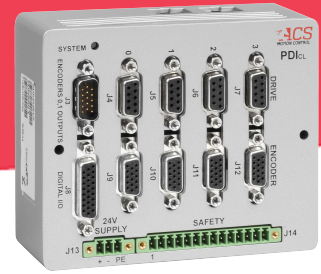


# PDI<sub>CL</sub>



## *EtherCAT® Two/Four Axis Pulse-Direction Drive Interface Module with Feedback*

- > Step motor control with position feedback verification
- > Position feedback: Up to four incremental digital or absolute (EnDat 2.1(Digital)/2.2, Smart-Abs, Panasonic, BiSS, SSI)
- > Drive interface:
  - > Speed up to 4M pulses per second
  - > Programmable pulse width from 80nS to 80µS
- > Digital I/O:
  - > Four general purpose inputs
  - > Four Registration MARK (High Speed Position Capture)
  - > Four motor brake outputs, 24V, 0.2A
  - > One PEG (Position Event Generator)
  - > All specific I/Os can be used as general purpose I/Os
- > Small enclosure: 121x100x48 mm3

The PDI<sub>CL</sub> (Pulse-direction Drive Interface) provides the ability to connect step motor drives and servo motor drives with Pulse-Direction interface to EtherCAT networks that are controlled by ACS' motion controller and EtherCAT master. The PDI<sub>CL</sub> includes incremental and optionally absolute digital encoder interfaces for position verification and closed loop operation.

It can be used also as a general purpose EtherCAT incremental and absolute encoder interface.

The product is offered in two versions: 2-axis and 4-axis.

The PDI<sub>CL</sub> is an effective solution to OEMs of multi-axis machinery that use an ACS EtherCAT master and need to control additional axes using drives with Pulse-Direction interface.

A comprehensive set of software support tools, the MMI Application Studio is provided for setup, programming and diagnostics.

## Specifications

### Number of Axes

2 or 4

### Control Supply

Input voltage: 24Vdc  $\pm$  10%

Input current: <0.7A (including 4 encoders)

Mating connector supplied.

### Drive Interface

- > Pulse-Direction: RS422
- > Maximum pulse rate: 4,000,000 pulses per second
- > Pulse Width: programmable, 80ns to 80 $\mu$ s
- > Drive Fault: two-terminal opto-isolated 24V, 14mA input, set by user as sink or source
- > Drive enable: two-terminal opto-isolated output, 5V and 24V, 20mA, set by the user as sink or source

### Feedback

Total number of encoder interfaces is equal to the number of axes, 2 or 4

Incremental Digital Encoder

One interface per axis

Format: AqB,l; Clk/Dir,l, RS-422,

Maximum rate: 50 million encoder counts/second

Protection: Encoder error, Encoder not connected

Encoder supply: 5V, 1.6A total (all encoders)

Encoder phases (A,B) for axis 0,1 are available as buffered outputs

Absolute Encoder (optional)

One interface per axis

Types: EnDat 2.1(Digital)/2.2, Smart-Abs, Panasonic, BiSS, SSI

### Certifications

CE: Yes

EMC: EN61326-1

### Digital I/O

General Purpose Inputs

Four, Single ended, opto-isolated. 24V (+/-20%) source

Sink type can be specified by the user

Safety Inputs

Left and right limit inputs per axis

Single ended, opto-isolated, 24V (+/-20%) source

Sink type can be specified by the user

E-Stop: 24V $\pm$ 20%,opto isolated, two-terminal

Unused safety inputs can be used as general purpose inputs

Registration MARK (High Speed Position Capture)

Four, Two-terminal, RS422, fast opto-isolation

Flexible assignment to any incremental encoder axis

Can be used as general purpose inputs

Motor Brake Outputs

Four, single ended, opto-isolated, 0.2A per output

Can be used as general purpose outputs

PEG (Position Event Generator)

One output, RS422

Pulse width: 26.6nSec to 1.75mSec

Maximum rate: 10MHz

Flexible assignment to any incremental encoder axis

### EtherCAT Communication

Two ports, In and Out

### Dimensions

121x100x48 mm<sup>3</sup>

### Weight

250 gr

### Environment

Operating range: 0 to + 50°C

Storage and transportation range: -25 to +60°C

Humidity (operating range): 5% to 90% non-condensing

### Accessories

PDId-ACC1 Mating connectors for drives, encoders and I/Os

PDId-ACC2 Din-rail mounting kit

## Ordering Options

Ordering Options	Field	Example User Selection	Values
Number of axes	1	4	2, 4
Total number of feedback channels	2	4	2, 4
Absolute encoders type	3	E	N - None, U - User selectable, E - EnDat 2.2 & 2.1 digital only, S - Smart Abs(S), P - Panasonic, B - BiSS-A/B/C, I - SSI, A - Sanyo ABS
Number of absolute encoders interface	4	1	0, 1, 2, 3, 4
I/O Configuration	5	N	N- Inputs & limits: 24V/SOURCE (PNP), Outputs: 24V/SOURCE (PNP) S - Inputs & limits: 24V/SINK (NPN). Outputs: 24V/SINK (NPN) T- Inputs & limits: 5V/SINK (NPN). Outputs: 5V/SOURCE (PNP)

### Example: PDId44E1N

Field	1	2	3	4	5
PN PDId	4	4	E	1	N