

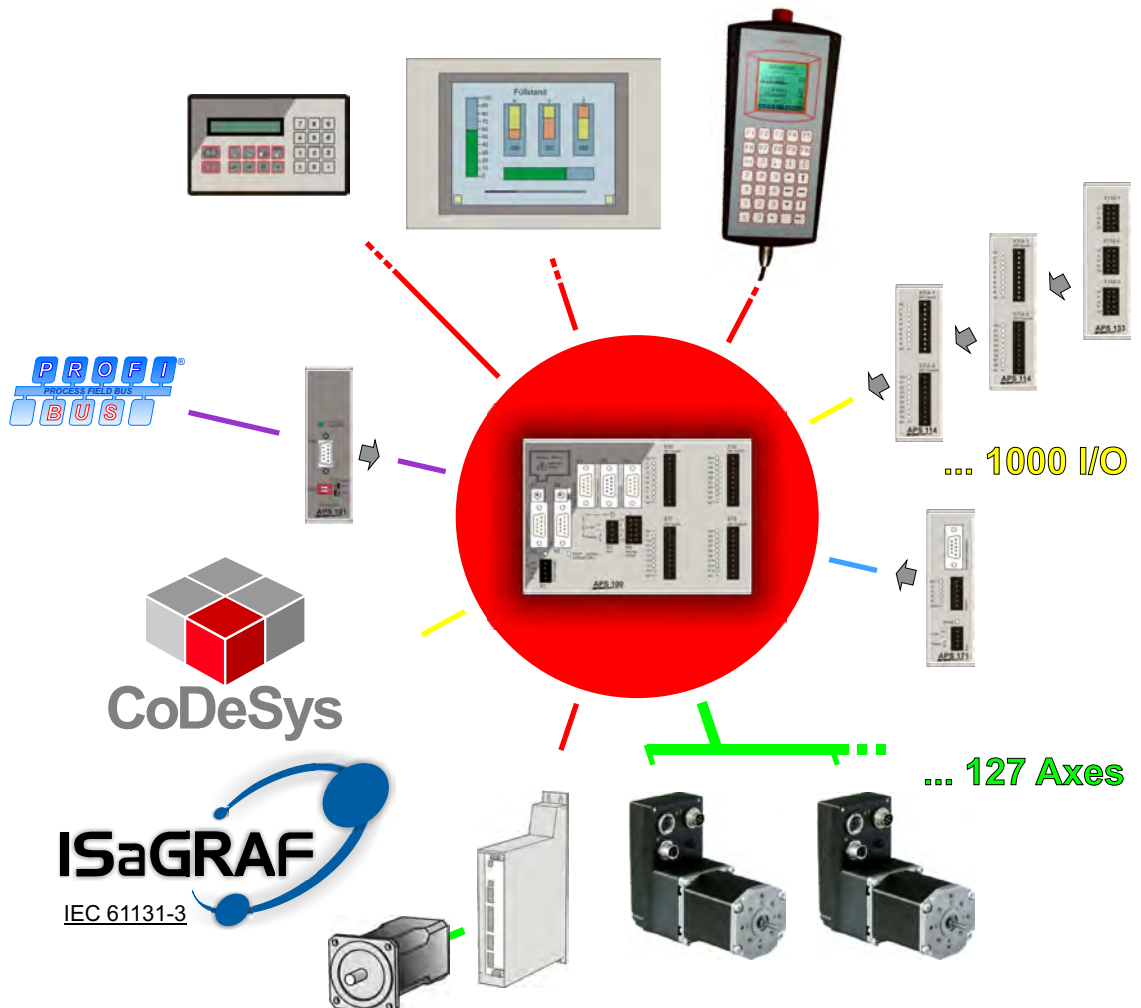


# APS-System

## Automation + Positioning + PLC

**Modular  
Automation System**

- Axis controller + PLC
- Control of external decentral axes
- Internal axis - or speed regulator
- Management of up to 127 axes
- IEC 61131-3 compliant programming
- Complete PLC - functionality
- Function blocks for positioning tasks
- 20 Digital inputs + 12 digital outputs (0,8A) on board
- 2 Analog inputs + 2 analog outputs on board
- Extension modules for more in- and outputs



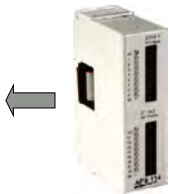
## System components



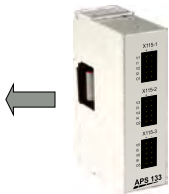
- **APS100 Main module**  
1 position controlled axis, +/- 10V, for servo-, or hydraulic drives,  
2 analog inputs, 20 digital inputs, 12 digital outputs, 1 analog  
auxiliary output, 1 relay output (drive enable)  
RS232 PC-Interface, RS232/RS485 Terminal interface, CAN-Bus  
Interface



- **APS171 Axis module for direct mounting to APS100**  
1 position controlled axis, +/- 10V, for servo-, or hydraulic drives,  
4 axis related inputs



- **APS114 digital I/O-module for direct mounting to APS100**  
8 digital inputs  
8 digital outputs



- **APS133 analog I/O-module for direct mounting to APS100**  
6 analog differential inputs +/- 10V or +/- 20mA  
3 analog outputs 0 - 10V



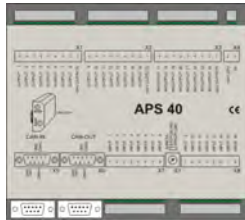
- **APS191 Profibus-Module for direct mounting to APS100**



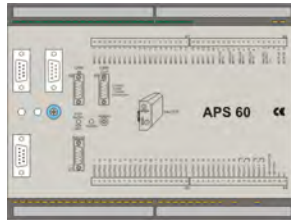
- **APS300 main module**  
4 analog inputs, 20 digital inputs,  
2 analog outputs, 12 digital outputs,  
RS232 Programming-interface, RS232/RS485 Terminal interface,  
CANopen Master  
Optional integrated Profibus-DP Slave interface



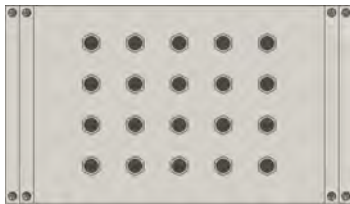
- **APS300 with Ethernet interface**  
with additional RJ45 Ethernet-programming interface for fast data  
transmission



- **APS40 I/O-Module through CAN-bus connection**  
16 digital inputs  
16 digital outputs 0,8A  
8 configurable in- / outputs



- **APS60 I/O-Module through CAN-bus connection**  
24 digital inputs  
30 digital outputs 0,2A  
2 relay outputs  
4 analog inputs, 4 analog outputs



- **APS40IP I/O-Module through CAN-bus connection;**  
Protection class IP66  
16 digital inputs  
16 digital outputs 0,8A  
8 configurable in- / outputs



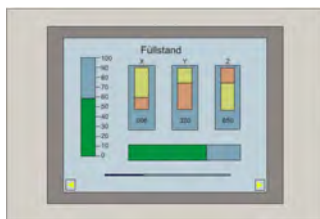
- **BT20/BT24 User terminal**  
10 function keys (inscribable on BT24)  
Numeric key block for number inputs  
Illuminated display 2x24 characters



- **BT300 User terminal**  
10 function keys  
Numeric key block for number inputs  
Illuminated display 4x40 characters



- **HBG10 Hand held user terminal**  
35 free inscribable keys, 3-fold usable  
Confirmation keys, optional with panic function;  
Emergency-Stop,  
Optional with hand-wheel, IP65  
Illuminated display



- **VT585W User terminal with touch-screen**  
10,4" (640x480)  
256 color TFT  
Matrix 40\*30  
Front IP65



- **Any user terminal with Modbus usable**

# APS Functions



## Positioning / Closed Loop Axis Controller

Function blocks are used to activate positioning and closed loop axis control. The cycle time of the axis controller is constant, regardless of the PLC cycle time.

- Positioning servo or stepper motors absolute and incremental (absolute-/rel. positioning)
- Selectable sinusoidal<sup>1</sup> or linear ramp
- Synchronizing<sup>1</sup> and servo control<sup>1</sup>
- Linear interpolation<sup>1</sup>
- Dynamic and static play compensation
- Automatic homing
- Manual mode (forward, reverse, rapid, creep) with teach-in feature
- Lag error<sup>1</sup> and working range monitoring
- Detailed status checking (axis stopped, moving) and error messages

<sup>1</sup> for servo motor drive only



## PLC

### Numerous PLC functions

- Mathematical functions
- Logical functions
- Trigonometric functions
- Integral, hysteresis, etc.
- Realtime clock
- Multitasking
- Local and global variables: Boolean, analog, timer, character strings
- Jumps, labels, statements and loops
- Subroutine / function call

### Memory APS100

	ISaGRAF	CoDeSys
Total	784k	832k
Program	512k	256k
Data	256k	448k
Variables non-volatile	16k	128k

### Memory APS300

	CoDeSys
Total	774k
Program	510k
Data	256k
Variables non-volatile	8k



## Operator Interface

- Output text and numeric values
- Direct keypad inquiry
- Formatted read-in of numeric entries



## Computer Link

Max. 128 bytes data exchange via  
Siemens Profibus-DP, RS 232 or RS 422  
- 64 bytes for input data  
- 64 bytes for output data



## Programming

One PC software package for all tasks:

Positioning, PLC, automating, operator interfaces and computer linking. Programming is feasible in the standard programming languages according to the IEC 61131-3 standard:

SFC	Sequential Function Chart
ST	Structured Text
FBD	Function Block Diagram
IL	Instruction List
LD	Ladder Diagram
FC	Flow chart

### Convenient development environment

- Windows 9x, Windows NT, Windows 2000, XP
- Project and program administration
- Test using simulator or directly in hardware using RS232
- Graphical diagnostic using actual display of variable values
- Common comprehensive function library for positioning commands and PLC functions
- Automatic program documentation

Diagnosis- and parametrizing software APS-COM available.

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**esitron-electronic GmbH**

Ernst-Zimmermann-Str. 18  
D-88045 Friedrichshafen  
Internet: www.esitron.de

Tel. +49(0)7541-6000-0  
Fax +49(0)7541-6000-11  
E-Mail: info@esitron.de