

Inductive proximity switch

Application:

Inductive proximity switches are capable of controlling contactors, relays or electronic logic switching systems. They are used as control or monitor switches on conveyor and crane systems, transfer lines and machine control systems, and to solve general automation problems.

Actuation:

Proximity switches are actuated by metals approaching or traveling past the active switching surface. The switches can be actuated through non-metallic substances such as glass, plastic or rubber. They are not affected by oil, water or dust.

Definitions:

Nominal switching distance S_n :

The nominal switching distance refers to a switching plate of steel St37 (the size of the switching plate should be taken from the individual description). It is reduced in the case of nickel by approximately 15%, in the case of stainless-steel by approximately 30%, in the case of brass by approximately 45%, in the case of aluminum by approximately 50% and in the case of copper by approximately 55%.

Real switching distance S_r :

The real switching distance takes into account permissible manufacturing tolerances.

Effective switching distance S :

The effective switching distance takes into account the permissible variation over the entire temperature range as well as the manufacturing tolerances. $S \leq 0,81 \times S_n$

Repeatability:

The repeatability of consecutive switching cycles is determined over a period of 8 hours with a housing temperature of 15°C - 30°C and a voltage of $E_n \pm 5\%$. The variation of any two measurements will not exceed the value stated in the specification.

Hysteresis:

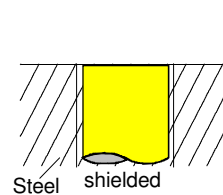
This is the difference between the operating point and the release point of a proximity switch.

Resistance to sustained short circuit:

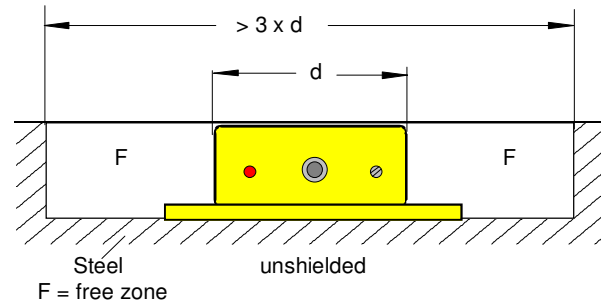
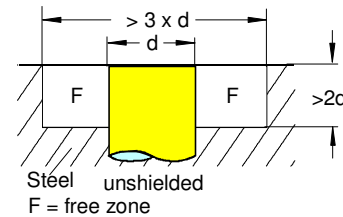
Switching resistance to sustained short circuit is not destroyed even in the event of sustained short circuit because the output range is disconnected electronically

Fitting instructions

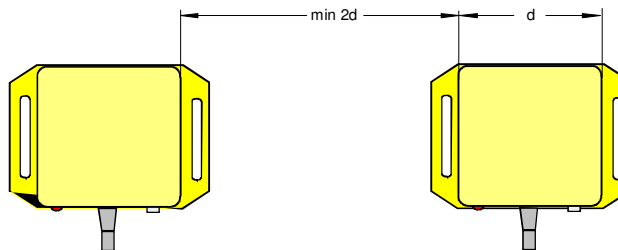
Flush fitting



Non-flush fitting



Fitting instructions for tandem arrangement



Measuring plate

Measuring plate steel St37

N14.. to N70..

Example: N30-...-...

N200.. to N1200..

100% = N^2

Measuring plate. 30x30mm

100% = 150x100x2 mm

Standard value

Target size %	150	50	25	12,5
Deviation from S_n in %	+10	-15	-25	-45

General specification:

Protection Class: IP 65 (DIN 40050 f)

Ambient Temperature

Type N...- -20°C to +80°C

Type NC...- -25°C to +100°C

NAMUR

Type NC...-1-... -20°C to +125°C

Cable dimensions: 2m LIYY 0,75mm²
special cable and extra length

available

Hysteresis: 1 to 5%

Repeatability: $\leq 1\%$

Example of order: N150-95-L83-100 L=2m

Order code:

N 125 - 95 - L 52 - 80 L=2m $\Rightarrow$ Cable length 2m
 $\hookrightarrow$ Nominal sensing range
 $\hookrightarrow$ Model 52
 $\hookrightarrow$ Type of connection: L = cable,
S = plug
 $\hookrightarrow$ Electric design: see Electrical design
 $\hookrightarrow$ Constructional form
 $\hookrightarrow$ Designation N = Inductive. NC = Temperature 100°C

Electrical design:

Two wire switch

4 NO 110 to 220 VAC
74 NO 24 to 250 V AC / DC
5 NC 110 to 220 VAC
75 NC 24 to 250 V AC / DC

Three wire switch

2 NC 15 to 30V DC, NPN
92 NC 10 to 80V DC, NPN
3 NO 15 to 30V DC, NPN
93 NO 10 to 80V DC, NPN
24 NC 15 to 30V DC, PNP
94 NC 10 to 80V DC, PNP
25 NO 15 to 30V DC, PNP
95 NO 10 to 80V DC, PNP

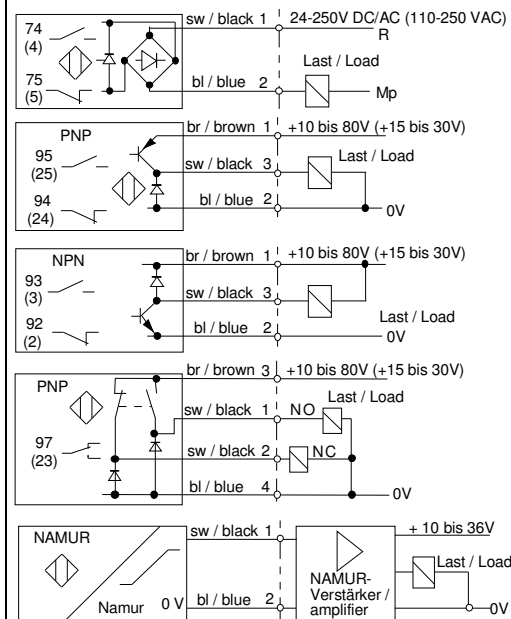
Four wire switch

23 exclusiv OR 15 to 30V DC, PNP
97 exclusiv OR 10 to 80V DC, PNP

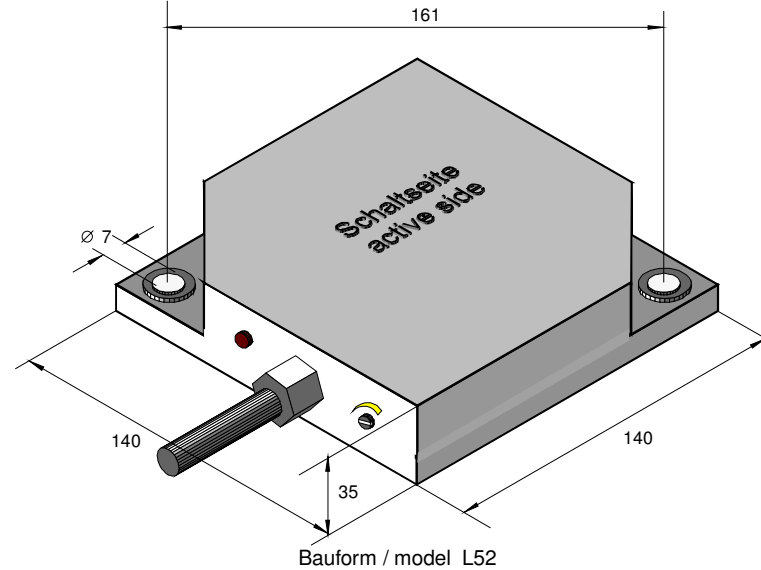
NAMUR switch (two wire)

1 NAMUR

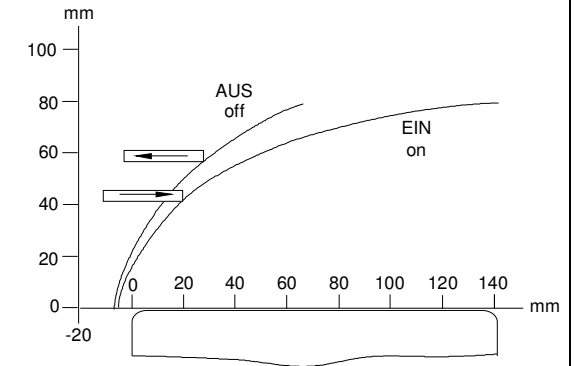
Anschlussbilder – Connection pictures



Induktiver Näherungsschalter / Proximity switch inductive

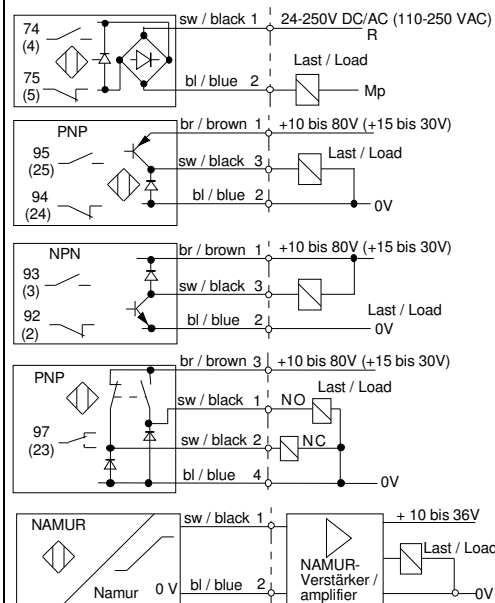


Schaltkurve / Switching curve

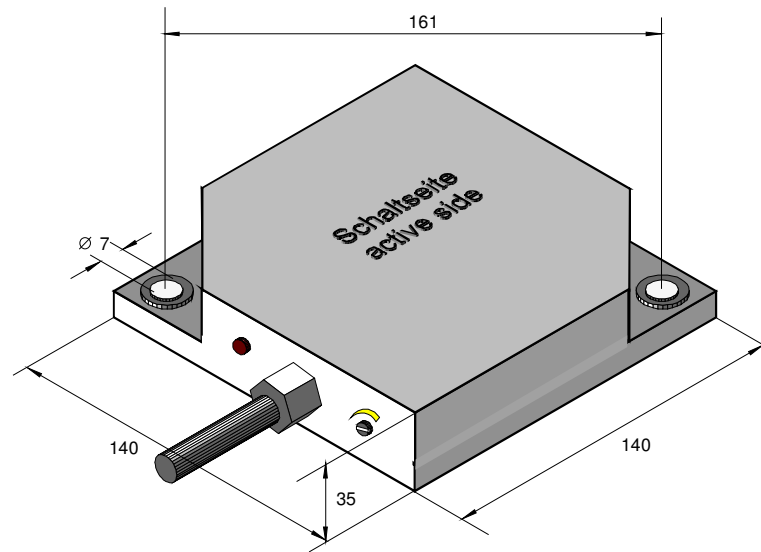
Bedämpfungsblech / Switching plate
Stahl / Steel ST37 70 x 70 x 2 mm

Schaltabstand / Nominal sensing distance	80 mm $\pm 10\%$ nicht bündig einbaubar (einstellbar) / unshielded adjustable			
Betriebsspannung / Operating voltage	Dreileiter / Three wire 10 – 80 V DC		Vierleiter / Four wire 10 – 80 V DC	Zweileiter / Two wire 20–250 V AC DC
Schaltfrequenz / Switching frequency	20 Hz		20 Hz	20 Hz
Ausgangsart / Outlet	PNP	NPN	PNP	NAMUR DIN 19234
Typ / Type coding	N125-95-L52-80	N125-93-L52-80	N125-97-L52-80	N125-74-L52-80
Typ / Type coding	N125-94-L52-80	N125-92-L52-80		N150-75-L52-80
Laststrom / Load current	400 mA		400 mA	5 bis 400 mA
Mindeststrom / Minimum current				5 mA
Spannungsabfall / Voltage drop	< 1 V		< 1 V	8 V
Schalthyserese / Hysteresis	5% bis / to 20%		5% bis / to 20%	5% bis / to 20%
Reproduzierbarkeit / Reproducibility	< 1 %		< 1 %	< 1 %
Temperaturdrift / Temperature drift	10 %		10 %	10 %
Betriebstemperatur / Ambient temperature	-20° C bis / to 80° C		-20° C bis / to 80° C	-20° C bis / to 80° C
Schutzart / Protection class	IP 67 		IP 67 	IP 67 
Kurzschlußfest / Short circuit protection	ja / yes		ja / yes	ja / yes
Verpolungsfest / Reserve polarity protection	ja / yes		ja / yes	ja / yes
Schaltzustandsanzeige / ON-OFF indicator	LED		LED	LED
Kabel (Länge/Querschnitt) / Cable dimensions	Oelflex; 2m / 3x 0,75 mm ²		Oelflex; 2m / 4x 0,75 mm ²	Oelflex; 2m / 2x 0,75 mm ²
Lieferbares Zubehör / Accessories remark	Kabelart; Kabellänge 5m, 10m, oder 15m auf Anfrage / Special cable and extra length 5m 10m or 15m available			NAMUR- amplifier

Anschlussbilder – Connection pictures



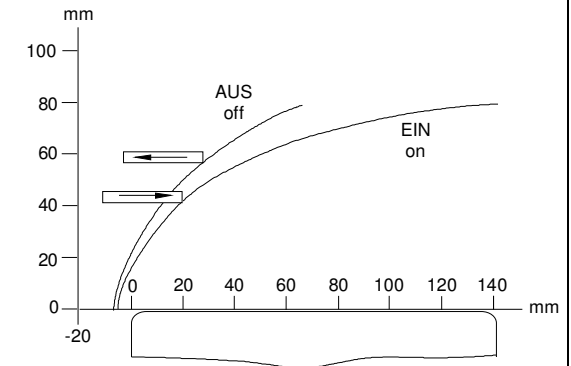
Induktiver Näherungsschalter / Proximity switch inductive



Bauform / model L52

Schaltkurve / Switching curve

Bedämpfungsblech / Switching plate
Stahl / Steel ST37 70 x 70 x 2 mm



Schaltabstand / Nominal sensing distance	80 mm ±10 % nicht bündig einbaubar (einstellbar) / unshielded adjustable			
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Schaltfrequenz / Switching frequency	20 Hz		20 Hz	20 Hz
Ausgangsart / Outlet	PNP		PNP	NAMUR DIN 19234
Typ / Type coding	NC125-95-L52-80	NC125-93-L52-80		NC125-74-L52-80
Typ / Type coding	NC125-94-L52-80	NC125-92-L52-80		NC150-75-L52-80
Laststrom / Load current	250 mA			3 – 60 VA
Mindeststrom / Minimum current				5 mA
Spannungsabfall / Voltage drop	< 1 V			8 V
Schalthyserese / Hysteresis	5% bis / to 20%			5% bis / to 20%
Reproduzierbarkeit / Reproducibility	< 1 %			< 1 %
Temperaturdrift / Temperature drift	10 %			10 %
Betriebstemperatur / Ambient temperature	-25° C bis / to 100° C			-25° C bis / to 100° C
Schutzart / Protection class	IP 67			IP 67
Kurzschlußfest / Short circuit protection	ja / yes			ja / yes
Verpolungsfest / Reserve polarity protection	ja / yes			ja / yes
Schaltzustandsanzeige / ON-OFF indicator	LED			LED
Kabel (Länge/Querschnitt) / Cable dimensions	Silicon, 2m / 3x 0,75 mm ²			Silicon, 2m / 2x 0,75 mm ²
Lieferbares Zubehör / Accessories remark	Kabelart; Kabellänge 5m,10m, oder 15m auf Anfrage/ Special cable and extra length 5m 10m or 15m available			NAMUR- amplifier