mtiinstruments

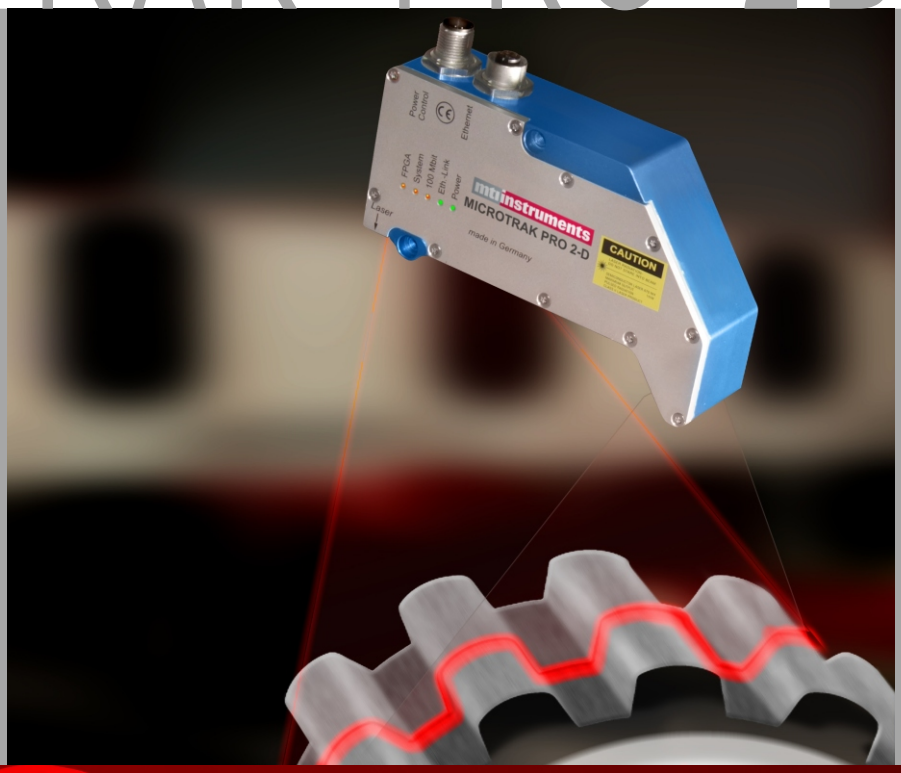
A worldwide leader in precision measurement solutions

2-Dimensional

Laser Profile

Sensors

MICROTRAK™ PRO-2D



High speed

laser triangulation scanners

for quality control and

production applications

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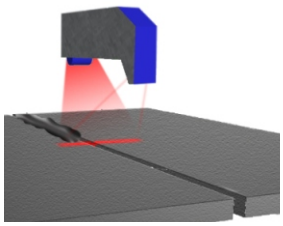
MICROTRAK™ PRO-2D

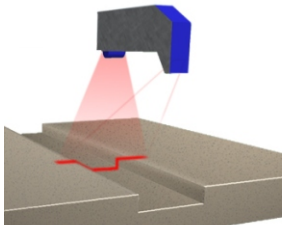
High accuracy, Cost effective, Laser profile sensors

MICROTRAK™ PRO-2D laser triangulation scanners provide high speed profile, displacement and dimensional information in real time. MTII's 40+ years of providing industry leading non-contact sensors has given us the technology and experience to offer the latest state-of-the-art 2D sensors.

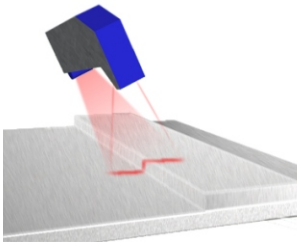
Unaffected by surface texture, color or stray light, the Microtrak™ PRO 2-D line of laser measurement systems are ideal for solving tough production and quality control applications throughout a wide variety of industries. The IP-64 housing design and optional casings makes them suitable for operation in harsh environments and under varying temperature conditions. Optional highly flexible, durable cables are available allowing for years of service in demanding robotic and motion control applications.



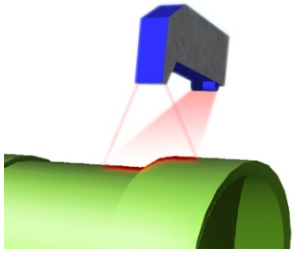
Butt Joint



Gap



Lap Joint



Pipeline Welding

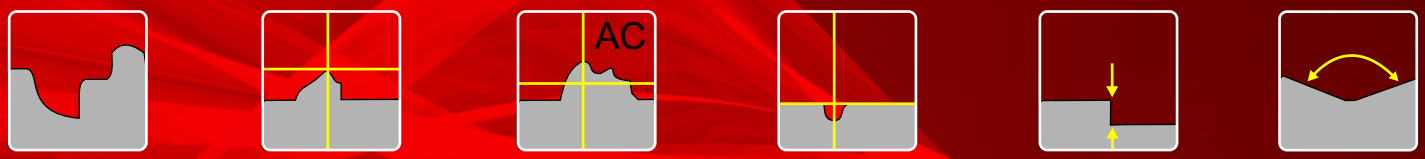
General Applications

- Welding
- Thickness
- Production control
- Displacement
- Warpage
- Quality control
- Step height
- Profiling
- Dimensional gauging
- Angle measurement
- Flatness
- Gap control
- Alignment
- 3D surface inspection

Specialty Applications

- Weld seam tracking
- Adhesive bead inspection
- Fill height
- Expansion/Contraction
- Structural Dynamics
- Presence/Absence of product

No External Controller Needed *Direct Ethernet Connection and Control*
High Accuracy *Robot Compatible* *Encoder Inputs*



Profile Display | Highest Point | Highest Point + Area Centroid, Weighted | V-groove | Edge | Angle

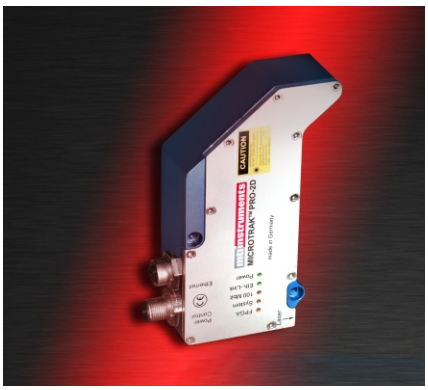
MICROTRAK™ PRO-2D

High accuracy, Cost effective, Laser profile sensors

The scanner's automatic profiling mode in conjunction with MTII's support software, simplifies programming and integration time. The high speed measurement rate and Ethernet interface allows active feedback control of processes in applications such as welding, glue dispensing and geometric control. Laser head electronics have been specially designed to protect against high shock and vibration. Provisions for synchronization of multiple heads are offered to expand the system measurement capabilities and perform 3-D analysis.

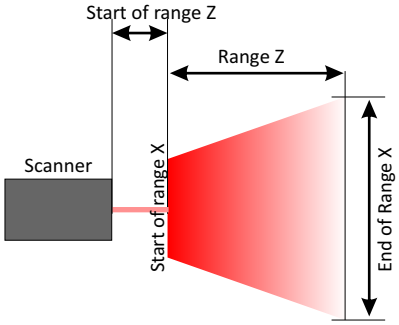
Features and Advantages

- Synchronization and External Trigger
- Protection class: IP-64
- Vibration: the electronic unit has been specially protected against shock and vibration (5g up to 1 KHz).
- Profile update rates to 93.5 Hz
- Up to 700Hz updates on select heads
- Trigger-mode approximately 60 Hz
- Time base stability: 100 microseconds
- Protective windows
- Optional water and cooling module



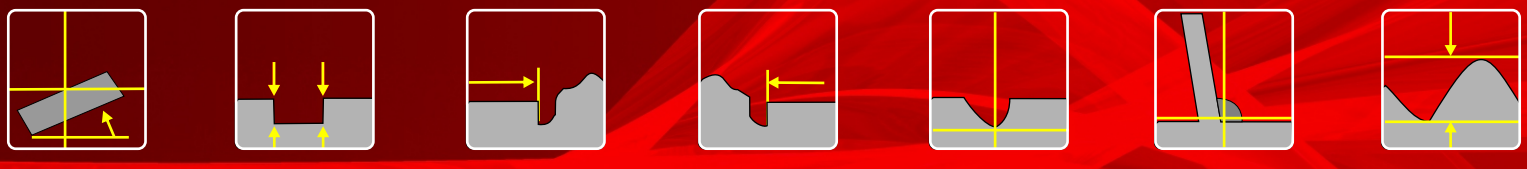
Measuring principle

The Microtrak™ PRO 2-D uses the triangulation principle to obtain a two dimensional height profile of target surfaces. A laser line generator projects a diverging line that has a beginning dimension of start of range x and maximum width dimension of end of range x. The line is diffusely reflected back onto a CCD camera array through focusing lenses. The CCD line profile image is then processed by the internal electronics and an X-Z calibrated array output is made available for the application or display software. Moving the sensor along a target allows the application software to build a three dimensional image.



When observing complex objects where shadowing may be present multiple heads can be synchronized either through the ethernet or with direct master slave synchronization.

Cost Effective *High Speed Profiles* *Simple User Interface*
Two Head Synchronization *Directly Digitizes*



Performance Specifications

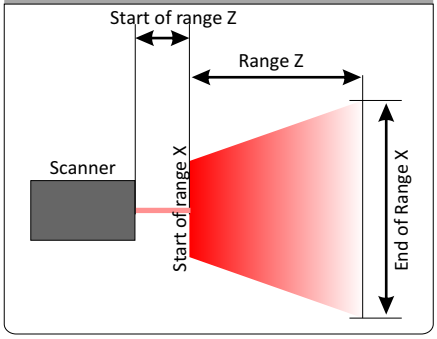
Laser Scanner at 93.5 Hz

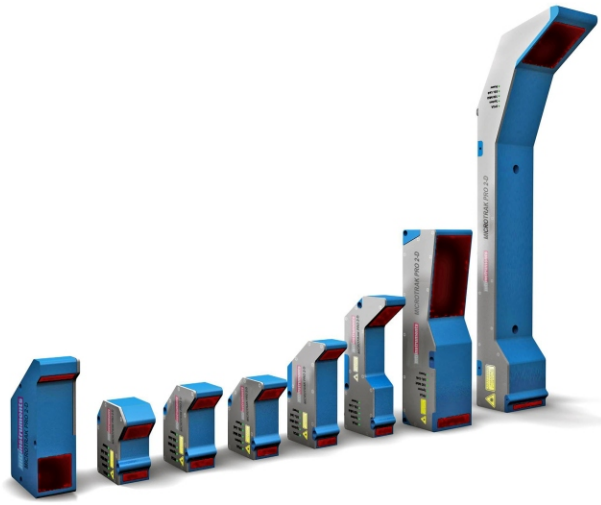
Description	6/4	10/13	20/10	40/20	60/30	80/40	120/60	220/120	400/200
Measuring Range Z (mm)	6	10	20	40	60	80	120	220	400
Start of Range Z (mm)	38	65	55	50	53	63	84	115	330
Start of Range X (mm)	4	13	10	20	30	40	60	120	200
End of Range X (mm)	4.5	15	13	26	40	55	80	160	280
Resolution Z (mm)	0.003	0.01	0.02	0.02	0.035	0.045	0.06	0.11	0.2
Resolution X (mm)	0.008	0.025	0.02	0.04	0.07	0.09	0.14	0.27	0.48
Scan Rate	100 Hz			100 Hz			100 Hz		
Laser Class	2M			2M			2M		

Laser Scanner at 380Hz/ 700 Hz

Description	80/40	220/120
Measuring Range Z (mm)	80	220
Start of Range Z (mm)	75	140
Start of Range X (mm)	40	120
End of Range X (mm)	55	180
Resolution Z (mm)	0.045	0.11
Resolution X (mm)	0.04 (0.08)	0.14 (0.28)
Scan Rate	380 Hz/ 700 Hz	380 Hz/ 700 Hz
Laser Class	3R	3B

Measurement Reference





Specifications

- Power supply: 8-30 Vdc, 15W
- Laser diode lifetime: 50,000 hours
- M12 (8-pin) male power supply and control connector
- M12 (4-pin) female Ethernet connector
- Linearity: 0.2% full scale range
- Operating temperature: 0°C (32°F) to 40°C (104°F)
- Storage temperature: -20°C (-4°F) to 70°C (158°F)
- Humidity: < 90% RH
- Ambient light: < 5,000 lux

CE

FDA Compliant

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