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Inline measurement terminal for position encoder, complete with accessories (connector and labeling field), 1 input for incremental encoder with rectangular signal (symmetrical or asymmetrical), 3 digital inputs 24 V DC, 3-conductor connection system

## Product Description

The terminal is designed for use within an Inline station. The terminal is used for detecting positions, lengths, or angular positions with incremental encoders. Both symmetrical (RS-422) and asymmetrical (5 V DC to 24 V DC) encoders with rectangular signals can be connected to the terminal block. Rotary transducers or length measurement systems can be read in with or without a Z pulse. To increase operational safety, all encoder inputs are monitored for broken cables. Using a special operating mode, the terminal supports distance-coded incremental encoders, with which the reference run can be reduced to very short distances. In addition to the input for the encoder signals, the terminal also has three digital 24 V DC inputs, one input for the home position switch, and two inputs for limit position switches. Thus 2 or 3-conductor sensors can be connected. Input I3 can also be used as an "open collector" output.

## Your advantages

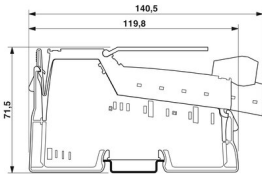
- Supports incremental encoders with symmetrical signals in accordance with EIA standard RS-422 (line driver)
- Supports incremental encoder with asymmetrical signals (push-pull)
- Supplies encoder with 5 V or 24 V voltage
- Three digital inputs for connecting two limit switches or a home position switch
- Maximum input frequency of 300 kHz
- 25-bit actual position value
- Precise evaluation via 1x, 2x, or 4x sampling
- Direction of rotation indicator via LED

## Commercial Data

Item number	2861755
Packing unit	1 pc
Minimum order quantity	1 pc
Sales Key	DRI
Product Key	DRI161
Catalog Page	Page 156 (C-6-2019)
GTIN	4017918899912
Weight per Piece (including packing)	178.033 g
Weight per Piece (excluding packing)	143 g
Customs tariff number	85389091
Country of origin	DE

## Technical Data

### Dimensions

Dimensional drawing	
Width	24.4 mm
Height	140.5 mm
Depth	71.5 mm

### Notes

#### Utilization restriction

EMC note	EMC: class A product, see manufacturer's declaration in the download area
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#### Utilization restriction

CCCex note	Use in potentially explosive areas is not permitted in China.
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### Material specifications

Color	green
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### Interfaces

#### Inline local bus

Connection method	Inline data jumper
Transmission speed	500 kbps
Transmission physics	Copper

### System properties

#### Module

ID code (dec.)	127
ID code (hex)	7F
Length code (hex)	02
Length code (dec)	02
Process data channel	32 bit
Input address area	4 Byte
Output address area	4 Byte
Register length	4 Byte
Required parameter data	1 Byte
Required configuration data	5 Byte

## Input data

### Digital

Number of inputs	3
Input voltage range "0" signal	-30 V DC ... 5 V DC
Input voltage range "1" signal	15 V DC ... 30 V DC
Connection method	Inline connector
Connection technology	3-conductor

### Incremental encoder

Number of inputs	1
Input frequency (5 V)	0 kHz ... 300 kHz
Input frequency (24 V)	0 Hz ... 300 kHz
Encoder signals	Symmetrical and asymmetrical encoders

### Counter

Number of inputs	3
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## Product properties

Type	modular
Product type	I/O component
Product family	Inline

### Insulation characteristics

Protection class	III (IEC 61140, EN 61140, VDE 0140-1)
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## Electrical properties

Test section	7.5 V supply (bus logics), I/O 500 V AC 50 Hz 1 min.
	7.5 V supply (bus logic)/functional ground 500 V AC 50 Hz 1 min.
	24 V supply (I/O) / functional ground 500 V AC 50 Hz 1 min.

### Supply

Drawing encoder supply voltage	Main circuit $U_M$
Encoder supply voltage	5 V DC
	24 V DC
Encoder supply current	max. 250 mA
I/O voltage	24 V DC
Typical current consumption	70 mA

### Potentials: Communications power ( $U_L$ )

Supply voltage	7.5 V DC (via voltage jumper)
Current draw	max. 70 mA

### Potentials: Main circuit supply ( $U_M$ )

Supply voltage	24 V DC (via voltage jumper)
Supply voltage range	19.2 V DC ... 30 V DC (including all tolerances, including ripple)
Current draw	max. 1 A

	typ. 340 mA
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## Connection data

### Connection technology

Connection name	Inline connector
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### Conductor connection

Connection method	Spring-cage connection
Conductor cross section rigid	0.08 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section flexible	0.08 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section AWG	28 ... 16
Stripping length	8 mm

### Inline connector

Connection method	Spring-cage connection
Conductor cross section, rigid	0.08 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section, flexible	0.08 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section AWG	28 ... 16
Stripping length	8 mm

## Environmental and real-life conditions

### Ambient conditions

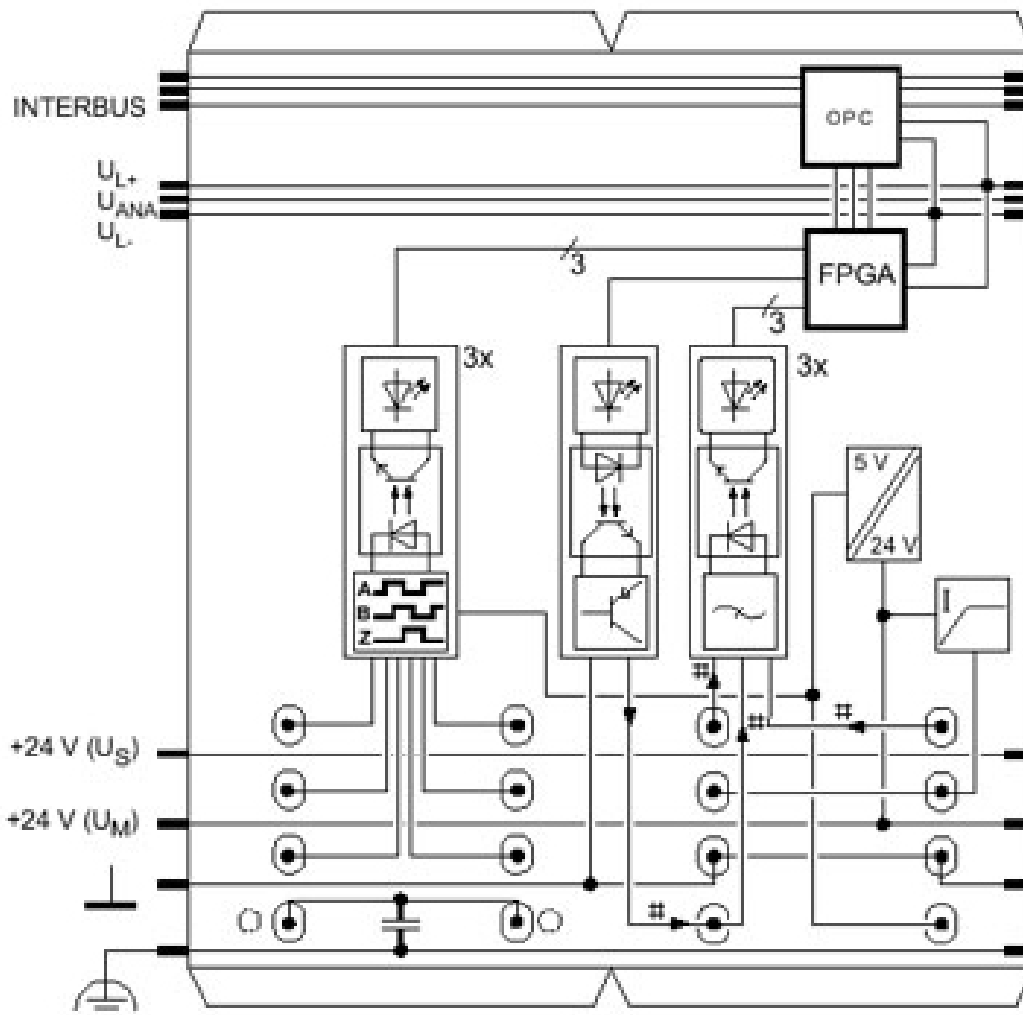
Degree of protection	IP20
Ambient temperature (operation)	-25 °C ... 55 °C
Ambient temperature (storage/transport)	-25 °C ... 85 °C
Permissible humidity (operation)	75 % ... 85 %
Permissible humidity (storage/transport)	75 % ... 85 %

## Mounting

Mounting type	DIN rail mounting
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Drawings

Block diagram



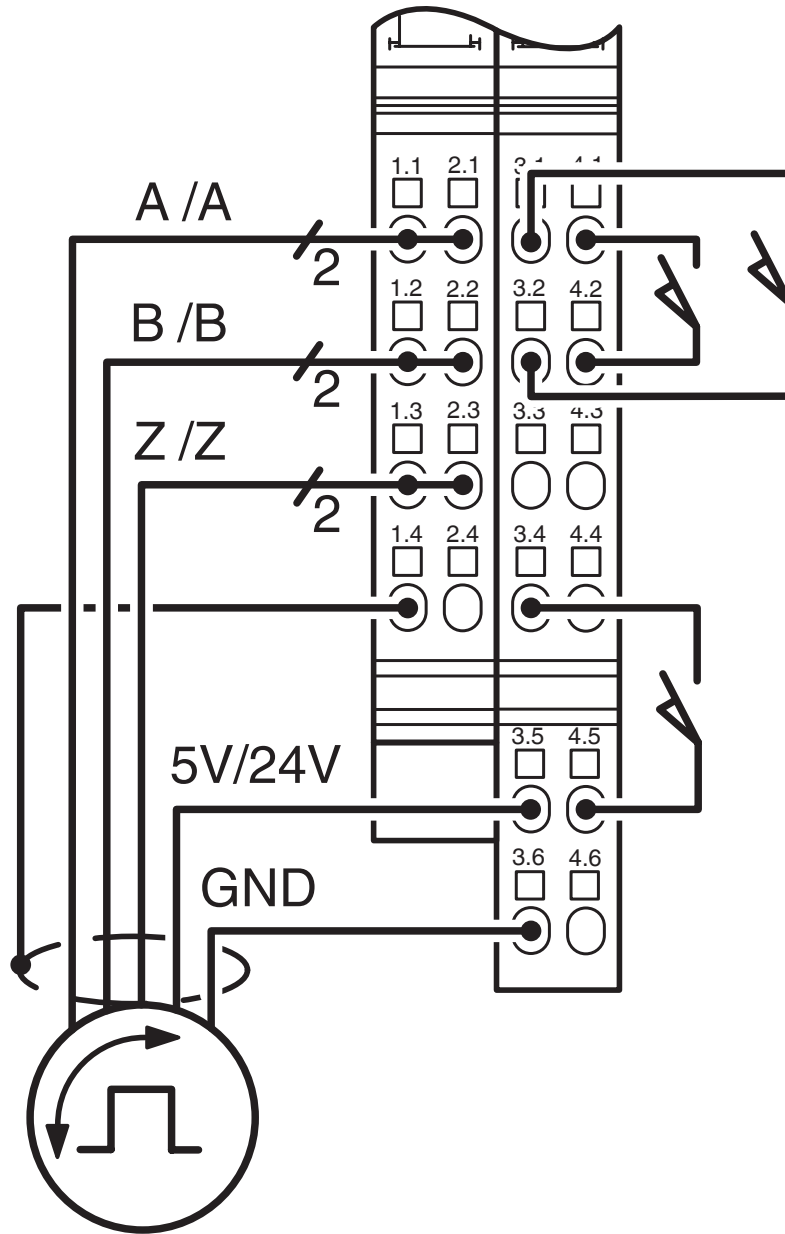
# IB IL INC-IN-PAC - Special function module

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<https://www.phoenixcontact.com/in/products/2861755>



Connection diagram

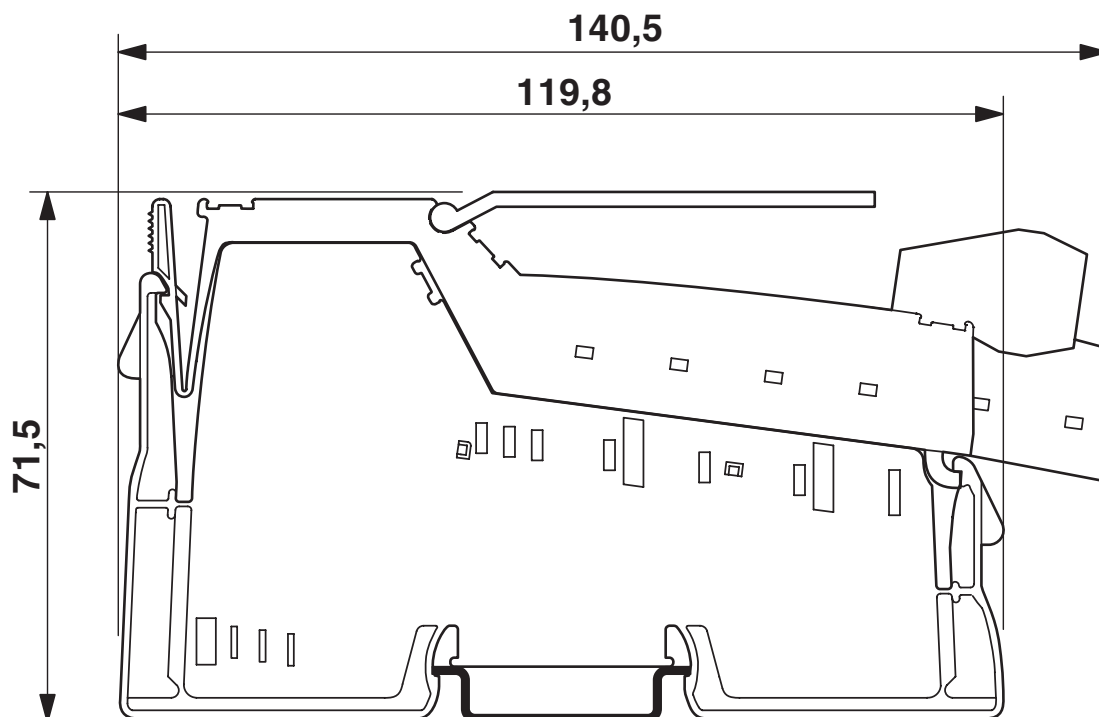


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Dimensional drawing




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## Approvals

 **UL Listed**  
Approval ID: FILE E 140324

 **cUL Listed**  
Approval ID: FILE E 140324

 **EAC**  
Approval ID: TR\_TS\_D\_01831-19

 **cUL Listed**  
Approval ID: FILE E 199827

 **UL Listed**  
Approval ID: FILE E 199827



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## Classifications

### ECLASS

ECLASS-11.0	27242605
ECLASS-12.0	27242605
ECLASS-13.0	27242605

### ETIM

ETIM 8.0	EC001601
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### UNSPSC

UNSPSC 21.0	32151600
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## Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads"

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## Accessories

### IB IL SCN-12-ICP - Inline connector

2727611

<https://www.phoenixcontact.com/in/products/2727611>



Connector, color coded, for digital 4, or 16-channel Inline input terminals

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### IB IL SCN-6 SHIELD - Inline shield connector

2726353

<https://www.phoenixcontact.com/in/products/2726353>



Inline shield connector

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### IB IL FIELD 2 - Labeling field

2727501

<https://www.phoenixcontact.com/in/products/2727501>



Labeling field, width: 12.2 mm

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## ESL 62X10 - Insert strip

0809492

<https://www.phoenixcontact.com/in/products/0809492>

Insert strip, Sheet, white, unlabeled, can be labeled with: Office printing systems:  
Laser printer, mounting type: insert, lettering field size: 62 x 10 mm, Number of  
individual labels: 72



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