WENZEL
Metromec

Products and Modules
WM | Quartis R2018-2

Specification

Products – the extensive standard equipment

WM | Quartis products contain an extensive collection of functions for coordinate measuring technology.

For extended and customized functionality, the products are completed with modules.

■ WM | Quartis

WM | Quartis is the standard product for measurement and evaluation on coordinate measuring machines. Measurement and programming can be executed online or offline.

The 3D graphics displays measuring machine, work piece (CAD models in ACIS format) and measuring results.

Elements can be calculated and evaluated with a free choice of measurement strategies, different regression calculations (least squares, Chebychev, minimum circumscribed, maximum inscribed, tangential) and normalized filters.

The collision detection detects and warns of collisions between the probe and the work piece (CAD model).

The computed error correction of the machine geometry (CAA) and temperature compensation guarantee best possible measuring results.

For the alignment, a powerful Bestfit for free-form and geometry as well as a RPS alignment are available besides the basic functions "primary direction, secondary direction and origin".

Form and position evaluations according to ISO 1101 / ASME Y14.5M, statistical functions with machine and process capability (SPC) as well as flexible creation of reports are also included.

The quick selection table and user management offer easy user guidance for the execution of measurement programs. With an appropriate reading device, measurement programs can be started using barcode, QR code or data matrix code.

Measuring results and programs are stored and managed in the integrated relational database. The database can be individually expanded with user defined properties.

The language of the user interface and the measurement reports can be set separately.

The following languages are available: Czech, German, English, French, Hungarian, Italian, Japanese, Korean, Dutch, Polish, Portuguese, Russian, Spanish, Swedish, Simplified Chinese, Slovak, and Spanish.

The following measuring devices (controller, counter, server software) can be operated without an additional module: WENZEL WPC 2030, WENZEL WPC 2040, WENZEL WMC, WENZEL WPZ 100, WENZEL WPZ 50 / WPZ 55, WM | PointMaster, WM | exact Analysis, I++ DME Server and Leadshine ENC7480.

■ WM | Quartis Offline

WM | Quartis Offline is the product for pure offline programming. It is not possible to connect to a measuring machine. Besides this restriction, the same functions as in the product WM | Quartis are included.

Notice:

The same application and device modules are required on a WM | Quartis Offline license as on the license for the measuring machine. For example, in order to program a probe rotation offline, the module IPH or CPH has to be available.

PH20 and REVO movements cannot be simulated with WM | Quartis offline. In order to do so, the product "WM | Quartis" in connection with an offline Renishaw UCC Server Software is required.

For "virtual measurement" with WM | PointMaster or WM | exaCT Analysis, the product "WM | Quartis" is needed as well, because it is not possible to establish a connection to PointMaster respectively exaCT Analysis with "WM | Quartis Offline".

Application modules – expand the basis functionality

Application modules expand the basis functionality of WM | Quartis products with powerful functionality for specific applications.

■ CURVE

The module CURVE allows CNC measurement of plane curves against nominal curves as well as the measurement of plane curves without CAD model. The probe radius correction is carried out three-dimensional. In addition, cam profiles (cylinder intersection curves) can be scanned. The tolerance "Line profile" can either be evaluated with or without reference, as well as with unilateral or unequally disposed tolerance zone. The curve is displayed with the tolerance zone in the element graphics. Curves can be divided in lines and circles using the function "extract".

■ SURF

The module SURF allows CNC measurement of surfaces as well as points and edge points with projection onto the CAD model. The probe radius correction is carried out perpendicular to the CAD surface. The tolerance "Surface profile" can be evaluated with or without references as well as with unilateral or unequally disposed tolerance zone.

■ EMD

The module EMD (Export Measuring Data) allows the export of measuring results in the following formats: Q-DAS ASCII transfer format, Excel spreadsheet format and BMWIpp format.

- Exporting feature data in a Q-DAS file, the K fields can be configured freely.
- Exporting feature and statistical data in an Excel file, content and format can be defined using an Excel template file (*.xlt, *.xltx).
- The BMWIpp export writes actual element data in a *.csv file.

■ IMPEX-ELEM

The module IMPEX-ELEM allows importing and exporting element data in the following formats: VDA-FS, IGES and ACIS.

Alignments can be transferred as transformation matrix (TMAT) to WM | exaCT Analysis or WM | PointMaster.

■ DMIS

The module DMIS allows the direct execution (interpreting) of DMIS programs. Supported are DMIS standard 5.2 functions for the measurement of geometry with triggered probe systems, all in WM | Quartis available constructions and evaluations as well as high language construct such as variables, conditions, jumps and loops.

DMIS programs are displayed in a comfortable editor where they can also be edited, checked and saved.

Measurement results can be output to a standardized DMIS results file (DMO) when running Quartis or DMIS programs.

■ EDB

The module EDB (External Database) allows to save measurement and system databases on a Microsoft SQL Server. This offers the advantages "Multi user capability" and "large amounts of data" compared to the default storage in Access based desktop databases.

The module EDB is required for multiple machine network with one (1) central database.

Notice:

The product "Microsoft SQL Server" is not included in the functionality and has to be licensed separately. Microsoft SQL Server from version 2008 R2 SP2 on are supported.

■ AUTOM

The module AUTOM (Automation Interface) is required for automation tasks. Machine-to-machine communication (M2M) takes place via the messaging protocol MQTT (TCP/IP).

The operating state of WM | Quartis can be monitored (interrogated). In case of status changes, WM | Quartis automatically sends events. Remote control is not yet possible.

Device modules – for optional machine components

Device modules expand WM | Quartis products for optional measuring machine components and their application.

■ IPH

The module IPH (Indexing Probe Head) supports the calibration and operation of the following indexed articulating probing systems from Renishaw: PH10M, PH10MQ, PH10T, PH10-iQ, MH8, MIH, MH20i.

Following a quick initial calibration procedure, the CAA-compensated PH10-iQ can be used in every position without additional calibration. The PH10-iQ functionality is available for triggered probe systems with spherical styli tips.

A generic indexed probe head is available if the measuring machine is controlled via an I++ DME Server.

If the machine is controlled via ZEISS CMM-OS, the Zeiss RDS articulating probing head has to be available.

■ CPH

The module CPH (Continuous Probe Head) allows calibrating and operating a continuously variable probe head that can be positioned in any direction. Once calibrated, one can directly measure with any angle position.

The module CPH supports the PH20, REVO, PHS1 and PHS2 from Renishaw.

A generic continuously variable probe head is available if the measuring machine is controlled via an I++ DME Server. If the machine is controlled via Zeiss CMM-OS, the Zeiss DSE articulating probing head is available.

■ PRC

The module PRC (Probe Changer) allows calibration and use of the following stylus changing systems and changing rack ports from Renishaw: ACR1, ACR2, ACR3, FCR25, MCR20, SCR200, SCP80, SCP600.

■ SCAN

The module SCAN allows scanning of the elements line, plane, circle, cylinder, cone, sphere and curve. Normalized filters and outlier elimination guarantee optimal results. Scanning is carried out on known or unknown scan paths.

The module SCAN allows the self-centered measurement of points in center bores, cones, V-grooves, gearings, etc.

The following scanning probes from Renishaw are supported: SP25, SP600, SP80 and REVO.

OS

The module OS (Optical Sensor) allows calibration and use of the optical sensor WENZEL PHOENIX II or PHOENIX III.

ROT

The module ROT (Rotary Table) allows calibration and use of a CNC rotary table as a positioning axis. The rotary table functionality is available for WENZEL WPC 2030, WPC 2040 and WMC controller as well as for I++ DME Server (Renishaw UCC).

MMM

The module MMM (Multiple Machine Mode) allows to control up to eight machines (carriages) simultaneously in multiple machine mode or within a multiple machine network. An ahead looking collision control between the machines that is based on moving safety zones is included.

Multiple machine mode: One Quartis controls multiple machines via DMIS programs.

Multiple machine network: Multiple Quartis control multiple machines via Quartis or DMIS programs, whereby the module MMM has to be unlocked on each individual Quartis license within the network.

With the MMM module, individual machines (carriages) can be coupled in order to create a common reference coordinate system.

DME-CNC

The module DME-CNC (Dimensional Measurement Equipment - CNC) allows operating CNC machines, which are not included in the product "WM | Quartis".

The following server software is supported: Zeiss CMM-OS (from version 2.8, only triggered probing systems, no scanning, no optical sensors).

DME-MAN

The module DME-MAN (Dimensional Measurement Equipment - Manual) allows operating manual machines, which are not included in the product "WM | Quartis".

The following server software and driver are supported: Hexagon RDS (Version 4.1), FARO USB FaroArm driver (version 6.0.2.3).

The Hexagon RDS interface supports currently following measuring arms: ROMER Absolute Arm, Cimcore CA7 Arm, ROMER and Tesa Multi Gage, Infinite and Stinger Arm.

The FARO USB interface supports currently following measuring arms: Edge, Fusion, Prime, Platinum, Quantum, Quantum S / M, Titanium and Advantage. FARO Gage measuring arms can not be used.

The measuring arms can be used with a fixed probe tip or with a trigger probe. Elements can be measured with single points or with scanning.

CAD interface modules – basis for efficient measurements

CAD interface modules allow importing CAD models in different formats. WM | Quartis internally uses the ACIS format from Spatial Corporation.

Data sets in ACIS format (up to version 2018) can be imported without an extra module.

■ VDA-FS

Import of CAD data in VDA-FS format (versions 1.0 and 2.0)

■ IGES

Import of CAD data in IGES format (up to version 5.3)

■ STEP

Import of CAD data in STEP format (versions AP203 and AP214 and AP242)

■ DXF

Import of 2D CAD data (curves) in DXF (AutoCAD) format (versions 2000/2002 and R12)

■ CATIA-4

Import of CAD data in CATIA V4 native format (versions 4.1.9 and 4.2.4)

■ CATIA-5

Import of CAD data in CATIA V5 native format (versions R8 up to R2018)

Import of CAD data in CATIA V6 format (up to version R2018) after they have been exported as CATPart or CATProdcut files from CATIA V6 database.

■ PRO-E

Import of CAD data in Pro/ENGINEER, Wildfire, Creo native format (versions Pro/E 16 up to Wildfire 5.0 up to Creo 4.0)

■ NX

Import of CAD data in Siemens NX (Unigraphics) native format (versions NX 1 up to NX 12)

PS

Import of CAD data in Parasolid native format (versions 9 up to 30)

SE

Import of CAD data in Solid Edge native Format (from version 18 up to ST10)

SW

Import of CAD data in SolidWorks native format (versions 2003 up to 2018)

INV

Import of CAD data in Autodesk Inventor native format (version V11 up to 2018)

WENZEL Metromec AG
Rheinfelsstrasse 1
CH-7007 Chur / Schweiz
Telefon: +41 81 257 07 00
Fax: +41 81 257 07 01
E-Mail: info@wenzel-metromec.ch
Web: www.wenzel-metromec.ch

WENZEL Group GmbH & Co. KG
Werner-Wenzel-Strasse
D-97859 Wiesthal / Deutschland
Telefon: +49 6020 201-0
Fax: +49 6020 201-1999
E-Mail: info@wenzel-group.com
Web: www.wenzel-group.com

Produkte_Module_WM_Quartis_R2018-2_EN_20AH08