

#### Overview



The ADI 4 Analog Drive Interface for 4 axes can be used to operate up to 4 drives with analog setpoint interface.

#### Benefits

- Connection via PROFIBUS DP
- Motion control functionality (isochronous mode)

#### Design

- 4 inputs for incremental encoders (TTL signals) or optionally 4 inputs<sup>1)</sup> for absolute encoders (SSI interface)
- 4 analog outputs  $\pm 10$  V for the setpoint
- 4 relay contacts for drive enable of axes 1 to 4
- 10 digital outputs<sup>2)</sup> (4 general, 6 drive-specific)
- 10 digital drive-specific inputs<sup>2)</sup>
- Onboard status display on 4 diagnostics LEDs

To supply the module and digital outputs with power, an external voltage source (+24 V DC) is needed.

#### Integration

The ADI 4 interface module can be used with the following controls:

- SINUMERIK 802D sl
- SINUMERIK 802D
- SINUMERIK 802D base line
- SINUMERIK 840Di sl
- SINUMERIK 840Di
- SINUMERIK 840D sl

#### *SINUMERIK 802D sl*

Two ADI 4 modules can be connected to the SINUMERIK 802D sl, permitting analog control of all its axes.

#### Encoder connection

With SINUMERIK 802D sl (in accordance with the existing number of axes), the following configurations are available as standard for each ADI 4:

- 4 x TTL signal inputs with S/R<sup>3)</sup>
  - 3 x 2500, 1 x 1024
  - 1 x 9000, 1 x 18000, 1 x 1024, 1 x 2500
  - or
  - 3 x 2048, 1 x 1024
  - 1 x 9000, 1 x 18000, 1 x 1024, 1 x 2048

Other configurations can be implemented on request.

#### *SINUMERIK 840Di/840Di sl/840D sl*

Several ADI 4 modules can be connected to the SINUMERIK 840Di/840Di sl/840D sl, permitting analog control of all axes of the SINUMERIK 840Di/840Di sl and up to 20 axes of the SINUMERIK 840D sl. Mixed operation of digital drives and ADI 4 modules is possible; the axes can interpolate with one another.

#### Encoder connection

- Incremental encoder (TTL) with differential transfer
  - Track A and inverted signal A
  - Track B and inverted signal B
  - Zero signal and inverted zero signal
  - Output frequency max. 1.5 MHz
  - Phase shift of Track A to Track B:  $90^\circ \pm 30^\circ$
  - Power consumption max. 300 mA
- Absolute encoder with SSI signal
  - True and inverted output signal
  - Shift clock as true and inverted signal
  - Transmission frequency max. 750 kbaud
  - Power consumption max. 300 mA
  - Only multi-turn encoders are approved for this purpose.
- Linear encoder with distance-coded zero marks/ reference marks
  - LS 476 C
  - LS 186 C, in conjunction with external pulse-shaper electronics EXE
- Encoder with sin/cos signals can be connected via external pulse-shaper electronics EXE.

<sup>1)</sup> Cannot be used with SINUMERIK 802D sl/802D/802D base line.

<sup>2)</sup> Only 9 can be used with SINUMERIK 802D sl/802D/802D base line.

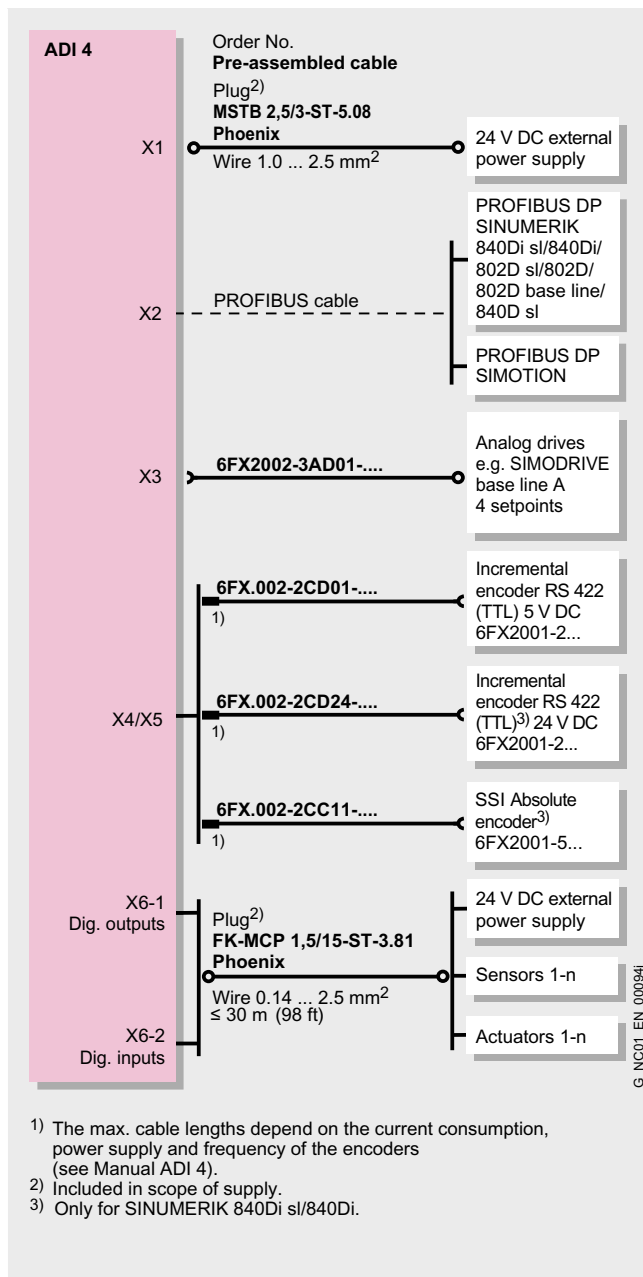
<sup>3)</sup> S/R = Signals/Revolution

# Basic components

## SINUMERIK I/O

### ADI 4 Analog Drive Interface for 4 axes

#### Integration (continued)



Connection overview for ADI 4

Information about application, configuration and cable extensions can be found under Connection system MOTION-CONNECT.

#### Technical specifications

<b>Order No.</b>	<b>6FC5211-0BA01-0AA3</b>
<b>Product name</b>	SINUMERIK Analog Drive Interface for 4 axes ADI 4
<b>Input voltage</b>	24 V DC
<b>Power consumption, max.</b>	30.2 W
<b>Degree of protection to EN 60529 (IEC 60529)</b>	IP20
<b>Humidity rating in accordance with EN 60721-3-3</b>	Class 3K5 condensation and icing excluded. Low air temperature 0 °C (32 °F).
<b>Relative humidity</b>	<ul style="list-style-type: none"> <li>Storage 5 ... 95%</li> <li>Transport 5 ... 95%</li> <li>Operation 5 ... 95%</li> </ul>
<b>Ambient temperature</b>	<ul style="list-style-type: none"> <li>Storage -20 ... +55 °C (-4 ... +131 °F)</li> <li>Transport -40 ... +70 °C (-40 ... +158 °F)</li> <li>Operation 0 ... 55 °C (32 ... 131 °F)</li> </ul>
<b>Dimensions</b>	<ul style="list-style-type: none"> <li>Width 48.5 mm (1.91 in)</li> <li>Height 325 mm (12.8 in)</li> <li>Depth 154.4 mm (6.08 in)</li> </ul>
<b>Weight, approx.</b>	1.5 kg (3.31 lb)

#### Selection and Ordering Data

Designation	Order No.
<b>SINUMERIK Analog Drive Interface for 4 axes ADI 4</b>	<b>6FC5211-0BA01-0AA3</b>