LEONARDO ELECTRONICS

SAL

Geniii Semi-Active Laser Seeker

The GEN III Semi-Active Laser (SAL) seeker provides high accuracy laser spot acquisition and tracking capability in a very compact sensor package for precision weapon terminal guidance.

The complexity and dynamics of modern battlefield scenarios places challenging demands on guidance systems for precision attack weapons. The requirement for highly target selective and accurate terminal guidance across a broad range of scenarios cannot be achieved by GPS/INS systems alone.

With laser spot tracking and SAL seeking products currently in-service worldwide, this product has been developed to address the increasing demand for SAL guided weapons. The GEN III SAL seeker delivers unprecedented levels of seeker accuracy to maximise weapon cost effectiveness under demanding guidance system requirement, and is compatible with a range of guided weapon types including missiles, bombs and rockets.

Main Features

- → Compatible with NATO STANAG 3733 or raw pulse interval entry
- → Linear angular reporting across field of view, enabling the benefits of proportional closed-loop weapon guidance throughout target engagement
- → Single channel RS422 communication interface and simple to implement in host systems
- → Comprehensive Built-in-Test (BIT) functionality
- → Hermetically sealed rugged mechanical enclosure
- → Provides mounting position on seeker body for auxiliary sensor

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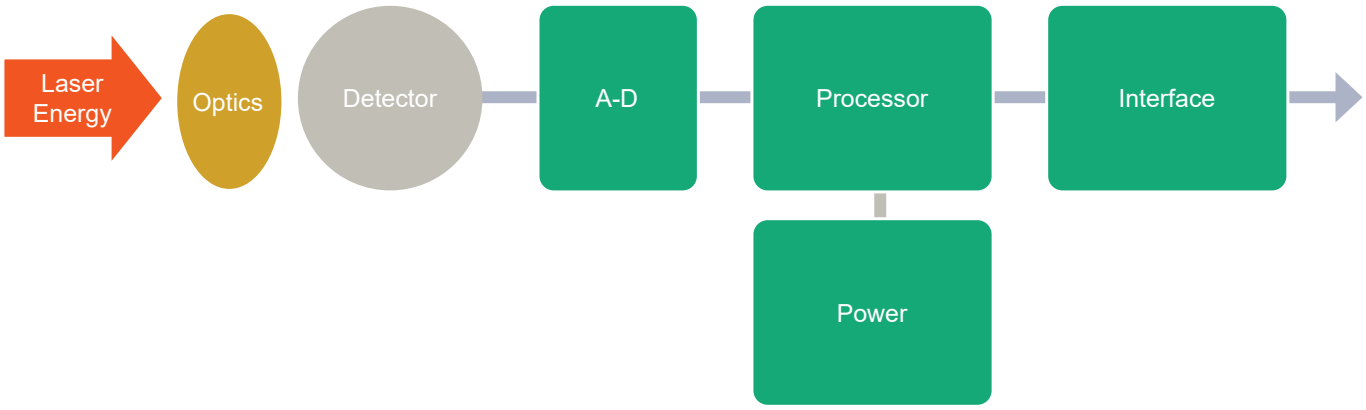

The GEN III SAL seeker detects the pulsed laser signal within the field of view. The laser signal is processed to determine if the correct code is received e.g. NATO STANAG 3733 and its bearing relative to the seeker boresight is calculated. For non-NATO users, other country specific PRF codes can be utilised. The target bearing is reported to the host weapon via the RS422 communication link.

The GEN III SAL seeker product uses a unique configuration silicon detector providing continuous high resolution angular reporting over a wide field of view. Configuration of this technology is the subject of patents both granted and under application.

The seeker algorithms have been developed from previous in-service signal processing on other successful laser sensor products and are optimised for application in this seeker product. The algorithms have a proven capability to acquire and maintain target track in the presence of false targets and clutter and have repeatedly demonstrated this performance during weapon development trials.

The GEN III SAL product provides a highly integrated complete sensor solution providing minimal risk of compatibility issues for ease of integration in customers' systems. In order to facilitate integration with alternative weapon types, the seeker also accommodates a wide input voltage range. It has been qualified for weapon operations from fixed/rotary wing and UAS carriage platforms. Multi-kilometre seeker acquisition and sub-metric terminal accuracy have been repeatedly demonstrated.

TECHNICAL SPECIFICATION

Spectral response	1064+/- 40nm
Total circular field of view	50 degrees
False Acquisition Rate	< 1 per hour
Angular accuracy	< 0.5° terminal accuracy
Input voltage range	18-36V dc, 28V dc nominal preferred
Power dissipation	<10W
Dimensions	Front dia 51mm x 142.5mm length Flange typical dia 76mm
Mass	350g typical
MTBF	Available upon request
Operating temperature	-40°C to +71°C
Storage temperature	-50°C to +85°C
Altitude	>= 25,000ft ISA
Vibration	Proven against typical rotary wing spectrum

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