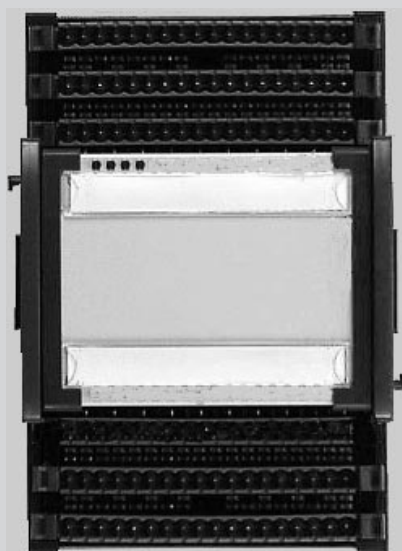## PMA

IO 300 / IO 301 / IO 302

I/O extension modules for analog voltages

16 voltage inputs

4 voltage outputs

1 reference voltage output

PROFILE

The IO 300 is part of the P-open series and provides compact analog I/O extension for the PU 100 range of PLCs. Depending on version, the unit has 16 analog voltage inputs and/or 4 analog voltage outputs.

With its compact dimensions of 124 x 170 mm, and a depth of 85,5 mm, the IO 30x is ideally suited for mounting close to the process in de-centralized systems.

The housing is designed for clip-on mounting to standard DIN rails. System extensions are easily implemented by connecting the IO 30x to its master PLC (PU 10x) via a cable which plugs into the module's extension bus (E-bus). See the specifications of the relevant PLC module for the max. possible number of extension I/O.

Input / output options

The IO 300 has 16 analog voltage inputs, 4 analog voltage outputs, and 1 reference voltage output.
The IO 301 provides only 16 analog voltage inputs, and the IO 302 has only 4 analog voltage outputs.

The input channels are multiplexed and have a signal range of ± 10 V. Similarly, the output channels operate in the range of ± 10 V, with a max. load of 5 mA.

The reference voltage output provides a short-circuit proof signal of +10 VDC.

Four front-panel LEDs show the module's operational status.

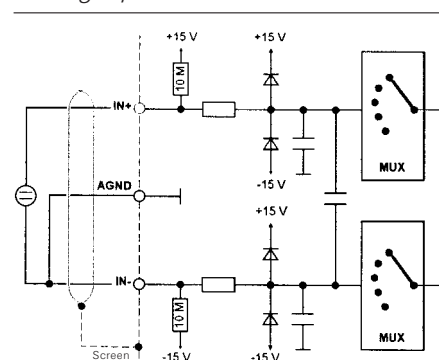### Convenient field connections

Electrical wiring from the machine or process is taken directly to the terminal strips at top and bottom of the modules. The terminal strips are of the plug-in type, allowing system pre-wiring as well as fast module exchange.
Furthermore, the following alternatives are available for the terminal strips:
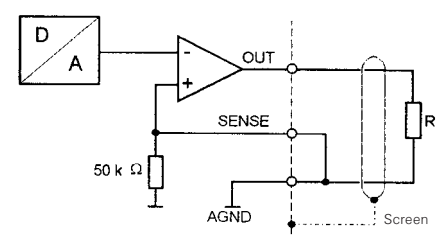● Screw terminals
● Screwless spring-clamp terminals
● Crimp terminals.

Inscription labels on the terminal strips allow clear identification of each I/O.

Analog input

Analog output

TECHNICAL DATA

Configuration
Pre-configured

Analog I/O
16 differential inputs for $\pm$ 10 V.
Resolution: 11 bits plus sign.
Common mode suppression: $\pm$ 2 V

4 floating outputs for $\pm$ 10 V.
Resolution: 11 bits plus sign.
Permissible load: $\geqq$ 2kΩ, $\leqq$ 5 mA,
$\leqq$ 10 mF

Connection: 3-wire technique
All inputs and outputs have reverse-polarity protection.

Reference voltage output
Signal: +10 VDC
Resolution: $\pm$ 10 mV
Permissible load: $\leqq$ 5 mA

Status LEDs / diagnostics
4 red LEDs show the module's operational status.

Interface

E-bus
For connection to the master PLC.

POWER SUPPLY

Module supply
24 VDC, max. 0,3 A (to EN 61 131-2)

Output energization
From the module supply via internal DC/DC converter.

Galvanic isolation
Between module electronics and E-bus. The analog outputs are not isolated from the module supply.

ENVIRONMENTAL CONDITIONS

Permissible temperature
For operation: 5...50°C

Climatic category
KUF to DIN 40 040
Relative humidity: $\leqq$ 85% yearly average, no condensation

Shock and vibration

Vibration test Fc
to DIN 60068-2-6 (5...50 Hz)
Unit in operation: 1g or 0,075 mm
Unit not in operation: 1,5g or 0,15 mm

Shock test Ea
to DIN IEC 60068-2-27 (15g, 11 ms)

ELECTROMAGNETIC COMPATIBILITY

Electromagnetic immunity
Complies with EN 50 082-2

Electromagnetic radiation
Complies with EN 50 081-2

GENERAL

Housing
Front dimensions: 124 x 170 mm
Depth: 85,5 mm
Module spacing: B = 113/118,5 mm
Protection mode: IP 20

CE-marking
Fulfils the European Directives for electromagnetic compatibility and low voltage.

Electrical connections
Choice of screw terminals (Phoenix type FRONT-MSTB 2,5/18-ST-5,08), screwless spring-clamp connection, or crimp terminals.
All terminal types simply plug onto the connector strips of the IO 300.

Electrical safety
Tested to IEC 348 (VDE 0411)
Protection class III (protective low voltage)

Mounting method
Clip-on rail mounting (NS 35/7,5 „top-hat" rails to DIN EN 50 022)

Weight: approx. 0,55 kg

Accessories
Operating instructions

ORDERING DATA

Description	Order no.
Analog extension module	
IO 300 with 16 voltage inputs, 4 voltage outputs	**9407 701 30001**
IO 301 with 16 voltage inputs	**9407 701 31001**
IO 302 with 4 voltage outputs	**9407 701 32001**

ACCESSORIES

Description	Order no.
18-pole screw terminal strip Phoenix type FRONT-MSTB 2,5/18-ST-5,08	**9407 799 00001**

Your local representative: