



APPLICATIONS

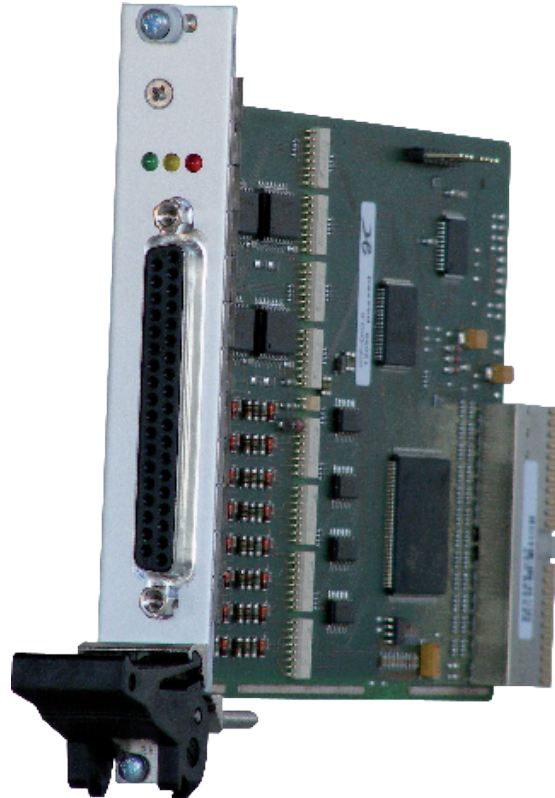
The EMTrust ICP-DIO has been designed to supply industrial applications with 16 independent digital input channels and 16 independent digital output channels with additional flexibility provided by the ability to configure four of its inputs for counter tasks.

Typical application areas include:

- ▶ Industrial Control and Automation
- ▶ Measurement and Control
- ▶ Automation
- ▶ Energy Management
- ▶ Environment Management

ICP-DIO

32-Channel Composite Digital Input & Output Board



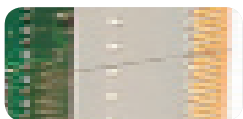
ICP-DIO

FEATURES

- ▶ 16 independent digital input channels
- ▶ 4 configurable up/down counters
- ▶ 16 independent digital output channels
- ▶ Output loading limited to 2A
- ▶ Common GND referencing
- ▶ Programmable interrupts
- ▶ Industry-standard 37-pin female D-Sub I/O interface
- ▶ Universal V I/O
- ▶ Front-panel status LEDs
- ▶ Design, Production and Support “Made in Germany”

BENEFITS

- ▶ All I/O are accessible of the front-panel
- ▶ IEC 61131-2 PLC compatibility
- ▶ Basic hot-swap support
- ▶ Optoisolated for improved security
- ▶ Fully protected
- ▶ Reduced power consumption
- ▶ Extensive driver support for all popular OS
- ▶ Long-term product availability
- ▶ Integrates with Phoenix terminal panel for DIN-rail mounting
- ▶ Open standard architecture



OVERVIEW

Being an industrial-grade, optoisolated 32-channel digital I/O board with 16 inputs and 16 outputs, the ICP-DIO is PLC compatible, complies with the IEC 61131-2 standard, and is fully protected on both input and output halves.

Interrupt driven events and comprehensive driver support permit installation in a range of harsh industrial environments.

SPECIFICATION SUMMARY

- ▶ 16 independent inputs
- ▶ 16 independent outputs
- ▶ 4 up/down counters
- ▶ IEC 61131-2 compatible
- ▶ Fully protected
- ▶ Programmable interrupts
- ▶ Comprehensive driver support
- ▶ Extended operational temperature option

SPECIFICATIONS

DIGITAL INPUT CHANNELS

16, independent, filtered & arranged in a single group with reference to a common GND.

COUNTERS

Four of the inputs can be configured as 16-bit programmable up/down counters

INPUT VOLTAGE

- ▶ 16V DC (minimum),
- ▶ 24V DC (typical),
- ▶ 32V DC (maximum)

INPUT CURRENT

Less than 8mA per channel

DIGITAL OUTPUT CHANNELS

16, independent & arranged in a single group with reference to a common GND

OUTPUT CURRENT

500mA per channel but not exceeding 2A total

OUTPUT VOLTAGE

- 24V DC (IEC 61131-2 type 1)
- ▶ 16V DC (minimum),
 - ▶ 24V DC (typical),
 - ▶ 32V DC (maximum)

SWITCHING TIMES

- ▶ Input: 20µs (typical)
- ▶ Output: 200µs (typical)

OPTOISOLATION

500V DC between I/O and system

PROTECTION

Over-voltage, thermal shutdown, reverse polarity and short circuit

INTERRUPT

Counter, input change-of-state and error

STATUS LEDs

- ▶ Green: No function
- ▶ Yellow: Power
- ▶ Red: Error (output only)
 - ▶ Open load
 - ▶ Short circuit
 - ▶ Over temperature
 - ▶ Over (under) voltage

POWER REQUIREMENTS

- ▶ +3.3V, +5V, 0.7W (typical)
- ▶ Power consumption 2.5W (typ.)

BOARD INTERFACE

37-pin female D-Sub connector

COMPACT PCI INTERFACE

32-bit/33 MHz slave, 3.3V/5.0V signalling voltage and full Plug&Play compatibility

MASS

100g (typical)

DIMENSIONS

3U (100x160 mm) x 4HP

CLIMATIC CONDITIONS

- ▶ 0°C to +70°C (standard)
- ▶ -40°C to +85°C (optional)
- ▶ -40°C to +85°C (storage)
- ▶ Humidity 5% to 95% (non-condensing) @ 40°C

SOFTWARE SUPPORT

The EMTrust driver software supports the widely-used industrial Windows XP (Embedded) and Linux operating systems. VxWorks and QNX can be supported upon request

CONFORMANCE

CompactPCI R2.1, IEC 61131-2

ORDERING INFORMATION

PRODUCT	DESCRIPTION
ICP-DIO-0	32-channel, optoisolated 24V DC digital input/output board for standard operational temperatures.
ICP-DIO-1	As above but designed for extended operational temperatures
ICP-STATUS-1	Termination panel for ICP-DIO with channel status LEDs
ICP-DCSET-1	2m cable set for ICP-DIO. Other lengths available on request
Notes: Driver software for chosen OS must be ordered separately	