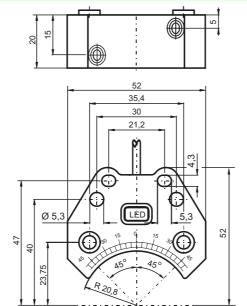
Inductive proximity switches

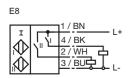
For installation in housing Direct mounting on standard actuators Satisfies machinery directive



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Switching element function PNP Dual Make function Rated operating distance s_n 3 mm Installation embeddable Output polarity DC Assured operating distance s_a 0 2.43 mm Reduction factor r_{Al} 0.5 Reduction factor r_{CU} 0.4 Reduction factor r_{CU} 1.1 Reduction factor r_{St37} 1.1 Nominal ratings Operating voltage U_B 10 30 V Switching frequency f 0 500 Hz Hysteresis f 1 Reverse polarity protection all connections Short-circuit protection pulsing Voltage drop f 2 3 V Design data Operating current f 0 0.5 mA typ. 0.1 f At 25 °C No-load supply current f 0 0.5 mA typ. 0.1 f At 25 °C Standard conformity EMC in accordance with IEC / EN 60947-5-2:2004 Standards Ambient conditions Ambient cemperature -25 f 70 °C (248 343 K) Mechanical specifications Connection type 180 mm, PVC cable	General specifications	
Installation embeddable Output polarity DC Assured operating distance s_a 0 2.43 mm Reduction factor r_{Al} 0.5 Reduction factor r_{CU} 0.4 Reduction factor r_{SL37} 1.1 Nominal ratings Operating voltage U_B 10 30 V Switching frequency f 0 500 Hz Hysteresis H typ. 5 % Reverse polarity protection all connections Short-circuit protection pulsing Voltage drop U_d ≤ 3 V Design data Operating current I_L 0 200 mA Off-state current I_r 0 0.5 mA typ. 0.1 μ A at 25 °C No-load supply current I_0 ≤ 25 mA Operating voltage display LED, green Indication of the switching state LED, yellow Standard conformity EMC in accordance with IEC / EN 60947-5-2:2004 Ambient conditions Ambient conditions Ambient temperature -25 70 °C (248 343 K) Storage temperature -40 85 °C (233 358 K)	Switching element function	PNP Dual Make function
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Rated operating distance s _n	3 mm
Assured operating distance s_a 0 2.43 mm Reduction factor r_{Al} 0.5 Reduction factor r_{Cu} 0.4 Reduction factor r_{V2A} 1 Reduction factor r_{S137} 1.1 Nominal ratings Operating voltage U_B 10 30 V Switching frequency f 0 500 Hz Hysteresis H typ. 5 % Reverse polarity protection all connections Short-circuit protection pulsing Voltage drop U_d ≤ 3 V Design data Operating current I_L 0 200 mA Off-state current I_r 0 0.5 mA typ. 0.1 μ A at 25 °C No-load supply current I_0 ≤ 25 mA Operating voltage display LED, green Indication of the switching state LED, yellow Standard conformity EMC in accordance with IEC / EN 60947-5-2:2004 Ambient conditions Ambient temperature -25 70 °C (248 343 K) Storage temperature -40 85 °C (233 358 K)	Installation	embeddable
Reduction factor r_{Al} 0.5 Reduction factor r_{CU} 0.4 Reduction factor r_{Sl37} 1.1 Nominal ratings 10 30 V Operating voltage U_B 10 500 Hz Hysteresis H typ. 5 % Reverse polarity protection all connections Short-circuit protection pulsing Voltage drop U_d ≤ 3 V Design data 0 Operating current I_L 0 200 mA Off-state current I_r 0 0.5 mA typ. 0.1 μA at 25 °C No-load supply current I_0 ≤ 25 mA Operating voltage display LED, green Indication of the switching state LED, yellow Standard conformity EMC in accordance with IEC / EN 60947-5-2:2004 Standards IEC / EN 60947-5-2:2004 Ambient conditions Ambient temperature -25 70 °C (248 343 K) Storage temperature -40 85 °C (233 358 K)	Output polarity	DC
Reduction factor r_{CU} 0.4 Reduction factor r_{S137} 1.1 Nominal ratings 10 30 V Operating voltage UB 10 500 Hz Hysteresis H typ. 5 % Reverse polarity protection all connections Short-circuit protection pulsing Voltage drop Ud ≤ 3 V Design data 0 200 mA Off-state current Ir 0 200 mA Off-state current I0 ≤ 25 mA Operating voltage display LED, green Indication of the switching state LED, yellow Standard conformity EMC in accordance with IEC / EN 60947-5-2:2004 Standards IEC / EN 60947-5-2:2004 Ambient conditions -25 70 °C (248 343 K) Ambient temperature -40 85 °C (233 358 K) Mechanical specifications	Assured operating distance s _a	0 2.43 mm
Reduction factor r_{V2A} 1 Reduction factor r_{S137} 1.1 Nominal ratings 10 30 V Operating voltage U _B 10 500 Hz Hysteresis H typ. 5 % Reverse polarity protection all connections Short-circuit protection pulsing Voltage drop U _d ≤ 3 V Design data 0 200 mA Off-state current I _r 0 200 mA Off-state current I ₀ ≤ 25 mA Operating voltage display LED, green Indication of the switching state LED, yellow Standard conformity EMC in accordance with IEC / EN 60947-5-2:2004 Standards IEC / EN 60947-5-2:2004 Ambient conditions -25 70 °C (248 343 K) Ambient temperature -40 85 °C (233 358 K) Mechanical specifications	Reduction factor r _{Al}	0.5
Reduction factor r_{S137} 1.1 Nominal ratings 10 30 V Switching frequency f 0 500 Hz Hysteresis H typ. 5 % Reverse polarity protection all connections Short-circuit protection pulsing Voltage drop U _d ≤ 3 V Design data 0 200 mA Operating current I _L 0 200 mA Off-state current I _r 0 0.5 mA typ. 0.1 μA at 25 °C No-load supply current I ₀ ≤ 25 mA Operating voltage display LED, green Indication of the switching state LED, yellow Standard conformity EMC in accordance with IEC / EN 60947-5-2:2004 Standards IEC / EN 60947-5-2:2004 Ambient conditions -25 70 °C (248 343 K) Ambient temperature -40 85 °C (233 358 K) Mechanical specifications	Reduction factor r _{Cu}	0.4
Nominal ratings 10 30 V Operating voltage UB 10 30 V Switching frequency f 0 500 Hz Hysteresis H typ. 5 % Reverse polarity protection all connections Short-circuit protection pulsing Voltage drop Ud ≤ 3 V Design data 0 200 mA Off-state current I₂ 0 200 mA Off-state current I₂ 0 0.5 mA typ. 0.1 μA at 25 °C No-load supply current I₀ ≤ 25 mA Operating voltage display LED, green Indication of the switching state LED, yellow Standard conformity EMC in accordance with IEC / EN 60947-5-2:2004 Standards IEC / EN 60947-5-2:2004 Ambient conditions -25 70 °C (248 343 K) Ambient temperature -40 85 °C (233 358 K) Mechanical specifications	Reduction factor r _{V2A}	1
Operating voltage U_B 10 30 V Switching frequency f 0 500 Hz typ. 5 % Reverse polarity protection all connections Short-circuit protection pulsing Voltage drop U_d ≤ 3 V Design data Operating current I_L 0 200 mA Off-state current I_r 0 0.5 mA typ. 0.1 μ A at 25 °C No-load supply current I_0 ≤ 25 mA Operating voltage display LED, green Indication of the switching state LED, yellow Standard conformity EMC in accordance with IEC / EN 60947-5-2:2004 Ambient conditions Ambient temperature -25 70 °C (248 343 K) Storage temperature -40 85 °C (233 358 K) Mechanical specifications	Reduction factor r _{St37}	1.1
Switching frequency f $0 \dots 500 \text{ Hz}$ Hysteresis H $10 \dots 500 \text{ Hz}$ $10 \dots 500 \text{ Hz}$ Hysteresis H $10 \dots 500 \text{ Hz}$ $10 \dots 5$	Nominal ratings	
Hysteresis H typ. 5 % all connections Short-circuit protection pulsing Voltage drop U_d ≤ 3 V Design data Operating current I_L 0 200 mA Off-state current I_r 0 0.5 mA typ. 0.1 μA at 25 °C No-load supply current I_0 ≤ 25 mA Operating voltage display LED, green Indication of the switching state LED, yellow Standard conformity EMC in accordance with IEC / EN 60947-5-2:2004 Standards IEC / EN 60947-5-2:2004 Ambient conditions Ambient temperature -25 70 °C (248 343 K) Storage temperature -40 85 °C (233 358 K) Mechanical specifications	Operating voltage U _B	10 30 V
Reverse polarity protection all connections $ \begin{array}{lllllllllllllllllllllllllllllllllll$	Switching frequency f	0 500 Hz
$\begin{array}{llllllllllllllllllllllllllllllllllll$	Hysteresis H	typ. 5 %
Voltage drop U_d $\leq 3 \text{ V}$ Design data Operating current I_L 0 200 mA Off-state current I_r 0 0.5 mA typ. 0.1 μ A at 25 °C No-load supply current I_0 $\leq 25 \text{ mA}$ Operating voltage display LED, green Indication of the switching state LED, yellow Standard conformity EMC in accordance with IEC / EN 60947-5-2:2004 Standards IEC / EN 60947-5-2:2004 Ambient conditions Ambient temperature -25 70 °C (248 343 K) Storage temperature -40 85 °C (233 358 K)	Reverse polarity protection	all connections
Design data $\begin{array}{llllllllllllllllllllllllllllllllllll$	Short-circuit protection	pulsing
Operating current I_L 0 200 mA Off-state current I_T 0 0.5 mA typ. 0.1 μ A at 25 °C No-load supply current I_0 \leq 25 mA Operating voltage display LED, green Indication of the switching state LED, yellow Standard conformity EMC in accordance with IEC / EN 60947-5-2:2004 Standards IEC / EN 60947-5-2:2004 Ambient conditions Ambient temperature -25 70 °C (248 343 K) Storage temperature -40 85 °C (233 358 K) Mechanical specifications	Voltage drop U _d	≤ 3 V
Off-state current I_r 0 0.5 mA typ. 0.1 μ A at 25 °C No-load supply current I_0 \leq 25 mA Operating voltage display LED, green Indication of the switching state LED, yellow Standard conformity EMC in accordance with IEC / EN 60947-5-2:2004 Standards IEC / EN 60947-5-2:2004 Ambient conditions Ambient temperature -25 70 °C (248 343 K) Storage temperature -40 85 °C (233 358 K) Mechanical specifications	Design data	
$\begin{array}{llllllllllllllllllllllllllllllllllll$	Operating current I _L	0 200 mA
Operating voltage display Indication of the switching state Standard conformity EMC in accordance with Standards IEC / EN 60947-5-2:2004 Standards IEC / EN 60947-5-2:2004 Ambient conditions Ambient temperature -25 70 °C (248 343 K) Storage temperature -40 85 °C (233 358 K) Mechanical specifications	Off-state current I _r	0 0.5 mA typ. 0.1 μA at 25 °C
Indication of the switching state Standard conformity EMC in accordance with Standards IEC / EN 60947-5-2:2004 Standards IEC / EN 60947-5-2:2004 Ambient conditions Ambient temperature -25 70 °C (248 343 K) Storage temperature -40 85 °C (233 358 K) Mechanical specifications	No-load supply current I ₀	≤ 25 mA
Standard conformity EMC in accordance with IEC / EN 60947-5-2:2004 Standards IEC / EN 60947-5-2:2004 Ambient conditions -25 70 °C (248 343 K) Storage temperature -40 85 °C (233 358 K) Mechanical specifications		LED, green
EMC in accordance with IEC / EN 60947-5-2:2004 Standards IEC / EN 60947-5-2:2004 Ambient conditions -25 70 °C (248 343 K) Ambient temperature -40 85 °C (233 358 K) Mechanical specifications	Indication of the switching state	LED, yellow
Standards IEC / EN 60947-5-2:2004 Ambient conditions -25 70 °C (248 343 K) Ambient temperature -25 70 °C (248 343 K) Storage temperature -40 85 °C (233 358 K) Mechanical specifications	Standard conformity	
Ambient conditions Ambient temperature -25 70 °C (248 343 K) Storage temperature -40 85 °C (233 358 K) Mechanical specifications	EMC in accordance with	IEC / EN 60947-5-2:2004
Ambient temperature -25 70 °C (248 343 K) Storage temperature -40 85 °C (233 358 K) Mechanical specifications	Standards	IEC / EN 60947-5-2:2004
Storage temperature -40 85 °C (233 358 K) Mechanical specifications	Ambient conditions	
Mechanical specifications	Ambient temperature	-25 70 °C (248 343 K)
·	Storage temperature	-40 85 °C (233 358 K)
Connection type 180 mm, PVC cable	Mechanical specifications	
		180 mm, PVC cable
Core cross-section 0.14 mm ²	Core cross-section	0.14 mm ²
Housing material PBT	Housing material	PBT
Sensing face PBT	Sensing face	PBT
Protection degree IP67	Protection degree	IP67
Note Installation in housing	Note	Installation in housing
General information	General information	
Use in the hazardous area see instruction manuals	Use in the hazardous area	see instruction manuals
Category 3D	Category	3D

Connection type:



Inductive proximity switches

ATEX 3D

Instruction

Device category 3D

Directive conformity Standard conformity

CE symbol

Ex-identification

General

Installation, Comissioning

Maintenance

[Fett]Special conditions

Maximum operating current IL

Maximum operating voltage UBmax

Maximum heating (Temperature rise)

at U_{Bmax} =30 V, I_{L} =200 mA at U_{Bmax} =30 V, I_{L} =100 mA at U_{Bmax} =30 V, I_{L} =50 mA at U_{Bmax} =30 V, I_{L} =25 mA Protection from mechanical danger

Protection of the connection cable

Manual electrical apparatus for hazardous areas

for use in hazardous areas with non-conducting combustible dust

94/9/EG

EN 50281-1-1

Protection via housing

Use is restricted to the following stated conditions



⟨ II 3D IP67 T 122 ° C X

The apparatus has to be operated according to the appropriate data in the data sheet and in this instruction manual.

The data stated in the data sheet are restricted by this operating instruction! The special conditions must be adhered to!

Laws and/or regulations and standards governing the use or intended usage

No changes can be made to apparatus, which are operated in hazardous areas. Repairs to these apparatus are not possible.

The maximum permissible load current must be restricted to the values given in

High load currents and load short-circuits are not permitted.

The maximum permissible operating voltage UBmax must be restricted to the values given in the following list. Tolerances are not permitted.

dependant of the load current I_L and the max. operating voltage U_{Bmax} . Information can be taken from the following list. The maximum surface temperature at maximum ambient temperature is given in the Ex identification of the apparatus.

52 °C

40 °C

35 °C

34 °C

The sensor must not be mechanically damaged.

The connection cable must be prevented from being subjected to tension and torsional loading.