

PLC-...-EIK 1-SVN 24P/P PLC-...-EIK 1-SVN 24M

PLC Electronic Sensor Terminal Blocks for NAMUR Proximity Sensors



INTERFACE

Data Sheet
102895_04_en

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Description

The **PLC-...-EIK 1-SVN 24...** electronic sensor terminal block converts the variable resistance of a NAMUR sensor into a digital signal that can be read by a PLC.

In addition, the internal circuitry monitors the sensor side for a short circuit or wire break and indicates these errors via the integrated LED.

Thanks to a corresponding resistance circuit, the **PLC-...-EIK 1-SVN 24...** can be used to monitor all mechanical switches (N/C or N/O contacts) for short circuits and/or wire breaks.

In addition to a high packing density, this switching amplifier features the following:

- Stabilized supply voltage for the NAMUR proximity switch
- Defined recognition and evaluation of the analog sensor signal
- Monitoring of the sensor cable for short circuits and wire breaks; a fault is indicated by the red LED
- Status display (high signal) via green LED
- 24 V/50 mA digital output for directly connecting programmable logic controllers
- Positive or negative error output depending on the version
- Additional output for error messages
- Connection option for PLC V8 adapter
- Bridging and labeling with standard terminal block accessories



Make sure you always use the latest documentation.
It can be downloaded at www.download.phoenixcontact.com.
A conversion table is available on the Internet at
www.download.phoenixcontact.com/general/7000_en_00.pdf.



This data sheet is valid for all products listed on the following page:

Ordering Data

PLC Electronic Sensor Terminal Block for NAMUR Proximity Sensors

Description	Type	Order No.	Pcs./Pck.
PLC electronic sensor terminal block for NAMUR proximity sensors			
Positive switching, with screw connection	PLC-SC-EIK 1-SVN 24P/P	2982663	10
Positive switching, with spring-cage connection	PLC-SP-EIK 1-SVN 24P/P	2982676	10
Negative switching, with screw connection	PLC-SC-EIK 1-SVN 24M	2982595	10
Negative switching, with spring-cage connection	PLC-SP-EIK 1-SVN 24M	2982605	10

Accessories

Description	Type	Order No.	Pcs./Pck.
Double-level terminal block, with pre-assembled resistors	UKK 5-2R/NAMUR	2941662	50
Insulating plate	PLC-ATP BK	2966841	25



The PLC-ATP BK insulating plate should be used in the following cases: always fit at the start and end of a PLC terminal strip for voltages greater than 250 V (L1, L2, L3) between the same terminal points on adjacent modules (FBST 8-PLC... or FBST 500... can be used for potential bridging) and for safe isolation between adjacent modules.

For other accessories such as power terminal blocks and plug-in bridges please consult the INTERFACE catalog and www.phoenixcontact.com.

Technical Data

Power Supply

Nominal input supply voltage U_{VN}	24 V DC $\pm 20\%$
Typical input current at U_{VN}	14 mA, approximately
Transmission frequency f_{limit}	350 Hz, approximately
Input circuit	Green LED, protection against polarity reversal, surge protection

Control Circuit

Non-load voltage	8.2 V DC $\pm 10\%$
Switching point according to EN 60947-5-6	
In conductive state	≥ 2.1 mA
In disabling state	≤ 1.2 mA
In the event of short circuit	20 mA, approximately
In the event of wire break	12 mA, approximately
Switching hysteresis	0.2 mA, approximately
Internal resistance	1 k Ω , approximately
Protective circuit	Surge protection

Alarm Output

Operating voltage range (negative switching)	3 V DC ... 33 V DC
Operating voltage range (positive switching)	$U_{VN} - 1.5$ V
Limiting continuous current	100 mA
Voltage drop at maximum limiting continuous current	≤ 1.5 V
Output circuit	Red LED, surge protection

Signal Output

Limiting continuous current	50 mA
Voltage drop U_R at maximum limiting continuous current	≤ 1.5 V
Output voltage (positive switching)	
In conductive state	≤ 100 mV
In disabling state	$U_{VN} - U_R$
Output voltage range (negative switching)	3 V DC ... 33 V DC
Output circuit	Surge protection

General Data	
Rated insulation voltage	50 V DC
Impulse voltage withstand level/insulation	0.4 kV/basic insulation
Ambient operating temperature range	-20°C ... 50°C
Nominal operating mode	100% operating factor
Inflammability class according to UL 94 (housing)	V0
Air and creepage distances between circuits	According to DIN EN 50178
Pollution degree	2
Surge voltage category	I
Mounting position	Any
Assembly	Can be aligned without spacing
Dimensions (W x H x D)	6.2 mm x 86 mm x 80 mm
Conductor cross section	
With screw connection	0.14 mm ² ... 2.5 mm ²
With spring-cage connection	0.2 mm ² ... 2.5 mm ²
Housing material	Polybutylene terephthalate PBT non-reinforced, green

Block Diagrams

Positive Switching Error Output ERR

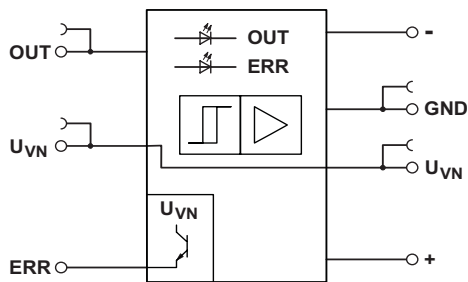


Figure 1 Block diagram for terminal blocks with positive switching outputs (P/P): Both +24 V connection terminal blocks are bridged internally

Negative Switching Error Output ERR

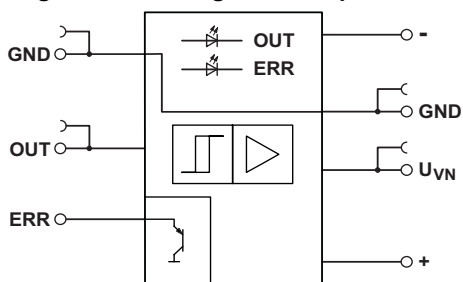


Figure 2 Block diagram for terminal blocks with negative switching (M) outputs: Both GND connection terminal blocks are bridged internally

Truth Table

Sensor status	Switching level		LED	
	OUT	ERR	green	red
Conductive	L	L	off	off
Disabling	H	L	ON	off
Short circuit	L	H	off	ON
Wire break	L	H	off	ON

Application Examples

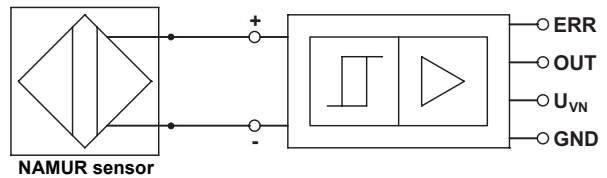


Figure 3 Application with NAMUR sensor

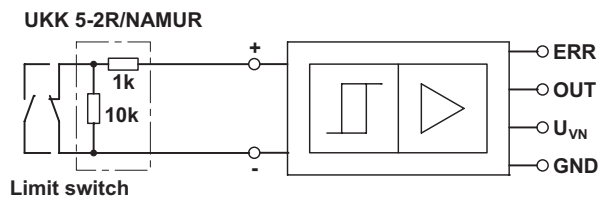


Figure 4 Application with limit switch

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