

# Advanced Formula Manager

## Product Information Note

### Engineering Calculations for Uniformance® PHD, Made Easy.

Uniformance® Advanced Formula Manager provides a rich calculation capability for Honeywell's Uniformance PHD. Calculations are built using a simplified VB script, helping engineers develop sophisticated calculations very easily, with a minimum of programming skills. Calculation libraries are centrally managed and run by the AFM server.

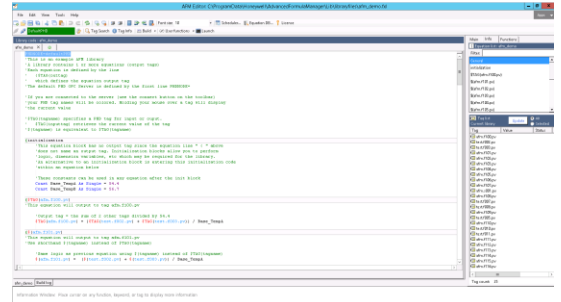
#### The Calculation Challenge

Too often, engineering calculations are performed in engineers' spreadsheets or in custom C, C++ or Visual Basic applications. These approaches can be very costly, and requires engineers to build expertise in software development and OPC or other PHD access mechanisms. In addition, calculation code is typically unmanaged, and the same calculation may be executed differently from engineer to engineer.

#### Advanced Formula Manager Benefits

AFM solves these problems by providing easy calculation development with a central platform for the storage and execution of calculations.

- Lower Engineering Cost – AFM comes with easy to understand functions for reading, writing and aggregating PHD data, so engineers can create engineering calculations without having to become software programming experts. AFM provides dynamic color-coded feedback to the end user on code syntax, proper use of built-in functions, and PHD tag validation.
- Centralized Calculation Management – All AFM calculation libraries are stored on a central AFM server, ensuring that calculation code is available to everyone who needs it. In addition, the AFM server manages the execution of each calculation library at the customer-configured execution intervals. Users may use provided calculations and functions, or build their own reusable functions, ensuring a consistent approach is taken across numerous users.
- Easy Integration with PHD – AFM makes it easy to get input data from PHD without having to write any data access code. AFM calculations results are written to PHD tags, making them available for trending and reporting alongside raw process and business data. End users need not know whether a tag came from the DCS, and manual entry, or AFM. They can simply add the tag to any PHD client application such as Uniformance Process Studio or Excel Companion, and go.



Easy report editing for Engineers

## Building Calculations

The AFM Editor makes it easy to get started building calculations, even for the novice user. AFM code is based on a simplified Visual Basic script. This simplified format provides built-in functions for common tasks like:

- Reading and writing PHD data
- Calculating averages and other aggregations
- Validating data quality

As calculations are built, user-friendly color coding is used to automatically validate tag names and syntax, and provide visual feedback.

## Advanced Calculations

While AFM makes calculation building easy, it has the flexibility to also support very advanced code. Advanced calculations may be used to include data from 3rd party databases with PHD data, reuse functions from 3rd party DLL's, and build reusable custom functions that may be called from any AFM library.

## Flexible Scheduling and Recalculation

The AFM Equation Scheduler provides a way to configure the startup options and execution options for calculation libraries.

Once configured, calculation libraries will be started and executed without any human intervention.

Beginning with release 201, the AFM scheduler provides a way to recalculate libraries. This provides a method to accommodate situations where past data is changed, such as corrected lab values or manual readings loaded to PHD on a delayed basis. Calculations that depend on such data can readily be rerun using the updated values.

## Testing and Debugging

AFM includes a rich set of functions that allow users to validate calculations before they are used to write to PHD. While under construction, calculations may be scheduled to run in "Test Mode", and values are written to the Test Mode viewer console for validation. For more

complicated code, AFM libraries may optionally also use VB.Net as its debugger.

## AFM Components

AFM consists of the following applications:

- Equation Editor: calculation code editor which allows the user to create and compile AFM libraries.
- Equation Scheduler: allows users to monitor, start and stop the AFM executable libraries.
- Equation Server: a Service responsible for actually performing the starting and stopping of libraries.
- Equation Database: provides users a method of recording, sorting, and searching AFM equations.
- Test Mode Viewer: allows users to monitor the output of libraries running in test mode.
- Log File Viewer: used to monitor and search the log files

## Integration with Microsoft® Visual Basic.Net

Installation of Visual Basic is optional, providing a very low-cost install of AFM, with the smallest possible footprint. Installation of the Visual Basic or the free Visual Basic Express is recommended for advanced tasks such as:

- Adding custom user-built functions
- Referencing external DLL's
- Debugging using VB.Net debugger

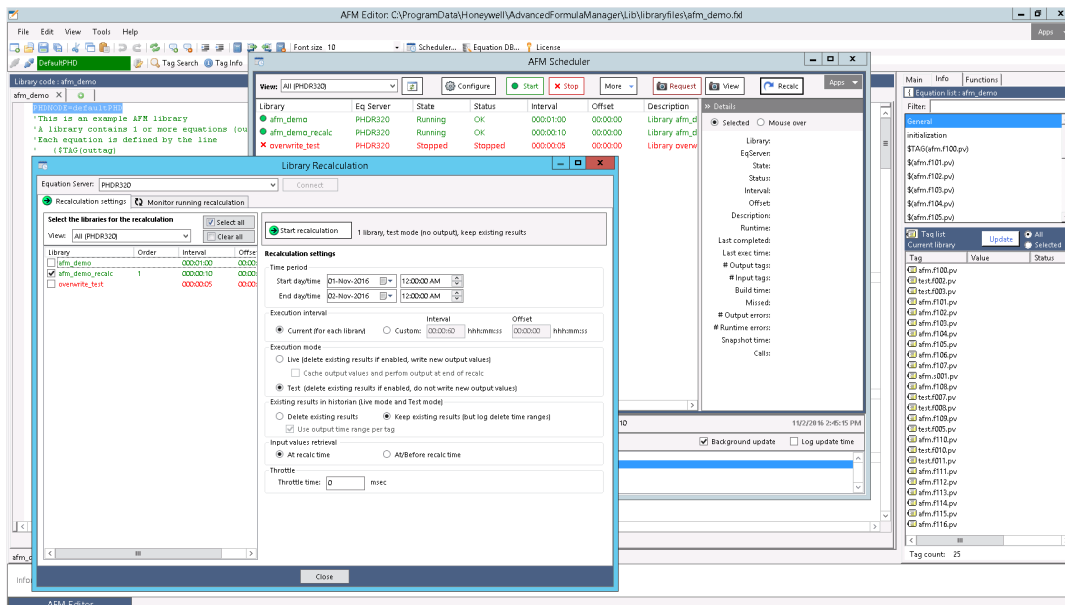
## Advanced Formula Manager Licenses

AFM is licensed based on the number of tags referenced per AFM server. AFM scales from a very small number of calculations per server to thousands of very complicated calculations with numerous input and output values. Contact your Honeywell representative for pricing details.

*Advanced Formula Manager provides the flexibility and straightforward user experience to start simply, and add extremely sophisticated engineering calculations.*

*AFM may be used with PHD or with any OPC server that supports write operations.*

AFM provides the administrative tools to manage calculation schedules, and to execute recalculations.



## Advanced Formula Manager R204 Technical Specifications

PARAMETER	SPECIFICATION
PHD SERVER RELEASES	PHD releases 300, 310, 320 and 321 PHD CX release 330
WINDOWS OPERATING SYSTEMS	Microsoft Windows 7, 2008, 2008 R2, 2012 and 10.32 and 64-bit Windows supported
MICROSOFT VISUAL BASIC RELEASES (OPTIONAL)	Visual Basic Community or Standard 2005 or newer Visual Basic Express 2005 or newer MSBuild 2.0, 3.5, and 4.0
OPC SERVER STANDARDS	Data Access (DA) 2.05 Historical Data Access (HDA) 1.1

## Real-time Digital Intelligence through Unified Data, Analytics and Visualization

Through its Uniformance® Suite, Honeywell offers integrated, best-in-class data, analytics and visualization products built on a common platform to meet complex customer challenges, deliver significant business value, and reduce total cost of ownership.

A fully integrated suite where all types of data are efficiently captured and stored for easy retrieval. In the Uniformance Suite, information is easily visualized and explored for effective engineering analysis. Events are predicted and detected based on underlying patterns and correlations, and process intelligence is used for better business decision-making—all performed within the context of an asset model.



### Uniformance PHD:

Capture and Store Real-time Process and Event Data across the Enterprise.



### Uniformance KPI: Define,

Track, Analyze and Improve KPIs for Performance Management



### Uniformance Asset

**Sentinel:** Monitor Plant Performance and Equipment Health



### Uniformance Insight:

Visualize Process Conditions and Investigate Events from Any Web Browser

## Uniformance Support Services

This product comes with worldwide, premium support services through our Benefits Guardianship Program (BGP). BGP is designed to help our customers improve and extend the usage of their applications and the benefits they deliver, ultimately maintaining and safeguarding their advanced applications.

Honeywell provides a complete portfolio of service offerings to extend the life of your plant and provide a cost-effective path forward to the latest application technology. Honeywell services include:

- Software installation services
- On-site engineering services
- Migration services
- Scope expansion services
- Assessment services
- Performance baseline and tuning services
- Customized training

## For More Information

Learn more about how Honeywell's Advanced Formula Manager can provide easy calculations, visit [uniformance.com](http://uniformance.com) or contact your Honeywell Account Manager.

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## Honeywell Process Solutions

1250 West Sam Houston Parkway South  
Houston, TX 77042

Honeywell House, Skimped Hill Lane  
Bracknell, Berkshire, England RG12 1EB UK

Building #1, 555 Huanke Road,  
Zhangjiang Hi-Tech Industrial Park,  
Pudong New Area, Shanghai 201203

[www.honeywellprocess.com](http://www.honeywellprocess.com)

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