Laser Tracker GTS Series

Large-scale space measurement

Integrated Measurement Head

Powerful CPU processing capability, compact control system are built into the laser head, and this integrated design greatly reduces the product volume and number of connection cables.

Automatic Locking

The camera will automatically search for the SMR in a certain area when the beam interrupts, and automatically lock the SMR after find it. The whole process does not require human operation.

HiADM

Absolute Distance Meter(ADM) and laser interferometer(IFM) fusion technology (HiADM) ensures excellent measurement accuracy and realizes Re-establish Beam Interruptions.

Integrated Environmental Weather Station

The integrated environmental weather station automatically monitors the environmental meteorological parameters, and compensates the influence of temperature, air pressure and humidity in real time.

MultiComm Communication

The instrument and computer can communicate with each other through hardware trigger, wired network or WIFI. The max measurement data output speed is 1000 points/second.

Portable

The laser head and accessories are packed well in portable boxes, making it easy to transport between different work sites.

IP54 Protection

IP54 protection level ensures that the host is protected from dust and other pollutants, and has strong environmental applicability.

Steady Tripod

The stable triangular support system avoids the loss of accuracy caused by environmental vibrations.

6D Attitude Probe iProbe

- Machine vision spatial attitude measurement
- It can measure the geometric structure of internal features and hidden features
- Thanks to dual probe design, it is efficient to measure complex features
- Wireless transmission

6D Attitude Smart Sensor iTracker

- The attitude sensor automatically follows and locks the laser beam, which has high measurement flexibility
- The pitch angle and yaw angle are not limited by the receiving angle of the optical receiver
- Simple interface connection, easy to install on machine tools or robots, high repeatability and precision
- Dedicated band laser beam and filter design, not sensitive to ambient light
- The highest sampling speed is 200 points/second

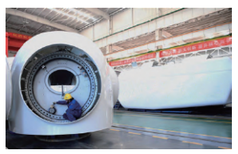
Application

Airplane Assembly

Train Assembly

Nuclear Generator Assembly

Vessel Assembly



Wind-Driven Generator Assembly

Rocket Assembly

Hydroelectric Generator Assembly

Robot Arm Calibration

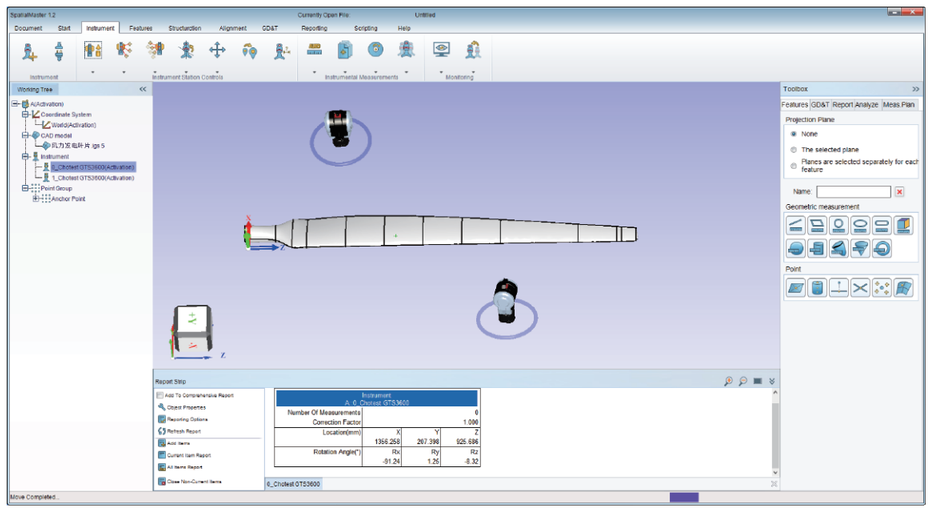
TBM Assembly

Car Assembly

Large Weapon Assembly

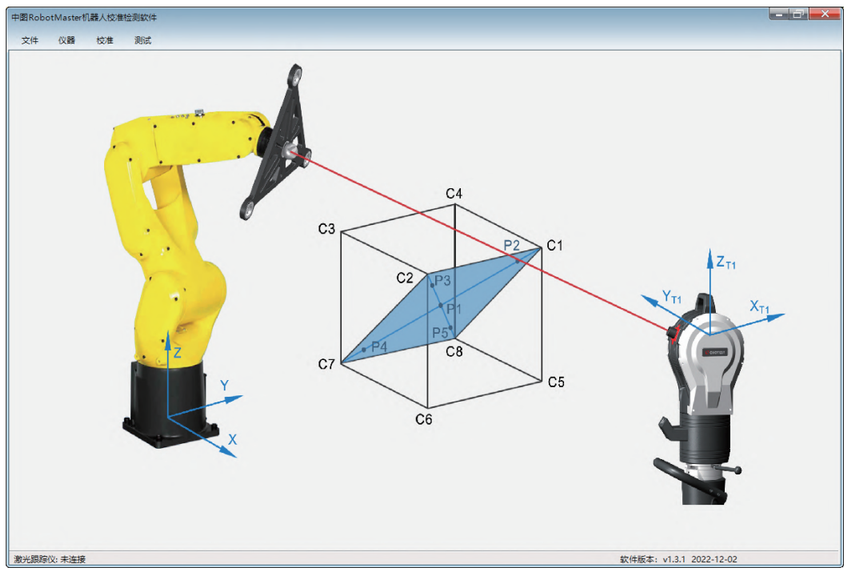
Large Machine tool Calibration

Spatial Measurement Software SpatialMaster



- Traceability, faithfully record the measurement information of all measurement points of all instruments.
- Rich geometry construction methods and accurate fitting algorithms, certified by Gauss and Chebyshev double PTB.
- Multiple registration and alignment methods such as optimal fitting, sequential registration, and comprehensive alignment.
- Provides powerful analysis functions, geometric relationship measurement functions, including professional GD &T evaluation.
- The convenient monitoring function can provide efficient assembly and adjustment services for the actual production assembly process.
- Self-controllable, visible and available report format, meeting various report format requirements.
- Automatic measurement, In-line measurement, Guide point measurement, Batch point measurement functions improve measurement efficiency.
- Support multi-station simultaneous measurement, and can carry out unified spatial measurement and analysis of multi-tracker multilateral method.
- Provide SDK interface, support user independent programming.

Robot Calibration Software RobotMaster



RobotMaster Software

The RobotMaster kit provides an absolute position accuracy calibration and performance test for industrial robots. RobotMaster supports not only enhanced solutions based on 6D attitude smart sensors, but also supports economic solutions based on SMR.

Robot Calibration Software

According to the DH parameters of the robot, the robot calibration mathematical model is established, and the robot zero position calibration, the robot DH parameter calibration, and the robot TCP center point accuracy calibration are performed. Without changing any structure and hardware size of the existing robot, the absolute pose accuracy of the robot can be effectively improved through the robot calibration software.

Robot performance testing software

According to the ISO 9283 industrial robot performance specification and its experimental method, the robot performance test is completed. The test content includes: robot pose accuracy, pose repeatability, multi-directional pose accuracy change, distance accuracy, distance repeatability, position stabilization time , position overshoot, pose characteristic drift, interchangeability, trajectory accuracy, trajectory repeatability, corner deviation, trajectory velocity characteristics, static compliance, etc.

GTS3000 Series Parameters

Model No.		GTS3300	GTS3600	GTS3800
Basic Spec.	Head Size	220×280×512mm		
	Head Weight	21Kg		
	Controller	Integrated		
	Laser Generator*1	633nm, 1mW/CW | Class 1		
	Support 6D	No		
	Protection Level	IP54		
Measuring Range	Max Distance(Radius)	30m	60m	80m
	Horizontal	±360°	±360°	±360°
	Vertical	-145°~+145°	-145°~+145°	-145°~+145°
Accuracy*2	Spatial Accuracy	15μm+6μm/m	15μm+6μm/m	15μm+6μm/m
	IFM Accuracy	0.5μm/m	0.5μm/m	0.5μm/m
	ADM Accuracy	10μm(Entire range)	10μm(Entire range)	10μm(Entire range)
	Level Accuracy	2.0"(Optional 1.0")	2.0"(Optional 1.0")	2.0"(Optional 1.0")
Data Output Rate		1000 points/sec.	1000 points/sec.	1000 points/sec.
Communication	Cable Connection	TCP/IP(Cat5)		
	Wireless Connection	WLAN(IEEE 802.11N)		
Working Environment	Operating Temperature	0°C~40°C		
	Altitude	-500~+3500m		
	Relative Humidity	0~95%, no condensation		
Power Supply		AC100~240V, 50/60Hz, 4A, 220W		

Note:
*1 According to IEC60825-1(2014-5), it meets the radiation performance standard.
*2 The accuracy index is the maximum permissable error (MPE), using the standard 1.5" SMR, excluding the influence of air temperature variations.

Parameters of 6D Attitude Sensor

6D Attitude Sensor iTracker		
Measuring Range	Max Range(Radius)	20m(Optional 30m)
	Pitch	-55°~+60°
	Yaw	±180°
	Roll	±360°
Basic Spec.	Weight	1.32kg
	Size	105×98×168mm
Accuracy	Attitude Angular Accuracy	0.03°
	Repeatability	0.005°
Transmission	Max Transmission Speed	200Hz
	Connection Type	Cable
Power Supply		From laser tracker

GTS6000 Series Parameters

Model No.		GTS6300	GTS6600	GTS6800
Basic Spec.	Head Size	220×256×480mm		
	Head Weight	16Kg		
	Controller	Integrated		
	Laser Generator*1	633nm, 1mW/CW | Class 1		
	Support 6D	Yes		
	Protection Level	IP54		
Measuring Range	Max Distance(Radius)	30m	60m	80m
	Horizontal	±360°	±360°	±360°
	Vertical	-145°~+145°	-145°~+145°	-145°~+145°
Accuracy*2	Spatial Accuracy	15μm+6μm/m	15μm+6μm/m	15μm+6μm/m
	IFM Accuracy	0.5μm/m	0.5μm/m	0.5μm/m
	ADM Accuracy	10μm(Entire range)	10μm(Entire range)	10μm(Entire range)
	Level Accuracy	1.0"	1.0"	1.0"
Data Output Rate		1000 points/sec.	1000 points/sec.	1000 points/sec.
Communication	Cable Connection	TCP/IP(Cat5)		
	Wireless Connection	WLAN(IEEE 802.11N)		
Working Environment	Operating Temperature	0°C~40°C		
	Altitude	-500~+3500m		
	Relative Humidity	0~95%, no-condensation		
Power Supply		AC100~240V, 50/60Hz, 4A, 220W		

Note:
*1 According to IEC60825-1(2014-5), it meets the radiation performance standard.
*2 The accuracy index is the maximum permissable error (MPE), using the standard 1.5"SMR, excluding the influence of air temperature variations.

Parameters of 6D Attitude Probe

6D Attitude Probe iProbe		
Measuring Range	Max Range(Radius)	15m
	Pitch	±45°
	Yaw	±45°
	Roll	0°~360°
Basic Spec.*1	Weight/Size	0.62kg, 222×128×122mm
Accuracy*2	Probe Accuracy	35μm
	Spatial Accuracy	50μm+6μm/m
Measuring Rod	Ball Diameter	3mm, 6mm
	Rod Length	40mm, 100mm, 200mm, 400mm
Transmission	Max Transmission Speed	200Hz
	Connection Type	IR
Power Supply	Type	Li-ion battery
	Working Duration	≥8 hours

Note:
*1 Does not include measuring rod.
*2 Uses 100mm measuring rod.