

Version **6.00.28.03** :

**features of version 6.00.28.03 compared to version 6.00.28.02 :**

(Release date : 01.09.2020)

- Pro II (PDF-) documentation reworked
- TiCoBasic user interface V1.6.4.4 : Online Help reworked
- ADlog V1.6.0 : Online Help reworked

**most important features of version 6.00.28.02 compared to version 6.00.26.07 :**

(Release date : 27.07.2020)

- ADbasic 6 user interface V6.3.1.4 , TiCoBasic user interface V1.6.4.4 :
  - bugfix: occasional (sporadic) problem at compilation of libraries
  - checking the window position on programstart was improved
- ADbasic T12 and T12.1 compiler V6.0.28.1 : improvements at #If ADwin\_System
- T9 - T11 compiler V5.0.48 : bugfix: occasional (sporadic) problem at Exit() if in Init:
- ADwin operating system (ADwin9.BTL) : bugfix: occasional problem (timeout error 1 or 2) caused by SetData()
- ADbasic include files :
  - ADwinGoldII.inc : bugfix at Run\_ProfinetIO()
  - ADwinpro2common.inc : bugfix at Profinet
  - ADwinX.inc : bugfix at Profinet and SSI\_Set\_Clock()
- Developer software :
  - Java V1.5.2 : functions are now „thread safe“ , *please see also C:\ADwin\Developer\Java\readme.txt*
- ADlog V1.6.0 : support of processor T12.1 / ADwin-X ; diverse improvements and bugfixes
- ADtest.exe V5.5 : bugfix: calibration of ADwin-X
- Linux, MAC OS version : adwin-compiler-6.0.26, adwin-lib-6.0.0 :
  - support of the processor T12.1 / ADwin-X
  - build-environment was changed from autotools/automake to cmake
  - USB- and Link-interface are no longer supported

**most important features of version 6.00.26.07 compared to version 6.00.26.01 :**

(Release date : 19.12.2019)

- Processor T12.1:
  - ADwinX.inc: new: DAC32(), Write\_DAC32()
  - ADwin121.BTL:
    - Boot- time optimized in some constellations
    - SetData- accesses on startindex < 0 are now prevented
    - bugfix: in context with 100 Mbit/s mode
    - a password-protected ENET interface can only be reconfigured (with a NEW password),
      - if the ADwin-X system is not yet booted
      - or within one minute after the Boot
- ADbasic 6 user interface V6.3.0.9 , TiCoBasic user interface V1.6.3.9 :
  - diverse improvements and bugfixes (among other things at the display of error messages)
- Developer software :
  - Python driver V0.16.3 :
    - additional functions for ADwin-X
    - *please see C:\ADwin\Developer\Python\README.txt*
  - dotNET - driver V1.0.75 : diverse improvements
  - Java V1.5.1 : *please see C:\ADwin\Developer\Java\readme.txt*

**most important features of version 6.00.26.01 compared to version 6.00.22.06 :**

(Release date : 10.09.2019)

- Processor T12.1:
  - ADwinX.inc: may now be used also in libraries
  - ADwin121.BTL: bugfix: occasional problem on configuring the ENET interface fixed
- ADbasic 6 user interface V6.3.0.5 , TiCoBasic user interface V1.6.3.5 :

- now runs under dotNet Framework 2.0 as well as 4.0
- further diverse improvements and bugfixes (among other things at Search in files)
- ADbasic 6 T12 and T12.1 compiler V6.0.26.1 :
  - Selectcase: the value range of the Case constants is no longer restricted to 0...255
  - new: ArcTan2 ( ) , Read/Write\_Data\_X\_Long/Float32/64 ( )
  - bugfixes among other things at CPU\_Sleep ( ) and libraries
- T9 - T11 compiler V5.0.47: improved compiler error messages
- Developer software :
  - DASyLab driver :
    - support of DASyLab 2016 (v14.x). Hint: the driver in the directory "Release7\_13" must be used for older DASyLab versions
    - now all functions are able to send and receive Double
    - bugfix at "Log errors"
- ADtools: TDigit V5.23: diverse bugfixes
- ADpro.exe V5.19 :
  - now runs under dotNet Framework 2.0 as well as 4.0
  - bugfix: program hung if broadcasts are not allowed (e.g. in internet)
- ADCandb V3.1.0 :
  - now runs under dotNet Framework 2.0 as well as 4.0
  - improvements at calculation functions and Transmit\_Dyn ( )

**most important features of version 6.00.22.06 compared to version 6.00.22.03 :**  
(Release date : 11.06.2019)

- Processor T12.1:
  - documentation and Online Help reworked
  - ADwin121.BTL: bugfixes:
    - occasional problem at Fifos
    - occasional problem at process with Eventsource External
- ADpro.exe V5.18 : bugfix : TiCo could not be stopped

**most important features of version 6.00.22.03 compared to version 6.00.17.03 :**  
(Release date : 02.04.2019)

- ADbasic 6 T12 and T12.1 compiler V6.0.22 , ADwin121.BTL :
  - **support of the new processor T12.1** (with 666 MHz , 1GByte, more details : see :  
C:\ADwin\Documents\Hardware\ADwin-X\german\XA20\_eng.pdf )
  - libraries with name \*.X.bas (X=0..9) are not longer allowed
  - bugfix: occasional problem, if the installation did not take place in the default path
- ADbasic 6 user interface V6.2.0.9 , TiCoBasic user interface V1.6.2.97 :
  - bugfix: Smart format was executed also in strings
  - further diverse improvements and bugfixes
- ADbasic T11 compiler V5.0.43 , TiCoBasic compiler V1.02.39 :
  - bugfix: occasional problem at macros (T9 to T11)
  - bugfix: occasional problem at ProcessError (TiCo, only at projects)
  - bugfix: occasional problem in Debug Mode (TiCo, only at projects)
- ADbasic / TiCoBasic include / library files :
  - support of the new module **Pro II-CAN-FD-2**
- Developer software :
  - dotNET - driver V1.0.74 :
    - Boot and LoadProcess do not longer require exclusive read-access on binaryfiles
  - Python driver V0.16.2 : please see C:\ADwin\Developer\Python\README.txt
  - JAVA V1.4.0 : support of the processor T12
- ADpro.exe V5.17 : diverse improvements
- ADtest.exe V5.4.0 : diverse improvements and support of ADwin-X-A20
- Fieldbus : new files:
  - GSDML-V2.33-HMS-CompactCom-40-PIR-ADwin-20180620.xml (for ADwin-X and Pro II, Profinet)
  - HMS CompactCom 40 EtherCAT 2\_08.xml (for ADwin-X and Pro II, EtherCAT)
  - HMSA1815.gsd (for ADwin-X and Pro II, Profibus)

**most important features of version 6.00.17.03 compared to version 6.00.15.01 :**  
(Release date : 14.03.2018)

- ADbasic 6 user interface V6.2.0.79 , TiCoBasic user interface V1.6.2.78 :
  - faster start of the ADbasic / TiCoBasic user interface
  - the most important Process Options are now also displayed in the project window
  - adaption to the various Windows display settings now also for the tool icons
  - Online Help system improved
  - further diverse improvements and bugfixes
- ADbasic T12 compiler V6.0.17.1 , T11 compiler V5.0.40 , TiCoBasic compiler V1.02.35 :
  - new: #Begin\_Debug\_Mode\_Disable , #End\_Debug\_Mode\_Disable
  - new: #If Processor : several processor types can now be set in the same source code line
  - bugfix: generic error at processing of constants (T12)
  - bugfix: passing of String expressions to macros (T12)
  - improvement at Float constants at T11
  - bugfix at TiCo libraries
- ADbasic / TiCoBasic include / library files :
  - FFT functions at T12 : now you can choose between 64 or 32 bit functions
  - bugfix at T12: P2\_SSI\_Set\_Delay()
  - new at Gold II : Init\_ProfinetIO() , Run\_ProfinetIO()
- ADwin operating system (ADwin12.BTL) : bugfix at very big Processdelay
- ADwin driver (ADwin32/64.DLL) : improved error handling
- Developer software :
  - dotNET driver V1.0.71 :
    - diverse improvements and bugfixes ( GetBtlDirectory , GetInstallationDirectory )
  - Delphi driver : new: Get\_FPar\_All\_Double() , Set\_FPar\_Block\_Double() , Get\_FPar\_Double() , Set\_FPar\_Double() , File2Data()
  - Python driver V 0.16.0 : please see C:\ADwin\Developer\Python\README.txt
  - Matlab - driver V4.09.01 : Help-files updated because of ADsim-T12
- ADtools TProcess V5.24: error at the Processdelay/frequency input at T12 fixed
- ADlog V1.4.1 : occasional buffer overflow fixed
- ADtest V5.2.0 : bugfix: problem, if a new (Windows) user was added
- ADwin-Speed-Test V7.0.0.7 : improved error handling
- ADCandb V3.0.11 : bugfix at the bus monitor
- Fieldbus : new : GSDML-V2.25-HMS-ABCC-PRT2P-20110511.xml (für Gold-II- Profinet)

**most important features of version 6.00.15.01 compared to version 6.00.08.01 :**  
(Release date : 03.03.2017)

- Windows 10: tested and approved for this operating system
  - bugfix: Device No and IP settings could get lost on major Windows 10 updates
  - bugfix: occasional crash of ADbasic user interface while using the Online Help (bug caused by Windows help system)
- ADbasic 6 user interface V6.2.0.23 , TiCoBasic user interface V1.6.2.23 :
  - new: Prebuild / Postbuild actions
  - new: switching between already used jump targets
  - new Online Help system
  - adaption to the various Windows display settings (e.g.: fontsize 125 and 150 %)
  - maximum line length was increased to 2048 characters
- ADbasic T12 compiler V6.0.15.1
  - decreased compile time for big programs
  - improvements of Stacktest and stack consumption in connection with Debug Mode
- ADbasic compiler V5.00.38 , TiCoBasic compiler V1.02.32 :
  - T11: codesize is now displayed split into PM, EM, DX
  - bugfix for libraries, among others for relative paths
- ADbasic / TiCoBasic include / library files:
  - bugfix: at Flexray at T12
  - new: P2\_LS\_Reset() , LS\_Reset()
- ADwin driver (ADwin32/64.DLL) :
  - occasional problem fixed at .IsFifo at USB
  - the memory location of the ADconfig-data (e.g. Device No, IP) was changed => an (old) copy of the ADwin32/64.dll must not be located in the application directory!

- Developer software :
  - dotNET driver V1.0.62 :
    - new: Restricted Mode can be queried
    - GetUsedStackSize now provides also values from Finish section
    - GetFreeMem provides values in bytes also at T12
- ADcandb V3.0.10 : diverse bugfixes
- Linux, MAC OS Version 5.00.10.03c : adwin-lib-5.0.10 :
  - support of the processor T12
  - adwin-lib driver can be compiled with GCC5 now

**most important features of version 6.00.08.01 compared to version 6.00.03.01 :**  
(Release date: 25.05.2016)

- ADbasic 6 T12 compiler V6.0.8.1
  - bugfix at libraries
- TiCoBasic compiler V1.02.29 :
  - new: Debug Mode
- ADbasic 6 user interface V6.1.0.10 :
  - new: Stacktest (only T12)
- ADbasic / TiCoBasic include / library files :
  - bugfix: WriteDAC32(), P2\_Wait\_mux()
  - new: P2\_LIN\_Ch\_Msg\_Read\_Cnt(), P2\_LIN\_Msg\_Read\_Status()
  - new: P2\_TiCo\_Get\_Process\_Error(), TiCo\_Get\_Process\_Error()
- ADwin operating system (ADwin12.BTL) : changes for Stacktest ; bugfix : cache management
- ADwin driver (ADwin32/64.DLL) : bugfix: Workload() (only T12)
- Developer software :
  - dotNET - driver V1.0.59.0 : T12 support (double – functions)
  - Matlab - driver V4.09.00 : T12 support (double – functions) ; creation of Standalone EXE now feasible
  - Labview driver V3.1 : adaptations and new functions at T12
  - C-driver V2.01 : bugfix and small corrections
- ADtools TProcess V5.20: bugfix: Processdelay conversion at T12
- ADpro V5.14 : bugfixes: Pro II-CNT, Pro-DIO
- ADcandb V3.0.7 : now also for T12

**most important features of version 6.00.03.01 compared to version 6.00.01.01 :**  
(Release date : 18.09.2015)

- ADbasic 6 T12 compiler V6.0.3.1
  - occasional problem fixed at optimization >= 2
  - bugfix at libraries, whose filename contains a space or a period
- ADwin driver (ADwin32/64.DLL) : USB : memory access violation fixed at Boot() function

**most important features of version 6.00.01.01 compared to version 5.00.29.00 :**  
(Release date : 17.07.2015)

- ADbasic 6 **T12** compiler V6.0.1 , ADwin12.BTL : (on the CD-Rom for the first time)
  - **support of the new processor T12** (with 1 GHz , 1GByte, more details : see :  
C:\ADwin\Documents\Hardware\ADwin-PRO\english\ProII-HW\_eng.pdf )
- ADbasic 6 user interface V6.0.0.17 , TiCoBasic user interface V1.5.0.17 : T12 support
- ADbasic / TiCoBasic include / library files : T12 support
  - ADwinPro2.inc : bugfix: P2\_SPI\_Master\_Set\_Clk\_Wait()
- ADwin driver (ADwin32/64.DLL, ADTCP32/64.DLL) : higher ENET data transmission rate
- Developer software : T12 support (double – functions)
  - C - driver V2 : now also support of multi-threading applications
  - C - driver V1 : still available for compatibility reasons
- ADlog V1.3.0 : T12 support
- ADEthFlash V3.11 : T12 support
- ADconfig V3.27 : bugfix at the input field of „Network Timeout“  
Subnet Mask is checked more strictly
- ADpro V5.12 : rudimental T12 support

- ADwin-Speed-Test V6.0.0.1 : more values for "Number of values to be transferred"
- ADcandb V3.0.6.26779

**most important features of version 5.00.29.00 compared to version 5.00.28.09 :**  
(Release date : 22.12.2014)

- Kallisté for ADwin V2.6.6.42 : (on the CD-Rom for the first time)
- ADcandb V2.1.4.18658 : (now also available on this CD-Rom)
- ADbasic 5 compiler V5.00.29 , TiCoBasic compiler V1.02.24 : diverse bugfixes :
  - occasional problem, if (Far-)East languages are used in Regional Settings of Windows
  - TiCo libraries
- ADbasic 5 user interface V5.2.0.21 , TiCoBasic user interface V1.4.0.21 :
  - now also the column widths of the Project Window are memorized
  - new at TiCoBasic: progress bar at programming of the Bootloader
- ADbasic / TiCoBasic include / library files :
  - EEPROM\_Support.inc : new: ENET3 / S-ATA / USB-support
  - ADwinPro2.inc : bugfix: P2\_SENT\_Set\_Serial\_Message\_Data()
  - MIO\_TiCo.inc, SPI\_TiCo.inc : bugfix: MIO\_Get\_Digout\_Long() , Get\_Digout\_Long()
- ADwin driver (ADwin32/64.DLL) : ENET interference immunity of Boot() function was improved
- Developer software :
  - Matlab - driver V4.08.00 : bugfixes at ADwin\_Init (error messages: „winqueryreg“ and „wd“)
- ADtools TFiFo V5.17 : bugfix: the Units of the columns have not been memorized
- ADtools TString V5.17 : bugfix: Windows font sizes 125 and 150 % have not been supported
- ADlog V1.2.1 : internal performance improvements
- ADconfig V3.25 : improved error message at wrong password
- ADpro V5.12 : detection of : *Pro II-DIO-8-D12*
- ADwin-Speed-Test V4.20.0.0 : improved error messages
- last version with official support for Windows 2000, Windows NT
- Linux, MAC OS Version 5.00.10.03b : adwin-lib-5.0.7 :
  - bugfix: adwin-lib driver was not compilable on some Linux versions

**most important features of version 5.00.28.09 compared to version 5.00.28.01 :**  
(Release date : 02.04.2014)

- TiCoBasic include file :
  - AOut\_TiCo.inc : support of the new module : *Pro II-AOut-8/16-TiCo*
- Developer software :
  - SciLab - driver V1.05.00 : now also support of the 64-bit SciLab version
  - Matlab - driver V4.06.00 : bugfix at Test-License key
- ADconfig V3.24 : improved errorhandling
- ADpro V5.7 : support of : *Pro II-AOut-8/16(-TiCo) Rev.E10*

**most important features of version 5.00.28.01 compared to version 5.00.24.00 :**  
(Release date : 27.11.2013)

- ADbasic 5 compiler V5.00.28 , TiCoBasic compiler V1.02.23 : diverse bugfixes
- ADbasic / TiCoBasic include / library files : support of the new modules :
  - *Pro II-AOut-1/16*
  - *Pro II-LS-2*
  - *Pro II-SPI-2-T , Pro II-SPI-2-D*
  - new: Digout\_FIFO\_Write\_Burst()
- ADbasic sample programs :
  - standard sample programs now also for Pro II : *ProII\_DMO1.bas, ProII\_DMO2.bas, etc.*
- ADpro V5.7 : support of : *Pro II-AOut-1/16* ; detection of : *Pro II-LS-2*

**most important features of version 5.00.24.00 compared to version 5.00.21.01 :**  
(Release date : 08.05.2013)

- ADbasic 5 compiler V5.00.24 , TiCoBasic compiler V1.02.20 :

- diverse bugfixes : powerfunction (only T9, T10)
- ADbasic 5 user interface V5.0.8.21 , TiCoBasic user interface V1.2.8.21 :
  - bugfix: occasional problem on programming the TiCo-Bootloader with big binary-files
- ADbasic / TiCoBasic include / library files : support of the new modules :
  - *Pro II-COMP-16*
  - *Pro II-ARINC-429*
  - *Pro II-MIL-1553*
  - *Pro II-DIO-32-TiCo2*
  - new : `P2_ECAT_Set_Mode()` (for *Pro II-EtherCAT-SL*)
- ADwin operating system (ADwin11.BTL) :
  - bugfix : problem at Low Prio processes in combination with Ethernet disruptions
- Developer software :
  - dotNET - driver : V1.0.57.0 : :
    - new : examples for WPF (= Windows Presentation Foundation)
    - Online-help reworked
  - Matlab driver V4.05.00 : new : `File2Data()`
- Fieldbus : ADwin-EtherCAT.xml (updated for firmware 2.0 of *Pro-II-EtherCAT*)
- ADpro V5.6.0 : support of : *Pro II Aln-F8/16 Rev. E04*

**most important features of version 5.00.21.01 compared to version 5.00.17.01 :**  
(Release date : 17.09.2012)

- ADbasic 5 compiler V5.00.21 , TiCoBasic compiler V1.02.19 :
  - diverse bugfixes (T9, T10) : strings, optimization 2
  - diverse bugfixes (T11) : `Start_Process()`, `Start_Process_Delayed()`
- ADbasic / TiCoBasic include / library files :
  - ADwinPro2.inc : support of the new module *Pro II-SENT-4*
  - EEPROM\_Support.inc : bugfix : problem, which occurred only with some hardware revisions
  - ADwinGoldII.inc , Fieldbus\_TiCo.inc : fieldbus errorhandling / errorcodes update
  - MIO-D12\_TiCo.inc : support of the new module *Pro II-MIO-D12*
  - RS\_LIN\_TiCo.inc : timing optimized
  - GoldIITiCo.inc : bugfix : `PWM_Write_Latch()`
- Developer software :
  - Matlab driver V4.02.00 : EXE-files can now be generated with the Matlab compiler
- ADpro V5.5.0 : improved errorhandling, if hardware is damaged

**most important features of version 5.00.17.01 compared to version 5.00.14.00 :**  
(Release date : 28.11.2011)

- ADbasic 5 user interface V5.0.8.19 , TiCoBasic user interface V1.2.8.19 :
  - new at T9 to T11 : "Call Tree"
  - "Managing Projects" enlarged : files of any type can be added to a project, and diverse settings can be saved in the project file
  - new : "<Region>" (= foldable text range) and „Create Region from Block“
  - new : "documenting self-defined instructions and variables" (i.e.: adding extra information)
  - further diverse improvements and bugfixes
- ADbasic 5 compiler V5.00.17 , TiCoBasic compiler V1.02.17 :
  - bugfix : occasional problem at `MemCpy()` at two-dimensioned arrays
  - bugfix: at T11 at Low Prio processes
  - bugfix: at TiCo at big jumps
  - diverse bugfixes among other things at FiFos, libraries (Float-division, TiCo)
- ADbasic / TiCoBasic include / library files :
  - new : `(P2_)Write_Fifo_Full` (at: Gold II, Gold II TiCo, Pro II)
  - bugfix : `P2_Digin_FIFO_Read_Fast()`
  - bugfix : at T11 at LS-Bus
  - EEPROM\_Support.inc : bugfix in timeout handling
- ADwin driver :
  - USB driver now also for 64 bit Windows operating systems
  - ADwin64.Dll : V3.0.464.2 : allows the access for 64-bit applications
- Developer software :
  - dotNET - driver : V1.0.57.0 : completely reworked Online-help

- Matlab driver V4.01.03 : now identical notes are displayed just once
- ADlog V1.2.0.0 : new : now also ADsim-processes can be used
- ADpro V5.4.5 : support of : *Pro AIn-F-8/16 Rev. B* , *Pro II AIn-F8/16 (calibration)*
- ADtest V5.1.0 : calibration data can be backed up in files and restored

#### most important features of version 5.00.14.00 compared to version 5.00.10.00 :

(Release date : 21.03.2011)

- ADbasic 5 user interface V5.0.6.78 , TiCoBasic user interface V1.2.6.78 :
  - new : "FontSize" can be set for the source code window
  - further diverse improvements and bugfixes
- ADbasic 5 compiler V5.00.14 , TiCoBasic compiler V1.02.14 :
  - new : Round() (returns the nearest integer of a value of data type Float)
  - the start of the timebase for Low Prio processes was moved from the begin of INIT to the end (T9 to T11)
  - bugfix : occasional problem if the passed parameter of a macro is an addition of strings
  - diverse bugfixes among other things at libraries
- ADbasic / TiCoBasic include / library files :
  - new : support for *L16-PWM1* (this add-on has one PWM-output and one SPI-interface)
  - new : support for *Pro II-TC-8 ISO* (module for thermocouples)
  - new : P2\_Wait\_Mux() (waits for the end of the multiplexer settling)
  - new : P2\_Digin\_Fifo\_Read\_Fast() (Fifo values are written into an array)
  - new : P2\_Burst\_CRead\_Pos\_Unpacked1, -2, -4, -8 (for *Pro II-AIn-F-8/14*)
  - new : EEPROM\_Support.inc : (see: C:\ADwin\Tools\Ethernet Interface\Bootloader\_eng.pdf)
  - diverse include and library functions : optimization (faster and smaller code)
- Developer software :
  - new : dotNET - driver : V1.0.52.0 BETA especially developed for Visual Studio .Net ; supports 32- and 64-bit
  - Labview driver V3.0 :
    - now 32- as well as 64-bit Labview is supported
    - new: File2Data.vi
  - SciLab driver V1.04.01 :
    - does now work also with new Scilab versions, e.g. 5.1.1 as well as 5.3.0-beta-4
    - optimized errorcode handling
  - Matlab driver V4.01.01 : if necessary , the function ADwin\_Init is called automatically
  - ADwinActiveX V 4.0.0.0 : bugfix : occasional problem on Vista, Windows 7
- ADlog V1.0.48.2 : bugfix at the processes for Gold II (issue at some analog channels)
- ADEthFlash V3.10 : the required firewall configuration is set automatically
- Fieldbus : new : ESI\_ABCC\_ECT\_V\_1\_04.XML (for *Gold-II- EtherCAT*)
- Installation routine : all default- registry- settings are now added also on 64-bit operating systems
- Linux, MAC OS Version 5.00.10.03 :
  - improvements, bugfixes : ADbasic compiler, library, generic driver, Scilab driver
  - new : Python driver 0.9 ; 64 bit support for ADconfig

#### most important features of version 5.00.10.00 compared to version 5.00.08.06 :

(Release date : 10.06.2010)

- ADbasic 5 user interface V5.0.6.68 , TiCoBasic user interface V1.2.6.68 :
  - new : user-defined, external shortcuts can be inserted into the ADtools-bar
  - new : in the context menu of the project window : "Open path in Windows Explorer"
  - new : the results of "Find : All Documents of Project" can be copied into the clipboard
  - "Autocomplete for instruction or variable" was improved
  - "Jump to Declaration" does work now also for user libraries
  - new in TiCoBasic : button „R“ (= Reset Tico)
- ADbasic 5 compiler V5.00.10 , TiCoBasic compiler V1.02.10 :
  - the DATA-number is now also displayed in the Debug Mode
  - bugfix : occasional problem at programs with codesize > 131072 bytes
  - diverse improvements and bugfixes among other things at libraries (ADbasic), Min\_Long, Max\_Long (TiCo)
- ADbasic / TiCoBasic include / library files :
  - improvements/bugfixes at : CAN, (P2-)Workload
  - new : Wait\_Mux, Mod (integer remainder of a division)
  - new : EtherCAT support for *Gold-II- EtherCAT*, *Pro-II-EtherCAT*, *Pro-II-MIO-4-ET1*
- ADbasic / TiCoBasic sample programs :

- FFT sample programs optimized for T11
- new sample programs for : *Pro II-Aln-8/18, Pro II-F8/14,16,18, Pro II-PWM-16, Pro II-Cnt, Pro-CO4*
- new Tico sample programs for Eventsource External
- ADwin driver :
  - new : ADwin64.Dll : V3.0.464.2 BETA : allows the access for 64-bit applications
  - new : ADsim32.Dll : allows access to internal parameters/signals of a compiled Simulink model
- Developer software :
  - new : Python - driver
  - Matlab – driver V4.00.00 : now also Matlab 64-bit is supported
  - Delphi driver : support of Delphi 2009 and 2010
- ADtools V5.17 : minor bugfixes (colours, large fonts)
- ADtest V5.0.2 : completely new developed testprogram for Light-16, Gold and Gold II , calibration for Gold II
- ADlog V1.0.47.1 : bugfix in Min/Max function
- Fieldbus : new files :
  - ADwin-EtherCAT.xml (for *Pro-II-EtherCAT, Pro-II-MIO-4-ET1*)
  - DDF\_ABCC\_ECT\_V\_1\_03.XML (for *Gold-II- EtherCAT*)
  - 324-8172-EDS\_ABCC\_DEV\_V\_2\_3.EDS (for *Gold-II-DeviceNet*)

**most important features of version 5.00.08.06 compared to version 5.00.07.02 :**  
(Release date : 28.09.2009)

- Windows 7 : tested and approved for this operating system
- ADbasic 5 compiler V5.00.08 , TiCoBasic compiler V1.02.09 Beta :
  - occasional problem if a THEN follows a FIFO
  - occasional generic error at SEQ\_READ8, SEQ\_READ16 and MEDIA\_READ
- ADwin operating system (ADwin11.BTL) :
  - bugfix : occasional problem on stopping of processes with Eventsource External
- ADbasic / TiCoBasic include / library files : support of the new modules :
  - Pro II-RTD-8
  - Pro II-FlexRay-2
  - Pro II-MIO-4
- ADconfig V3.20 : the configuration of illegal (UDP) ports is now prevented
- ADtools V5.15 : improvements and bugfixes (TButton, TMeter, TGraph, ADtools.exe)
- ADlog V1.0.46.0 : enhanced ASCII record options
- L16Calib V2.0 : bugfix at calibration of Light-16
- Setup.exe V5.0.0.6 : faster installation procedure

**most important features of version 5.00.07.02 compared to version 5.00.05.10 :**  
(Release date : 23.06.2009)

- last version with official support for Windows 98, ME
- ADbasic 5 user interface V5.0.6.27 , TiCoBasic user interface V1.2.6.27 Beta :
  - "Automatic quick info" : automatic display of (declaration-) information if mouse is over a source code element (variable, #Define, (Lib-) Sub, (Lib-) Function)
  - when typing a Sub/Function : information on their passed parameters are shown
  - "Scan Global Variables" button in the Parameter Window : now also global arrays are shown in the Info Window
  - Autocomplete now also at :
    - #INCLUDE together with include filenames, which fit to the selected ADwin- system
    - "Reserved Keywords"
    - many "Codesnippets"
  - now the Process Window also shows, whether the process code contains Debug- / Timing- information
  - printing of a code "selection" is now possible
  - further diverse improvements and bugfixes
- ADbasic 5 compiler V5.00.07 , TiCoBasic compiler V1.02.06 Beta :
  - diverse improvements and bugfixes among other things at Timing Analyser (T9,T10)
- ADbasic / TiCoBasic include / library files :
  - ADwinPro2.inc : support of the new module : Pro II-Aln-F-8/16
  - several .inc files : bugfix at : P2\_Read\_Msg\_Con(), Set\_TiCo\_RingBuffer()
  - FFT.Li\* : bugfix at : FFT(), FFT\_INIT() (only if several processes, only T11)
- ADwin driver (ADwin32.DLL) : now up to 50 TCP/IP Devices can be used (before: 30)



- Developer software :
  - C - driver : TiCoLoadBin (= sample program for loading TiCo binary files)
  - DASyLab driver : new help file does work now also on Vista
  - Agilent VEE : sample programs revised, new : Bas\_Dmo6.vee
- ADtools V5.13 : diverse improvements and bugfixes
- ADEthFlash V3.8 : bootloader now also accepts \*11c.BTL (= ADsim) files
- ADpro V5.4.3 : support of : Pro II-AIn-F-8/16
- Profibus : V2.16 : updated : Generic Station Description file (for Gold II and PRO II) : HMSB1811.gsd

**most important features of version 5.00.05.10 compared to version 5.00.02.01 :**  
(Release date : 12.01.2009)

- ADbasic 5 user interface V5.0.5.10 , TiCoBasic user interface V1.2.5.10 Beta :
  - new : automatic source code formatting (= "Smart format")
  - new : formatting : "Align comments after source code"
  - new : additional frequency display of the current process
  - further diverse improvements and bugfixes
- ADbasic 5 compiler V5.00.05. , TiCoBasic compiler V1.02.03. Beta :
  - better syntax checking at the preprocessor
  - diverse improvements and bugfixes among other things at libraries and in Debug Mode
- ADbasic / TiCoBasic include / library files :
  - ADwinPro2.inc, DIO32TiCo.inc : edge output FIFO for DIO-32-TiCo Rev E03
  - ADwinGoldII.inc, GoldIITiCo.inc : new: Digin(); new option: Gold II-Storage-16 (16 GB flash memory)
  - ADwinGoldIII.inc : new: SEQ\_READ8(), SEQ\_READ16(); bugfix: Profibus
  - String.Li\* : bugfix at function LNGTOSTR : inaccuracies at very big values
- ADwin driver (ADwin32.DLL) : bugfix at Enet at GetData() (only if network timeout)
- Developer software :
  - ADwinActiveX V 3.0.0.3 :
    - improved error handling at diverse functions
    - bugfix : memory problem at GetData\_String() and at Get\_FPar\_Block\_Double()
- ADconfig V3.18 : bugfix : occasional problem at "Scan AEI"  
now also 00-22-71-XX-XX-XX is selectable as default MAC address range
- ADtools V5.10 : TButton : new option : "Close all ADtools"  
TButton : new option : transfer data from a file to a DATA  
TParFPar : bugfix : at importing of comments
- ADpro V5.4.2 : minor changes
- ADlog V1.0.45.3 :
  - new processes for Pro II-AIn-32/18 (16 and 32 channels)
  - new: "Moving X-Axis" (= softscrolling of the X-Axis at slow sample rates)
  - bugfix at drawing of several windows, bugfix at configuration with several windows
  - diverse improvements
- Profibus : new Generic Station Description file (for Gold II and PRO II) : HMSB1811.gsd

**most important features of version 5.00.02.01 compared to version 5.00.00.01 :**  
(Release date : 17.06.2008)

- ADbasic 5 user interface V5.0.2.0 :
  - improved operator guidance at the useage of libraries
  - bugfix at : Parameter Scan, 64-bit Windows operating systems
- TiCoBasic V1.2.2 Beta : diverse improvements and bugfixes
- ADbasic / TiCoBasic include files :
  - ADwinGoldII.inc : Profibus support and diverse improvements
  - GoldIITiCo.inc : Gold II supports now also TiCo
  - ADwinPro1.inc, ADwPDIO.inc : bugfix at DIGOUT
  - ADwinPro2.inc : - the new module Pro II-PROFI-SL is now supported  
- bugfix at P2\_BURST\_INIT
  - AInTiCo.inc : the following new modules are now supported :  
- Pro II AIN 32/18-D-TiCo  
- Pro II AIN 8/18-L2-TiCo
- ADPro V5.4.1 :
  - the TiCo on a module is stopped, and again started on closing of the window

- support of : PRO II-CNT-D/-T/-I and all Pro I and Pro II-CAN-modules
- diverse improvements and bugfixes : problem fixed at 64-bit Windows operating systems
- ADlog V1.0.44.0 :
  - diverse improvements in the user interface and diverse bugfixes
  - moving average filter : "Values count" now up to 10000
- Setup.exe (V 5.0.0.2) :
  - bugfix : compiler was not found, if ADwin-software was not installed to C:\ADwin
  - faster startup of the ADbasic 5 user interface caused by the useage of NGEN
- JAVA V1.2.2 :
  - multiple threads can now access the same ADwinDevice-Object („Thread safety“)

### most important features of version 5.00.00.01 compared to version 4.20.10.05 :

(Release date : 02.04.2008)

- TiCoBasic V1.2.1 Beta : diverse improvements and bugfixes
- ADbasic 5 V5.0.0.0 :
  - totally new user interface (see chapter "News in ADbasic 5" in the ADbasic help)
  - bugfix at : MEMCPY , calculations with the constant 0 , libraries
  - .NET-Framework 2.0 is now required
- ADbasic include files :
  - ADwinGoldII.inc : Gold II is supported
  - ADwinPRO2.inc : the following new modules are now supported :
    - PRO II-CAN-2 , PRO II-CAN-2-LS
    - PRO II-LIN-2
    - PRO II-RSx-2 , PRO II-RSx-4
    - PRO II-PWM 16 , PRO II-PWM-16-I
    - PRO II-CNT-D, PRO II-CNT-T, PRO II-CNT-I
    - PRO II-TRA-16
- ADwin driver (ADwin32.DLL) : bugfix at T11 at GetData () (only if count > 22.000.000)
- Developer software :
  - Matlab driver : now Matlab version 7.6 (R2008a) is supported ; Processor\_Type now also for T10, T11
- ADconfig V3.16 : bugfix : visible / invisible window at „Configure AEI“
- ADPro V5.4.0 :
  - support of : PRO II-DIO-32, PRO II-TRA-16, PRO II-OPT-16, PRO II-RSx-2, PRO II-RSx-4
  - .NET-Framework 2.0 is now required
- Pro-Storage V1.13 : bugfixes ; the firmware version number is now displayed
- ADlog V1.0.42.0 :
  - Gold II is supported
  - setting of the Samplerate was improved
- Fieldbus / Profibus : new file : 321-2932-HMS\_1811.gsd
- Setup.exe (V 5.0.0.1) :
  - automatic deinstallation of an already installed ADwin-software
  - check if the Microsoft (R) .NET Framework 2.0 is installed
- One-Click-Install.bat (V1.0 Beta) : alternative installation of the ADwin Software via command line

### most important features of version 4.20.10.05 compared to version 4.20.10.00 :

(Release date : 27.07.2007)

- TiCoBasic V1.1.02 Beta : diverse bugfixes ; new : RINGBUFFER
- ADtools V5.7 : new : TGraphTiCo
- ADbasic include files :
  - ADwinL16.inc : bugfix : SEQ\_INIT () ; new (for CAN) : READ\_MSG\_CON ()
  - ADwinPRO1.inc, ADwPEXT.inc, ADwGCAN.inc : new (for CAN) : READ\_MSG\_CON ()
  - ADwinPRO2.inc : Pro II-DIO-32 Rev. E is now supported
- Developer software :
  - Matlab driver : now also Matlab version 7.4 (R2007a) is supported ;  
"Standalone Applications" (EXE) can be created
  - DASYLab driver : new : support of DASYLab (version 7 , 8 and 9)
  - Testpoint driver : Realtime Object 1.4.2 : new action : Fifo Full
- ADlog V1.0.41.0 :
  - measurement processes for Pro, Pro II, Gold and Light-16 were optimized ; L16\_MODE for Light-16 Rev.B

**most important features of version 4.20.10.00 compared to version 4.20.08.02 :**  
(Release date : 20.03.2007)

- TiCobasic V1.1.01 : Real-Time development tool for TiCo processors  
(The TiCo-processor is a standalone, free programmable add-on processor, which is currently used in certain *ADwin-Pro II*-modules)
- ADbasic V4.20.10 :
  - Windows Vista is supported (new HTML Help system)
  - bugfix at : `CASEELSE`
- ADwin operating system (ADwin11.BTL) :
  - bugfix: occasional problem caused by PC communication
  - bugfix: occasional problem on starting several processes
- ADbasic include files :
  - `ADwPDIO.inc`, `ADwinPRO1.inc` : bugfix at `PWM_ENABLE`
  - `ADwPEXT.inc`, `ADwinPRO1.inc` : bugfix at Profibus, Interbus
- Developer software :
  - Delphi driver : bugfix at `Process_Status()`
- ADconfig V3.13 : support of Windows Vista
- ADtools V5.7 : :
  - Windows Vista is supported (new HTML Help system)
  - bugfix at `TButton`, `TGraph`, `TLED`
- ADEthFlash V3.7 : support of Windows Vista
- ADPro V5.3.2 :
  - SSI-Interface of CO4-D modules is supported
  - the four counters of CO4 modules are supported
  - backup and restore of calibration data (modules `Aln-F8/18`, `Aln-F8/14`, `Aln-8/18` and `Aln-32/18`)
- ADlog V1.0.40.2 :
  - Windows Vista is supported (new HTML Help system)
  - bugfix : occasional problem on recording in Diadem-format
- Setup.exe V4.7 : installs current versions of the "Adobe Reader"
- Linux, MAC OS : SciLab is now supported

**most important features of version 4.20.08.02 compared to version 4.20.05.07 :**  
(Release date : 16.11.2006)

- ADbasic V4.20.08 :
  - bugfixes at : `libraries`, `STRINGS`, `SHIFT_LEFT`, `SELECTCASE` und `MEMCPY`
  - bugfix at access to Pro-II bus
  - bugfix at programcode located in `DRAM_EXTERN` (only T11)
  - bugfix (at T9 and T10) on calculation of constants (  $1 / \text{const.}$  )
- ADwin operating system (ADwin11.BTL) :
  - bugfix: occasional damage of low prioritized processes caused by PC communication
- ADwin operating system (ADwin10.BTL) :
  - bugfix at the PC communication functions `Fifo_Full`, `Fifo_Empty`, `Fifo_Clear`
  - bugfix at code in `LOWINIT` at externally controlled processes
  - bugfix at : `TAN`
- ADbasic include files :
  - `ADwinPRO1.inc` : LS-Bus support (T11)
  - `ADwPEXT.inc` : LS-Bus support (T9 und T10)
  - `ADwL16.inc` : LS-Bus bugfix and optimized
- Developer software :
  - Labview driver V2.2 :
    - changes because compatibility to Windows / Linux / Mac OS
- ADconfig V3.9 :
  - Web Interface can be started from the Scan- window
  - „Ping“ can be executed
  - bugfix : it was possible to create a duplicate Device No ( at Edit : USB/Link )
- ADPro V5.2.2510 :
  - LS-Bus- module is supported
  - calibration of the modules `Aln-F8/18`, `Aln-8/18` and `Aln-32/18`

- diverse improvements and bugfixes
- ADlog V1.0.37.1 :
  - number of points per line increased from 10000 to 20000
  - higher performance at lower CPU-load
- Linux, MAC OS :
  - ADbasic- compiler V4.20.07.00 (only for Linux)
  - Linux / Mac-library ( = shared library) V3.0.449 :
    - support of Mac OS X 10.4 for ADwin-systems with Ethernet-interface
  - Labview driver V2.2 (Linux and MAC)
  - numerous functional improvements

**most important features of version 4.20.05.07 compared to version 4.20.04.04 :**  
(Release date : 06.09.2006)

- ADbasic V4.20.05 :
  - bugfixes at: MEMCPY, SELECTCASE (only at CASE 0)
  - bugfix on opening of ADbasic project files ( \*.ABP)
  - bugfix at instructions for the modules Pro-II-AOut- 8/16 and Pro-II-Aln-F-8/14
  - occasional problem with access to Pro-II bus
- ADbasic include files :
  - ADwinPRO2.inc : bugfix at the modules Aln-8/18 and Aln-32/18  
(concerns the instructions : P2\_SEQ\_INIT and P2\_BURST\_READ\_INDEX )
  - ADwinPRO1.inc : new : TC\_READ\_B
  - ADwPEXT.inc : new : TC\_READ\_B
  - ADwPAD.inc : bugfix for T10 at : READ\_ADCF8, READ\_ADCF8\_PACKED
  - ADwL16.inc : new : support of the module HSM-24V (via LS-Bus)
- Developer software :
  - examples for Excel driver (ActiveX and Visual Basic)
  - SciLab V1.03.00 : (on the CD-Rom for the first time)
  - Matlab : warning "... case-sensitive match for 'adlab' ..." fixed
- ADPro V5.2.2406 : diverse improvements
- ADlog V1.0.36 :
  - new : processes and configurations for Pro-II modules
  - diverse improvements

**most important features of version 4.20.04.04 compared to version 4.20.03.07 :**  
(Release date : 17.05.2006)

- ADbasic V4.20.04 :
  - bugfixes at: libraries, strings, MEMCPY, SHIFT\_RIGHT, SHIFT\_LEFT
  - bugfix at programcode located in DRAM\_EXTERN (only T11)
  - bugfix at optimization level 2 ( only T9 and T10 )
  - bugfix at powerfunction ( only at ^2 or ^3 )
- ADwin11.BTL :
  - bugfix at SetData at certain values of Startindex and Count
  - bugfix at GetFifo (only at high prioritized processes with long lasting EVENT section)
- ADbasic include files :
  - ADwinPRO2.inc : new : support of the modules Aln-8/18, Aln-32/18 and AOut-8/16 (Rev. E)  
(new instructions : P2\_ADC... , P2\_SEQ... , P2\_DAC... , P2\_DAC4\_PACKED, ...)
  - ADwinPRO1.inc as well as ADwPEXT.inc : new instr. : TCJ\_DIG\_TO\_TEMP, TCK\_DIG\_TO\_TEMP, PT100\_DIG\_TO\_TEMP, PT100\_DIG\_TO\_R
- ADwin driver (ADwin32.DLL) : bugfix at Get\_Digout() and Set\_Digout()
- ADtools : V5.5 : :
  - TGraph : new : FFT
  - now each tool can be moved by ADtools.exe and brought "on top" of the screen
  - new : ADstartpanel.exe
  - diverse bugfixes and improvements
- ADEthFlash V3.4 : new : button for Bootloader dis-/enable (from ENET firmware 2.66 on)
- ADlog V1.0.33 :
  - Start/Stop Communication Buttons are now located in the toolbar of the main window
  - math. functions improved

- diverse improvements

### most important features of version 4.20.03.07 compared to version 4.20.03.00 :

(Release date : 30.03.2006)

- ADbasic include files :
  - ADwinPRO2.inc : new : support of the module Pro-Ain-F-8/14 (Rev. E)  
bugfix at CPU\_EVENT\_CONFIG()
  - ADwL16.inc : new instructions for Rev. B : SEQ\_READ(), SEQ\_INIT(), L16\_MODE()  
only DIO\_02 : SSI\_...()  
only DIO\_02 or DIO\_03 : DIGIN\_LONG\_E(), DIGOUT\_LONG\_E()
- ADwinTCPserver V1.7.0 : optimisation of data throughput
- Pro-Storage : Pro-Storage\_MP.BAS : bugfix at writing into a file
- L16Calib.exe V2.0 : now also suitable for calibration of the new L16 Rev. B
- ADconfig V3.5 : bugfixes at DHCP
- ADlog V1.0.32 :
  - new : math. functions : Addition, Substraction
  - new : two configurations with 16 channels for ADwin Gold
  - improved Zoom at several Y-axis
  - Recording mode : enhanced triggermodes
  - Recording mode : now also header line (with the names of the channels)

### most important features of version 4.20.03.00 compared to version 4.20.01.08 :

- ADbasic V4.20.01 , ADwin11.BTL :
  - Conditional compilation with ADWIN\_SYTEM ( = ADWIN\_GOLD, ADWIN\_L16, ADWIN\_PRO )
  - names of variables and #DEFINE may not contain special characters (+-\*/^.;&|%\$\$#) any longer
  - bugfix at libraries at T11
  - bugfix at programcode located in DRAM\_EXTERN (only T11)
  - bugfix at concatenation of strings
  - bugfix at setting of the Low Priority Level
  - bugfix at #DEFINE, which is used in a SUB or a FUNCTION
- ADbasic include files :
  - ADwpAD.inc : new : READ\_ADCF4/8, READ\_ADCF4/8\_PACKED
  - ADwinPRO2.inc : new : support of the module Pro-Ain-F-8/18
- ADbasic libraries :
  - String.Li\* : bugfix at function VALF : Exponent was ignored, if it contained a "+" character
- ADtools : TProcess V5.3 supports the new Debug- Mode messages of the Pro-II-Bus
- ADPro V5.1.2153 : diverse improvements
- ADlog V1.0.27 : diverse improvements

### most important features of version 4.20.01.08 compared to version 4.01.19.00 :

- ADbasic version 4.20.01 , ADwin11.BTL :
  - **support of the new processor T11** (with 300 MHz , more details : see document :  
C:\ADwin\Documents\Hardware\ADwin-PRO\english\Pro\_T11\_eng.pdf )
  - new instructions (only T11) : - START\_PROCESS\_DELAYED, RESTART\_PROCESS, MEMCPY,  
CPU\_SLEEP, P1\_SLEEP, P2\_SLEEP
  - maximum codesize (per process) is 1.000.000 Byte when using T11 processor
  - bugfix at Shift\_Left
  - bugfix at string assignment and string addition (only when using a T10 processor)
  - Parameter Scan did not work for Par\_80, FPar\_80
  - now a warning is generated, if the operator "-" is directly following after the operators "/" or "^".
- ADbasic include files :
  - ADwinPRO1.inc : new file for processor T11 (for well-known bus Pro I)
  - ADwinPRO2.inc : new file for processor T11 (for new Bus Pro II)  
new instructions : CPU\_EVENT\_CONFIG, CPU\_DIGIN, CPU\_DIG\_IO\_CONFIG, CPU\_DIGOUT
  - ADwinPRO\_ALL.inc : new universal include file for all processors T4 to T11
- ADbasic libraries :

- String.Li\* : bugfix at functions LNGTOSTR and FLOTOSTR
- FFT.Li\* : optimized version for T11, bugfix at function FFT\_Phase ()
- ADbasic sample programs :
  - new sample programs : Pro-Aln8-14\_Seq.BAS, Pro-Aln8-14.BAS
- ADwin driver bugfixes :
  - occasional problem with SetData function (ENET)
  - occasional loss of PC physical memory on useage of function SetFifo (ENET)
- Developer software :
  - Agilent VEE : sample programs revised, new : Bas\_Dmo7.vee
  - Matlab : ADlab.dll is now located in the directory "C:\ADwin\Developer\Matlab\ADwin"
- ADPro version 5.0.2077 :
  - support of processor T11 ; improved user interface
  - hint : ADpro\_Old has to be used for processors T4 to T8
- ADlog V1.0.24 : diverse improvements ; reworked Online-help
- ADEthFlash V3.3 : new : button for Bootloader dis-/enable (from ENET firmware 2.66 on)
- Setup.exe (version 4.3.0.0) :
  - there is no more check, whether the user is a so-called "Administrator", but only, whether the user is a member of the Administrators' group
  - check if Microsoft (R) .NET Framework 1.1 is installed
- JAVA V1.2 :
  - support of processor T11
  - new methods : Set\_Processdelay, Get\_Processdelay
  - the max. data transmission rate at GetData was increased (from ENET firmware 2.66 on)

#### **most important features of version 4.01.19.00 compared to version 4.01.17.01 :**

- ADbasic version 4.01.19 :
  - bugfix at : "Compiler Options" -> "System" -> "ADwin-GOLD"
- ADlog V1.0.21 : diverse improvements ; reworked Online-help

#### **most important features of version 4.01.17.01 compared to version 4.01.15.00 :**

- ADbasic version 4.01.17 :
  - display of line and column number in the "Status Bar"
  - new ADbasic systemvariable PROCESSDELAY (identical with GLOBALDELAY)
  - bugfixes at #defines, #endif and optimization level 2
  - bugfix at : SIN, COS, EXP, LOG, LN, SQRT, TAN, ARCSIN, ARCCOS, ARCTAN
  - bugfix at : variable ^ constant ^ constant
  - bugfix : Mark Controlblock did not work under Win XP
- ADbasic include files :
  - ADwpext.inc : support of the new thermocouple- module TC-8 ISO
- ADbasic library files :
  - Sting.Li9 / .LiA : bugfix at STRMID, STRLEFT, STRRIGHT, FLOTOSTR
- ADwin driver (ADwin32.DLL) :
  - max. data transmission rate at GetData was increased from 4.8 to 6 Mbyte/s (from ENET firmware 2.66 on)
  - bugfix : write permissions are no longer needed in the root- directory on the fixed disk ( C:\ )
  - bugfix : now also dots (= periods) are allowed in the path of the ADwin?.BTL
- Developer software :
  - ADwinActiveX V 3.0.0.1 :
    - improved error handling now supports also Multi-Threading
    - bugfix at Set\_Language()
  - Labview driver :
    - improved error handling now supports also Labviews Multi-Threading
    - the DLL-calls were made independent from the user-interface; therefore the user-interface is operable even during long-lasting DLL-calls (e.g. if ADwin-system is not accessible)
    - calling convention of the VI's is no longer "as caller" but "standard" , therefore possibly higher speed
    - from now on the current driver does only support Labview versions >= 6.0
    - bugfix : at GetData\_String
  - Matlab driver :
    - new : Get\_Last\_Error\_Text, String\_Length, Get/SetData\_String, Get\_DeviceNo, Show\_Errors
    - Online-help : 'help ADwin' can now be called in the 'Command Window'
  - Testpoint driver : Realtime Object 1.4.1 :

- new action : Read Fifo Int32 : necessary for integer numbers greater than 16777215 (= 24-bit)
  - Read Parameter All and Read Parameter Block are now returning signed values
- ADconfig V3.0 :
  - completely new designed and clearly arranged user interface
  - scanning of ADwin-systems (Scan\_AEI) is now integrated into ADconfig
  - context- sensitive Online- help
- ADEthFlash V3.2 as well as ADtools V5.1 : adaption for future processors
- ADlog V1.0.19 : diverse improvements
- JAVA V1.1 : bugfixes

### most important features of version 4.01.15.00 compared to version 4.01.13.00 :

- ADbasic version 4.01.15 :
  - new samples : RS232\_send\_string.BAS, RS232\_receive\_string.BAS
- ADwin operating system :
  - ADwin10.BTL : bugfix at ADBasic instruction START\_PROCESS()
  - ADwin9.BTM : issue with Link- Bootloader fixed
- Developer Software :
  - Delphi driver : bugfix : wrong return values at function ADBoot() (at processors T2, T4, T5, T8) as well as function Processor\_Type() (at T5 and T9)
  - Matlab driver : bugfix: function 'Get\_Globaldelay' : value was taken from processnumber+1
  - C - driver : sample programs revised
  - Testpoint driver : systemobject 1.3.8 :
    - new option „Load Standardprocesses“ (i.e. loading of ADwins9.btl is possible)
  - ADwinActiveX V 2.0.0.11 :
    - **New** : sample programs for VB.NET and C#.Net
    - Intouch sample programs adapted to Intouch 9.0
  - **New** : GUI\_development.pdf : advice for developers on the drivers and samples of the different development environments
- ADwinTCPserver V1.6.3 :
  - Bugfix : big data throughput caused a timeout at 'SetData'
  - now several PCs can access an ADwin-system via the ADwinTCPserver
  - Help- file completely revised
- ADEthFlash V3.0 : Online info about EEPROM Support now also for ADwin Ethernet interface 2
- ADtools V5.0 : at all ADtools : bugfix at the DeviceNo (only if last used DeviceNo does not exist any more)
  - TPoti: the Focus-color and the NonFocus-color is now selectable
  - ADtools.exe : the recent used path is remembered on saving and opening \*.def files
- ADlog V1.0.11 : datalogging software for ADwin systems
  - ADbasic measurement processes reworked
  - higher performance of the graphic display
  - X-axis can be shown in a date / time formatted manner
  - diverse bugfixes and improvements
  - Help- file now also in English
- **Linux** : completely reworked : ADbasic- compiler V4.01.11 and driver V3.0.446 (now also ENET support)

### most important features of version 4.01.13.00 compared to version 4.01.10.02 :

- ADbasic version 4.01.13 :
  - bugfix : at SHIFT\_LEFT, SHIFT\_RIGHT, ABS, SIN, COS, EXP, LOG, LN, SQRT, TAN if one of these functions uses itself as a function parameter
  - bugfix : accuracy of calculations at division by a constant
  - bugfix : printing in „landscape“- orientation
  - bugfix : at optimization level 2 on calculation with constant expressions
  - new Compiler Option : Remember Device No.
- ADbasic Include files :
  - ADwpio.inc : new subroutine : RTC\_GET()
  - ADwpAD.inc : bugfix : BURST\_CREAD ()
  - ADwpext.inc : bugfixes : RS\_RESET(), WRITE\_FIFO(), GET\_LINE\_STATUS()
  - ADwGCAN.inc : new file for CAN-expansion at ADwin-GOLD
  - PRO-STORAGE\_SP.inc : bugfix : MEDIA\_RD\_...

- ADwin driver bugfixes :
  - occasional problem with SetData function on ENET – fixed only together with firmware >= 2.53 and 2.64 respectively
  - occasional problem with GetFifo function (ENET)
- Developer Software : Testpoint driver :
  - Realtime Object 1.3.8 : bugfix : Read Parameter returned only unsigned values.
  - A/D Object 1.3.5 : bugfix : at Sample A/D Action (all 16-bit values < 32768 were miscalculated)
- ADEthFlash V2.9 : EEprom Support now also for ADwin Ethernet interface 2
- ADtools V4.9 : diverse buxfixes at TGraph, TDigit, TPoti, TPar\_Fpar
  - TGraph : new : now up to 16 analog channels and 32 digital channels
  - TGraph : new : importing of data from a textfile
  - TGraph : new : timer can be disabled by pressing the SHIFT- key during startup
  - TGraph : new : values can be edited by double-clicking in the Textwindow
  - TProcess : new : ADbasic Debug Errors are displayed
  - TProcess : new : PM, DM, DX and Codesize are displayed
  - TProcess : new : Globaldelay can be set also in frequency units (Hz, kHz, MHz)
  - TPar\_Fpar : new : comments can be imported from ADbasic #defines.
- ADlog V1.0 : datalogging software for ADwin systems. **(on the CD-Rom for the first time)**
- **JAVA** V1.0 : JAVA- interface for ADwin-systems with Ethernet interface **(on the CD-Rom for the first time)**

#### **most important features of version 4.01.10.02 compared to version 4.01.01.21 :**

- ADbasic version 4.01.10 :
  - bugfix : if the same Fifo is used several times within an expression
  - diverse bugfixes at optimization level 2 (e. g. at :Digin() )
  - bugfix : at integer expression VARIABLE \* CONST / CONST or VARIABLE / CONST \* CONST
  - now more than 128 characters are allowed for file-/pathname
  - bugfix : occasional problem with libraries
  - bugfix : on task-switch among several low prioritized processes
  - improved checking of the function parameters at :Fifo\_Full(), Fifo\_Empty(), Fifo\_Clear()
  - improved checking of the file, which is passed to the IMPORT instruction
- ADwin operating system (ADwin9.BTL, ADwinS9.BTL, ADwin10.BTL) :
  - bugfixes at the communication process and at the process-scheduling of low priority processes
- Developer Software :
  - Matlab driver : new function Data\_Length()
  - C - driver : sample programs revised
  - ADwinActiveX V 2.0.0.10 : bugfix at function "Boot": If property Exception\_Enable is used, then no exception was initiated.
- Pro-Storage V1.8 : bugfixes ; now also FLOAT can be stored/loaded

#### **most important features of version 4.01.01.21 compared to version 4.01.0106 :**

- ADbasic library files : new : FFT library now also for T10 (FFT.Lia)
- ADbasic include files :
  - ADwpdio.inc : new : instructions for the COMP16 module ; bugfix on Pro-Storage (RTC)
  - ADwpext.inc : corrected : SET\_RS ()
  - ADwpda.inc : new instructions for memory option (for example Pro-Aout-4/16-M2)
- ADwin driver bugfixes and optimizations :
  - occasional problem with SetData function on ENET
  - occasional problem with access from several PCs to one ADwin-system (ENET)
  - better usage of the transmission bandwith on simultaneous access from one PC to several ADwin-systems with the same TCP/IP port.
  - ENET optimizations at SetFifo function , especially active with Win9X/ME PCs
- ADwin operating system (ADwin9.BTL, ADwinS9.BTL, ADwin10.BTL) :
  - Bugfix : on starting a second process
- Developer Software :
  - VisualBasic driver : return value of the function Get\_Globaldelay
  - Testpoint driver : A/D Objekt now also for GOLD and L16
  - Labview driver : Acquire.vi now also for GOLD and L16
  - InTouch driver : sample programs are on the CD for the first time



- Matlab driver : some functions returned a duplicate result
- GoldCalib V1.0 this is the calibration program for ADwin-Gold-ENET/USB
- Pro-Storage V1.6 : now also module addresses > 99
- ADEthFlash V2.2 : supports now also firmware 2.52

#### most important features of version 4.01.0106 compared to version 4.00.0600 :

- ADbasic version 4.01.01 :
  - Mark Controlblock now also for SELECTCASE
  - new functions : CAST\_FLOATTOLONG(), CAST\_LONGTOFLOAT()
  - bugfixes :
    - at optimization level 2
    - constant -2147483648 was not accepted
    - problem with Fifo (Float) as LValue
    - Open All Includes did not work in certain cases
    - Debugmode did not work in Lowlnit section
    - problem on handling with strings
    - on ADC instruction if the first function parameter is not a constant
    - error on nested libraries with T10 if array is in external memory (DX)
- ADbasic include files :
  - ADwinpro.inc : new function : CPU\_DIGIN()
  - ADwpdio.inc : new: Pro-Storage : PCMCIA- memory and real-time clock
- Developer Software :
  - Testpoint driver : support of the T10 processor
  - Labview driver : paths adapted for Labview 7 and sample programs
  - C - driver : reworked
- ADEthFlash V2.1 : support of ADwin Ethernet interface 2

#### most important features of version 4.00.0600 compared to version 4.00.0500 :

- ADbasic version 4.00.06 :
  - bugfix : old incompatible libraries are now rejected
  - FFT- library newly generated with ADbasic 4
- ADconfig V2.7 :
  - bugfix (problem, if all Device\_No have been deleted)
- ADPro Version 4.1 :
  - support of the new Pro-AIN 8/14, Pro-AIN-32/14, Pro-AIn-8/16 Rev C, Pro-AIn-32/16 Rev C

#### most important features of version 4.00.0500 compared to version 3.20.1200 :

- ADbasic version 4.00.05 :
  - T10 Processor (80 MHz) is now supported (\*1)
  - Projectmanagement : A projectfile can be created, which is able to open several ADbasic files (\*1)
  - new optimisations for T10 : up to 10 % less program memory (PM) needed, compared with the T9
  - support also of the ADwin-Gold-ENET and ADwin-Gold-USB (both Rev. B1 or greater)
  - for ADwin-Gold : multiplexer settling time changed from 1,5 to 2,5 µs for theADC12 instruction. Programs with the ADC12 instruction now need more CPU- time and eventually have to be reworked.
  - Load Standardprocesses : If "No" => approx. 11 kByte bigger free program memory (PM)
  - Default Settings for Directory (BTL, INC, LIB) now also for several Users under NT, W2K, XP
  - commandline functionality
  - improved user interface :
    - all 80 PARs/FPARs in Parameter window
    - simultaneous control over all 10 processes in the "Processes Window" (\*1)
    - new button: "Enable cyclic update"
    - new button: "Parameter Scan" (\*1)
    - system (Gold, Pro, Light-16, ..) is now selectable. (= replacement for: "16 bit resolution")
    - shortcuts für Boot, Compile, Start, Stop, Parameter Scan, (Un-)Comment Block, In-/Outdent
    - permanent display of the options :
      - Process X delay (= former called : (Global-) Delay)
      - Initial Processdelay (= former called : (Global-) Delay)

- Device No. , Eventsource , Priority , Process number , Optimize Level
- new instructions :
  - Sleep()
  - AT DM\_LOCAL, AT DRAM\_EXTERN can optionally be specified on BYREF parameters of libraries (for the reason of code optimisation)
  - #IF PROZESSOR = T10 THEN
- bugfixes :
  - #DEFINE now also allowed on strings
  - at powerfunction ( ^ ), at optimisation level 2, at IMPORT instruction
- revised editions of ADbasic Manual and Tutorial
- revised edition of context- sensitive ADbasic Online Help

\*1 = a new ADbasic4 license is necessary for this feature

- ADbasic include files :
  - Adapted for processor T10 : ADwpAD.inc, ADwpDA.inc, ADwpDIO.inc, ADwinPro.inc, ADwpEXT.inc
  - ADwpAD.inc : new for Pro-AIN-F-X/14 (Rev B2) : BURST\_CSTART(), BURST\_CREAD(), SYNC\_MODE()
    - new instructions for sequence control : SEQ\_...()
    - support of new Pro- AIN 8/14 , Pro- AIN 32/14
  - ADWgcnt.inc : new for ADwin-Gold-ENET/-USB (Rev. B1 or greater) with CO1 Option :
    - CNT\_GETSTATUS(), CNT\_RESETSTATUS(), CNT\_SE\_DIFF()
- ADbasic Library files : new : ADwpEXT\_lib.Li9, ADwpEXT\_lib.LiA
- ADwin driver bugfixes :
  - occasional problem (errorcode 2000) with SetFifo function on ENET
  - occasional problem with path-/filename with function ADwin\_Debug\_Mode\_On
- ADwin operating system (ADwin9.BTL, ADwinS9.BTL) :
  - ADwinS9.BTL : approx. 11 kByte bigger free program memory (PM)
- Developer Software :
  - Labview driver : improvements on Stopdac, Startdac, Acquire, Process\_Status
  - Delphi Treiber : improvements on Get\_last\_error\_text
- ADtools V4.6 : TProcess : Processor T10 is now supported ; bugfixes at TPoti and TPar\_FPar ; improvements at TGraph
- ADEthFlash V2.0 : Processor T10 is now supported
- ADPro Version 4.0 : Processor T10 is now supported
- ADtest V1.7 : (settings are now stored in the registry in location „HKEY\_CURRENT\_USER“)
- ADwinTCPIPserver V1.2 : on errors, now errorcodes are displayed
- ADbootload V3.4 : bugfix

#### most important features of this version compared to version 3.20.0804 :

- ADbasic version 3.20.12 :
  - Bugfixes on libraries and Sleep instruction in optimization level 2
  - Bugfix on sin-, cos- and powerfunction ( ^ ) at processes with low priority
- ADwin driver :
  - improved USB driver
- ADwin operating system (ADwin9.BTL) :
  - Bugfix on Booting the ADwin-Pro system (undefined behaviour)
- Developer Software :
  - Matlab driver : (license key for this is required).
- ADtest V1.6 : (settings are now stored in the registry in location „HKEY\_CURRENT\_USER“)
- ADwinTCPIPserver V1.1 : (for the first time on the ADwin-CD)

#### most important features of this version compared to version 3.20.0703 :

- ADbasic version 3.20.08 :
  - Bugfixes on libraries and on calculations with signed constants
  - The default setting for “16 Bit resolution” is now “Yes”
- ADbasic include files improved : ADwL16.inc, ADwgcnt.inc, ADwpad.inc, ADwpDIO.inc ( new: instructions for Pro-CO4, Pro-DIO-32 (Rev B) )
- ADbasic example “Bas\_Dmo7.bas” improved

- FFT– library available for the first time in : C:\ADwin\ADbasic3\lib
- ADwin driver improvements :
  - On using the functions GetData\_Float / GetFifo\_Float / GetFPar\_All , possibly existing invalid bit patterns (e.g. because of not initialized data) are now set to Q-NAN
- Developer Software :
  - improvements in Labview and C – driver
  - **ADwinActiveX V 2.0** available for the first time in : C:\ADwin\Developer\ActiveX  
Therefore for the first time a driver for the developer environment :
    - **Visual Studio .NET**: C#, VC++ 7, VB.NET
 As well as for the developer environments :
    - Visual C++ 6, Visual Basic 6 , Borland Delphi , Borland C-Builder , Agilent VEE, etc.
- ADPro Version 2.9 : The revision identifier is now displayed for all (i.e. also old) modules
- Windows Installer Engine version 2.0 :
  - The new engine version will be installed automatically, if necessary.
  - Problem on deinstalling older versions (Error 1316) is now fixed
  - Service pack 6 is now required for WinNT (SP6 is available on CD in directory : NT4\_SP6a).

### most important features of this version compared to version 3.20.0109 :

- ADbasic version 3.20.07 :
  - Bugfixes on strings, libraries, ADC12, optimization level 2, power function (^)
  - Escape sequences for strings
  - Constants are now combined/calculated at compile-time, no longer at runtime. This is valid for all optimization-levels. Advantage : programs are executed faster. But **ATTENTION** : waiting times (e.g. for multiplexer settling time) , which have been implemented by program code containing calculations with constants, are now shorter. They have to be reworked respectively.
- ADbasic include files :
  - ADwpEXT.inc (new instruction because CAN-LS : **GET\_LINE\_STATUS**)
  - ADwL16.inc (for ADwin-L16-DIO1 and ADwin-L16-CO1)
- ADwin driver bugfixes :
  - improved errorhandling for diverse functions
  - improved USB driver (errorhandling)
- ADwin operating system (ADwin9.BTL) :
  - decrease in the influence of the process- timing, which could be caused by :
    - **BEGIN\_CRITICAL\_SECTION** (often used in : ADwin-Pro)
    - or division in a process with low priority
- Developer Software :
  - improvements in Visual Basic, Labview and C - driver
- ADPro Version 2.7 : new : identification/calibration of new module Pro-AIN-F-4/14, Pro-AIN-F-8/14
- L16Calib V1.0 this is the calibration program for ADwin-Light16
- ADconfig V2.2 : (configuring of several Devices is more user friendly now)
- ADtools V4.4 :
  - new : TString ( for displaying and editing of ADbasic- strings)
  - TPar\_FPar : new : individual labelling of each Par / FPar-line
  - Bugfixes
- ADfind\_dll V 1.0 searches for all ADwin- DLL and BTL files, which are stored on the PC

### most important features of this version compared to version 3.20.0101 :

- ADwin driver feature :
  - higher data transfer rates with GetData\_Long, ...\_Float, ...\_String, ...\_Double on ENET, if firmware of the ADwin ENET interface >= 2.5 and if <= 1750 data are transferred from the ADwin- system
- ADwin driver bugfixes :
  - occasional problem (windows- protection fault) with GetData function on networks, which have a lot of traffic
  - occasional problem (wrong errorcode) with SetFifo function on ENET
- ADPro version 2.6 : new : identification of new counter module Pro-CO4
- ADbasic include files :
  - ADwpAD.inc (because of new Pro-AIN-8/16-RB , Pro-AIN-32/16-RB ,  
Pro-AIN-F-4/14, Pro-AIN-F-8/14)
  - ADwpDIO.inc ( new: instructions for Pro-CO4 (and SSI))
- Developer Software :
  - Testpoint driver version 1.3.6 with the following new actions :
    - Get\_Last\_Error

- Read Parameter All, Read Parameter Block
- Labview driver version 2.0 with the following new functions:
  - errorhandling conformable with Labview (error wiring via Error In, Error Out : based on Get\_Last\_Error, Get\_Last\_Error\_Text )
  - Get\_Par\_Block, Get\_FPar\_Block
  - GetData\_String, SetData\_String, String\_Length
  - Process\_Status, Data\_Length, Set\_Globaldelay, Get\_Globaldelay, Set\_Language
- ADEthFlash V1.5 (new : EEprom support)
- ScanAEI V1.2 (new : If DIL-switch 1 is present, the version number is displayed with an appended ".1" )
- ADtools : bugfixes on Tgraph and TProcess
- ADconfig V2.1 : easier user guidance for the configuration of Ethernet

### most important features of this version compared to version 3.00.3011 :

- Window XP support (new USB driver)
- ADbasic version 3.20.01 : new :
  - Libraries (see : ADbasic3.20-lib\_eng.pdf)
  - String functions (see : ADbasic manual : ADbasic3\_eng.pdf)
  - „Syntax Color“ (highlighting of ADbasic keywords, comments, etc.)
  - Autoindent
  - multiple “Undo“ and “Redo“
  - “Open All Includes“ (opens all files, which are included by the #INCLUDE command)
  - “Tabsize“ now adjustable (Default Tabsize = 2 , therefore it may be necessary to check the format of those ADbasic programs, which are using TABs)
  - On right mouseclick :
    - (Un-)Comment Block (changing multiple codelines to comments and vice versa)
    - Indent/Outdent
    - Mark Controlblock (on right mouseclick on a line, which contains IF , ELSE or ENDIF , the whole textblock of the IF – ELSE – ENDIF structure will be highlighted ; the same is also valid for : DO .. UNTIL , FOR .. NEXT )
  - Info window (shows several compiler- error messages and warnings)
  - diverse bugfixes (e.g. at SELECTCASE)
- ADPro version 2.4 : new : calibration function now has adjustable gain; binary input possible; ability to switch between UNI/BIP voltage ranges; identification of new module AIN32/16RB
- ADtest V1.4 : last used Device No. is now saved
- ADconfig V2.0 : diverse improvements, timeout now adjustable with resolution of 100 ms
- ADwin driver :
  - better error handling
  - bugfix at Set\_Fifo ( error occurred only with Ethernet, if Float Data were converted to Long DATA(s) )
  - bugfix at process-scheduling of low priority processes
- Developer Software : Visual Basic , Delphi and C – driver with the following new functions :
  - Get\_Last\_Error, Get\_Last\_Error\_Text
  - Get\_Par\_All, Get\_FPar\_All
  - GetData\_String, SetData\_String, String\_Length
  - Process\_Status, Data\_Length, Set\_Globaldelay, Get\_Globaldelay, Set\_Language
  - etc.
- ADtools V4.1 (new : TFifo and TBin)
- ScanAEI V1.0 (scans all ADwin-Ethernet interfaces, which are located in the same TCP/IP- subnet as the PC )
- Linux : latest driver and (for the first time) XADbasic\_beta (= ADbasic-GUI)

### most important features of this version compared to version 3.00.2735 :

- ADPro version 2.2 : new : calibration function for Rev. B modules
- ADtest V1.3 : now also GOLD and Light-16 is supported ; Info window shows all installed ADwin software packages
- ADconfig version 1.7 : now available : 4-digit Linkaddress
- ADbasic : diverse bugfixes on : DAC- instruction, libraries, external event, integer division

- diverse updates and bugfixes on : ethernet, profibus, ADserver.exe, standard processes, Bootloader (Link), process-timing of low priority processes, communication problem on very big blocktransfer of data under WinNT and Win2000 fixed, problem on starting and stopping of processes under Testpoint fixed
- developer software :
  - Labview driver adapted for Labview 6.0
- for the first time on CD : ADbasic development system and drivers for Linux

**most important features of version 3.00.2735 compared with version 3.00.2733 :**

- ADEthFlash V1.2 (for programming the bootloader and updating the firmware of ADwin-systems with Ethernet interface)
- ADTools V 3.6
- Significant improvement of the transfer rate of ADwin-light-16

**most important features of version 3.00.2733 compared with version 3.00.2332 :**

- support of ADwin-systems with Ethernet interface
- under Win2000 also ADPCMCIA and PCI is now supported.
- under Win2000 the ISA-LINK cards are managed now in the "Device Manager".
- new ADbasic instruction : **SELECTCASE**
- "16 Bit resolution" is now the default setting in the ADbasic Compiler Options
- improvements in the accuracy of calculations with the power- function ( ^ )
- improvements of the functionality and the (transfer rate) performance of USB