

# AEROSPACE PROXIMITY SENSORS, GAPS & HAPS SERIES

**TABLE 1. GAPS SERIES AND HAPS SERIES PERFORMANCE SPECIFICATIONS**

CHARACTERISTIC	PARAMETER	
Mechanical Characteristics	GAPS	HAPS
<b>Weight</b>	Less than 60 grams (inline variants); 85 grams (right-angle variants)	60 g to 150 g
<b>Sealing</b>	Hermetically sealed	Hermetically sealed, pigtail versions environmentally sealed
<b>Connector/leads</b>	D38999/25YA98PN D38999/25YA98PA EN2997Y10803MN	<ul style="list-style-type: none"> <li>• D38999/25YA98PN</li> <li>• EN2997Y10803MN</li> <li>• M83723/90Y10056</li> <li>• M83723/90Y10058</li> <li>• D38999/25YA98PA</li> <li>• M83723/90Y1005N</li> <li>• M83723/90Y10057</li> <li>• Pigtail</li> </ul>
<b>Form factor</b>	<ul style="list-style-type: none"> <li>• Inline, cylindrical, threaded</li> <li>• Right angle, cylindrical, threaded</li> <li>• Inline, cylindrical, flanged</li> <li>• Right angle, cylindrical, flanged</li> </ul>	<ul style="list-style-type: none"> <li>• Inline, cylindrical, threaded</li> <li>• Right angle, cylindrical, threaded</li> <li>• Inline, cylindrical, flanged</li> <li>• Right angle, cylindrical, flanged</li> </ul>
<b>Sensing distance</b>	3,5 mm max.	4 mm max.
<b>Sensing face</b>	Inconel®	Inconel®
<b>Outer body material</b>	Stainless steel	Stainless steel
<b>Sensor head diameter</b>	13,5 mm [0.53 in]	13,5 mm [0.53 in]
<b>Sensor length</b>	55 mm [2.17 in] max.	various; 60 mm [2.36 in] max.
<b>Target (typical)</b>	SS 17-4PH rectangular target with dimensions 25 mm x 18 mm x 3 mm [0.98 in x 0.71 in x 0.12 in]	SS 17-4PH rectangular target with dimensions 25 mm x 18 mm x 3 mm [0.98 in x 0.71 in x 0.12 in]
<b>MTBF</b>	500,000 flight hours	500,000 flight hours
Electrical Characteristics	GAPS	HAPS
<b>Supply voltage</b>	12 Vdc to 32 Vdc (input)	12 Vdc to 28 Vdc
<b>Supply current</b>	<10 mA	<10 mA
<b>Operating temperature range</b>	-55°C to 115°C [-67°F to 239°F]	-55°C to 115°C [-67°F to 239°F]
<b>Storage temperature range</b>	-65°C to 115°C [-85°F to 239°F]	-65°C to 115°C [-85°F to 239°F]
<b>Target response time</b>	5 ms	5 ms
<b>Power on delay time</b>	<1 second	<1 second
<b>Bonding resistance</b>	< 2.5 mΩ	<2.5 mΩ
<b>Dielectric strength</b>	1000 Vdc/750 Vac for 1 minute	500 Vdc/500 Vac for 1 minute
<b>Insulation resistance</b>	200 MΩ min. at 50 Vdc	200 MΩ min. at 50 Vdc
Sensing Characteristics	GAPS	HAPS
<b>Ga/Gd</b>	see Figure 3	see Figure 3
<b>Target material</b>	17-4 PH stainless steel heat treated to condition H1025	17-4 PH stainless steel heat treated to condition H1025
<b>Target dimension</b>	Rectangular target of 25 mm x 18 mm x 3 mm	Rectangular target of 25 mm x 18 mm x 3 mm

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TABLE 2. GAPS SERIES AND HAPS SERIES PERFORMANCE SPECIFICATIONS		
CHARACTERISTIC	PARAMETER	
Environmental Characteristics	GAPS	HAPS
Temperature and altitude	RTCA/DO-160G – Section 4, Category D3	RTCA/DO-160G – Section 4, Category D3
Temperature variation	RTCA/DO-160G – Section 5, Category S2	RTCA/DO-160G – Section 5, Category S2
Humidity	RTCA/DO-160G – Section 6, Category C	RTCA/DO-160G – Section 6, Category C
Operational shock and crash safety	RTCA/DO-160G – Section 7, Category B	RTCA/DO-160G – Section 7, Category B
Vibration	RTCA/DO-160G – Section 8, Category R (Curve E, E1, and W)	RTCA/DO-160G – Section 8, Category R (Curve E, E1, and W)
Explosion safety	RTCA/DO-160G – Section 9, Category E&H	RTCA/DO-160G – Section 9, Category E&H ENV III
Water proofness	RTCA/DO-160G – Section 10, Category R	RTCA/DO-160G – Section 10, Category R
Fluid susceptibility	RTCA/DO-160G – Section 11, Category F	RTCA/DO-160G – Section 11, Category F
Sand and dust	RTCA/DO-160G – Section 12, Category D	RTCA/DO-160G – Section 12, Category D
Fungus resistance	RTCA/DO-160G – Section 13, Category F	RTCA/DO-160G – Section 13, Category F
Salt spray	RTCA/DO-160G – Section 14, Category T	RTCA/DO-160G – Section 14, Category T
Magnetic effects	RTCA/DO-160G – Section 15, Category A	RTCA/DO-160G – Section 15, Category A
Power input	RTCA/DO-160G – Section 16, Category A	RTCA/DO-160G – Section 16, Category A
Voltage spike	RTCA/DO-160G – Section 17, Category A	RTCA/DO-160G – Section 17, Category A
Audio frequency conducted susceptibility	RTCA/DO-160G – Section 18, Category Z	RTCA/DO-160G – Section 18, Category Z
Induced signal susceptibility	RTCA/DO-160G – Section 19, Category CWE	RTCA/DO-160G – Section 19, Category CWE
Radio frequency radiated susceptibility	RTCA/DO-160G – Section 20, Category F	RTCA/DO-160G – Section 20, Category G
Radio frequency conducted susceptibility	RTCA/DO-160G – Section 20, Category W	RTCA/DO-160G – Section 20, Category Y
Radio frequency emission	RTCA/DO-160G – Section 21, Category M	RTCA/DO-160G – Section 21, Category M
Lightning induced transient susceptibility	RTCA/DO-160G – Section 22, Category B3K3L3	RTCA/DO-160G – Section 22, Category B3K3L3
Icing	RTCA/DO-160G – Section 24, Category A	RTCA/DO-160G – Section 24, Category A
Electrostatic discharge	RTCA/DO-160G – Section 25, Category A	RTCA/DO-160G – Section 25, Category A