

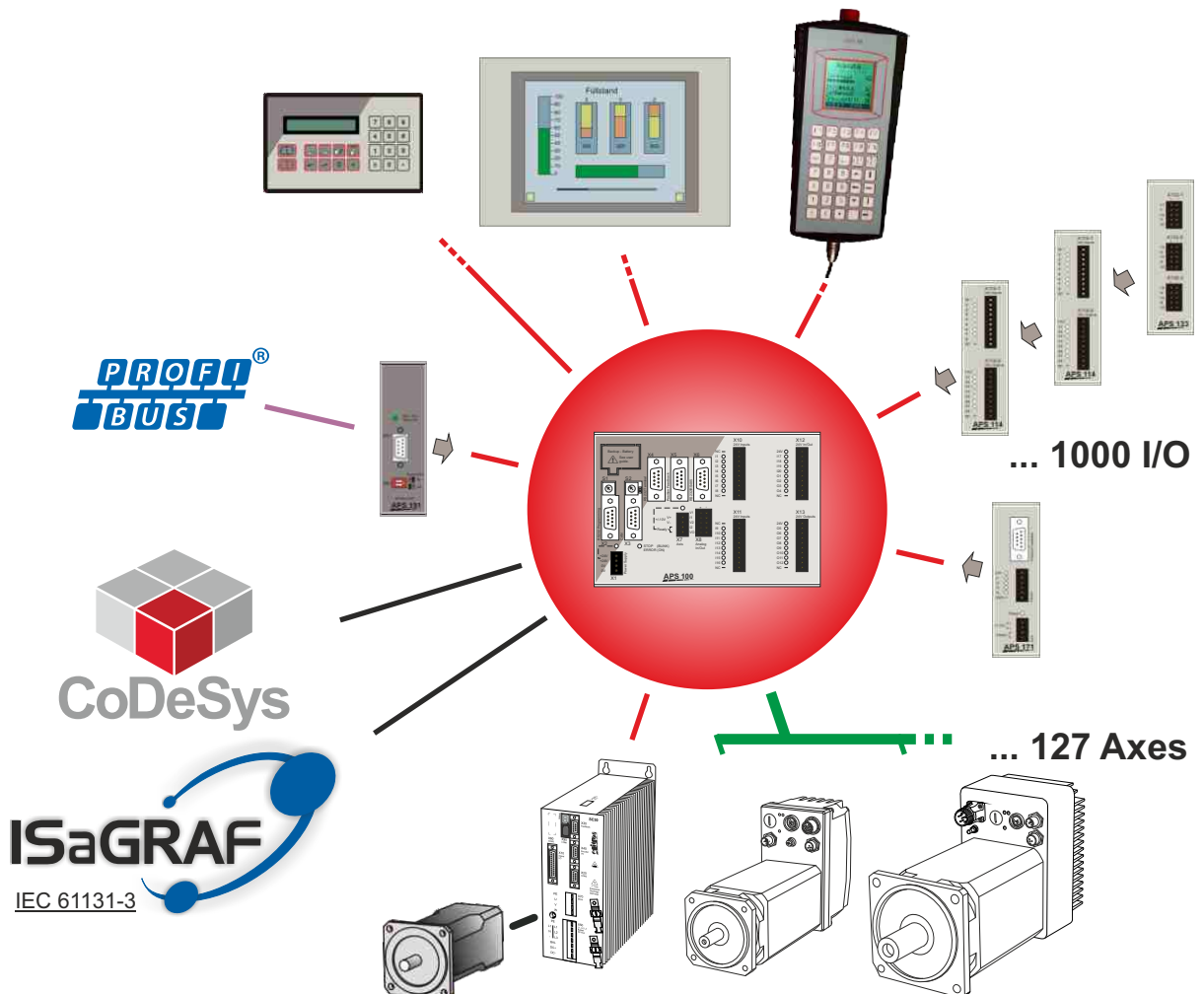


APS-System

Automation + Positioning + PLC

- 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

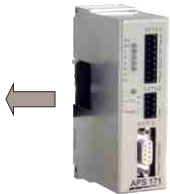
**Modular
Automation System**



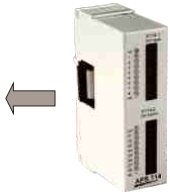
System components



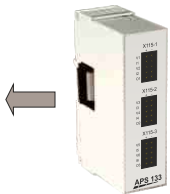
- **APS100 Main module**
1 position controlled axis, +/- 10V, for servo-, or hydraulic drives, encoder input for position feedback (incremental, SSI, transsonar)
2 analog inputs, 20 digital inputs, 12 digital outputs, 1 analog auxiliary output, 1 relay output (drive enable)
RS232 PC-Interface, RS232/RS485 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**

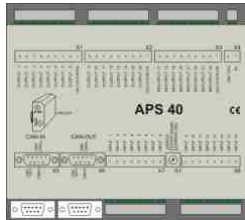


- **APS300 main module**
4 analog inputs, 20 digital inputs,
2 analog outputs, 12 digital outputs,
RS232 Programming-interface, RS232/RS485 Terminal interface,
CANopen Master
Axis control through CAN-Bus
Optional integrated Profibus-DP Slave interface



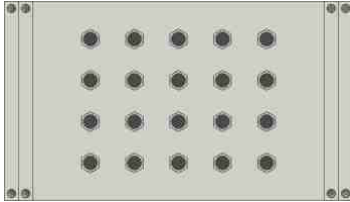
- **APS300 with Ethernet interface**
with additional RJ45 Ethernet-programming interface for fast data transmission

CAN
BUS



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

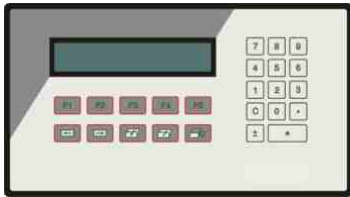
CAN
BUS



- **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



- **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 sinusoidal¹ or linear ramp
- Synchronizing¹ and servo control¹
- Linear interpolation¹
- Dynamic and static play compensation
- Automatic homing
- Manual mode (forward, reverse, rapid, creep) with teach-in feature
- Lag error¹ and working range monitoring
- Detailed status checking (axis stopped, moving) and error messages

¹ 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 7, 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