

PROXIMITY SWITCH TUTORIAL



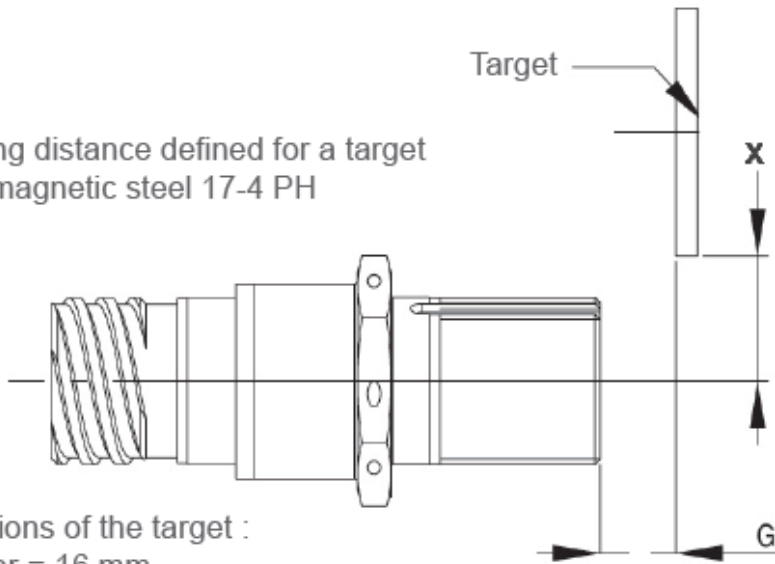
2 WIRES PROXIMITY SWITCH NORMALLY OPEN

EXAMPLE OF PRODUCT 84 792 000

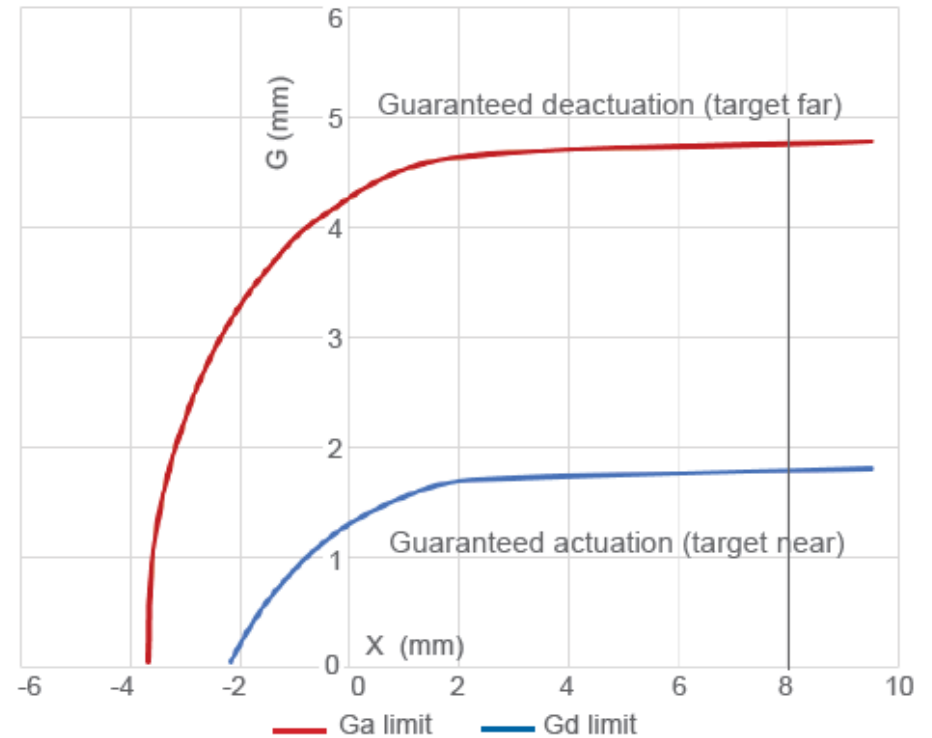


DETECTION CURVE (SLIDE BY MODE)

Switching distance defined for a target in ferromagnetic steel 17-4 PH



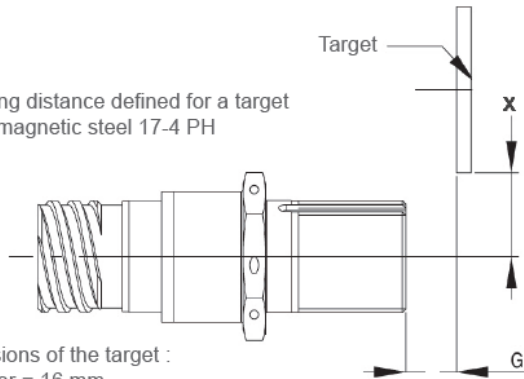
Dimensions of the target :
Diameter = 16 mm
Thickness = 1 mm



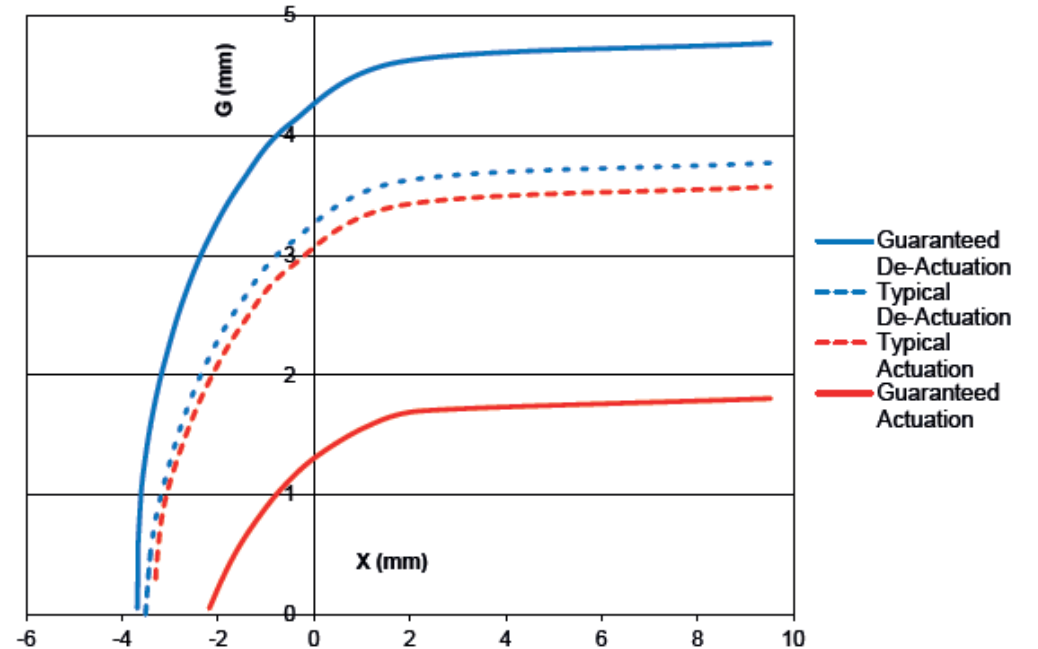
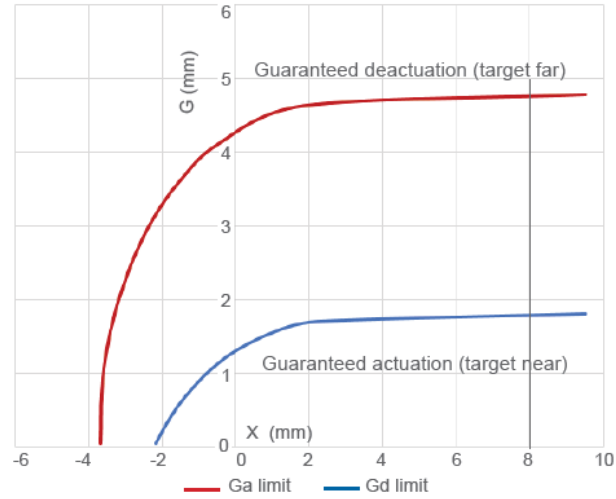


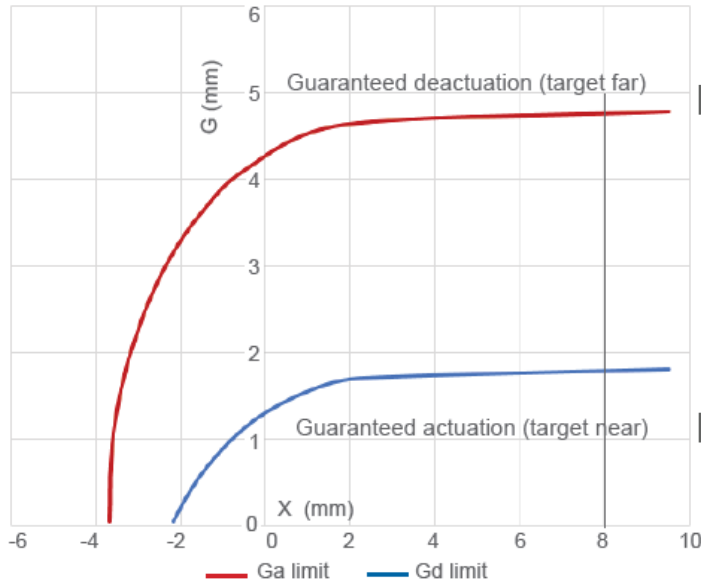
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Switching distance defined for a target in ferromagnetic steel 17-4 PH

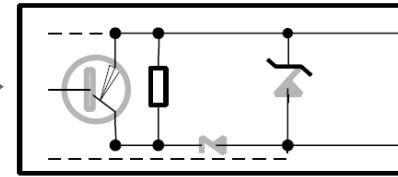


Dimensions of the target :
Diameter = 16 mm
Thickness = 1 mm

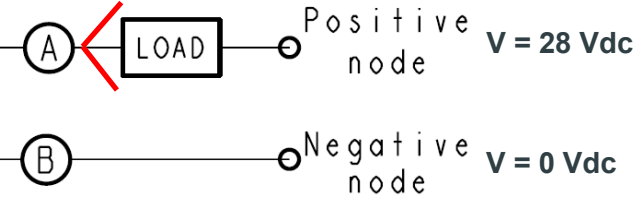




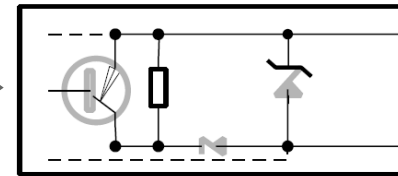
WIRING DIAGRAM:



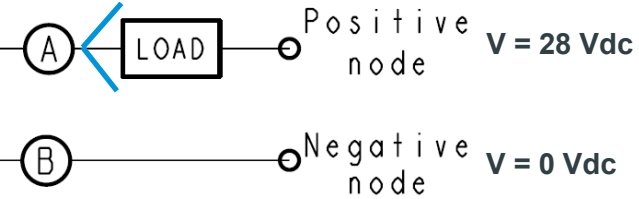
I = between 1 mA and 3 mA



WIRING DIAGRAM:



I = between 6 mA and 12 mA



OUTPUT STATES AND PERMANENT BUILT IN TEST INFORMATION (PBIT)

Load Current*	< 1 mA	1 mA < I < 3 mA	3 mA < I < 6 mA	6 mA < I < 12 mA	I > 12 mA
Output state	Proximity Switch failure or external wiring open	Target far	Proximity Switch internal failure	Target near	Proximity Switch internal failure or external short circuit

* Load = 400 Ω ± 5%

Normally Open (NO):

i.e. when target is far there is no current (zero current) in the switch.

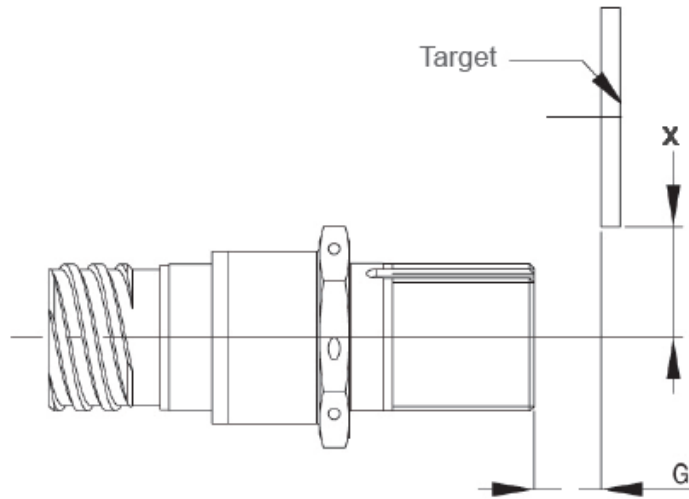
Because of BIT, current is close to zero through the switch ~ 2 mA.

3 WIRES PROXIMITY SWITCH NORMALLY CLOSED

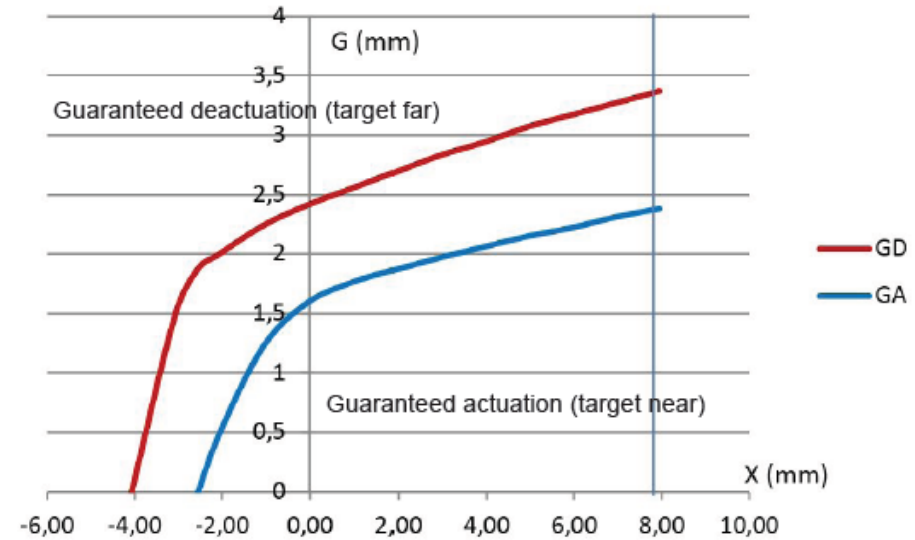
EXAMPLE OF PRODUCT 84 793 050



DETECTION CURVE (SLIDE BY MODE)

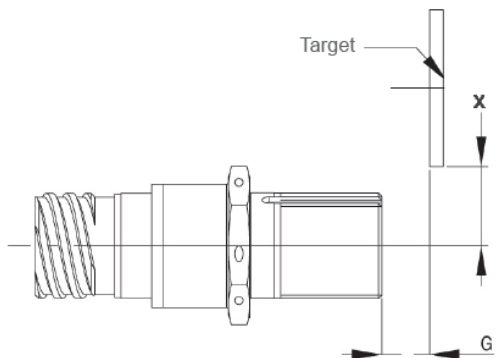


Switching distance defined for :
 Target in ferromagnetic steel 15-5 PH
 Dimensions of the target: diameter = 15.875 mm, thickness = 1 mm

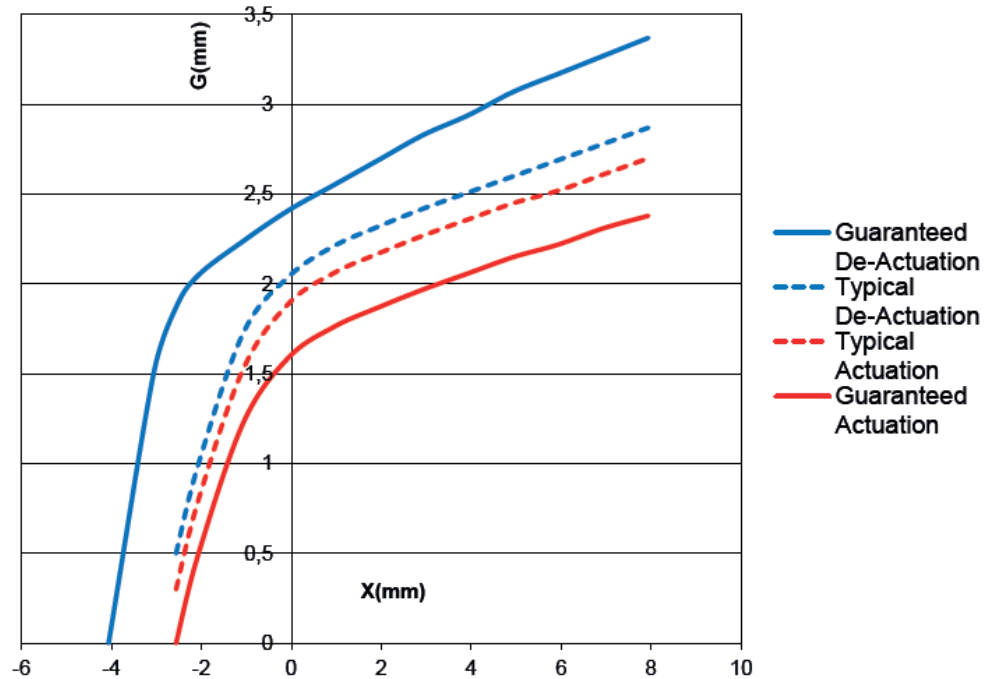
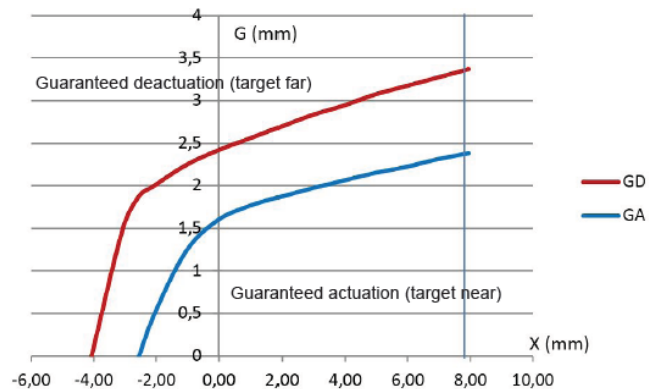


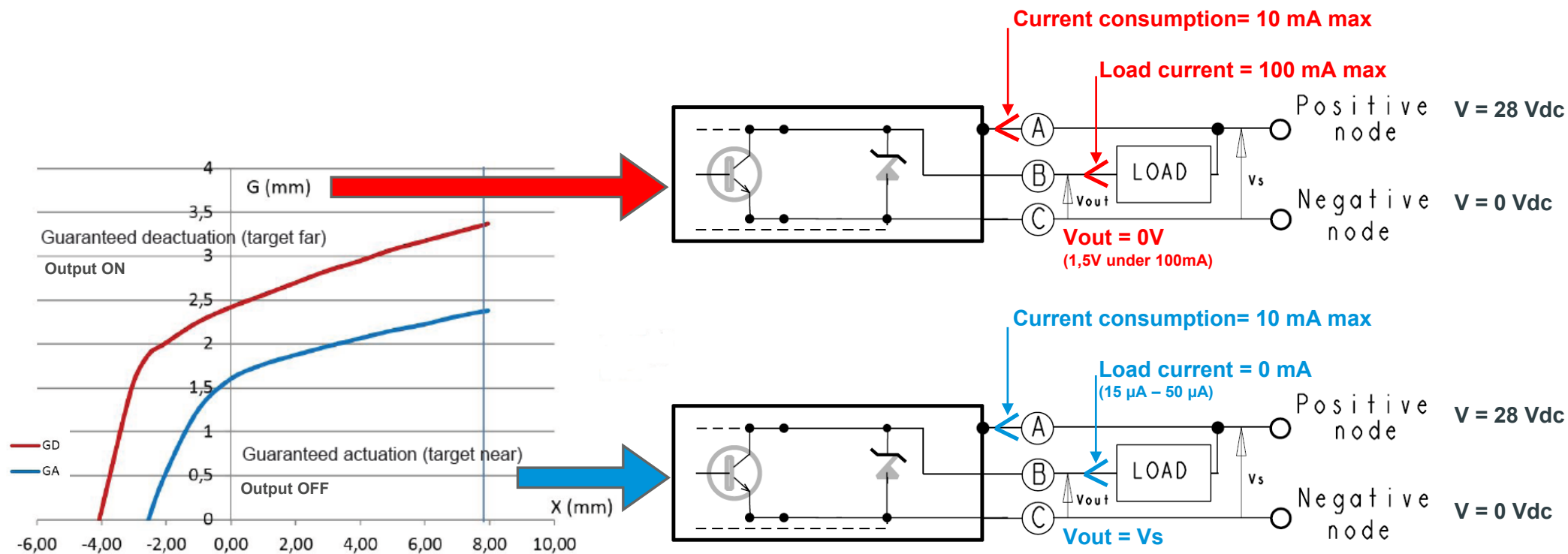


DETECTION CURVE (SLIDE BY MODE)



Switching distance defined for :
 Target in ferromagnetic steel 15-5 PH
 Dimensions of the target: diameter = 15.875 mm, thickness = 1 mm

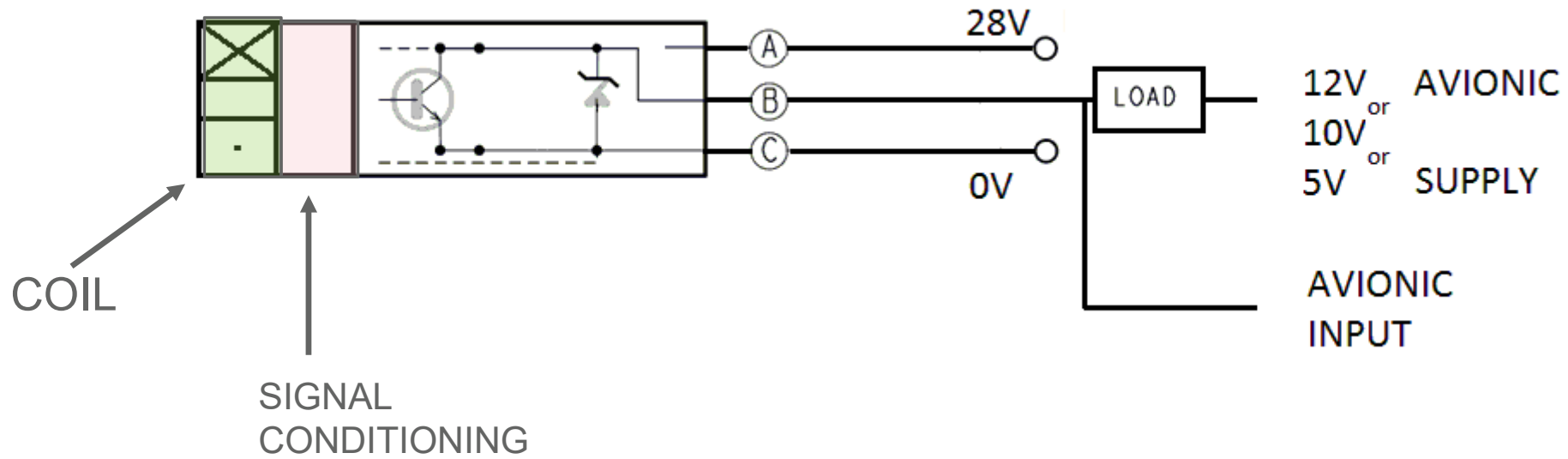


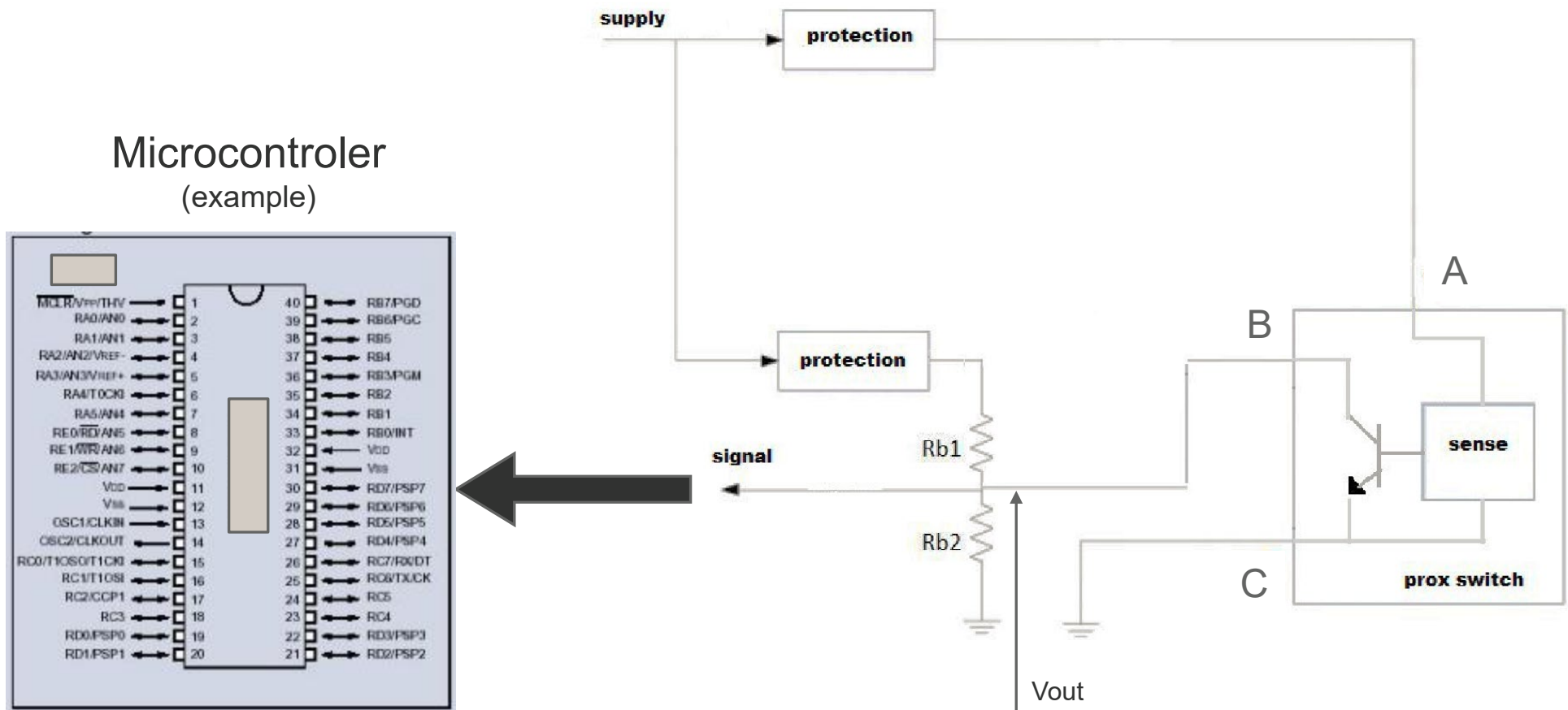


Normally Closed (NC):

Output conductive when target is in de-actuation area

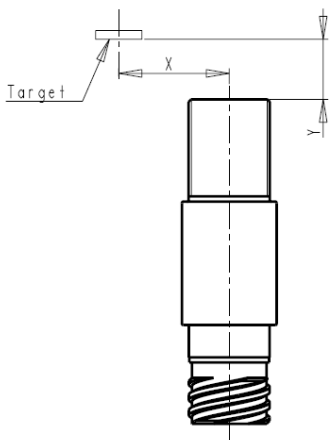
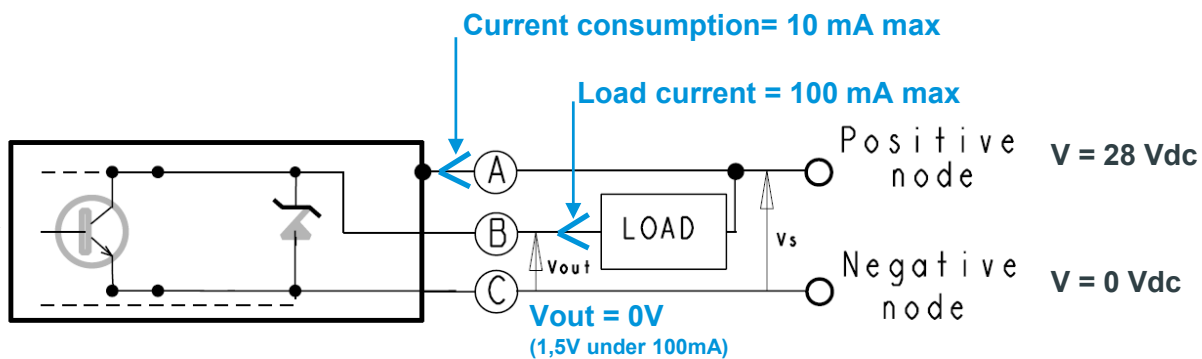
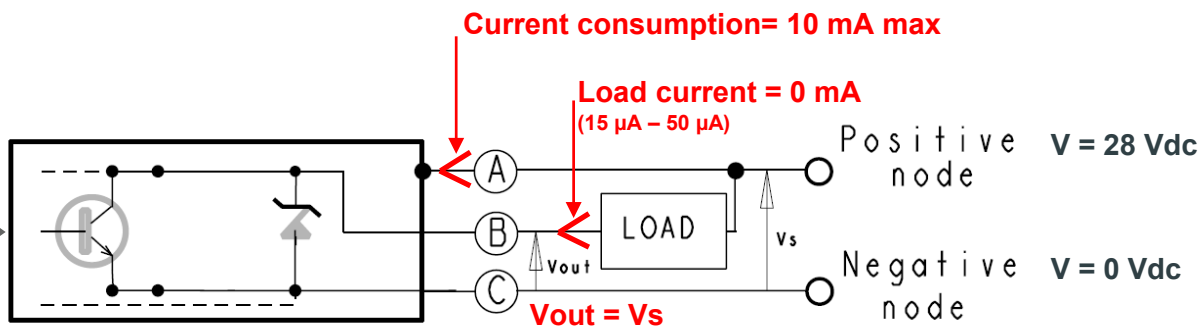
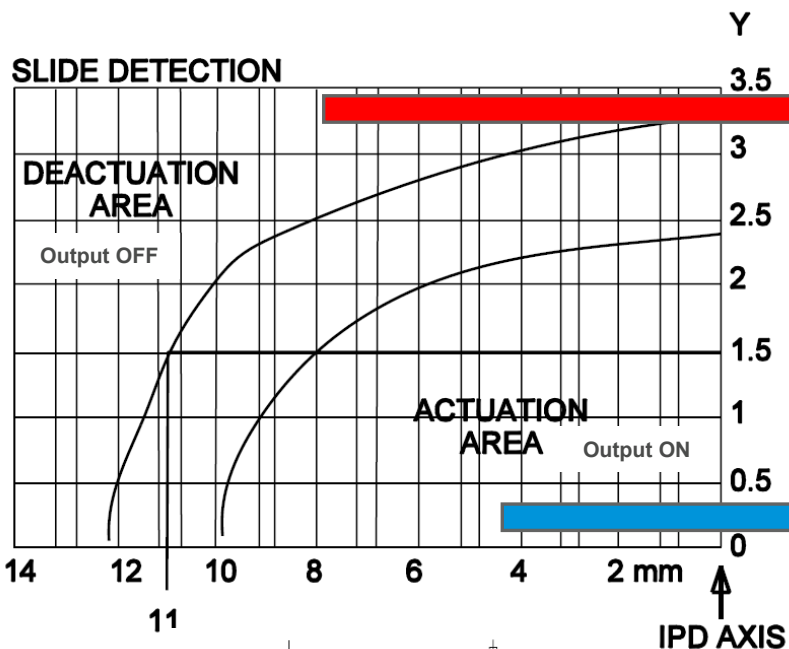
i.e. when target is far there is current in the switch thus $V_{out} \sim 0 \text{ V}$.





3 WIRES PROXIMITY SWITCH NORMALLY OPEN

EXAMPLE OF PRODUCT 84 799 117



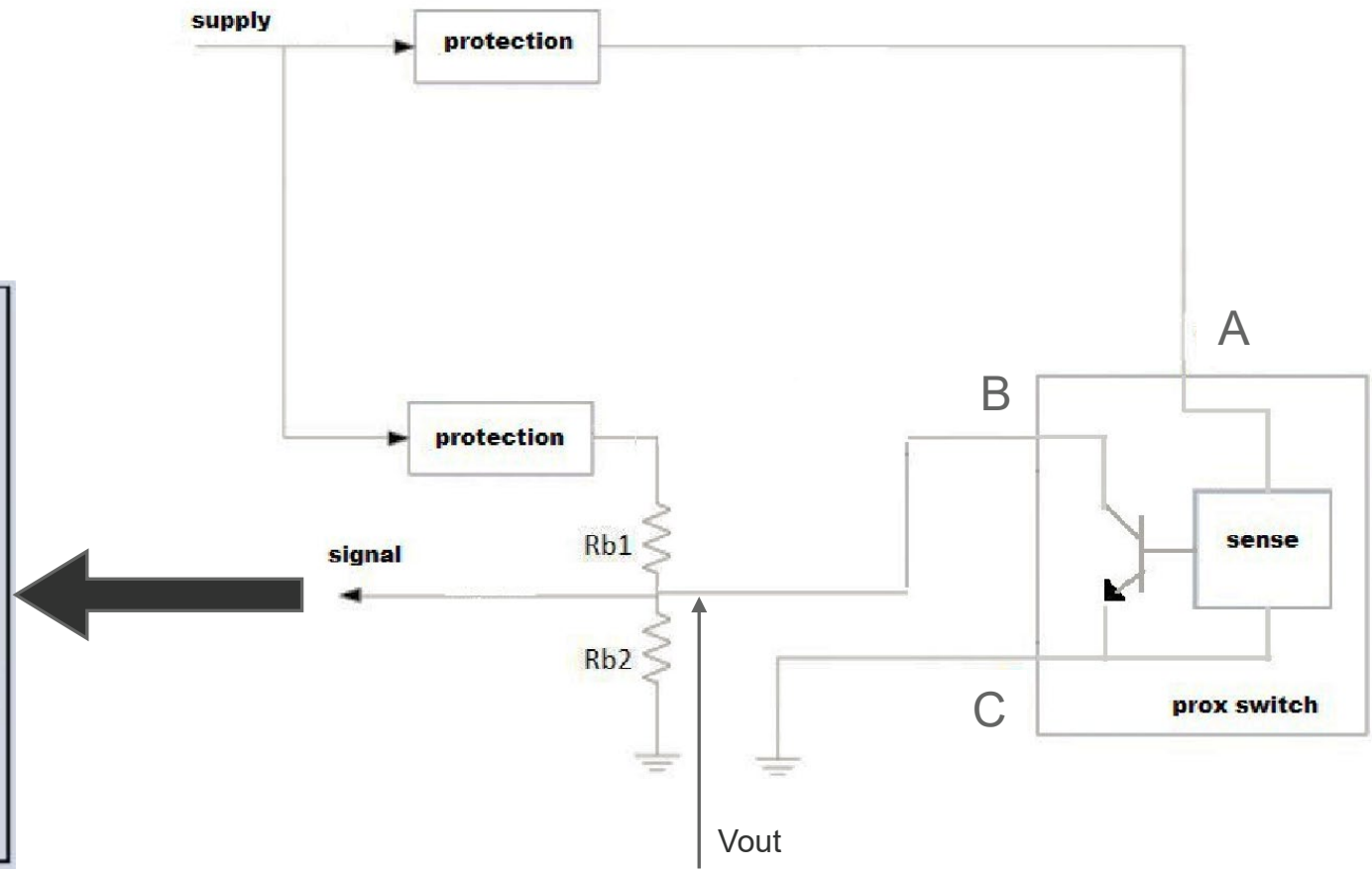
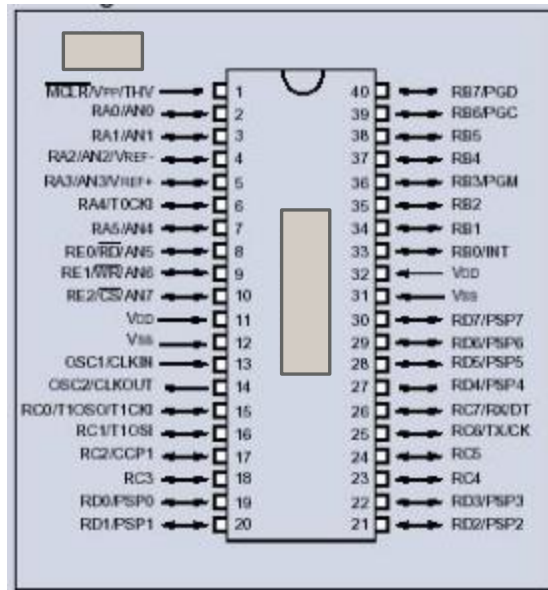
Normally Open (NO):

Output conductive when target is in actuation area

i.e. when target is near there is current in the switch thus V out ~ 0 V.



Microcontroller
(example)



FOR QUESTIONS :
www.crouzet.com