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Industrial Real-Time Control and Data Acquisition Systems: **ADwin**

Product Overview



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Product Overview

ADwin-Gold Series

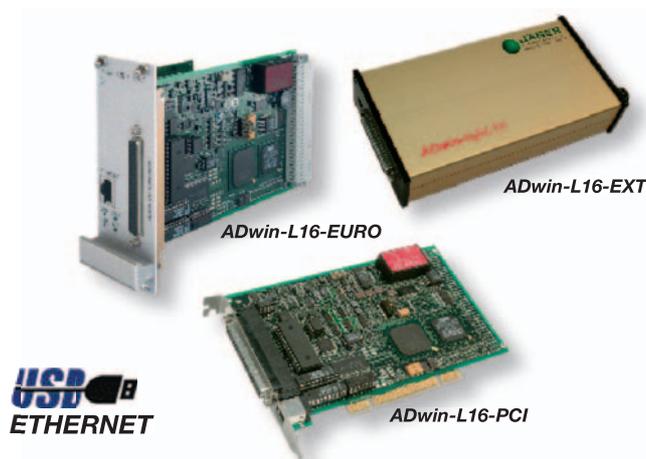
ADwin-Gold	
	System features ADwin-Gold: 2 x 8 analog inputs, $\pm 10V$ multiplexed to 2 x 16-bit ADC (5 μ s) and 2 x 14-bit ADC (0.5 μ s), 2 analog outputs 16-bit DAC (3 μ s), 16 digital inputs, 16 digital outputs D-SUB, 1 trigger input, 1 processor ADSP21062, 32-bit, 40MHz, 256KB int. RAM, 16MB ext. RAM, 2m power supply cable to the desktop computer, compact metal enclosure
ADwin-Gold-ENET	ADwin-Gold with integrated Ethernet interface (10/100 MBit/s), BNC sockets for analog signals
ADwin-Gold-D-ENET	ADwin-Gold with integrated Ethernet interface (10/100 MBit/s), D-SUB sockets for analog signals
ADwin-Gold-USB	ADwin-Gold with integrated USB interface, BNC sockets for analog signals
ADwin-Gold-D-USB	ADwin-Gold with integrated USB interface, D-SUB sockets for analog signals
ADwin-Gold Options (Options for the standard system, later upgrading is not possible)	
ADwin-G-CAN	Option of 2x CAN-BUS, 2x RS232/485, 4x SSI decoder (only available for ADwin-Gold-D) It is recommended to use the memory option ADwin-G-MEM64 with this option.
ADwin-G-CAN-LS	Option of 2x CAN-BUS, Low-Speed, 2x RS232/485, 4x SSI decoder (only available for ADwin-Gold-D) It is recommended to use the memory option ADwin-G-MEM64 with this option.
ADwin-G-CO1	Option of four 32-bit counters, which can individually operate in the following modes: period width measurement, impulse measurement or up/down counters with clock/direction or 4-edge evaluation Input signal: 5 V differential (RS422)
ADwin-G-DA	6 additional analog outputs, 16-bit DACs
ADwin-G-MEM64	Memory expansion from 16MB ext. memory to 64MB and memory expansion from 256KB int. memory to 512KB.
ADwin-G-Boot	Flash EPROM bootloader for stand-alone operation without PC, only in combination with an Ethernet interface
ADwin-G-Mount	DIN-rail installation kit
Accessories	
ADwin-G-Pow	External power supply (12V DC) for the ADwin-Gold (10-35V)



Product Overview

ADwin-light-16 Series

ADwin-light-16 Systems	
	System features ADwin-L16 8 analog inputs $\pm 10V$, 16-bit ADC (10 μ s), 2 analog outputs (16-bit), : 6 (4) digital inputs, 6 digital outputs, 1 trigger input, two 32-bit impulse counters, 1 processor ADSP21062, 32-bit, 40MHz, 256KB int. RAM, 8MB ext. RAM
ADwin-L16-PCI	ADwin-L16 as a PCI plug-in board (1 slot) USB interface to the computer
ADwin-L16-cPCI	ADwin-L16 as a Compact PCI USB interface to the computer
ADwin-L16-EXT	ADwin-L16 in an external industrial enclosure USB interface to the computer
ADwin-L16-EXT-ENET	ADwin-L16 in an external industrial enclosure Ethernet interface (10/100 Mbit/s) to the computer
ADwin-L16-EURO	ADwin-L16 as a Euro-size board, (5HP) USB interface to the computer
ADwin-L16-EURO-ENET	ADwin-L16 as a Euro-size board, (10HP) Ethernet interface (10/100 Mbit/s) to the computer
ADwin-Light-16 Options (Options of the standard system, later upgrading is not possible)	
ADwin-L16-CO1	1 x 32-bit up/down counter with 4-edge evaluation instead of 2 x 32-bit impulse counters Not available with the L16-DIO1 option
ADwin-L16-DIO1 *	Expansion module 1 CAN interface, 32 digital inputs/outputs, configured in groups of 8 bits as inputs or outputs, 2 x 32-bit counters, which can operate in the following modes: period width measurement, impulse measurement or up/down counters with clock/direction or 4-edge evaluation. (not available with the L16-CO1 option)
ADwin-L16-Boot	Flash EPROM bootloader for stand-alone operation without computer, only in combination with the Ethernet interface
ADwin-L16-Mount	DIN-rail installation kit for the ADwin-L16-EXT systems
ADwin-L16-Pow	External power supply (12V DC) for the ADwin-L16 (10 - 18V)
* System dimensions with the L16-Dio1 option: - ADwin-L16-EXT-ENET 226x109x104 mm, ADwin-L16-EXT 226x109x104 mm - ADwin-L16-EURO-ENET 20 HP wide, ADwin-L16-EURO 15 HP wide - ADwin-L16-PCI requires 3 slots	



Product Overview

ADwin-Pro Series

Processor Modules:

ADwin-Pro CPU	
Pro-CPU-T11-ENET	1 processor ADSP, 32-bit, 300MHz, 768KB int. RAM, 256MB ext. RAM, 1 Ethernet interface (10/100Mbit/s) for communication with the computer, 1 trigger input. Very important: ADwin-Pro-II and ADbasic version 4 is necessary.
Pro-CPU-T10-ENET	1 processor ADSP21160, 32-bit, 80MHz, 512KB int. RAM, 128MB ext. RAM, 1 Ethernet interface (10/100Mbit/s) for communication with the computer, 1 trigger input. Very important: ADbasic version 4 is necessary.
Pro-CPU-T9-ENET	1 processor ADSP21062, 32-bit, 40MHz, 256KB int. RAM, 16MB ext. RAM, 1 Ethernet interface (10/100Mbit/s) for communication with the computer, 1 trigger input.
Pro-CPU-T9-USB	1 processor ADSP21062, 32-bit, 40MHz, 256KB int. RAM, 16MB ext. RAM, 1 USB interface for communication with the computer, 1 trigger input.
ADwin-Pro CPU Options (Options of the processor modules, later upgrading is not possible)	
Pro-MEM-T9-64	Memory expansion for the T9 from 16 MB ext. memory to 64 MB and memory expansion from 256 KB int. memory to 512 KB
Pro-Boot	Flash EPROM bootloader for stand-alone operation, without PC. Only in combination with an Ethernet interface.

Enclosures:

ADwin-Pro-II Enclosures	
ADwin-Pro-II	19" enclosure (19 inch wide, 5 1/4 inch high), AC power supply, 115/230V, 16 slots. Desktop unit, all modules mounted from the frontside. For Pro-CPU-T11-ENET only.
ADwin-Pro-BM-II	19" enclosure (19 inch wide, 5 1/4 inch high), AC power supply, 115/230V, 15 slots. Desktop unit, all modules mounted from the backside. For Pro-CPU-T11-ENET only.
ADwin-Pro-Standard Enclosures	
ADwin-Pro	19" enclosure (19 inch wide, 5 1/4 inch high), 70W AC power supply, 115/230V, 16 slots. Desktop unit, all modules mounted from the frontside.
ADwin-Pro-BM	19" enclosure (19 inch wide, 5 1/4 inch high), 70W AC power supply, 115/230V, 15 slots. Desktop unit, all modules mounted from the backside.
ADwin-Pro-DC	19" enclosure (19 inch wide, 5 1/4 inch high), 80W DC-DC converter 10-35V, 16 slots. Desktop unit, all modules mounted from the frontside.
ADwin-Pro-light	1/2 19" enclosure (9 inch wide, 5 1/4 inch high), 40W AC power supply 115/230V, 7 slots. Desktop unit, all modules mounted from the frontside.
ADwin-Pro-mini-2	enclosure (25HP wide, 3U high), DC-DC-converter 10-18V power supply, 5 slots. Desktop unit, all modules mounted from the frontside.
ADwin-Pro-mini-3	enclosure (25HP wide, 3U high), DC-DC-converter 20-36V power supply, 5 slots. Desktop unit, all modules mounted from the frontside.



Product Overview

ADwin-Pro Series

Analog Input/Output Modules:

Analog input modules, multiplexed	
<i>Pro-AIn-8/12</i>	8 analog differential inputs, 12-bit ADC, 1µs conversion time, LEMO sockets.
<i>Pro-AIn-8/12-D</i>	8 analog differential inputs, 12-bit ADC, 1µs conversion time, D-SUB connector.
<i>Pro-AIn-32/12</i>	32 single ended or 16 differential analog inputs, 12-bit ADC, 1µs conversion time, D-SUB connector.
<i>Pro-AIn-8/14</i>	8 analog differential inputs, 14-bit ADC, 0.5µs conversion time, MUX 3µs, block measurement, LEMO-sockets.
<i>Pro-AIn-8/14-D</i>	8 analog differential inputs, 14-bit ADC, 0.5µs conversion time, MUX 3µs, block measurement, D-SUB connector.
<i>Pro-AIn-16/14-C</i>	16 differential current inputs 0..20mA, 500Ω Shunt (0.05%, TK10), 14-bit ADC, 0.5µs conversion time, MUX 3µs, D-SUB socket.
<i>Pro-AIn-32/14</i>	32 single ended or 16 differential analog inputs, 14-bit ADC, 0.5µs conversion time, MUX 3µs, block measurement, D-SUB connector.
<i>Pro-AIn-8/16</i>	8 analog differential inputs, 16-bit ADC, 5µs conversion time, MUX 7µs, block measurement, LEMO sockets
<i>Pro-AIn-8/16-D</i>	8 analog differential inputs, 16-bit ADC, 5µs conversion time, MUX 7µs, block measurement, D-SUB connector.
<i>Pro-AIn-32/16</i>	32 single ended or 16 differential analog inputs, 16-bit ADC, 5µs conversion time, MUX 7µs, block measurement, D-SUB connector.
Analog input modules, parallel acquisition, without multiplexer	
<i>Pro-AIn-F-4/14</i>	4 analog differential inputs, one 14-bit ADC per each of the channels, 0.5µs conversion time per ADC, 2MB RAM, LEMO sockets.
<i>Pro-AIn-F-4/14-D</i>	4 analog differential inputs, one 14-bit ADC per each of the channels, 0.5µs conversion time per ADC, 2MB RAM, D-SUB connector.
<i>Pro-AIn-F-8/14</i>	8 analog differential inputs, one 14-bit ADC per each of the channels, 0.5µs conversion time per ADC, 2MB RAM, LEMO sockets.
<i>Pro-AIn-F-8/14-D</i>	8 analog differential inputs, one 14-bit ADC per each of the channels, 0.5µs conversion time per ADC, 2MB RAM, D-SUB connector.
<i>Pro-AIn-F-4/16</i>	4 analog differential inputs, one 16-bit ADC per each of the channels, 10µs conversion time per ADC, LEMO sockets.
<i>Pro-AIn-F-4/16-D</i>	4 analog differential inputs, one 16-bit ADC per each of the channels, 10µs conversion time per ADC, D-SUB connector.
<i>Pro-AIn-F-8/16</i>	8 analog differential inputs, one 16-bit ADC per each of the channels, 10µs conversion time per ADC, LEMO sockets.
<i>Pro-AIn-F-8/16-D</i>	8 analog differential inputs, one 16-bit ADC per each of the channels, 10µs conversion time per ADC, D-SUB connectors.
Analog output modules	
<i>Pro-AOut-4/16</i>	4 analog outputs, 16-bit DAC, 3µs conversion time, LEMO sockets.
<i>Pro-AOut-4/16-D</i>	4 analog outputs, 16-bit DAC, 3µs conversion time, D-SUB connector.
<i>Pro-AOut-8/16</i>	8 analog outputs, 16-bit DAC, 3µs conversion time, LEMO sockets.
<i>Pro-AOut-8/16-D</i>	8 analog outputs, 16-bit DAC, 3µs conversion time, D-SUB connector.
<i>Pro-AOut-4/16-M2</i>	4 analog outputs, 16-bit DAC, 3µs conversion time, LEMO sockets Programmable signal generator with 2MB SRAM
<i>Pro-AOut-4/16-M2-D</i>	4 analog outputs, 16-bit DAC, 3µs conversion time, D-SUB connector Programmable signal generator with 2MB SRAM

Product Overview

ADwin-Pro Series

Digital I/Os, Counter Modules, Flash Disk:

Flash Disk	
<i>Pro-Storage</i>	PCMCIA Flash Disk and ADwin carrier module for mobile storage of data. Contains 1 PCMCIA Flash storage medium of 128MB
Digital input / output modules	
<i>Pro-COMP-16</i>	Comparator input board, 16 channels, switching threshold – 2...8V (1024 steps)
<i>Pro-DIO-32</i>	32 TTL I/Os software selectable in groups of 8 bits each as inputs or outputs
<i>Pro-OPT-16</i>	16 digital inputs with optocouplers. Input voltage 5 V, 12 V or 24 V
<i>Pro-TRA-16</i>	16 isolated transistor outputs, max. 200 mA per channel
<i>Pro-REL-16</i>	16 relay outputs, max. 500 mA per channel
Counters, PW and PWM modules	
<i>Pro-CO4-D</i>	4 x 32-bit counters and 2 x SSI decoders. Each channel can operate in the following modes: pulse-period measurement, pulse-width and duty cycle measurement, up/down counter with clock/direction, or quadrature evaluation. RS422 level
<i>Pro-CO4-T</i>	4 x 32-bit counters. Each channel can operate in the following modes: pulse-period measurement, pulse-width and duty cycle measurement; up/down counter with clock/direction, or quadrature evaluation. 5 V TTL level
<i>Pro-CNT-16/32</i>	16 x 32-bit impulse counters
<i>Pro-PWM-4</i>	Transistor outputs for pulse-width modulated signals, 16-bit
Counters, PW and PWM modules (isolated by optocouplers)	
<i>Pro-CO4-I</i>	4 x 32-bit counters. Each channel can operate in the following modes: pulse-period measurement, pulse-width and duty cycle measurement; up/down counter with clock/direction, or quadrature evaluation. 5V, 12V, or 24V.
<i>Pro-CNT-16/32-I</i>	16 x 32-bit impulse counters, signal voltage 5V, 12V or 24V
<i>Pro-PWM-4-I</i>	Transistor outputs for 4 pulse-width modulated signals, 16-bit.

Serial Modules:

Serial and fieldbus modules	
> For PRO-CPU-T9 it is recommended to use the CPU option Pro-MEM-T9-64 with these modules <	
<i>Pro-RS232-2</i>	RS232 interface, two channels, 2 x 9 pin D-SUB connector
<i>Pro-RS232-4</i>	RS232 interface, four channels, 4 x 9 pin D-SUB connector, requires two slots
<i>Pro-RS485-2</i>	RS485 interface, two channels, 2 x 9 pin D-SUB connector
<i>Pro-RS485-4</i>	RS485 interface, four channels, 4 x 9 pin D-SUB connector, requires two slots
<i>Pro-CAN-1</i>	CAN bus interface, high-speed, 1 channel, 1x9 pin D-SUB connector and socket each
<i>Pro-CAN-2</i>	CAN bus interface, high-speed, two channels, 2 x 9 pin D-SUB connector
<i>Pro-CAN-1-LS</i>	CAN bus interface, low-speed, one channel, 1 x 9 pin D-SUB connector and socket
<i>Pro-CAN-2-LS</i>	CAN bus interface, low-speed, two channels, 2 x 9 pin D-SUB connector

Product Overview

ADwin-Pro Series

Signal Conditioning Modules:

Amplifier components: PT100, Thermocouples types J or K (other types on request), Note: each module requires 1 input of an analog input module for data acquisition	
Pro-PT100-4	Inputs for 4 Pt100 elements, LEMO connector to the sensor.
Pro-PT100-4-D	Inputs for 4 Pt100 elements, D-SUB connector to the sensor.
Pro-PT100-8	Inputs for 8 Pt10 elements, LEMO connector to the sensor, requires two slots
Pro-PT100-8-D	Inputs for 8 Pt10 elements, D-SUB connector to the sensor.
Pro-TC-8-ISO	Thermocouple board, 8 channels, isolated , filter at 7 Hz, 16-bit ADC per channel, type -K, -J, -S, -T
Pro-TC-4-K	Inputs for 4 thermocouples type K.
Pro-TC-8-K	Inputs for 8 thermocouples type K.
Pro-TC-16-K	Inputs for 16 thermocouples type K, 37pin D-SUB socket
Pro-TC-4-J	Inputs for 4 thermocouples type J.
Pro-TC-8-J	Inputs for 8 thermocouples type J.
Pro-TC-16-J	Inputs for 16 thermocouples type J, 37 pin D-SUB socket
Pro-TC-16-J-con	Thermocouple D-SUB connector for the module Pro-TC-16-J
Pro-TC-16-K-con	Thermocouple D-SUB connector for the module Pro-TC-16-K

Filters/isolation amplifiers *1	
Pro-MB8-DD	Carrier module for up to 8 MB modules, DSUB inputs/outputs, requires 3 slots.
Pro-MB8-LL	Carrier module for up to 8 MB modules, LEMO connector inputs/outputs, requires 3 slots
Pro-MB8-LD	Carrier module for up to 8 MB modules, LEMO connector inputs/DSUB outputs, requires 3 slots
Pro-MB8-DL	Carrier module for up to 8 MB modules, DSUB connector inputs/LEMO connector outputs, requires 3 slots
*1 Time of delivery on request *2 Please indicate on order	

Product Overview

Modules of Earlier Versions

Earlier versions of *ADwin* boards such as *ADwin-9*, *ADwin-9L*, *ADwin-8*, *ADwin-8L*, *ADwin-4*, *ADwin-4L*, *ADwin-Gold* with ISA linkadapter and plug-in boards for *ADwin-Pro* on request.

Link converters	
ADlink	PC linkadapter board, 1 channel, for connecting an external <i>ADwin</i> board to a PC, ISA version, 2 m cable included
ADlink-PCI	PC linkadapter board, 1 channel, for connecting the <i>ADwin-Pro</i> to a PC, PCI version, 2 m cable included
ADpcmcia *1	Linkadapter board for connecting a notebook, 2 m cable included
ADwin-G-USB-Conv *2	USB-link converter in a compact metal enclosure, 1.8 m USB cable (for connection to the PC) included, 0.5 m link cable (for connection to the <i>ADwin-Gold</i>), 0.5 m power supply cable (for connection to the <i>ADwin-Gold</i>)
ADwin-G-ENET-Conv *2	Ethernet-link converter (10/100 MBit/s) in a compact metal enclosure, cross-over cable included, 0.5 m link cable (for connection to the <i>ADwin-Gold</i>) 0.5 m power supply cable (for connection to the <i>ADwin-Gold</i>)
Pro-USB	USB-link converter as <i>ADwin-Pro</i> module, 1.8 m USB cable (for connection to the PC) included, 0.1 m link cable (for connection to <i>Pro-CPU-T9</i>) included
Pro-ENET	Ethernet-link converter (10/100 MBit/s) as <i>ADwin-Pro</i> module, cross-over cable included, 0.1 m link cable (for connection to <i>Pro-CPU-T9</i>) included

*1 Contrary to the *ADlink* ISA board and *ADlink-PCI* (standard delivery) without power supply for *ADwin-Gold* (see accessories: *ADwin-G-Pow*).

*2 When using a notebook, an *ADwin-G-Pow* is required

Product Overview

Accessories ADwin-Pro, ADwin-Gold, ADwin-L16

Cable and Adapter Sets:

Cable sets – LEMO	
Pro-CS-1	4 cables à 20 cm (7.8 inch) with LEMO connectors on each end 4 cables à 40 cm (15.7 inch) with LEMO connectors on each end
Pro-CS-2	4 cables à 40 cm (15.7 inch) with LEMO connectors on each end 4 cables à 80 cm (31.5 inch) with LEMO connectors on each end
Pro-CS-3	4 cables à 100 cm (39.4 inch) with LEMO connectors on each end 4 cables à 150 cm (59 inch) with LEMO connectors on each end
Pro-CS-4	4 cables à 500 cm (196.8 inch) with LEMO connectors on each end
Pro-CS-5	8 cables à 40 cm (7.8 inch) with LEMO connectors on each end
Pro-CS-6	8 cables à 100 cm (39.4 inch) with LEMO connectors on each end
Pro-CS-7	8 cables à 200 cm (78.8 inch) with LEMO connectors on each end
Adapter sets – LEMO	
Pro-AS-1	4 adapters: LEMO-connector (female) ↔ BNC-connector (female)
Pro-AS-3	4 adapters: LEMO-Y-connector (male to double female)
Pro-AS-4	4 adapters: LEMO-connector (female) ↔ LEMO-connector (female)
Pro-AS-5	4 terminators: 50 Ω, LEMO-connector (female)
Pro-AS-6	4 cable-adapters (10cm/4"): LEMO-connector (male) ↔ BNC-connector (female)
Pro-AS-7	4 cable-adapters (1m/3'31/2"): LEMO-connector (male) ↔ BNC-connector (female)
Pro-AS-8	4 cable-adapters (2m/6'63/4"): LEMO-connector (male) ↔ BNC-connector (female)
Pro-AS-9	4 cable-adapters (1m/3'31/2"): LEMO-connector (male) ↔ BNC-connector (male)
Pro-AS-10	4 cable-adapters (2m/6'63/4"): LEMO-connector (male) ↔ BNC-connector (male)
Cables/Terminal block – SUB-D	
ADwin-Cable-1	1 m extension cable for 37-pin ADwin D-SUB connectors, on one end socket, on the other a connector
ADwin-Cable-2	0.5 m extension cable for 37-pin ADwin D-SUB connectors, on one end socket, on the other a connector
ADwin-Cable-3	0.25 m extension cable for 37-pin ADwin D-SUB connectors, on one end socket, on the other a connector
ADwin-AT-37M	Terminal block for 37-pin male D-SUB connectors

Product Overview

Software, Training for ADwin-Pro, ADwin-Gold, ADwin-L16

Software	
ADbasic	Fast real-time development tool for ADwin systems, version 4.xx
ADlab	Driver for measuring, controlling and monitoring with ADwin systems from MATLAB for MATLAB 5 and 6 under Windows

Training and customized software development
<p>Please contact us for custom-designed training services on ADwin systems.</p> <p>Also, together with our system integration partners we are able to provide turnkey solutions by designing application specific software.</p> <p>Please call your local Keithley office and discuss your application.</p>



A G R E A T E R M E A S U R E O F C O N F I D E N C E

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