

MEASURLINK 8

MEASURLINK IS AN EASY-TO-USE, DATA COLLECTION AND REAL-TIME STATISTICAL PROCESS CONTROL SUITE.

SMALL TOOL INSTRUMENTS
AND DATA MANAGEMENT



MeasurLink8

Data Collection and Real-Time Statistical Process Control

MeasurLink is designed to collect and unite all measurement data in one central data base. Measurement results acquired via CMMs are automatically transferred into a SQL database and directly available for monitoring, analysis or reporting in real-time.

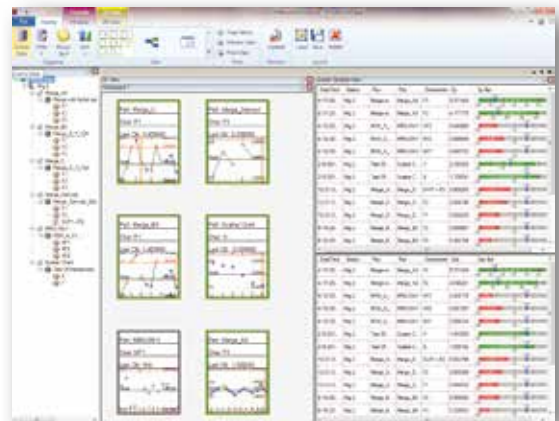
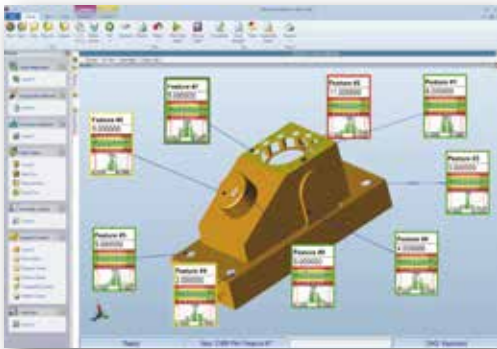
MeasurLink gives you the performance you need through distributed processing. It delivers a safe and organised data warehousing system making quality data available for viewing and analysis by any member of the production, engineering, and managerial staff throughout your company.

Inspection in the factory produces data for analysis, corrective action, and various reporting needs. As the backbone of your quality efforts, MeasurLink is guaranteed to reduce your production costs and increase profits.



Data Collection

MeasurLink enables you to connect and acquire data from virtually any measuring device. It supports the full range of metrology technology, including calipers, micrometers, indicators, CMMs, vision systems and more. Select the edition to fit the device and your needs.



Data Analysis

MeasurLink gives you the flexibility to analyse your processes, identify problem areas and take corrective action to improve your product's quality. Inspection runs can be sorted by Inspection Station, Routine or Part, and are displayed with the look and feel of Windows Explorer. Inspection data can be merged, filtered, grouped, charted and printed in the way you want.

Monitoring

Real-time monitoring of data as it is collected. Provides the QC/Production Manager with the perfect tool to organise and maintain a shopwide quality program at a glance.

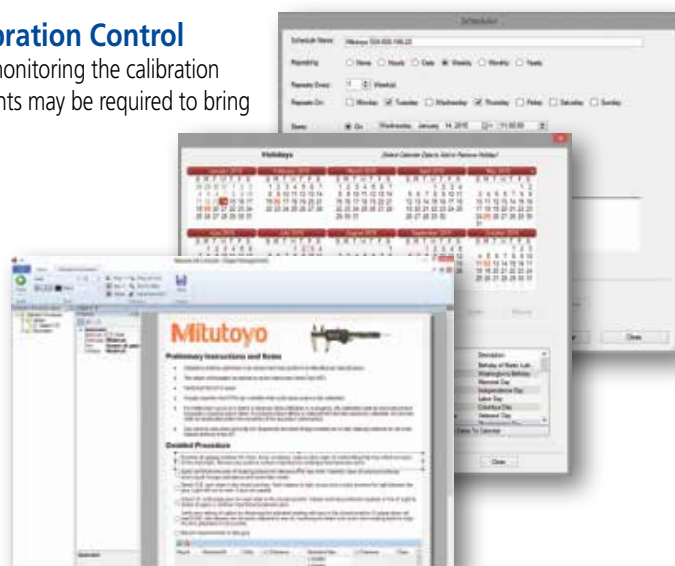


Measurement System Analysis

Determines the repeatability and reproducibility, linearity, bias and stability of inspection systems, allowing you to isolate gauging problems.

Gauge Inventory and Calibration Control

Gauge management is essential for monitoring the calibration history of a gauge. Periodic adjustments may be required to bring a gauge into specification.



MeasurLink Real-Time

Real-Time Data Collection Module

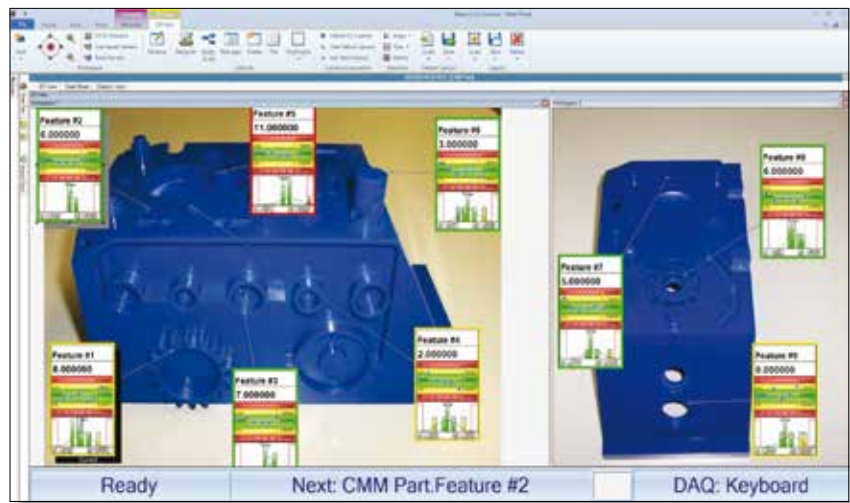
FEATURES

MeasurLink Real-Time enables you to connect and acquire data from virtually any measuring device. It supports the full range of metrology technology, including calipers, micrometers, indicators, CMMs, vision systems and more. Select the edition to fit the device and your needs.

Real-Time Professional Edition

Enables customers to connect and acquire data from Mitutoyo Coordinate Measuring Machines, Vision and Form Measuring Systems via native integration (DDE). ASCII and QMD (xml-based) file import are also supported. In addition to the features above, this application also includes data filters and a full reporting tool complete with sample templates.

Supported data sources: keyboard, RS-232C and USB devices, native Mitutoyo integration (DDE), ASCII and QMD (xml-based) file import.



SPECIFICATIONS

Order No.	Description
64AAB471R	MeasurLink 8 Real-Time Professional Edition

Note: Upgrade packages are also available. Please contact our sales department for details.

Import templates

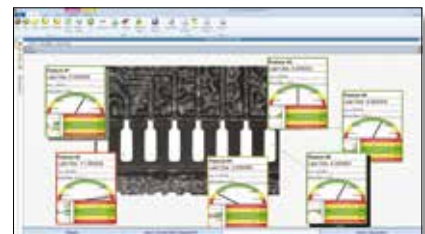
Easily create an import template that maps data in a text file to MeasurLink. Templates are saved to the database for everyone to use and can be added as data sources to data collection stations. An import template can be verified against the source file without adding data to the system.

Direct data transfer

Collect data into MeasurLink from Mitutoyo measuring systems running Mitutoyo software that is MeasurLink enabled. This provides a tighter and more robust interface than importing data from files.

Filter data

All data collected within a Real-Time run is related. Often, especially for runs containing a large volume of subgroups, requests are made for subsets of data that are further related to the entire run's population. MeasurLink provides robust filtering capabilities to comply with these requests.



Import data

When set up as a data source, import templates are readily available to the operator; or periodic imports can be executed.

Real-Time Professional 3D Edition

Designed for customers who wish to collect data using Hoops 3D graphics view, in addition to all features offered by MeasurLink 8 Real-Time Professional Edition. Hoops 3D files can be exported from most CAD systems and provides the operator with a real view of the part. Camera angle and position can be saved for each characteristic, which provides for an intuitive, prompt guided sequence for an inspector to follow.

Supported data sources: keyboard, RS-232C and USB devices, native Mitutoyo integration (DDE), ASCII and QMD (xml-based) file import.

SPECIFICATIONS

Order No.	Description
64AAB472R	MeasurLink 8 Real-Time Professional 3D Edition

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3D view

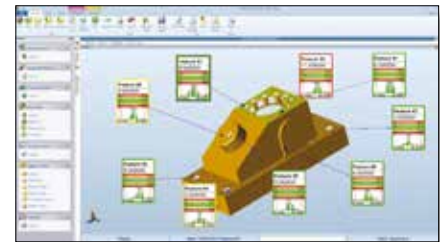
True three-dimensional model support with Hoops streaming files (.HSF). Export your part's model from Catia, Solidworks or other CAD software and place callouts in 3D space.

Flexible callout design

Callouts provide part acceptability at a glance. You can design them the same way as for the two-dimensional view to include charts or statistical information with the ability to size any element inside the callout.

Guided sequencing

The display can automatically change during data collection to show the next or last observation point, providing simple, guided sequencing for the inspection procedure. By saving a different view for each characteristic to be inspected, you can have the model rotate, pan or zoom to show the operator details of the part.

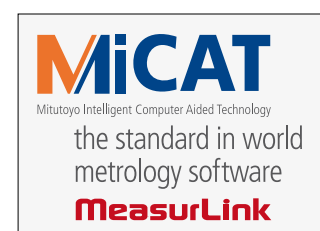


MeasurLink is designed to detect and display patterns and provide additional statistical information. Many patterns can be seen appearing on SPC charts, including:

- Cycles
- Trends
- Freaks
- Mixtures
- Grouping or 'bunching' of measurements
- Gradual change in level
- Sudden shift in level
- Instability (abnormally large fluctuations)
- Stratification (abnormally small fluctuations)
- Interactions (two or more variables acting together)
- Systematic variation
- Tendency of one chart to follow another

EDITION DEFINITIONS

Function	Real-Time Professional Edition	Real-Time Professional 3D Edition	Process Analyzer Professional Edition
Classic SPC views	✓	✓	✓
Datasheet	✓	✓	✓
2D View	✓	✓	✓
Manager Views	✓	✓	—
Hoops 3D View	—	✓	—
Filter	✓	✓	✓
CMM/Vision/Form connectivity	✓	✓	—
Import (ASCII)	✓	✓	—
Audit Trails	✓	✓	✓
Merge, Copy and Edit Data	—	—	✓
Scatter Chart	—	—	✓
Archive Data	—	—	✓
Electronic Signatures	—	—	✓



MeasurLink Process Analyzer

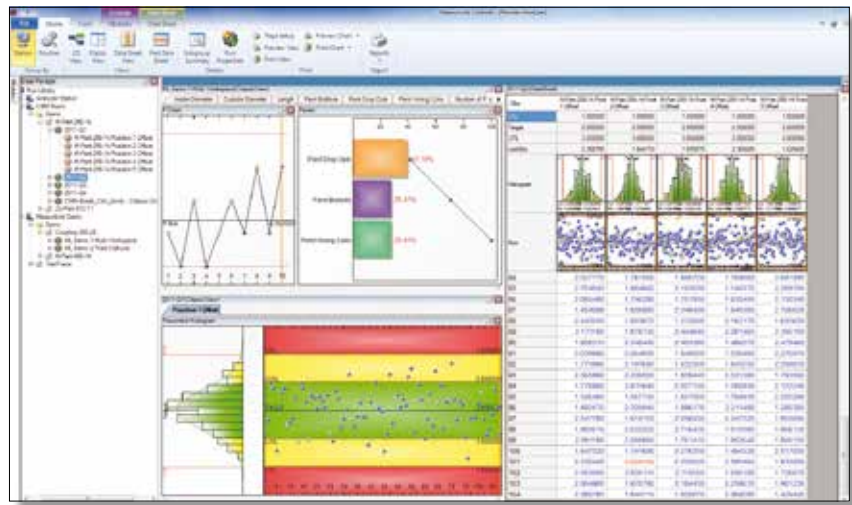
Data Analysis Module

FEATURES

Process Analyzer is an invaluable tool for your quality team. It gives you the flexibility to analyse your processes, identify problem areas and take corrective action to improve your product's quality. Inspection runs can be sorted by Inspection Station, Routine or Part, and are displayed with the look and feel of Windows Explorer. Inspection data can be merged, filtered, grouped, charted and printed in the way you want.

Process Analyzer Professional Edition

Designed for robust manipulation of Real-Time data in a networked environment using advanced features. It enables quality engineers to manipulate the data in meaningful ways that contribute to quality control initiatives. For larger installations that use different databases, the ability to switch the connection allows an engineer to analyse data from all sources. Full reporting template functionality is also provided.



Review inspection data

Analyse inspection data, view notes and traceability. Open data from different runs to compare the data and process behaviour.

Switch between databases

For larger installations that use different databases, the ability to switch the connection allows an engineer to analyse data from all sources.

Tree control navigation

Self-organised inspection data provided in an easy to use navigation tree. Sort data by station or Inspection routine, part, year, month or day.

Reporting

Reporting is made easy through the use of a "what you see is what you get" style of template creation, which allows you to pick chart and data through drag and drop with resizing. Several standard report templates are provided.

SPECIFICATIONS

Order No.	Description
64AAB475R	MeasurLink 8 Process Analyzer Professional Edition

Note: Upgrade packages are also available. Please contact our sales department for details.

Group, search and sort data

View data by part, routine, station, year, month, day. Apply saved filters to data and search for specific traceability or serial number criteria.

Scatter plots

Perform correlation studies to identify process interactions.

Electronic signatures

When combined with Audit Trails available in Real-Time, and security is implemented, then MeasurLink provides support for FDA requirements for medical and pharmaceutical manufacturers.

Merge data

Combine 'lot based' or 'just in time' collected data to get a bigger picture of process variation and production quality.

Filter data

Robust filtering capabilities are provided. Often, for runs containing a large volume of data, requests are made for subsets of data.

Compare capability to traceability

Easily view charts showing the capability of a characteristic based on the traceability, subgroup or time. Compare the capability of machines, for example. The C_{pk} shows green for exceeding requirements and red for failing.

MeasurLink Process Manager

Network Monitoring Dashboard Module

FEATURES

Real-time monitoring of data as it is collected. Provides the QC/Production Manager with the perfect tool to organise and maintain a shopwide quality program at a glance.

Process Manager Standard Edition

Process Manager provides a method for auditing the entire shop floor inspection activity from a single PC. Easily see process information without walking from one inspection area to another by viewing current production across all machines. Show clients your quality operation for the entire facility.

Log view

Designed to display information from multiple stations in a tabular view format. The user can select the type of events to be monitored.

Group, search and sort data

View data by part, routine or station. Apply saved filters to data so you monitor only the data that you are responsible for.

Manager view

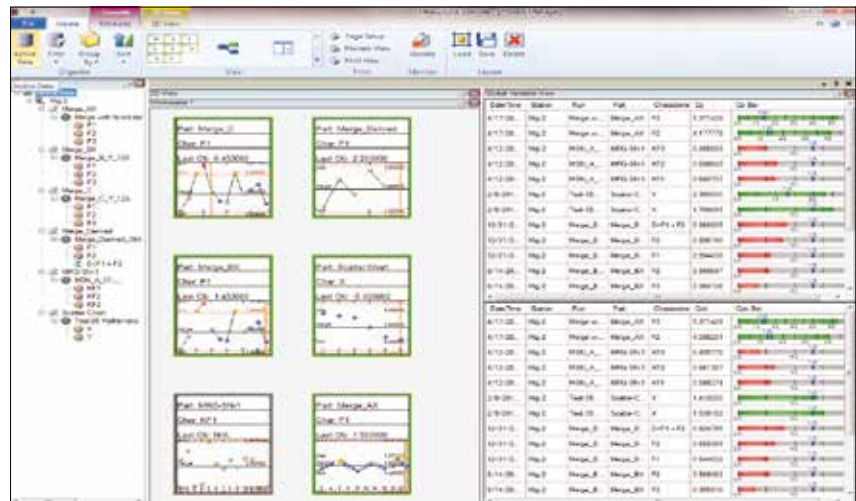
Display a snapshot window of characteristics that are currently being collected in MeasurLink Real-Time. The data can be sorted by station, capability or time stamp.

Global variable view

Display process capability across all operations in your plant.

Remote viewing

See what the operators see and what your customers will see before product is delivered. Drill down through data to see detailed information. View Traceability, Assignable Causes, Corrective Action, Notes and raw data for current production across all machines.



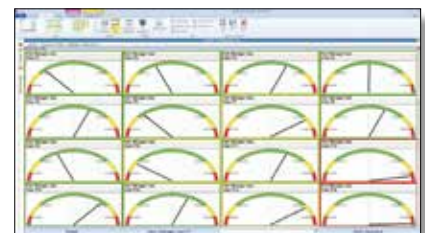
SPECIFICATIONS

Order No.	Description
64AAB476R	MeasurLink 8 Process Manager

Note: Upgrade packages are also available. Please contact our sales department for details.

Plant view

Allows users the highest level view of their shopfloor processes. Callouts have a meaningful border colour related to tests for capability that have been enabled in each routine's properties.



MeasurLink Process Manager displays snapshot windows of characteristics that are currently being collected in MeasurLink Real-Time. The data can be sorted by Station, Process, Capability or Timestamp.

MeasurLink Gage R&R

Measurement Systems Analysis Module

FEATURES

Determines the repeatability and reproducibility, linearity, bias and stability of inspection systems, allowing you to isolate gauging problems.

Gage R&R Standard Edition

These techniques provide information about a measurement system's reproducibility, repeatability, location or stability. Graphical tools allow for isolation of gauging problems including inconsistencies in technique between operators or inspectors.

Study wizard

User-guided study setup defines the study that needs to be performed in order to determine the measurement system's capabilities. All elements required for the selected study to be completed are captured before the study is created, and the user is prompted to provide any missing information before beginning the study.

Data input

Data for the study can be collected directly from a gauge connected to the system or transferred from Mitutoyo Coordinate Measuring Machines or Vision and Form Measuring Systems via native integration (DDE). Users can also key in their data.

Group studies

All studies in the database are visible and can be organised using various criteria.

Randomised collection sequence

As recommended by the academic community, the collection sequence can be automatically randomised.



SPECIFICATIONS

Order No.	Description
64AAB477R	MeasurLink 8 Gage R&R

Note: Upgrade packages are also available. Please contact our sales department for details.

Study types

MeasurLink Gage R&R uses calculation methods based on AIAG's Measurement Systems Analysis, Fourth Edition (commonly known as MSA 4). The following study types are supported:

Location

- Bias
- Linearity

Reproducibility

- Type I
- Variable Range Method

Repeatability & Reproducibility

- Crossed ANOVA
- Crossed Average & Range
- Nested ANOVA
- Nested Average & Range

Stability

- Stability

In addition to standard calculations, the software provides graphical tools for analysis of the measurement system. The Xbar and R chart can show whether there is adequate gauge discrimination to record part-to-part variation in production and if operators are consistent.

The Part-by-Appraiser plot can show if there is a lack of consistency between operator inspection techniques.



MeasurLink Gage Management

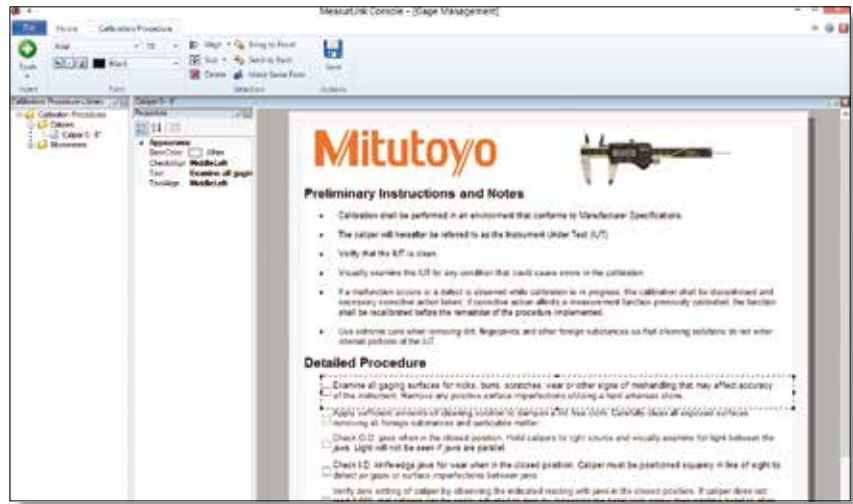
Gauge Inventory and Calibration Control Module

FEATURES

Gauge management is essential for monitoring the calibration history of a gauge. Periodic adjustments may be required to bring a gauge into specification.

Gage Management Edition

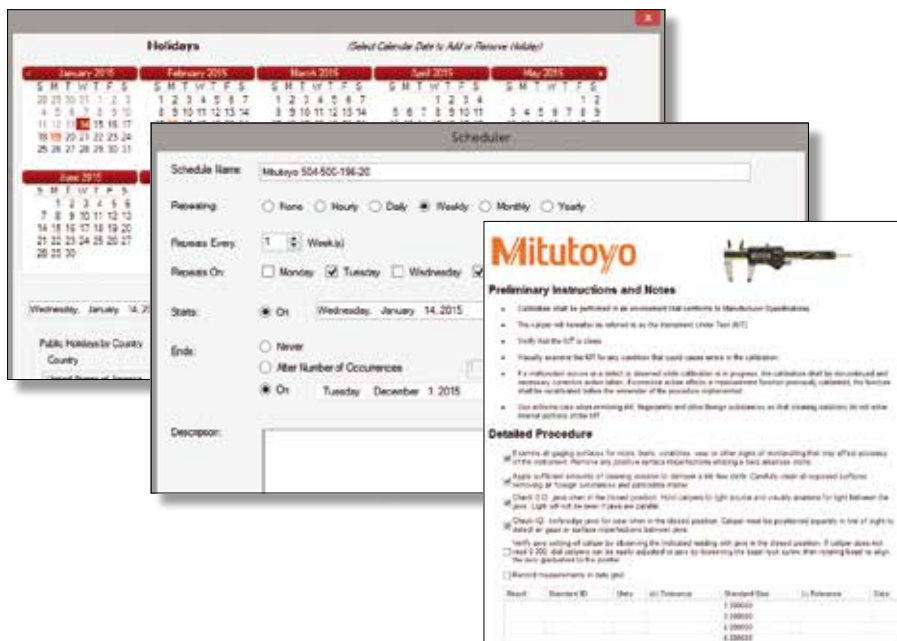
A Microsoft Windows-based gauge calibration tracking software that is networkable and shares the same database used by the rest of the MeasurLink software family. This assists users in developing, maintaining, organising and managing information about their gauges. Information such as gauge inservice dates, calibration recall dates, gauge R&R dates and general gauge event history is provided by an intuitive interface with complete reporting abilities. MeasurLink Gage Management also supports the creation of vendor contact and user lists, and comes equipped with a 'smart' calendar that allows you to define working days.



SPECIFICATIONS

Order No.	Description
64AAB478R	MeasurLink 8 Gage Management

Note: Upgrade packages are also available. Please contact our sales department for details.



- Gauge inventory management
- Gauge calibration recall system
- Gauge calibration procedure
- Assessment and reporting
- Gauge vendor management
- Gauge location management
- Gauge R&R history



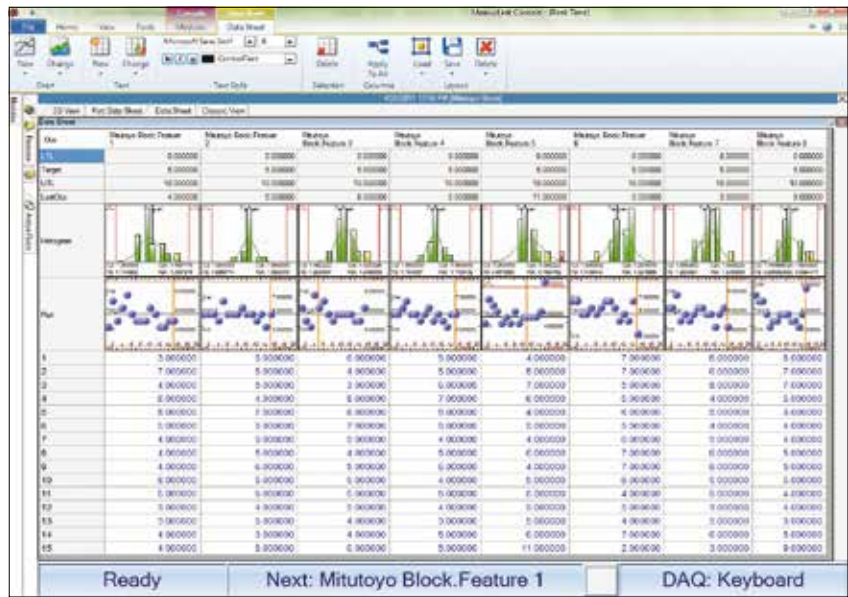
Main Features

User-friendly

Click a gauge button and watch the charts update in real-time. This helps the operator stay in control of the process. Begin collecting data in minutes with the newly designed Inspection Wizard.

Data acquisition

Collects data from digital micrometers, calipers, indicators, bore gauges, etc. Keyboard entry is quick and easy. Collect data for one or a million parts.



Comprehensive SPC

Easy to use Control Charts, Histograms, Capability, Detailed statistics, Assignable Causes, Corrective Actions and Traceability all make this software 'best in class'.

Variable data

Collect dimensional data (length, width, height, outside diameter, inside diameter, weight, etc.). Supports derived features (calculations for runout, volume, true position, etc.)

Attribute data

Collect data from visual inspections (burrs, cracks, dents, missing holes, etc.) to determine the fitness of a part. Track failures using a go/no-go style or count the defects on a characteristic to determine if a part is defective. There is complete flexibility to study characteristics individually or in groups.

Engineering specifications

Attach drawings to parts, routines or individual characteristics for viewing. Most file formats are supported as an attachment (e.g. Word, PDF, CAD).

Multimedia aids

Attach movies (AVI, MOV, MPG), sound (WAV) and images (BMP, JPG, TIF) to parts, routines or individual characteristics as instructional aides for an operator.

Revision history

Track specification adjustments and preserve historical data.

Mathematically derived features

Fully functioning real-time calculator with standard math functions including square root, exponential, trigonometric, sum, average, max and min.

Part pictures

View scanned blueprints and digital photographs at a glance. On-screen guided sequencing keeps the operator moving to the right feature.

Data tests

Full support of Western Electric and Nelson Tests for pattern recognition in control charts (e.g. extreme point, trend, stratification, oscillation, etc.) along with various alerts for each failed test.

Forced assignable cause

Force prompts for assignable causes on Inspectors during data collection if the process is out of control. Empower operator to build on an existing pick list.

Corrective action plans

Operators choose corrective action as applied to the part or process. Multiple corrective actions can be applied to any subgroup. Empower operator to build on existing Corrective Action list.

Sequenced and random gauge input

Flexible data input. Collect data by feature, by part or randomly. Guided sequencing minimises inspection errors.

Time stamped data

All observation data is marked with the date and time from the computer clock.

Flexible reporting

Build report templates with company logos and free-form text. Select and position chart types to customer specification.

Mixed variable/attribute data

Mix your dimensions and non-conformances in the same Inspection Routine. Track defects along with your dimensional data.

Crystal Reports

Create your own customised Crystal Reports for use with Part or Run data.

FDA 21CFR Part11 support

Provides support for medical and pharmaceutical manufacturers' electronic records, including audit trails, e-signatures (Process Analyzer Professional only) and advanced security.

Inspection wizard

Begin collecting data in minutes by defining features, tolerances and input method.

Easy-to-use

MeasurLink provides the most intuitive interface with complete SPC functionality to help you monitor and manage your manufacturing processes. With MeasurLink, you can easily manage the quality levels of parts, identify problem areas and apply corrective action to areas in need of attention.

MeasurLink 8 System Requirements

Database Management System (DBMS) Requirements

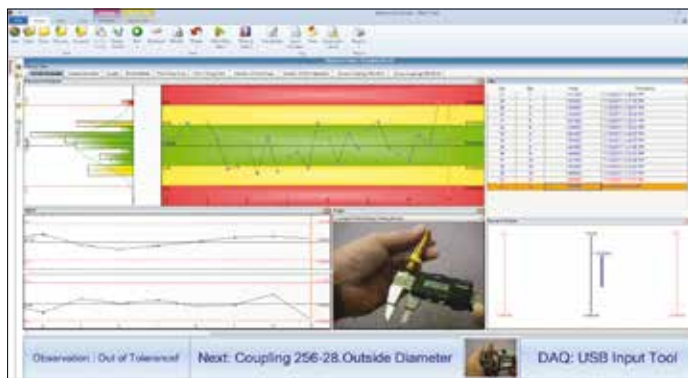
MeasurLink 8 ships with a copy of Microsoft SQL Server Express Edition 2014 SP1, for a standalone or a workgroup installation. MeasurLink 8 also supports:

- Microsoft SQL Server 2014
- Microsoft SQL Server 2012
- Microsoft SQL Server 2008

Operating System Requirements

All MeasurLink 8 products are supported on the following Microsoft Windows Operating System versions:

- All Windows 7 versions
- All Windows 8 versions
- 32-bit and 64-bit supported



MeasurLink Suite of Software

MeasurLink is an easy-to-use, Windows-based family of quality data management software applications. MeasurLink combines real-time data acquisition, on-line statistical analysis, integrated networking, and quality information sharing into a comprehensive data management solution.

- **Real-Time**
On-line real-time data collection
- **Process Analyzer**
Analysis of all data
- **Process Manager**
Network monitoring
- **Gage R&R**
Gauge repeatability and reproducibility
- **Gage Management**
Gauge inventory and calibration control

Note: Upgrade packages are also available. Please contact our sales department for details.

www.measurlink.com



Coordinate Measuring Machines



Vision Measuring Systems



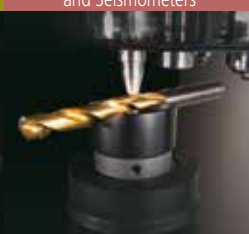
Form Measurement



Optical Measuring



Sensor Systems

Test Equipment
and Seismometers

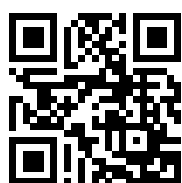
Digital Scale and DRO Systems

Small Tool Instruments
and Data Management

Whatever your challenges are, Mitutoyo supports you from start to finish.

Mitutoyo is not only a manufacturer of top quality measuring products but one that also offers qualified support for the lifetime of the equipment, backed up by comprehensive services that ensure your staff can make the very best use of the investment.

Apart from the basics of calibration and repair, Mitutoyo offers product and metrology training, as well as IT support for the sophisticated software used in modern measuring technology. We can also design, build, test and deliver bespoke measuring solutions and even, if deemed cost-effective, take your critical measurement challenges in-house on a sub-contract basis.



Find additional product literature
and our product catalogue

www.mitutoyo.eu

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