

MeasurLink®

An Integrated Solution for Quality Data Management

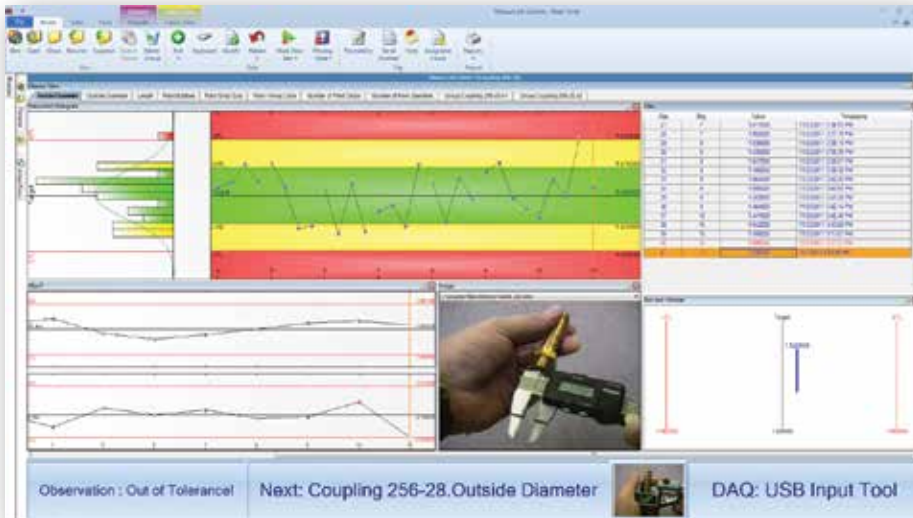
MeasurLink® meets the challenge of centralizing your quality data with the most versatile tool and instrument interface options available. This high-end statistical platform delivers real-time data—when you need it most—with instant message capabilities and comprehensive quality reporting. MeasurLink® provides part inspection visualizations that are second to none, ensuring a clear view of your inspection process and your measurement results.

Whether used as an enterprisewide quality data solution or as a stand-alone quality data station, MeasurLink® provides the complete situational awareness that you need to successfully manage your process improvement and defect prevention efforts.

MeasurLink® is backed by Mitutoyo, the global leader in metrology—combining a full product line of precision measuring tools, instruments and equipment with a worldwide information network that understands the unique precision measurement and quality management needs of every industry that it serves.

Most of Mitutoyo's electronic instruments can output data via optional connecting cables or wireless transmitters and receivers in the form of the Digimatic code. The Digimatic code can also be converted into RS-232C format with several available gage multiplexers. In this way, digital data can be sent to PCs for data acquisition and advanced statistical analysis.

As a client/server application, MeasurLink gives you the performance you need through distributed processing. Combined with a multi-user relational database, MeasurLink® delivers a safe and organized 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 your bottom line.



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



MeasurLink 8 System Requirements

Database Management System (DBMS) Requirements

MeasurLink 8 ships with a copy of Microsoft® SQL Server 2014 SP1, which can be 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

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An Integrated Solution for Quality Data Management

User-friendly

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

Data acquisition

Collects data from digital micrometers, calipers, indicators, bore gages, etc. Keyboard entry is a snap. 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 run out, 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 the individual characteristics and as a group of them, too.

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 aids for an operator.

Revision history

Track specification adjustments and preserve historical data.

Mathematically derived features

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

Part pictures

View scanned blueprints, 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 Assignable Cause Tags on Inspector during collection if process is out of control. Empower operator to build on 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 gage input

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

Time stamped data

All observation data is marked with the data 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 and defectives along with your dimensional data.

Crystal Reports

Create your own customized 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 60 seconds with a "Quick Run" by defining features, tolerances and input method.



Easy-to-use MeasurLink® provides to you 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 your parts, identify problem areas and apply corrective action to areas in need of attention.

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MeasurLink® Real-Time

On-line Real-Time Data Collection

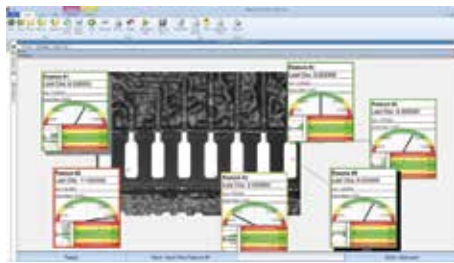
FEATURES

MeasurLink Real-Time performs as a data acquisition clearinghouse by enabling 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 the needs.

Real-Time Standard Edition

Designed for customers who want to acquire and analyze data in real-time and check variable and attribute inspection to maximize production and minimize defects. It has views to allow the user to create Parts, Characteristics with nominal and tolerance and Traceability lists. The data collection interface provides real-time graphics for Run charts, Control charts, Histograms and Statistics. Standard views include Datasheet (observations and charts), Classic View (chart windows), and 2D view (part images with callouts that include charts and statistical data) along with an especially customizable Info View and additional Manager views. Full reporting template functionality is also provided.

Supported data sources: keyboard, RS232 and USB devices.



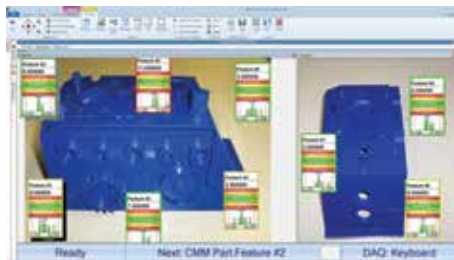
SPECIFICATIONS

Order No.	Description
64AAB470	MeasurLink 8 Real-Time Standard Edition

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 all of the features supported by **MeasurLink 7 Real-Time Standard Edition**, this application also supports data filters. Full reporting functionality with templates is also provided

Supported data sources: keyboard, RS232 and USB devices, native Mitutoyo integration (DDE), ASCII and QMD (xml-based) file import.



Import templates

Easily create an import template that maps data in a text file to MeasurLink information. 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.

SPECIFICATIONS

Order No.	Description
64AAB471	MeasurLink 8 Real-Time Professional Edition

Direct data transfer

Collect data into MeasurLink from Mitutoyo capital equipment 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 from 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.



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

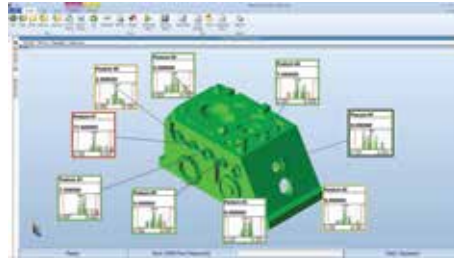
- Cycles
- Trends
- Freaks
- Mixtures
- Grouping or "bunching" of measurements
- Gradual change in level
- Sudden shift in level
- Instability (abnormally large fluctuations)
- Stratification (abnormally small fluctuations)
- Interactions (two or more variables acting together)
- Systematic variation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

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Real-Time Professional 3D Edition

Designed for customers who wish to collect data using the Hoops 3D graphics view, in addition to all features offered by MeasurLink 7 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 providing for an intuitive prompted guided sequencing for the inspector.

Supported data sources: keyboard, RS232, and USB devices, native Mitutoyo integration (DDE), ASCII and QMD (xml-based) file import.



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 the 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 sequence

The display can automatically change during data collection to show the next or last observation point, providing a simple guided sequence 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.

SPECIFICATIONS

Order No.	Description
64AAB472	MeasurLink 8 Real-Time Professional 3D Edition

Edition Definitions

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

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MeasurLink® Process Analyzer

Data Analysis Software for Windows

FEATURES

Process Analyzer is an invaluable tool for your quality team. It gives you the flexibility to analyze 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 the Windows Explorer. Inspection data can be merged, filtered, grouped, charted and printed in the way you want it.

Process Analyzer Lite Edition

Designed for offline viewing of Real-Time data in a networked environment. All views that are available in Real-Time Standard Edition are supported, with the exception of the Manager Views. Full reporting template functionality is also provided.



Review inspection data

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

Switch between databases

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

Tree control navigation

Self organized 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 that allows you to pick chart and data through drag and drop with resizing. Several standard report templates are provided out of the box.

SPECIFICATIONS

Order No.	Description
64AAB474	MeasurLink 8 Process Analyzer Lite Edition

Process Analyzer Professional Edition

Designed for more robust manipulation of Real-Time data in a networked environment using advanced features not available in MeasurLink Process Analyzer Lite Edition. It enables Quality Engineering to slice and dice 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 analyze data from all sources.

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.

Merge Data

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

Scatter Plots

Perform correlation studies to identify process interactions.

Electronic Signatures

The e-signatures can be applied to runs only in

Process Analyzer Professional. When combined with Audit Trails available in Real-Time, and security is implemented, then MeasurLink provides support for FDA requirements for the Medical and Pharmaceutical Manufacturers.

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 Cpk shows green for exceeding requirements and red for failing.



SPECIFICATIONS

Order No.	Description
64AAB475	MeasurLink 8 Process Analyzer Professional Edition

MeasurLink® Process Manager

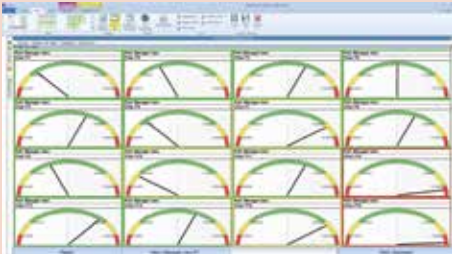
Network Monitoring Software for Windows

FEATURES

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

Process Manager Standard Edition

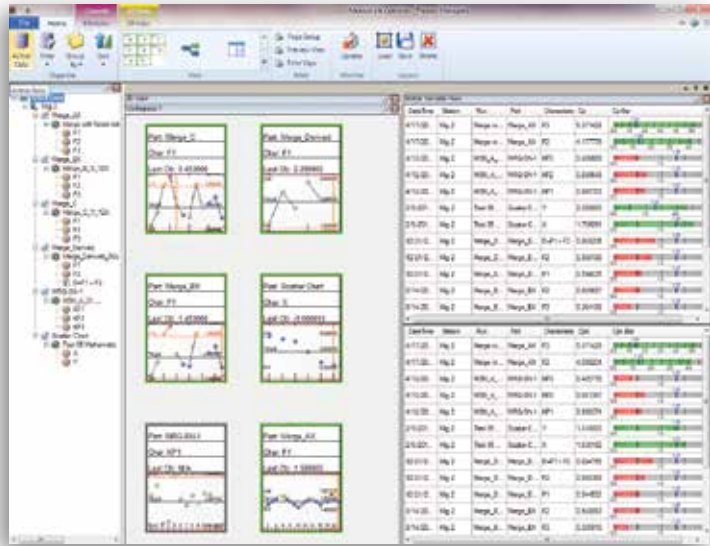
Process Manager provides a method to audit the entire shop floor inspection activity from a single PC. Easily see process information without walking from one inspection area to another by viewing current production across all machines. Show clients your quality operation for the entire facility.



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.



Plant View allows users the highest level view of their shop floor processes. Callouts have a meaningful border color related to tests for capability that have been enabled in each routine's properties.



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, 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 Timestamp.

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
64AAB476	MeasurLink 8 Process Manager Standard Edition

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MeasurLink® Gage R&R

Measurement Systems Analysis

FEATURES

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

Gage R&R

Measure the capability of a measurement system for a measurement task. 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 helps the user define 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 warned to provide any missing information before beginning the study.

Data Input

The data for the study can be collected directly from a gage connected to the system or transferred from Mitutoyo Coordinate Measuring Machines, 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 organized using different criteria.

Randomized Collection Sequence

As recommended by the academic community,

the collection sequence can be automatically randomized.

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

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In addition to the standard calculations this software also provides graphical tools for analysis of the measurement system. The Xbar and R chart can show whether there is adequate gage discrimination to record part to part variation in production and if operators are self-consistent. The Part-by-Appraiser plot can show if there is a lack of consistency between operator inspection techniques.

SPECIFICATIONS

Order No.	Description
64AAB477	MeasurLink 8 Gage R&R

MeasurLink® Gage Management

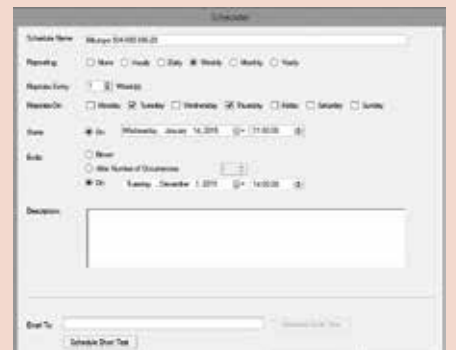
Gage Inventory and Calibration Control

FEATURES

Gage Management is essential for monitoring the calibration history of a gage. Periodic adjustments may be required to bring a gage into specification.

Gage Management Standard Edition

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



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

SPECIFICATIONS

Order No.	Description
64AAB478	MeasurLink 8 Gage Management

MeasurLink® Workgroup and Site License Packages

Packages and Bundles

The MeasurLink suite is best acquired as a Workgroup or Site License. These packages are a mix and match bundle of any module. Workgroups are 5, 10 and 15 seats. A Site License is 30 or more seats of MeasurLink. The package can be any combination of Real-Time*, Process Analyzer, Process Manager, Gage R&R and/or Gage Management modules. All of the stations in the installation store their data in an SQL Database located on the user's network.

*Real-Time Professional 3D Edition has an additional surcharge per seat.

MeasurLink Group Licensing

SPECIFICATIONS

Order No.	Description
64AAB479	MeasurLink 8 Site License

MeasurLink 8 Site License is a bundle package that provides the customer with the ability to install up to and including 30 copies (any combination) of any application in the MeasurLink 8 suite.

Order No.	Description
64AAB480	MeasurLink 8 Workgroup License

MeasurLink 8 Workgroup License is a bundle package that provides the customer with the ability to install up to and including 15 copies (any combination) of any application in the MeasurLink 8 suite.

Order No.	Description
64AAB482	MeasurLink 8 Workgroup License – 10 Pack

MeasurLink 8 Workgroup License – 10 Pack is a bundle package that provides the customer with the ability to install up to and including 10 copies (any combination) of any application in the MeasurLink 8 suite.

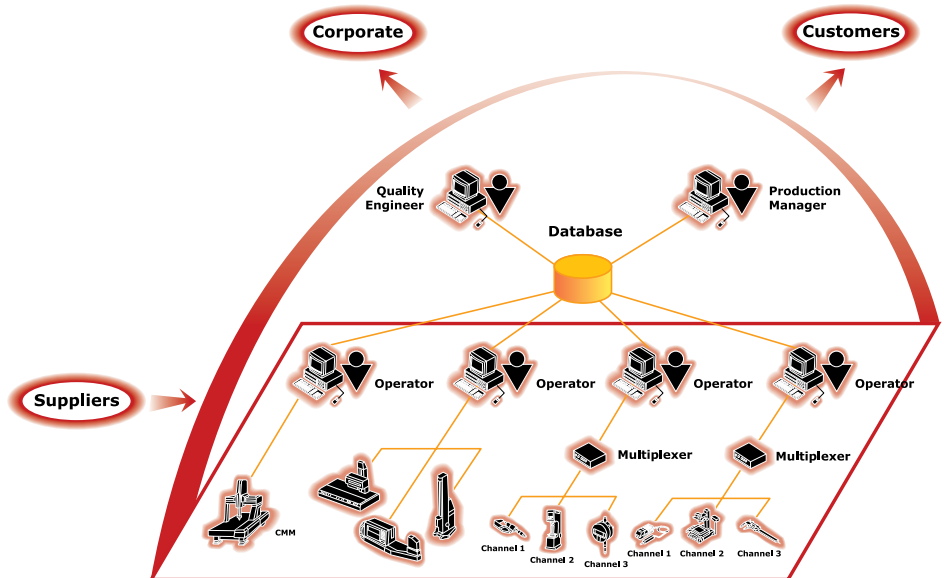
Order No.	Description
64AAB483	MeasurLink 8 Workgroup License – 5 Pack

MeasurLink 8 Workgroup License – 5 Pack is a bundle package that provides the customer with the ability to install up to and including 5 copies (any combination) of any application in the MeasurLink 8 suite.

Order No.	Description
64AAB484	MeasurLink 8 Academic License

MeasurLink 8 Academic License a bundle package that provides Universities and Technical Colleges with the ability to install up to and including 20 copies (any combination) of any application in the MeasurLink 8 suite for educational purposes.

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



The Manufacturing Process with MeasurLink®



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Benefits include:

- Better unit cost
- Mix and match desired modules
- Site Licenses can be shared among multiple facilities.
- Security Center can manage users access with each module.
- Support Center allows users to manage the suite through the network, eliminating interruption in data collection.

MeasurLink® Floating License

Floating License Upgrade Option

Users who want to use MeasurLink in a terminal server environment or want to have a number of concurrent users should consider the Floating License upgrade option. This upgrade is available in packs of 5, 10, 15 and 30. This upgrade includes a licensing sever, DeployLX version 5, that manages the number of seats available.



This type of installation is common in modern IT infrastructure. Thin-Client hardware or traditional PCs can utilize this option. A user could choose to upgrade a portion of or their entire number of seats to the Floating License upgrade option.

Benefits include:

- Easier maintenance of installations
- Most flexible use of modules
- Cost effective way to include more users without purchasing additional seats.
- Can be added to an existing installation or integrated during the initial installation.

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MeasurLink Floating Option

SPECIFICATIONS

Order No.	Description
64AAB479F	MeasurLink 8 Floating License Option 30

MeasurLink 8 Floating License Option 30 adds the Floating Option to a new or an existing installation. Must already have a minimum of 30 seats to add this option.

Order No.	Description
64AAB480F	MeasurLink 8 Floating License Option 15

MeasurLink 8 Floating License Option 15 adds the Floating Option to a new or an existing installation. Must already have a minimum of 15 seats to add this option.

Order No.	Description
64AAB482F	MeasurLink 8 Floating License Option 10

MeasurLink 8 Floating License Option 10 adds the Floating Option to a new or an existing installation. Must already have a minimum of 10 seats to add this option.

Order No.	Description
64AAB483F	MeasurLink 8 Floating License Option 5

MeasurLink 8 Floating License Option 5 adds the Floating Option to a new or an existing installation. Must already have a minimum of 5 seats to add this option.

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