

AXL F DI32/1 XC 1F - Digital module



2701226

<https://www.phoenixcontact.com/us/products/2701226>

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The figure shows the standard item

Axioline F, Digital input module, Digital inputs: 32, 24 V DC, connection technology: 1-conductor, Extreme conditions version, transmission speed in the local bus: 100 Mbps, degree of protection: IP20, including bus base module and Axioline F connectors

Product description

The module is designed for use within an Axioline F station. It is used to acquire digital signals. You can adjust the filter times of the inputs to increase noise immunity. Filter times of 100 μ s enable you to implement a counter function with a maximum input frequency of 5 kHz in the application.

Your advantages

- 32 digital inputs in accordance with EN 61131-2 type 1 and type 3
- 24 V DC, 2.4 mA
- Connection of sensors in 1-conductor technology
- Minimum update time of < 100 μ s
- Filter times can be adjusted in three increments: < 100 μ s, 1000 μ s or 3000 μ s
- Maximum input frequency: 5 kHz
- Device rating plate stored
- Can be used under extreme ambient conditions
- Extended temperature range of -40 °C ... +70 °C (see "Tested successfully: use under extreme ambient conditions" in the data sheet)
- Partially coated PCBs

Commercial data

| | |
|--------------------------------------|---------------|
| Item number | 2701226 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | DR02 |
| Product key | DRI231 |
| GTIN | 4046356730785 |
| Weight per piece (including packing) | 236.9 g |
| Weight per piece (excluding packing) | 167 g |
| Customs tariff number | 85389091 |
| Country of origin | DE |

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Technical data

Dimensions

| | |
|---------------------|--|
| Dimensional drawing |  |
| Width | 53.6 mm |
| Height | 126.1 mm |
| Depth | 54 mm |
| Note on dimensions | The depth applies when a TH 35-7.5 DIN rail is used (in accordance with EN 60715). |

Notes

| | |
|-------------------------|---|
| Note on application | |
| Note on application | Only for industrial use |
| Utilization restriction | |
| EMC note | EMC: class A product, see manufacturer's declaration in the download area |

Material specifications

| | |
|-----------------|-----------------|
| Color (Housing) | gray (RAL 7042) |
|-----------------|-----------------|

Interfaces

| | |
|----------------------|-----------------|
| Axioline F local bus | |
| Number of interfaces | 2 |
| Connection method | Bus base module |
| Transmission speed | 100 Mbps |

System properties

| | |
|-----------------------------------|--------|
| Programming data (LocalbusSlave) | |
| Input address area | 4 Byte |
| Output address area | 0 Byte |
| Fieldbus data telegram (PROFIBUS) | |
| Required parameter data | 3 Byte |
| Required configuration data | 6 Byte |

Input data

| | |
|----------|--|
| Digital: | |
|----------|--|

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| | |
|-----------------------------------|---|
| Input name | Digital inputs |
| Description of the input | EN 61131-2 types 1 and 3 |
| Number of inputs | 32 |
| Connection method | Push-in connection |
| Connection technology | 1-conductor |
| Input voltage range "0" signal | -3 V DC ... 5 V DC |
| Input voltage range "1" signal | 11 V DC ... 30 V DC |
| Nominal input voltage U_{IN} | 24 V DC |
| Nominal input current at U_{IN} | 2.4 mA |
| Current flow | linear until nominal current is reached, then constantly approx. 2.4 mA |
| Input filter time | 3000 μ s (Default) |
| | 1000 μ s |
| | < 100 μ s |
| Process data update | < 100 μ s |
| Protective circuit | Polarity reversal protection of the inputs; parallel diode (30 V, 5 s) |

Product properties

| | |
|--------------------|---|
| Product type | I/O component |
| Product family | Axioline F |
| Type | block modular |
| Mounting position | any (no temperature derating) |
| Scope of supply | including bus base module and Axioline F connectors |
| Special properties | Extreme conditions version |

Insulation characteristics

| | |
|----------------------|------------------------------|
| Overvoltage category | II (IEC 60664-1, EN 60664-1) |
| Pollution degree | 2 (IEC 60664-1, EN 60664-1) |

Electrical properties

| | |
|---|--------|
| Maximum power dissipation for nominal condition | 3.65 W |
|---|--------|

Potentials: Axioline F local bus supply (U_{Bus})

| | |
|----------------|------------------------------|
| Supply voltage | 5 V DC (via bus base module) |
| Current draw | max. 120 mA (HW 00) |
| | max. 60 mA (from HW 01) |

Potentials: Supply for digital input modules (U_I)

| | |
|----------------------|--|
| Supply voltage | 24 V DC |
| Supply voltage range | 19.2 V DC ... 30 V DC (including all tolerances, including ripple) |
| Current draw | max. 50 mA |
| Protective circuit | Surge protection; electronic (35 V, 0.5 s) |
| | Reverse polarity protection; parallel diode; with external 5 A fuse (only for commissioning) |
| Protection | max. 8 A (polarity reversal protection up to 5 A) |

Electrical isolation/isolation of the voltage ranges

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| | |
|--|------------------------|
| Test voltage: 5 V supply of the local bus (U_{BUS}) / 24 V supply (I/Os) | 500 V AC, 50 Hz, 1 min |
| Test voltage: 5 V supply of the local bus (U_{BUS}) / functional ground | 500 V AC, 50 Hz, 1 min |
| Test voltage: 24 V supply (I/O) / functional ground | 500 V AC, 50 Hz, 1 min |

Connection data

Connection technology

| | |
|-------------------------------|---|
| Connection name | Axioline F connector |
| Note on the connection method | Please observe the information provided on conductor cross-sections in the "Axioline F: system and installation" user manual. Applications with UL approval: only use copper conductors. |

Axioline F connector

| | |
|-----------------------------------|---|
| Connection method | Push-in connection |
| Note on the connection method | Please observe the information provided on conductor cross-sections in the "Axioline F: system and installation" user manual. Applications with UL approval: only use copper conductors. |
| Conductor cross-section, rigid | 0.2 mm ² ... 1.5 mm ² |
| Conductor cross-section, flexible | 0.2 mm ² ... 1.5 mm ² |
| Conductor cross-section AWG | 24 ... 16 |
| Stripping length | 8 mm |

Environmental and real-life conditions

Ambient conditions

| | |
|--|---|
| Ambient temperature (operation) | -25 °C ... 60 °C (Standard applications and applications with UL approval) -40 °C ... 70 °C (Extended, see section "Tested successfully: use under extreme ambient conditions" in the data sheet.) |
| Degree of protection | IP20 |
| Air pressure (operation) | 70 kPa ... 106 kPa (up to 3000 m above sea level) |
| Air pressure (storage/transport) | 70 kPa ... 106 kPa (up to 3000 m above sea level) |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C |
| Permissible humidity (operation) | 5 % ... 95 % (non-condensing) |
| Permissible humidity (storage/transport) | 5 % ... 95 % (non-condensing) |

Mechanical test

| | |
|--|-----|
| Vibration resistance in accordance with EN 60068-2-6/IEC 60068-2-6 | 5g |
| Shock in accordance with EN 60068-2-27/IEC 60068-2-27 | 30g |
| Continuous shock in accordance with EN 60068-2-27/IEC 60068-2-27 | 10g |

Test (noxious gas)

| | |
|---------------|---|
| Test standard | ISA-71.04-2013 G3 Harsh Group A IEC 60068-2-60:2015 Method 4 |
| Temperature | 25 °C ±1 K |

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| | |
|--|----------------|
| Humidity (relative) | 75 % \pm 3 % |
| Test duration | 21 Days |
| Volume concentration H ₂ S (Hydrogen sulfide) | 50 ppb |
| Volume concentration NO ₂ (Nitrogen dioxide) | 1250 ppb |
| Volume concentration Cl ₂ (Chlorine) | 10 ppb |
| Volume concentration SO ₂ (Sulfur dioxide) | 300 ppb |

Standards and regulations

| | |
|------------------|---------------------------------------|
| Protection class | III (IEC 61140, EN 61140, VDE 0140-1) |
|------------------|---------------------------------------|

Mounting

| | |
|-------------------|-------------------------------|
| Mounting type | DIN rail mounting |
| Mounting position | any (no temperature derating) |

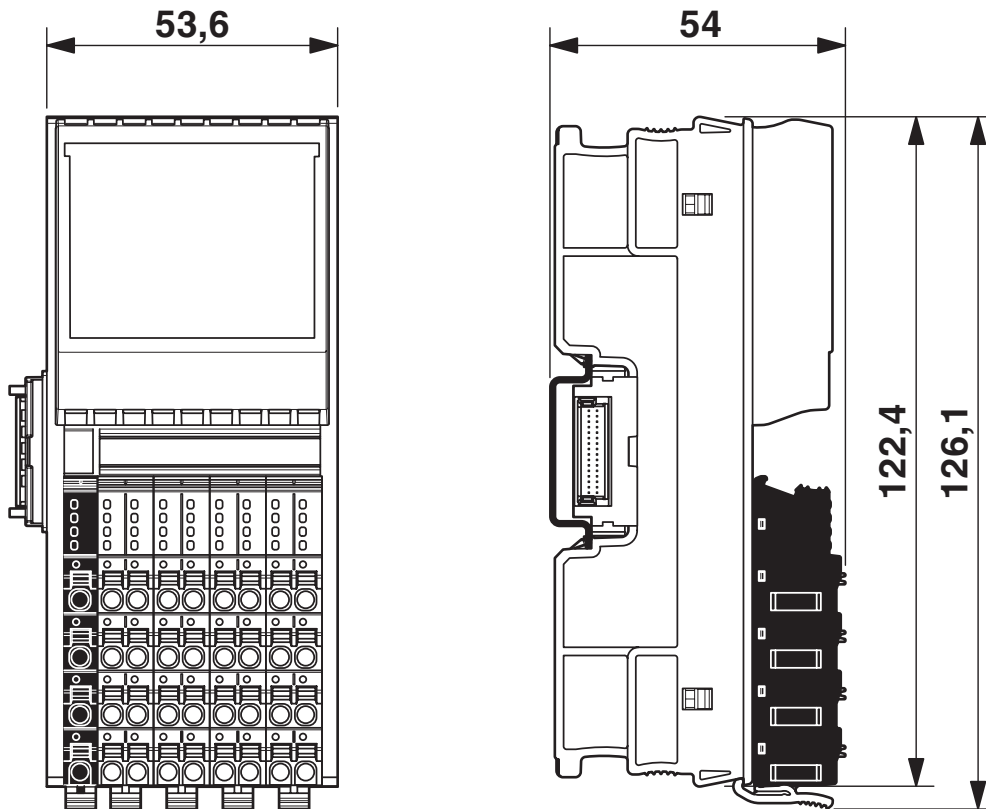
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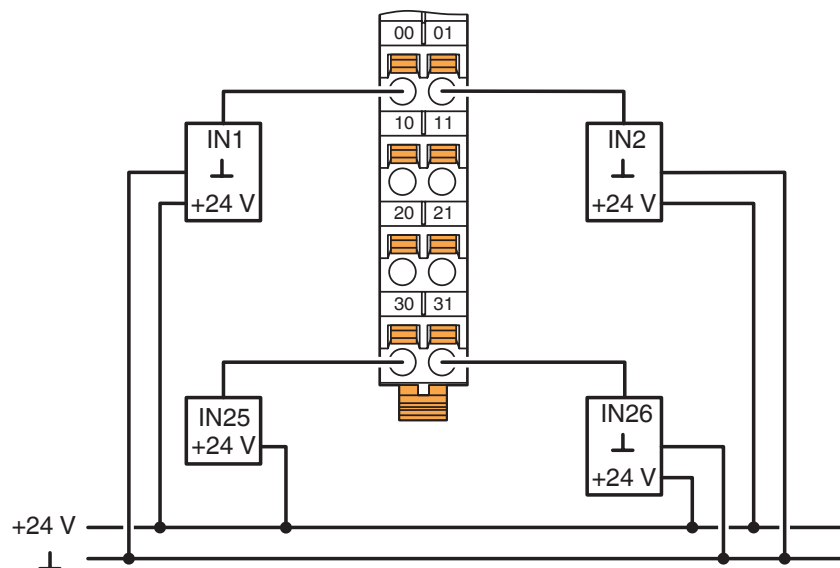
<https://www.phoenixcontact.com/us/products/2701226>

Drawings

Dimensional drawing



Connection diagram

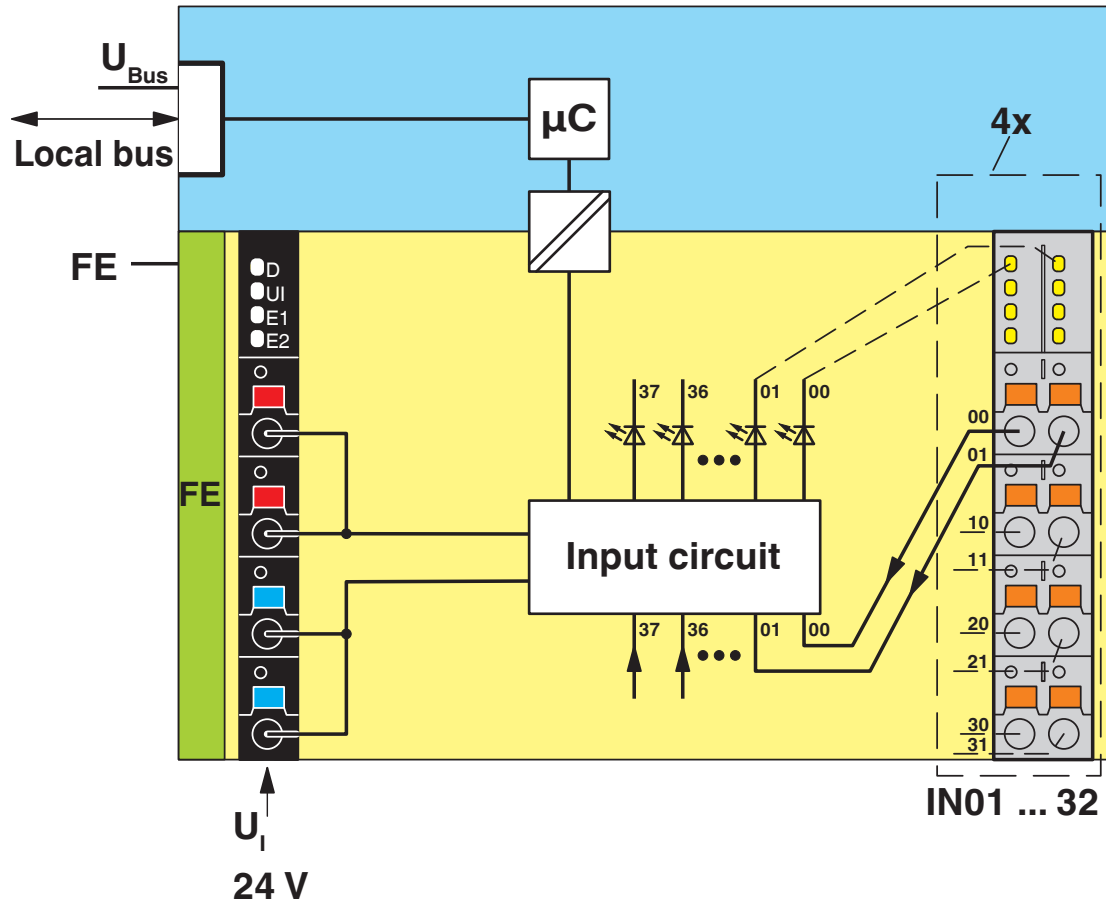


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Block diagram



Internal wiring of the terminal points

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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2701226>



DNV GL

Approval ID: TAA00000DF



PRS

Approval ID: TE/1020/880590/21

BSH

Approval ID: 840



RINA

Approval ID: ELE008423XG001



cULus Listed

Approval ID: E238705

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Classifications

ECLASS

| | |
|-------------|----------|
| ECLASS-13.0 | 27242604 |
| ECLASS-15.0 | 27242604 |

ETIM

| | |
|-----------|----------|
| ETIM 10.0 | EC001599 |
|-----------|----------|

UNSPSC

| | |
|-------------|----------|
| UNSPSC 21.0 | 32151600 |
|-------------|----------|

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Environmental product compliance

EU RoHS

| | |
|---|--------------|
| Fulfills EU RoHS substance requirements | Yes |
| Exemption | 7(a), 7(c)-I |

China RoHS

| | |
|--|---|
| Environment friendly use period (EFUP) | EFUP-50 |
| | An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required. |

EU REACH SVHC

| | |
|-------------------------------------|---|
| REACH candidate substance (CAS No.) | Lead(CAS: 7439-92-1) |
| | 6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol(CAS: 119-47-1) |
| SCIP | 176effd0-e82d-4dd0-ad49-f023593c2906 |

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