HGUIDE I700
MEMS IMU

The HGuide i700 is a proven low-SWaP, near-navigation grade MEMS IMU that requires no export license and is fully calibrated across a wide temperature range.

AIR

- Class 3 UAV
- Aerial Survey
- EI/IR Pods

LAND

- UGV Navigation
- Mobile Survey
- Pipeline Inspection

SEA

- Surface Heave and Navigation
- Marine Survey
- Underwater Vehicles

HONEYWELL INERTIAL ADVANTAGE

Honeywell Aerospace is a global leader in high performance inertial measurement units (IMUs), delivering precise navigation, stabilization, and control across a wide range of applications.

Our extensive portfolio of inertial sensors and navigators serves diverse sectors within the aerospace, defense, and industrial markets.

Whether MEMS, FOG, or RLG-based, Honeywell IMUs offer exceptional accuracy and reliability— even in the most demanding environments.

Our globally recognized IMU manufacturing capabilities are backed by ISO 9001:2015 and AS9100D certifications, with over 1 million tactical-grade IMUs delivered to date.

THE HGUIDE I700 ADVANTAGE

- Best-in-Class MEMS IMU with unmatched performance for its size and price point
- Proven reliability and ruggedness - engineered for dependable operation throughout the unit's lifecycle
- Low SWaP, Cost-Effective near-nav-Grade IMU
- No Export License Required. ECCN = 7A994
- World-Class inertial sensor development - includes advanced calibration and compensation capabilities
- Higher dynamics served by HG3900

Honeywell

GENERAL		MECHANICAL	
Gyro Operating Range (°/sec)	400	Size (mm)	75 x 75 x 79 (not inc. tabs)
Accelerometer Operating Range (G)	20	Weight (g)	907
Output Data Rate (inertial data) (Hz)	600 /100, Standard	Seal (IP Rating)	Semi-Hermetic
Update rate (roll & pitch)	N/A	Materials/Construction	Machined and Anodized Aluminium
Start-up time to full performance	5 seconds, standard		
Output Data Protocol	ASYNC	External Connector	Samtec TMM Series (TMM-115)
Calibration	Over Full Temperature Range	Recommended Mating connector	CLT series (CLT-115)
Bandwidth, -90°/-3 dB (Hz)	70/180		

GYRO PERFORMANCE	Performance (Factory Fresh)	Performance (Full Life – 10 years)
PARAMETER	I700 BA	I700 BA
Gyro Bias In-Run Stability (RMS) (°/hr 1σ)	0.06	0.08
Gyro Bias Repeatability (turn-on to turn-on, RMS) (°/hr 1σ)	0.15	0.5
Gyro Noise – ARW (°/√hr)	0.008	0.015
Gyro Scale Factor Repeatability (ppm, 1σ)	200	300
Gyro Scale Factor Static G-Sensitivity (ppm/g, 1σ)	50	50
Gyro Scale Factory Linearity Error (ppm 1σ)	400	1000
Gyro Axis Misalignment (μrad 1σ)	100	100
Vibration Rectification Error (°/hr)	1	1

ACCEL PERFORMANCE	Performance (Factory Fresh)	Performance (Full Life – 10 years)
PARAMETER	I700 BA	I700 BA
Accel Bias In-Run Stability (RMS) (mg 1σ)	0.012	0.02
Accel Bias Repeatability (turn-on to turn-on, RMS) (mg 1σ)	0.5	2
Accel Noise – VRW (m/s/√hr)	0.02	0.02
Accel Scale Factor Accuracy (ppm 1σ)	100	100
Accel Scale Factory Nonlinearity (ppm 1σ)	8	8
Accel Axis Misalignment (μrad 1σ)	300	300
Vibration Rectification Error (mg)	0.12	0.5

| ELECTRICAL	
Input Supply Voltage (nominal & min/max)	+5 VDC and +15VDC
Power Consumption (Watts, typical & max)	< 6 Watts (Start), <2.5W (Run)
Data Interfaces	Async RS422
ESD Compliance (rating & list of tests)	ISO 10605:2008/Amd 1:2014 Unpowered
EMC Compliance (list of tests)	MIL-STD-461G

ENVIRONMENTAL	
Mechanical Shock profiles tested	50G SRS
Vibration profiles tested	3.9 gRMS 10-2000Hz random vibration standard
Operating Temperature	–55°C to +85°C
Storage Temperature	–55°C to +85°C
Humidity	DO-160G Section 6, Category B
MTBF	50,000 hour, MIL-HDBK-217F AIC at 25°C
Lifetime – operational	500 hrs minimum without recalibration; 10 years total
Lifetime – storage	10 years minimum

CONNECTIONS

PIN	LEGEND	DESCRIPTION	PIN	LEGEND	DESCRIPTION
1	+5VDC	+5VDC Power Input	16	Reserved	User no Connect
2	+15VDC	+15VDC Power input	17	Reserved	User no Connect
3	+5V GND	+5VDC Power Return	18	Reserved	User No Connect
4	+15V GND	+15VDC Power Return	19	Reserved	User No Connect
5	CGND	Chassis Ground	20	SER_DATA_L	Serial Data Output - Low
6	Reserved	User no Connect	21	Reserved	User no Connect
7	GP_CLK_H	Data Sync Output - High	22	SER_DATA_H	Serial Data Output - High
8	Reserved	User no Connect	23	RESET_N	Reset Input - Active Low
9	GP_CLK_L	Data Sync output - Low	24	IBIT_N	IBIT Command Input - Active Low
10	Reserved	User no Connect	25	Reserved	User no Connect
11	Reserved	User no Connect	26	Reserved	User no Connect
12	Reserved	User no Connect	27	Reserved	User no Connect
13	Reserved	User No Connect	28	Reserved	User No Connect
14	Reserved	User No Connect	29	Reserved	User No Connect
15	Reserved	User No Connect	30	Reserved	User No Connect

Standard units - for more details see manual or contact Honeywell.
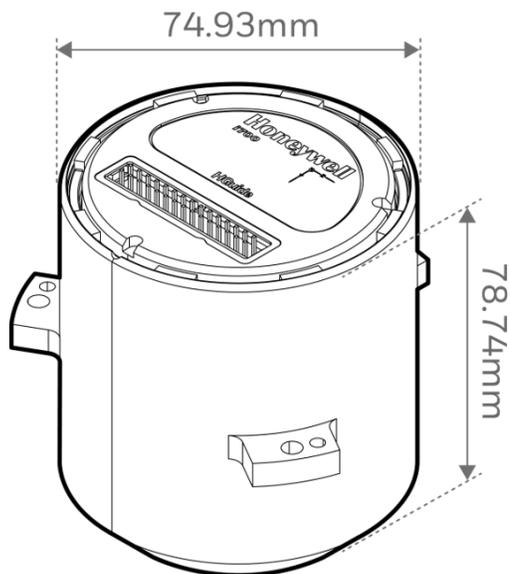
HGUIDE I700 ORDERING AND ACCESSORIES

PRODUCT	ORDERING PART NUMBER	DESCRIPTION
HGuide i700 BA	68910700-BA02	Standard B-Grade i700 IMU

Tech. and Sales Support
resilient.navigation@honeywellaerospace.com

For more information
aerospace.honeywell.com/HGuide

The HGuide i700 is designed and built
at a Honeywell facility in the USA.

It has an ECCN of 7A994 and is generally
available without an export license.

This document does not contain EAR
controlled technology or ITAR controlled
technical data.

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**THE
FUTURE
IS
WHAT
WE
MAKE IT**

Honeywell