

PLIO03 Multifunction I/O Module Tech-Note

The PLIO03 is compact multifunction I/O module. The plug-in is compatible with Series 500, 500G, 600, eX and eXware. The PLIO03 is a programmable module offering a highly flexible configuration. The PLIO03 is the basic block for extending you HMI applications to complete control applications



- 20 Digital Inputs, configurable as counter/encoder channels
- 12 Digital Outputs
- 4 Analog Inputs configurable for voltage, current or temperature measurement. When configured in Single-ended mode, up to 8 voltage measurement inputs are possible
- 1 PT100 input for cold junction compensation of thermocouples
- 4 Analog Outputs configurable for voltage or current

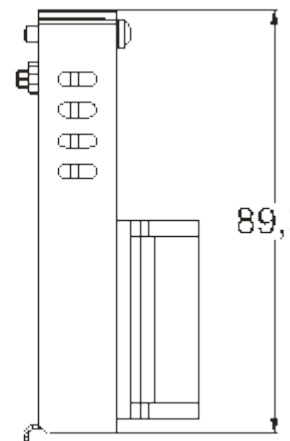
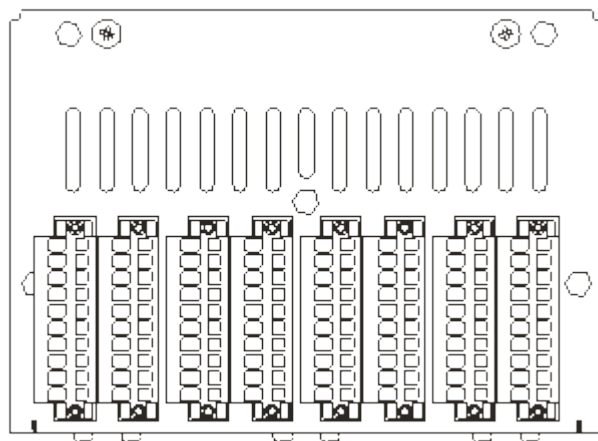
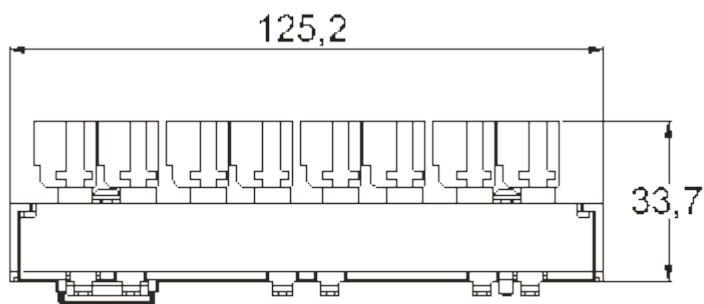
Highlights

The PLIO03 I/O module has been designed for the Series 500, 500G, 600, eX and eXware.

- Plug&Play operation. The I/O module is automatically detected when plugged-in.
- I/O configuration supported by a Codesys I/O library.
- Compact and low power consumption.
- No additional power supply required in addition to the 24Vdc I/O power supply
- Optically isolated Digital I/O.
- Overcurrent and Thermal shutdown for Digital Outputs with integrated diagnostic functions.
- Easy wiring with removable 3,5mm spring connectors.
- Digital Inputs can be configured as encoder inputs, counter inputs and period/ frequency measurement.
- Analog Input programmable as voltage inputs, current inputs. Additionally they can be configured to support industrial temperature sensors like thermocouple and PT100 (RTD).
- Analog Inputs with Programmable Gain Amplifier (PGA) and Offset
- On-board FPGA-based measurement controller reduces main CPU overhead.
- Analog Outputs programmable as voltage outputs and current outputs.
- Additional PT100 channel for cold junction compensation. To be used for thermocouples.
- Advanced board-level diagnostic

Technical Data

| Digital Inputs | |
|------------------------------------|--|
| Number of channels | 20 |
| Type of channel | Source active high (+24Vdc) inputs. |
| Input Voltage range | 12 - 30 Vdc |
| Input impedance | 3,3 KOhm |
| Optical isolation | Yes |
| Isolation | 1500 Vdc |
| Input filter | Programmable 0.1ms to 20ms |
| Special input modes | Software configuration for 2 blocks of 4 inputs. Each block can be configured as encoder, counter or frequency |
| Encoder mode | 2 blocks of 4 digital inputs can be programmed as Encoder Phase A, B, Zero and Machine Zero Index. Max frequency 1MHz. 32bit counter |
| Counter mode | 2 blocks of 2 digital inputs can be programmed as pulse and gate counter inputs. Max frequency 1MHz. 32bit counter |
| Frequency mode | 2 digital inputs can be programmed as frequency measurement inputs. Max frequency 20 KHz. Minimum frequency 1 Hz |
| Digital Outputs | |
| Number of Channels | 12 |
| Type of channel | Source type with feedback of output driver fault status |
| Output Voltage range | 12 - 30Vdc |
| Nominal Output current | 0,5A |
| Optical isolation | Yes |
| Output protection | Overcurrent and over temperature protected driver |
| Analog Inputs | |
| Number of channels | 4 differential or 8 single ended |
| Description | Individually programmable. |
| Optical isolation | No |
| Measurement type | Industry standard voltage or current. Temperature measurement with trasductors such as thermocouples and PT100/ RTD |
| A/D resolution | 12 bits |
| Accuracy @ 25°C | 0,1% typ. |
| Voltage input range and accuracy | Bipolar: ±100mV 0,1% F.S. ±500mV 0,2 % F.S. ±1V 0,1% F.S. ±5V 0,1% F.S. ±10V 0,1% F.S. Unipolar: 0-1V 0,1% F.S. 0-10V 0,1% F.S." |
| Voltage Input absolute input range | +/- 15Vdc (Analog ground referenced) |
| Current input range | 0-20mA |
| | 4-20mA |
| Current mode input impedance | 200 Ohm |
| Voltage mode input impedance | 10 MOhm |
| Thermocouple input | E, J, K,R,S,T types |
| Cold Junction compensation | External with dedicated PT100 input |
| PT100 (RTD) input | 2, 3 or 4 wires transducer interface type with break and short circuit detection |
| Analog Outputs | |
| Output channels | 4 |
| Analog output type | Voltage or current |
| Optical isolation | No |
| D/A Resolution | 12 bit |
| Output voltage type | Single-ended +/-10Vdc |
| Output voltage load impedance | 1 KOhm min. |
| Output voltage linearity error | 0,15% |
| Output current type | Current source type 0-20mA or 4-20mA |
| Output current load impedance | 470 ohm max. |
| Output current linearity error | 0,20% |
| Connectors | |
| Connector Type | Omnimate Range header/plugs 3,5mm – 10 contacts (two pieces terminal blocks) |
| Removable Plug Connector | Spring type contact Part number: 1691190000 BLZF 3.50/10/180F SN BK BX" |
| Approvals | |
| CE | Emission EN 61000-6-4, Immunity EN 61000-6-2 for installation in industrial environments |
| UL | cULus: UL508 |
| UL | cULus: Class I Div. 2 |
| ATEX | Yes |
| IECEX | Yes |
| DNV-GL | Yes |
| LR | Yes |
| EU MR | Yes |
| RCM | Yes |



Ordering Information

| Model | Part Number | Description |
|--------|-------------|--|
| PLIO03 | +PLIO03U0P1 | Multifunction I/O Module. 20 DI, 12 DO, 4 AI, 4 AO |