Registered to AS9100D & ISO 9001

MISS DISTANCE SCORING SENSOR
DATA SHEET & TECHNICAL SPECIFICATIONS

Features
- 0 to 75 feet scoring range
- 1 foot scoring accuracy
- Environmentally qualified to MIL-STD-810
- EMI qualified to MIL-STD-461G
- Sea Skimming to High Altitude

Applications
- Weapon System Scoring

The Miss Distance Scoring Sensor (MDSS) is the airborne element of the Kratos Scoring System Suite. Tracking data from the MDSS is transferred in real time to the Automated Ground Scoring Ground Station, where it is captured and processed to produce scores for the user.

The MDSS is installed within airborne platforms to measure the miss distance between the target and the passing projectiles or missiles. The Kratos Scoring System has been field-proven supporting ballistic missile target and subscale aerial target missions, providing scoring results for air-to-air, air-to-ground, and air-to-sea missions. It is a non-cooperative Doppler radar system that is capable of providing real-time telemetry signals; to the Kratos Ground Scoring Station for fast and accurate miss-distance, time, and closing velocity data for high altitude and low altitude intercept scenarios.

The MDSS operates against high performance missiles as well as ballistic projectiles as small as 76 mm. The Kratos Scoring System Suite supports live-fire training mission environments containing up to six target vehicles, with each vehicle equipped with the scoring sensor Each MDSS operates without concern of interference from other miss distance sensors. It consists of two functional elements; a miss distance radar sensor to acquire the scoring information and a telemetry transmitter downlink to send the scoring information to a ground scoring station.

KRATOS®
UNMANNED SYSTEMS DIVISION

Approved for Public Release: DOPSR 18-S-2400

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Characteristics

Type:	RF, Non-cooperative, Scalar
Scoring:	Missiles and Projectiles (12.7 mm and larger)
Scoring Rate:	90 projectiles per minute
Scoring Range:	0 to 75 feet (0 to 22.86 meters)
Closing Velocity:	200 to 8,000 ft/sec (60.96 to 2438.4 m/sec)
Accuracy Miss Distance:	1.0 ft (rms) for 0 to 75 ft scoring range
Accuracy Velocity:	25 ft/sec (7.62 m/sec or 1% (rms)

Power Requirements

DC Power:	22 to 32 VDC (28 VDC Nominal)
Consumption:	65 Watts max
Protection:	Reverse polarity protected

Electrical

Radar Transmitter	
Frequency:	2433.077 – 2433.913 MHz (6 channels)
Power (peak pulse):	20 Watts maximum at antenna
Pulse Width:	220 ns nominal
PRF:	1 MHz nominal
Telemetry	
Format:	NRZL
Bit Rate:	700 kb/s
Bandwidth:	1 MHz
Frequency (tunable):	L-Band and S-Band
Power:	2 Watts minimum
Number of Targets:	6 simultaneous max with 200 feet minimum separation

Environmental

Temperature, Operating:	-40°F to +159°F (-40°C to +71°C)
Temperature, Storage:	-65°F to +203°F (-54°C to +95°C)
Cooling:	Passive Conductive (no moving parts)
Vibration:	MIL-STD-810H, Method 514.8, Equipment Category 12, Procedure I
Temp/Humidity/Alt:	MIL-STD-180H, Method 520.5, Procedure III
Shock:	MIL-STD-810H, Method 516.8, Procedure I
Salt Fog:	MIL-STD-180H, Method 509.7, Procedure I
Acoustical Noise:	MIL-STD-180H, Method 515.8, Procedure II
Acceleration:	MIL-STD-810H, Method 513.8, Procedure II
Reliability:	500 hours Mean Time Between Failure
EMI:	MIL-STD-461G

Physical

Size:	9.06" L x 6.33" W x 3.00" H (23.01 cm x 16.08 cm x 7.62 cm)
Weight:	9 pounds

35 Hill Ave.
Fort Walton Beach, FL 32548
ContactMSI@kratosdefense.com
www.kratosdefense.com
(850) 244-2332