CODESYS STORE

Data Sheet CODESYS Profiler

The CODESYS Profiler enables the detailed measurement of runtime behavior and code coverage at program block level.

The CODESYS Profiler is part of the tool bundle CODESYS Professional Developer Edition.

Product description

With the CODESYS Profiler, software engineers and application developers can perform an early measurement and evaluation of the processing times and code coverage of the different POUs in an IEC 61131-3 application. These measurements can be performed on the CODESYS SoftPLC or a physical device without changing the IEC 61131 application code in the project. Application development and measurement can be done in parallel in one and the same development environment.

Functionality

- Dynamic measurement by instrumentation of code upon each function entry and exit after activating the runtime measurement in the development environment
- Only during measurement: temporary code increase and prolongation of runtime by 10-50% dependent on PLC platform and program structure
- Starting measurement via variable or on command
- Clear presentation of measurement results on the development interface

Benefit

- Performance and code coverage measurement of the machine code already at the beginning of the development phase
- Timely notice of runtime issues
- Identification of time consuming program parts and the portion of unprocessed statements
- No modification of the application code by the user needed for measurement
- Collective or single measurement of application POUs possible
- Determination of code efficiency by comparing historical and current measurements
- Improved software quality

The CODESYS Profiler provides the following main functions:

- Measurement of application runtime (“Profiling”) on controllers with CODESYS Control Runtime
- Conditional execution using any Boolean variable
- Runtime measurement of single POUs or POU instances with “Profiler Watch List”
- Measurement of unprocessed statements or “Code Coverage” per POU
- Implicit extension of the binary code during compilation without changing the code of the project
- Application-specific setting options
    - Display of the critical path in the measurement results
    - Selection of measured task
    - Selection of units of measure (ticks, milliseconds, or microseconds)
    - Definition of memory allocated for the measurement
    - Setting of the measurement function (storing the next or maximum cycle)
    - Selection of measured calls
    - Selection of measured POUs for code coverage
- Display of results
    - Summarized overview
    - Call tree (by time or process)
    - Tables
    - Watch list

- Calculation of different information
    - Percentage of time spent in call
    - Total time spent in call
    - Average time of all POU calls of a single cycle
    - Minimum and minimum processing time over multiple cycles
    - Number of calls
    - Display of time spent for each call
    - Standard deviation of average measured time
    - Percentage of processed code
- Export of results in CSV format

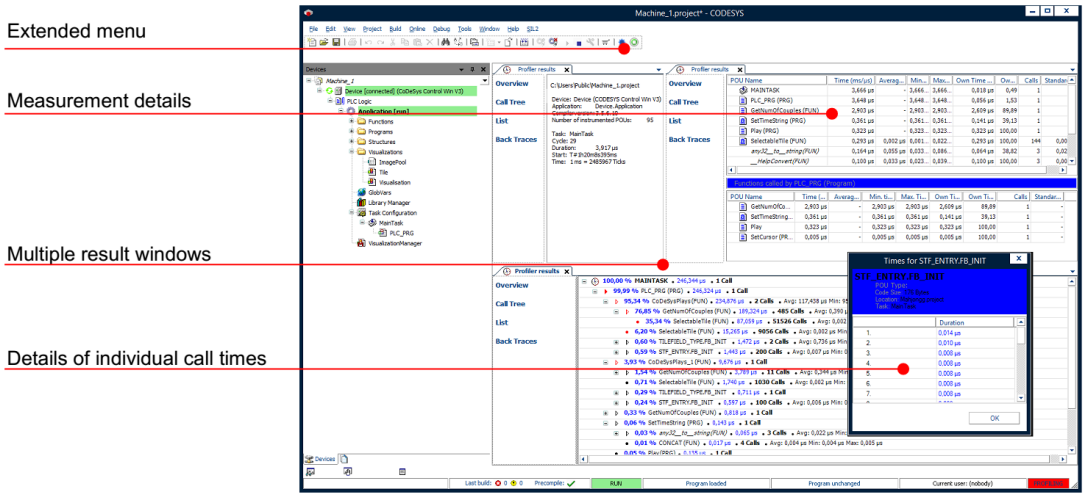

Image: Display of the results from a runtime measurement using CODESYS Profiler

General information

Manufacturer:

3S-Smart Software Solutions GmbH
Memminger Strasse 151
87439 Kempten
Germany

Support:

https://support.codesys.com

Item:
CODESYS Profiler
Item number:
2101000004
Sales:

CODESYS Store
https://store.codesys.com

Included in delivery:
- Package for the CODESYS Development System including license agreement and online help
- License key

System requirements and restrictions

Programming System	CODESYS Development System V3.5.13.0 or higher
Runtime System	CODESYS Control V3.5.0.0 or higher
Supported Platforms/ Devices	The runtime measurement is independent of platform and device (for all CODESYS Control Runtime devices).
Additional Requirements	Subscription of the CODESYS Professional Developer Edition.
Restrictions	• Runtime measurement for IEC 61131 program parts only • Potential temporary code increase and prolongation of runtime by 10-50% dependent on PLC platform and program structure • Enabling or disabling the profiling feature or changing the profiling settings requires a download (online change is not possible). • Demo version: limited time and range of functions • 64 bit support with version 1.2.0.0 and higher
Licensing	The following licenses are available: • Demo license: Time limited usage • Subscription license: Time limited usage The following licensing options are supported: • Soft Key, with CODESYS Development System SP 13 (Workplace-bound licensing, free part of all CODESYS products) • Optional: CODESYS Key (Increased security against loss of license keys, transferable licensing to other workstations)
Required accessories	Optional: CODESYS Key

Note: Not all CODESYS features are available in all territories. For more information on geographic restrictions, please contact sales@codesys.com.
Note: Technical specifications are subject to change. Errors and omissions excepted. The content of the current online version of this document applies.