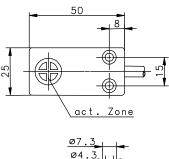
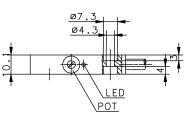
# **Technical Data**

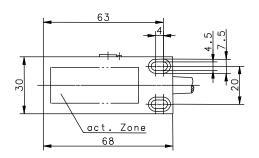
# Capacitive Proximity Switch

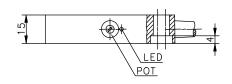


# Series E50 and E68 flush - DC





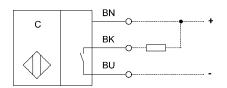




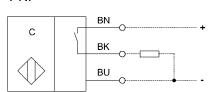
Mounting: flush	Type E50 Enclosure: Thermoplastic		Type E68 Enck	osure: Thermoplastic		
Mounting. hush	2m cable					
Sn	8mm	10mm				
Sr	3-8mm	3-10mm				
Output	N.O.	N.C.	N.O.	N.C.		
NPN	6507390001		6507356001			
PNP	6507990001		6507956001			

## Wiring Diagram NPN and PNP N.O.

#### NPN



#### PNP



This document will not become the contractual basis; the details included herein do not constitute any descriptions of expected conditions, so that warranties/claims for defects on account of possible variations of the actual qualities from the qualities described herein are explicitly excluded. All rights reserved. Specifications subject to change without notice!

Date of issue: 21.06.2012 / Page 1 of 2

Document: 7100015\_en.doc / Status: 4 / 0235-12

# **Technical Data**Capacitive Proximity Switch



## Technical Data according to EN 60947-5-2

Electrical data  Rated operating distance Mounting  Standard target  Effective operating distance  Sa			
Mounting     flush       Standard target     E50 = 25x20x1mm; E68 = 57x30x1mm; material: steel; connected to earth       Effective operating distance     Sr     Adjustable with potentiometer (POT)       Assured operating distance     Sa     0 ≤ Sa ≤ 0,8 Sr       Switching element function     See overview       Repeat accuracy     R     ≤ 0,1 Sr       Differential travel (hysteresis)     H     ≤ 0,2 Sr       Frequency of operating cycles     f     ≈ 25Hz       Rated operational voltage     Ue     12 - 24V DC       Operational voltage range     Us     10 - 36V DC       Rated insulation voltage     Ui     75V DC       Rated insulation voltage     Ui     500V       Voltage drop     Ud     ≤ 1,5V DC       Utilization category     DC-13 (Switching element)       Rated operational current     Ie     ≤ 200mA DC       Ufilization category     DC-13 (Switching element)       Rated operational current     Ir     ≤ 15mA DC       Minimum operational current     Ir     ≤ 0,5mA DC       No-load supply current     Ir     ≤ 0,5mA DC       No-load supply current     Ir     ≥ 15mA DC       Switching element     Permanent overload and s.c.p.       Short-circuit protection     Pulsed       Rated conditional shor	Electrical data		
Mounting     flush       Standard target     E50 = 25x20x1mm; E68 = 57x30x1mm; material: steel; connected to earth       Effective operating distance     Sr     Adjustable with potentiometer (POT)       Assured operating distance     Sa     0 ≤ Sa ≤ 0,8 Sr       Switching element function     See overview       Repeat accuracy     R     ≤ 0,1 Sr       Differential travel (hysteresis)     H     ≤ 0,2 Sr       Frequency of operating cycles     f     ≈ 25Hz       Rated operational voltage     Ue     12 - 24V DC       Operational voltage range     Us     10 - 36V DC       Rated insulation voltage     Ui     75V DC       Rated insulation voltage     Ui     500V       Voltage drop     Ud     ≤ 1,5V DC       Utilization category     DC-13 (Switching element)       Rated operational current     Ie     ≤ 200mA DC       Ufilization category     DC-13 (Switching element)       Rated operational current     Ir     ≤ 15mA DC       Minimum operational current     Ir     ≤ 0,5mA DC       No-load supply current     Ir     ≤ 0,5mA DC       No-load supply current     Ir     ≥ 15mA DC       Switching element     Permanent overload and s.c.p.       Short-circuit protection     Pulsed       Rated conditional shor	Rated operating distance	S <sub>n</sub>	See overview
Standard target  Effective operating distance  Effective operating distance  Effective operating distance  Se overview  Effective operating distance  Se overview  Adjustable with potentiometer (POT)  Turn right ≜ high sensitivity, turn left ≜ low sensitivity  Assured operating distance  Se overview  Assured operating distance  See overview  Repeat accuracy  R ≤ 0,1·Sr  Differential travel (hysteresis)  H ≤ 0,2·Sr  Frequency of operating cycles  f ≈ 25Hz  Rated operational voltage  Ue 12 − 24V DC  Operational voltage range  Ul 10 − 36V DC  Rated insulation voltage  Ul 75V DC  Rated insulation voltage  Ul 10 − 36V DC  Rated insulation voltage  Voltage drop  Ul 4 ≤ 1,5V DC  Utilization category  Rated operational current  Um 20 − 30 (Switching element)  Rated operational current  In 20 − 30 (Switching element)  All C  Minimum operational current  In 2 1 mA DC  Off-state current  No-load supply current  No-load supply current  Switching element  Permanent overload and s.c.p.  Flase polantity protection  With permutation of +, −, output no damage occurs			flush
Effective operating distance $S_r  \text{Adjustable with potentiometer (POT)} \\                                   $			
Assured operating distance $S_a = 0.5 \le 0.0 \le 0$			See overview
Assured operating distance $S_a$ 0 ≤ Sa ≤ 0,8·Sr Switching element function See overview Repeat accuracy R ≤ 0,1·Sr Differential travel (hysteresis) H ≤ 0,2·Sr Frequency of operating cycles f ≈ 25Hz Rated operational voltage Ue 12 − 24V DC Operational voltage arange Ue 10 − 36V DC Rated insulation voltage Uimp 500V Voltage drop Ud ≤ 1,5V DC Utilization category DC-13 (Switching element) Rated operational current le ≤ 200mA DC Minimum operational current lr ≤ 2,5·mA DC Switching element lr ← 2,5·mA DC Switching element No-load supply current load supply current load supply frequency Pulsed Rated conditional short-circuit current Rated conditional short-circuit current load supply frequency DC Switching element load supply frequency DC Switching element load supply frequency Scale Supply frequency With permutation of +, −, output no damage occurs	Effective operating distance	S <sub>r</sub>	Adjustable with potentiometer (POT)
Switching element function       See overview         Repeat accuracy       R       ≤ 0,1·Sr         Differential travel (hysteresis)       H       ≤ 0,2·Sr         Frequency of operating cycles       f       ≈ 25Hz         Rated operational voltage       Ue       12 – 24V DC         Operational voltage range       UB       10 – 36V DC         Rated insulation voltage       Ui       75V DC         Rated impulse withstand voltage       Uimp       500V         Voltage drop       Ud       ≤ 1,5V DC         Utilization category       DC-13 (Switching element)         Rated operational current       Ie       ≤ 200mA DC         Minimum operational current       Im       ≥ 1mA DC         Off-state current       Ir       ≤ 0,5mA DC         No-load supply current       Io       ≤ 15mA DC         Switching element       Permanent overload and s.c.p.         Short-circuit protection       Pulsed         Rated conditional short-circuit current       100A         Rated supply frequency       DC         False polarity protection       With permutation of +, -, output no damage occurs		-,	Turn right ≙ high sensitivity, turn left ≙ low sensitivity
Repeat accuracy Differential travel (hysteresis) H ≤ 0,2·Sr Frequency of operating cycles Fated operational voltage Ue Deprational voltage range Ue Rated insulation voltage Ui Rated operational current Ui Rated operational current Ui Rated operational current Ui Rated current Ui Rated conditional short-circuit current Rated conditional short-circuit current Rated supply frequency False polarity protection With permutation of +, -, output no damage occurs	Assured operating distance	Sa	0 ≤ Sa ≤ 0,8·Sr
Repeat accuracy Differential travel (hysteresis) H ≤ 0,2·Sr Frequency of operating cycles Fated operational voltage Ue Deprational voltage range Ue Rated insulation voltage Ui Rated operational current Ui Rated operational current Ui Rated operational current Ui Rated current Ui Rated conditional short-circuit current Rated conditional short-circuit current Rated supply frequency False polarity protection With permutation of +, -, output no damage occurs	Switching element function		See overview
Frequency of operating cycles $f$ ≈ 25Hz Rated operational voltage $U_e$ 12 $-$ 24V DC $0$ Operational voltage range $U_B$ 10 $-$ 36V DC $0$ Rated insulation voltage $0$ U <sub>i</sub> 75V DC $0$ Rated impulse withstand voltage $0$ U <sub>imp</sub> 500V $0$ Voltage drop $0$ U <sub>d</sub> ≤ 1,5V DC $0$ Utilization category $0$ DC-13 (Switching element) $0$ Rated operational current $0$ Voltage drop $0$ U <sub>imp</sub> $0$ DC-13 (Switching element) $0$ Rated operational current $0$ Voltage drop $0$ DC-13 (Switching element) $0$ Parameter		R	≤ 0,1·Sr
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	Differential travel (hysteresis)	Н	≤ 0,2·Sr
$\begin{array}{llllllllllllllllllllllllllllllllllll$	Frequency of operating cycles	f	≈ 25Hz
$ \begin{array}{llllllllllllllllllllllllllllllllllll$	Rated operational voltage	$U_e$	12 – 24V DC
$ \begin{array}{llllllllllllllllllllllllllllllllllll$	Operational voltage range	$U_B$	10 – 36V DC
$ \begin{array}{llllllllllllllllllllllllllllllllllll$	Rated insulation voltage	$U_{i}$	75V DC
$ \begin{array}{llllllllllllllllllllllllllllllllllll$	Rated impulse withstand voltage	$U_{imp}$	500V
Rated operational current $I_e$ ≤ 200mA DC         Minimum operational current $I_m$ ≥ 1mA DC         Off-state current $I_r$ ≤ 0,5mA DC         No-load supply current $I_o$ ≤ 15mA DC         Switching element       Permanent overload and s.c.p.         Short-circuit protection       Pulsed         Rated conditional short-circuit current       100A         Rated supply frequency       DC         False polarity protection       With permutation of +, -, output no damage occurs	Voltage drop	$U_d$	
$\begin{array}{lll} \mbox{Minimum operational current} & \mbox{I}_{m} & \geq 1\mbox{mA DC} \\ \mbox{Off-state current} & \mbox{I}_{r} & \leq 0,5\mbox{mA DC} \\ \mbox{No-load supply current} & \mbox{I}_{o} & \leq 15\mbox{mA DC} \\ \mbox{Switching element} & \mbox{Permanent overload and s.c.p.} \\ \mbox{Short-circuit protection} & \mbox{Pulsed} \\ \mbox{Rated conditional short-circuit current} & 100\mbox{A} \\ \mbox{Rated supply frequency} & \mbox{DC} \\ \mbox{False polarity protection} & \mbox{With permutation of +, -, output no damage occurs} \\  \end{array}$	Utilization category		DC-13 (Switching element)
$ \begin{array}{llllllllllllllllllllllllllllllllllll$	Rated operational current	l <sub>e</sub>	≤ 200mA DC
No-load supply current       I₀       ≤ 15mA DC         Switching element       Permanent overload and s.c.p.         Short-circuit protection       Pulsed         Rated conditional short-circuit current       100A         Rated supply frequency       DC         False polarity protection       With permutation of +, -, output no damage occurs		I <sub>m</sub>	
Switching element Permanent overload and s.c.p. Short-circuit protection Pulsed Rated conditional short-circuit current 100A Rated supply frequency DC False polarity protection With permutation of +, -, output no damage occurs	Off-state current	I <sub>r</sub>	- / -
Short-circuit protection Pulsed Rated conditional short-circuit current 100A Rated supply frequency DC False polarity protection With permutation of +, -, output no damage occurs	117	lo	≤ 15mA DC
Rated conditional short-circuit current  Rated supply frequency  False polarity protection  100A  DC  With permutation of +, -, output no damage occurs			
Rated supply frequency DC False polarity protection With permutation of +, -, output no damage occurs			
False polarity protection  With permutation of +, -, output no damage occurs			
	Rated supply frequency		DC
Time delay before availability t < 50ms			
Time delay before availability ty = 50115	Time delay before availability	$t_v$	≤ 50ms

Electromagnetic compatibility (EMC)					
Electromagnetic field test	IEC 61000-4-3	3V/m, 801000MHz			
Electrostatic discharge test	IEC 61000-4-2	8kV AD			
Electrical fast transient immunity test (Burst)	IEC 61000-4-4	1kV/ coupling clamp			
Impulse voltage withstandability (Surge)	IEC 61000-4-5	500V, 1,2/50μs bei Ri = $42Ω$			
Radiated disturbance field strength	EN 55011	≤ 40dB (µV/m)			

Mechanical Data	
Enclosure	PBT black
Ambient air temperature	-25°C 70°C
Type of protection	IP65 (NEMA 12)
Pollution degree	3 (Pollution of the active zone can cause Impairments of the operating distances.)
Indication	Power ON: LED = yellow
Termination type	E50 = Cable 3 x 0,34mm² x 2m; PVC–Outer jacket, black E68 = Cable 3 x 0,5mm² x 2m; PVC–Outer jacket, black

This document will not become the contractual basis; the details included herein do not constitute any descriptions of expected conditions, so that warranties/claims for defects on account of possible variations of the actual qualities from the qualities described herein are explicitly excluded. All rights reserved. Specifications subject to change without notice!

Date of issue: 21.06.2012 / Page 2 of 2 Document : 7100015\_en.doc / Status : 4 / 0235-12