar representing reading
  - Digital - up to 4 decimal places for mm/5 for inches
  - Warning - Red bar/number indicates out of limit measurement
- Selectable Computation Mode
  - Thickness, Thickness to reference
  - Track Peak+/Peak-
  - *maxA - minA, maxB - minB*
- Set tolerance and process limits via keypad
- Preset thickness or tare functions

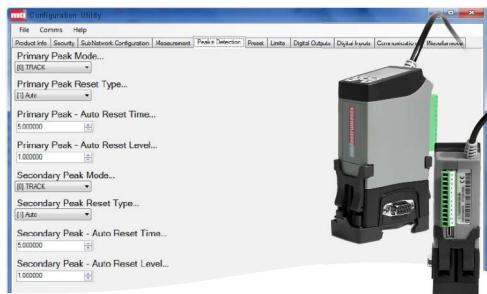
## Remarkable Functionality

The Microtrak™ 3 Thickness Gauge System combines our proven laser triangulation sensors with a modular controller that can operate either as a standalone solution or with a PLC/PC. The controller simplifies thickness applications through high speed internal sampling and digital thickness computation, reducing errors often encountered with traditional analog summing methods. The controller can detect out of range thickness conditions within 0.00025 seconds and provide indication via a digital output pin.



- Visible Laser Spot - Allows for easy positioning and alignment of the laser head.
- Auto Gain Circuitry - Automatically determines and adjusts the ideal laser power needed for accurate and repeatable measurements on different surface types.
- Digital Output - RS-485 or optional USB
- Cut-Time Feature - Ignore holes and cutouts with its bridging function.

## PLC or Computer Modbus Interface



- Modbus output (RTU) over RS485 or USB (optional)
- Programmable discrete I/O (4 inputs, 3 outputs)
- Set tolerance and process limits via keypad or PC
- Multiple formulas available (A+B, A-B, etc.)
- DIN Rail Mount
- 24V DC Power Supply

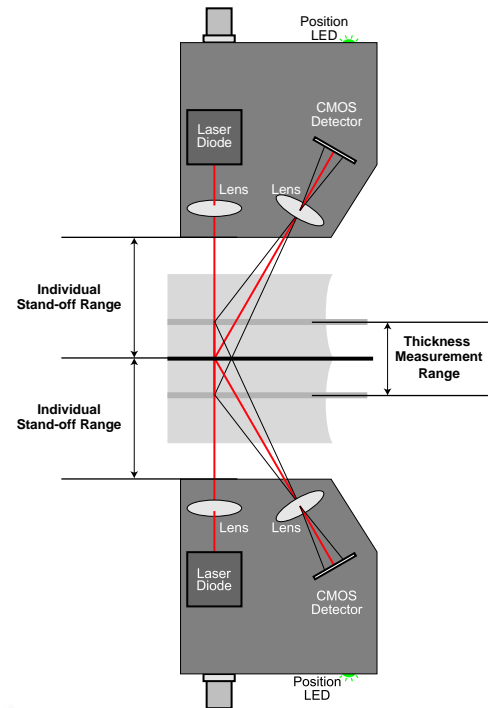
The TGS is ideal for measuring targets such as metallic, wood, ceramic, steel or plastic.



## Laser Triangulation Technology Principle

Laser triangulation sensors contain a solid-state laser light source and a CMOS detector. A laser beam is projected on the target being measured and a portion of the beam is reflected through focusing optics onto a detector. As the target moves, the laser beam proportionally moves on the detector. The signal from the detector is used to determine the relative distance to the target.

Laser displacement sensors are non contact by design. Because of this, the object being measured will not be distorted or damaged and target motions will not be dampened. Additionally, laser displacement sensors can measure high frequency motions because no part of the sensor needs to stay in contact with the object, making them ideal for high speed production line applications.



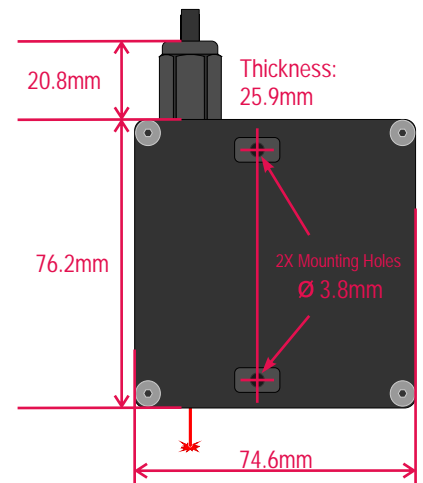
## Product Dimensions:



TGS Side



TGS Back



TGS Laser Head

## What's in the box:

Flat Head Screwdriver

### USB Drive

- Software
- Users Manual

Channel 1 Module  
with Laser Head and  
Display Gauge

Channel 2 Module  
with Laser Head  
and Slave Controller

USB to RS485  
(Factory Pre-Attached)





## Specifications

Model Name	Microtrak 3 TGS 25-02	Microtrak 3 TGS 25-04	Microtrak 3 TGS 50-10	Microtrak 3 TGS 50-20
Product Number	8000-6851	8000-6852	8000-6853	8000-6854
Thickness Measurement Range (mm)	4	8	20	40
<sup>1</sup> Noise (μm)	0.600	1.200	3.600	6.500
Linearity	±0.06% FSR			
Laser Head Specifications				
Stand-off (mm)	25	25	50	50
Range (mm)	2	4	10	20
Extended Range (mm)	2.5	5.0	12.5	25.0
<sup>2</sup> Laser Spot Size (μm)	30	30	25	36
<sup>1</sup> LSB Resolution (μm)	0.038	0.076	0.191	0.382

[1] ±Peak noise at the center range of white photo paper with frame rate of 20kHz.

[2] Major diameter measured at standoff.

- <sup>1</sup>Laser Power : <5mW
- Laser Class (IEC 60825): 3R
- Frequency Response: Up to 4kHz
- Operating Temperature Range: 0°C to 40°C
- Storage Temperature Range: -20°C to 70°C
- Humidity Range: 10 to 95% Non-Condensing
- Temperature Stability: 0.05% FSR/°C
- Digital Interface: RS-485 (Half Duplex)
- Supplied Laser Head Cable Length: 2m ±0.025m (other cable length optional)

- <sup>2</sup>Supply Voltage: SELV : 18 to 32VDC
- <sup>2</sup>Nominal Supply Voltage: SELV 24VDC
- Maximum Power Draw: 5.0W
- Software Selectable Filters: 0.1Hz, 1Hz, 25Hz, 200Hz, 1kHz, 4kHz
- <sup>3</sup>Nominal Laser Wavelength : 670nm

[1]Laser power is based on standard products.

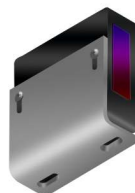
[2]Safety Extra Low Voltage

[3]Nominal laser wavelength is based on standard products.

## Optional Accessories

Description	Product Number
FS6-1 Right Angle Bracket (25/50)	8000-6431
Universal Input Power Supply (DIN Mount) Assembly 24V	8000-6925
12-position Euro Connector - replacement	8000-6885
DB-9 Extension Cable	8000-6886
Din-rail mounting	8000-6882
USB Interface cable (pre-wired to connector)	8000-7012
T-connector (joins channel 1&2 modules) - replacement	8000-6884

FS6-1 Right Angle Bracket  
P/N: 8000-6431



Universal Input Power Supply  
(DIN Mount) Assembly  
P/N: 8000-6925



*Includes power cord and  
24VDC harness (specify  
country for correct line cord)*



Channel 1  
Replacement Module

CH1-25-02 Laser w/ Display	8000-6843
CH1-25-04 Laser w/ Display	8000-6844
CH1-50-10 Laser w/ Display	8000-6845
CH1-50-20 Laser w/ Display	8000-6846



Channel 2  
Replacement Module

CH2-25-02 Laser	8000-6847
CH2-25-04 Laser	8000-6848
CH2-50-10 Laser	8000-6849
CH2-50-20 Laser	8000-6850

### MTI Instruments, Inc.

325 Washington Avenue Extension  
Albany, NY 12205-5505

PH: +1-518-218-2550

OR USA TOLL FREE: 1-800-342-2203

FAX: +1- 518-218-2506

EMAIL: sales@mtiinstruments.com

www.mtiinstruments.com

# mtiinstruments

A subsidiary of Mechanical Technology, Inc.(MKTY)

MT3TGS.01.16.14.rev1.0