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Sensing and Control

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ZS-00427-01**PRELIMINARY DATA****ONE PART RECTANGULAR PROXIMITY SENSOR (INCORPORATING BUILT IN TEST FUNCTION)****Description :**

Environment-proof self-contained proximity sensor enclosed in a rugged hermetically sealed ceramic/stainless steel housing, designed to meet the requirements of aerospace applications.

Operation by the Eddy Current Killed Oscillator (ECKO) principle, which is used to detect metallic objects passing in front of the sensing face. Once a target metal is detected, a trigger signal is produced which is then passed through the output conditioning circuitry to give a high or low output, depending on the sensor application.

Features :

- All metal sensing
- Small size rectangular housing
- Built In Test function (BITE)
- High level EMC and lightning strike performance
- High level of electronics protection
- Mean Time Between Failure >200K hours

Typical Applications :

- Aircraft landing gear uplocks and downlocks
- Aircraft weight-on-wheels
- Aircraft arrestor hook
- Flight control surfaces



Dimensions in mm (for reference only)

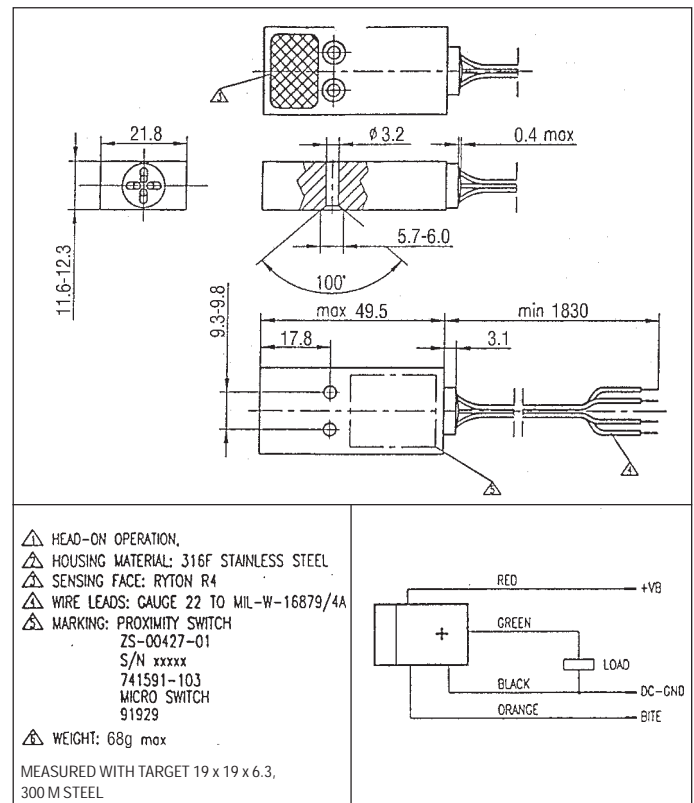



Table 1

External wiring failure mode	Proximity switch (as target conditioned)	Proximity switch output status
Open input (28 Vdc)	Actuated or deactuated	Deactuated '0' volts
Open input (ground)	Actuated	Actuated
	Deactuated	Deactuated
Open output	Actuated	Actuated
	Deactuated	Deactuated
Shorted bit (to 28 Vdc)	Actuated	Deactuated
	Deactuated	Deactuated
Open or grounded (bit)	Actuated	Actuated
	Deactuated	Deactuated

Specifications

Sensing Characteristics : 		
	Level	Specification (Note 1)
Switching function	Normally open, current source	
Guaranteed actuation distance	≥ 5.08 mm	
Guaranteed deactuation distance	≤ 9.40 mm	
Differential travel	≤ 0.51 mm	
Power-on delay	≤ 50 ms	
Repetition rate of sensing	0 to 100 Hz	
False pulse suppression	Yes	
BITE Inputs :		
BITE far	+VB-3 V to + VB	
BITE near	-12 to -30 V	
Failure Mode Detection :		
External wiring	According to Table 1	
Electrical Specifications :		
Power Supply -		
Supply voltage	+18 to +30 V	
Ripple voltage	≤ 1 Vrms at 10 Hz-6.5 kHz	
Surge voltage	≤ 50 V in 50 ms	
Current consumption w/o load	≤ 9 mA	
Dielectric strength	≥ 500 V	
Insulation resistance	≥ 10 MOhm at 500 V	
Output -		
On state output voltage	≤ 1.0 V at 15 mA	
Maximum current consumption	≤ 30 mA	
Load current	≤ 15 mA	
Current limit	≤ 23	
Off state leakage current	≤ 67 μA	
Environmental Specifications :		
Operating temperature range	-53° to +82° C	
Storage temperature	-53° to +82° C	
Temperature cycling	500 cycles	
Altitude	-305 m to + 15,240 m	
Humidity	100% RH	
Salt mist (spray)	≥ 0.2 gr./m ³	
Immersion	Hermetically sealed	
Acceleration	TBD	
Vibration	TBD	MIL-STD-810D, Meth. 514.3, Cat. 5, Proc. I MIL-STD-810C, Meth. 514.2, Proc. XI
Shock	TBD	MIL-STD-810D, Meth. 516.2, Proc. IV & V
EMC Requirements :		
Radiated emissions	RE101	MIL-STD-461D
Radiated emissions	RE102	MIL-STD-461D
Conducted susceptibility	CS101	MIL-STD-461D
Conducted susceptibility	CS101	MIL-STD-461D
Conducted susceptibility	CS102	MIL-STD-461D
Radiated susceptibility	RS101	MIL-STD-461D
Radiated susceptibility	RE103 (200 V/m, 10 kHz to 35 GHz)	MIL-STD-461D
Lightning induced transients, Pin test	Category A3XX	DO-160C, Section 22, June 19, 1992
Magnetic susceptibility	Section 3.4.1.2	LOCKHEED 423062
Static magnetic fields	Section 3.4.1.3	LOCKHEED 423062
Dynamic magnetic fields	Section 3.4.1.4	LOCKHEED 423062
Mean Time Between Failure prediction	> 200000 hrs	MIL-HDBK-217 F
Notes :		
1. Unless otherwise stated, tested to or by similarity to Honeywell internal specifications		