

| | | |
|---|---|---|
|  | <h1 style="margin: 0;">HGS (INDIA) LIMITED</h1> |  |
|---|---|---|

SPECIFICATION SHEET - Overhauser magnetometer SmartMag

SmartMag

The World’s most advanced and portable magnetometer based on the Overhauser effect. The complete ready to use set with all necessary accessories and battery fits in a carry-on size case and weighs only 7.5 kg. SmartMag can be used as an observatory magnetometer, base station, as part of a multi-sensor gradiometer, or even as a GNSS base and rover with centimeter accuracy in PPK mode.

- Highest precision and sensitivity
- The World’s most compact basestation magnetometer
- Optimal for operation in magnetic observatories
- Several SmartMags can be combined into gradiometer
- Built-in multi-band GNSS receiver with PPK feature



SmartMag

| 1 | UTC_date | UTC_time | Time_zone | BS_name | Field | Error | Device | SN | Lat | Lon | Alt | Zone | Hemisphere | Easting | Northing | hAcc | vAcc |
|----|------------|--------------|-----------|---------|-----------|-------|----------|-------|-----------|-------------|---------|------|------------|-----------|------------|------|------|
| 2 | 07.05.2024 | 23:12:00.000 | 0 | 1 | 55133.651 | 0.05 | SmartMag | 1071F | 50.613073 | -115.120806 | 1704.92 | 11 | N | 632951.34 | 5608483.95 | 0.1 | 0.2 |
| 3 | 07.05.2024 | 23:12:01.000 | 0 | 1 | 55133.645 | 0.052 | SmartMag | 1071F | 50.613073 | -115.120806 | 1704.91 | 11 | N | 632951.33 | 5608483.95 | 0.1 | 0.2 |
| 4 | 07.05.2024 | 23:12:02.000 | 0 | 1 | 55133.635 | 0.048 | SmartMag | 1071F | 50.613073 | -115.120806 | 1704.92 | 11 | N | 632951.33 | 5608483.95 | 0.1 | 0.2 |
| 5 | 07.05.2024 | 23:12:03.000 | 0 | 1 | 55133.679 | 0.049 | SmartMag | 1071F | 50.613073 | -115.120807 | 1704.93 | 11 | N | 632951.32 | 5608483.96 | 0.1 | 0.2 |
| 6 | 07.05.2024 | 23:12:04.000 | 0 | 1 | 55133.680 | 0.052 | SmartMag | 1071F | 50.613073 | -115.120807 | 1704.95 | 11 | N | 632951.31 | 5608483.96 | 0.1 | 0.2 |
| 7 | 07.05.2024 | 23:12:05.000 | 0 | 1 | 55133.661 | 0.05 | SmartMag | 1071F | 50.613073 | -115.120807 | 1704.96 | 11 | N | 632951.31 | 5608483.96 | 0.1 | 0.2 |
| 8 | 07.05.2024 | 23:12:06.000 | 0 | 1 | 55133.703 | 0.053 | SmartMag | 1071F | 50.613073 | -115.120807 | 1704.97 | 11 | N | 632951.31 | 5608483.96 | 0.1 | 0.2 |
| 9 | 07.05.2024 | 23:12:07.000 | 0 | 1 | 55133.719 | 0.055 | SmartMag | 1071F | 50.613073 | -115.120807 | 1704.98 | 11 | N | 632951.31 | 5608483.96 | 0.1 | 0.2 |
| 10 | 07.05.2024 | 23:12:08.000 | 0 | 1 | 55133.74 | 0.057 | SmartMag | 1071F | 50.613073 | -115.120807 | 1704.97 | 11 | N | 632951.31 | 5608483.95 | 0.1 | 0.2 |
| 11 | 07.05.2024 | 23:12:09.000 | 0 | 1 | 55133.779 | 0.062 | SmartMag | 1071F | 50.613073 | -115.120807 | 1704.98 | 11 | N | 632951.31 | 5608483.95 | 0.1 | 0.2 |
| 12 | 07.05.2024 | 23:12:10.000 | 0 | 1 | 55133.787 | 0.068 | SmartMag | 1071F | 50.613073 | -115.120807 | 1704.98 | 11 | N | 632951.3 | 5608483.94 | 0.1 | 0.2 |
| 13 | 07.05.2024 | 23:12:11.000 | 0 | 1 | 55133.803 | 0.065 | SmartMag | 1071F | 50.613073 | -115.120807 | 1704.99 | 11 | N | 632951.3 | 5608483.93 | 0.1 | 0.2 |
| 14 | 07.05.2024 | 23:12:12.000 | 0 | 1 | 55133.808 | 0.069 | SmartMag | 1071F | 50.613073 | -115.120807 | 1704.99 | 11 | N | 632951.29 | 5608483.93 | 0.1 | 0.2 |
| 15 | 07.05.2024 | 23:12:13.000 | 0 | 1 | 55133.843 | 0.068 | SmartMag | 1071F | 50.613073 | -115.120807 | 1704.99 | 11 | N | 632951.29 | 5608483.92 | 0.1 | 0.2 |
| 16 | 07.05.2024 | 23:12:14.000 | 0 | 1 | 55133.819 | 0.071 | SmartMag | 1071F | 50.613073 | -115.120807 | 1704.99 | 11 | N | 632951.29 | 5608483.93 | 0.1 | 0.2 |
| 17 | 07.05.2024 | 23:12:15.000 | 0 | 1 | 55133.829 | 0.072 | SmartMag | 1071F | 50.613073 | -115.120807 | 1704.99 | 11 | N | 632951.3 | 5608483.93 | 0.1 | 0.2 |
| 18 | 07.05.2024 | 23:12:16.000 | 0 | 1 | 55133.787 | 0.067 | SmartMag | 1071F | 50.613073 | -115.120807 | 1704.96 | 11 | N | 632951.31 | 5608483.93 | 0.1 | 0.2 |
| 19 | 07.05.2024 | 23:12:17.000 | 0 | 1 | 55133.797 | 0.06 | SmartMag | 1071F | 50.613073 | -115.120807 | 1704.99 | 11 | N | 632951.32 | 5608483.94 | 0.1 | 0.2 |
| 20 | 07.05.2024 | 23:12:18.000 | 0 | 1 | 55133.739 | 0.055 | SmartMag | 1071F | 50.613073 | -115.120806 | 1704.99 | 11 | N | 632951.33 | 5608483.94 | 0.1 | 0.2 |
| 21 | 07.05.2024 | 23:12:19.000 | 0 | 1 | 55133.811 | 0.052 | SmartMag | 1071F | 50.613073 | -115.120806 | 1704.99 | 11 | N | 632951.34 | 5608483.95 | 0.1 | 0.2 |
| 22 | 07.05.2024 | 23:12:20.000 | 0 | 1 | 55133.812 | 0.042 | SmartMag | 1071F | 50.613073 | -115.120806 | 1704.99 | 11 | N | 632951.34 | 5608483.95 | 0.1 | 0.2 |

SmartMag console is equipped with OLED display and a switch panel. The control of measured values and their quality is provided in digital, graphical, and audible modes.



| Specifications | |
|----------------------------|---|
| Dynamic range | 20 000 to 120 000 nT |
| Absolute accuracy | 0.1 nT |
| Sensor sensitivity | 0.021 nT/ $\sqrt{\text{Hz}}$ rms 0.012 nT/ $\sqrt{\text{Hz}}$ rms (on request) |
| Resolution | 0.001 nT |
| Gradient tolerance | 30 000 nT/m |
| Sample rates | 0.25, 0.2, 0.5, 1, 2, 3 s and longer with 1 s step |
| Sensor's stability | >10 years |
| Interfaces | built-in: USB, RS-232, CAN FD Optional: Ethernet |
| GNSS receiver | built-in and optional external |
| GNSS antenna | External |
| Additional sensors | IMU, Compass |
| Memory | up to 32 Gb (microSD) |
| Power | 11 ÷ 16.8 V, Li-ion, LiFePo4 or lead battery Optional: 100-240 VAC |
| Operating temperature | -40 to +60 °C |
| Li-ion battery | 14.6 V, 4 A-h |
| Dimensions with connectors | Ø73×116 mm – sensor 125×100×35 mm – console |

| Ordering Information | |
|--|---------------------|
| Item Description | HGS Part No. |
| Overhauser Observatory magnetometer SmartMag | MK001499 |

Version 1.1



HGS (INDIA) LIMITED
 158, Sector-4, IMT Manesar, Gurugram-122050, Haryana, INDIA
 Tel: +91 (0124) 4681800
 Email: sales@hgsindia.com | Website: www.hgsindia.com

