



## ANTI-DITHER MODULE

### >> ADEX SERIES <<

- » Eliminates mechanical vibration counting errors
- » Optical isolation between input and outputs
- » Push-pull outputs with short circuit protection
- » HTL output power range with reverse polarity protection
- » Frequency up to 200KHz
- » TTL or HTL configurable input power supply

### MAIN FEATURES

Anti-Dither Encoders Module (ADE) was designed to eliminate counting errors in systems with high mechanical vibrations. Using the quadrature signals, the ADE can discriminate between dither noise or real movement of the encoder shaft, eliminating thus the noise in output channels. In addition to this, the ADE eliminates any invalid input transition generating only valid transitions in their outputs.

Also, the ADE allows the change of signal levels, the increase the quantity of outputs or regeneration of signal when the cable length is extensive.

The input signals of ADE (A-B-Z) may be single-ended or differential in both 5V and 24V. In either case, the inputs are opto-coupled to isolate the outputs of the ADE from the encoder inputs, avoiding problems of noise and ground.

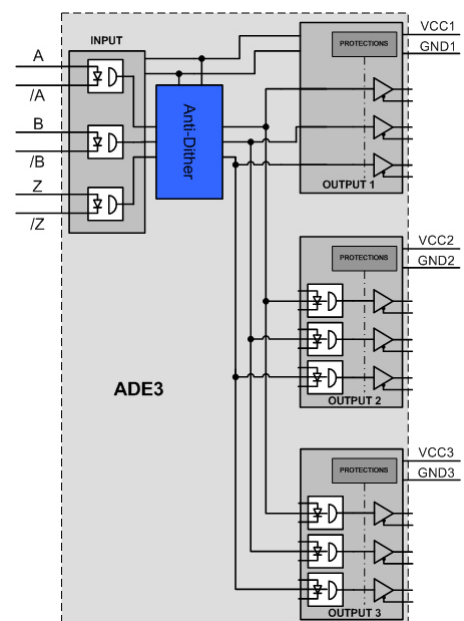
The outputs are push-pull type, have short circuit protection and diagnostics for low power. The power supply range is 12-30 Vdc output (HTL version) or 5V (TTL version), can each deliver 100mA. Each group of outputs has led indicators of 'Vcc' and 'Failure'.

ADE module has two versions: the ADE1 having an input (A-B-Z) and one output (A1-B1-Z1); and the ADE3 which has one input and three outputs (A1-B1-Z1) (A2-B2-Z2) (A3-B3-Z3). All outputs have available their inverted signals.

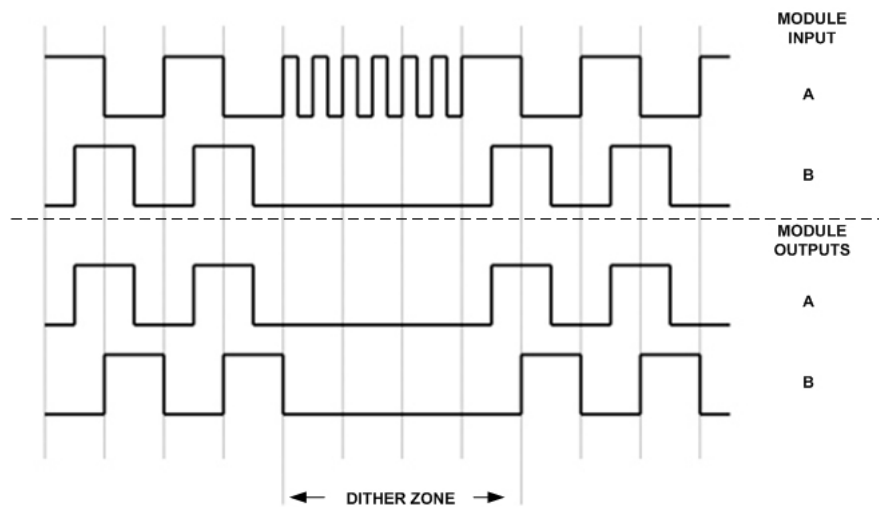
The maximum operating frequency is 200kHz.

### TECHNICAL FEATURES

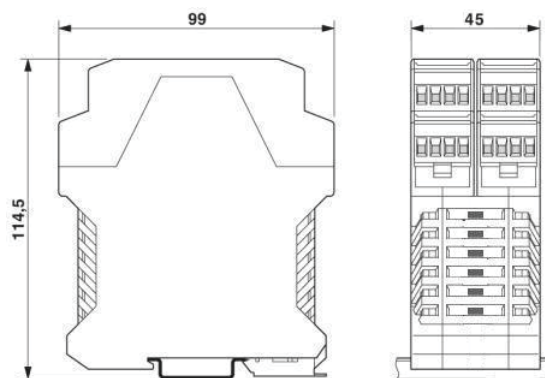
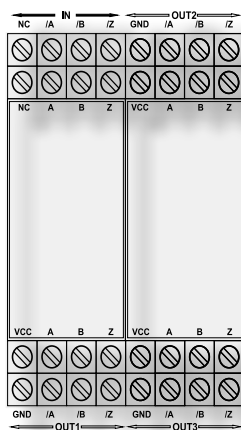
| Symbol | Description                     | Min. | Typ.     | Max. | Units |
|--------|---------------------------------|------|----------|------|-------|
| VCCn   | Supply Voltage                  | 12   | 24       | 30   | [V]   |
|        | Low Voltage Protection          |      | 10.8     |      | [V]   |
|        | Inputs                          |      |          |      |       |
|        | Input Voltage ON (24V Version)  | 10   | 24       | 30   | [V]   |
|        | Input Voltage ON (5V Version)   | 3    | 5        | 8    | [V]   |
|        | Input Voltage OFF (24V Version) |      |          | 4    | [V]   |
|        | Input Voltage OFF (5V Version)  |      |          | 2    | [V]   |
|        | Impedance (24V Version)         |      | 2760     |      | [Ohm] |
|        | Impedance (5V Version)          |      | 560      |      | [Ohm] |
|        | Outputs                         |      |          |      |       |
|        | Outputs Voltage                 |      | VCCn-0.5 |      | [V]   |
|        | Outputs Current                 |      |          | 100  | [mA]  |
|        | Frequency                       |      |          | 200  | [KHz] |
|        | Input/Outputs Isolation         | 1000 |          |      | [VDC] |
|        |                                 |      |          |      |       |
|        |                                 |      |          |      |       |



## WAVEFORMS

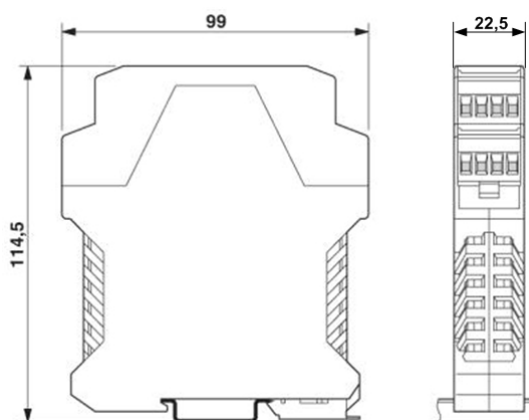
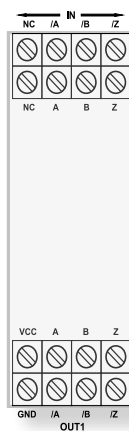


## ADE3 WIRING DIAGRAM AND DIMENSIONS



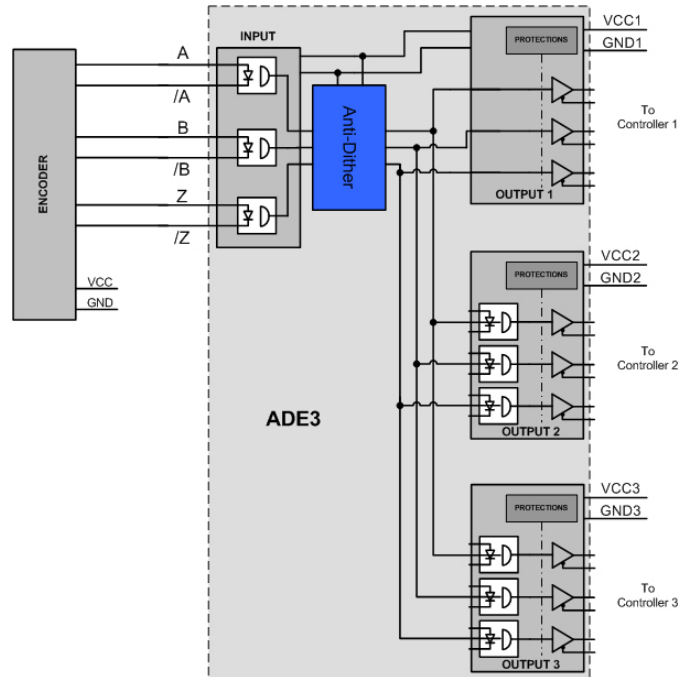
DIN Rail Mounting

## ADE1 WIRING DIAGRAM AND DIMENSIONS

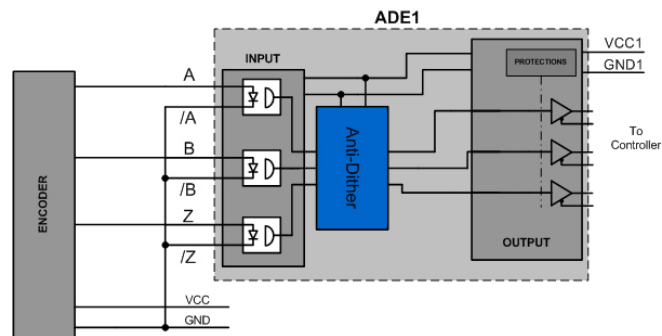


DIN Rail Mounting

## DIFFERENTIAL WIRING EXAMPLE



## SINGLE-ENDED WIRING EXAMPLE



## PRODUCT CODES

| INPUT VOLTAGE | OUTPUT VOLTAGE 1 | OUTPUT VOLTAGE 2 | OUTPUT VOLTAGE 3 | PRODUCT CODES |
|---------------|------------------|------------------|------------------|---------------|
| 5 V           | 12-30 VDC        | 12-30 VDC        | 12-30 VDC        | ADE3-0524     |
| 24 V          | 12-30 VDC        | 12-30 VDC        | 12-30 VDC        | ADE3-2424     |
| 5 V           | 12-30 VDC        | 5 VDC            | 5 VDC            | ADE3-0505     |
| 24 V          | 12-30 VDC        | 5 VDC            | 5 VDC            | ADE3-2405     |
| 5 V           | 12-30 VDC        | NA               | NA               | ADE1-0524     |
| 24 V          | 12-30 VDC        | NA               | NA               | ADE1-2424     |