Track Objects with Magnetic DC Technology

➤ Fast, dynamic tracking – 240 to 420 updates per second.

➤ Miniaturized passive sensors – outputs unaffected by "power-line" noise sources.

➤ All attitude tracking – no inertial drift or optical interference.

➤ High metal immunity – no distortion from non magnetic metals.
### Technical Specifications

**Sensor Configurations**
- Model 55 (0.56 mm), Model 90 (0.9 mm), Model 130 (1.5 mm), Model 180 (2.0 mm), Model 800 (8.0 mm)

**Degrees of Freedom**
- 6 (Position and Orientation)

**Update Rate**
- Up to 420 updates/second for each sensor
  - Default: 240 updates/second

**Translation Range**
- **MODEL 55 SENSOR**
  - Mid-Range Transmitter: 28 cm (11.0 inches)
  - Short-Range Transmitter: Contact Ascension
- **MODEL 90 SENSOR**
  - Mid-Range Transmitter: 36 cm (14.0 inches)
  - Short-Range Transmitter: Contact Ascension
- **MODEL 130 SENSOR**
  - Mid-Range Transmitter: 46 cm (18.0 inches)
  - Short-Range Transmitter: Contact Ascension
- **MODEL 180 SENSOR**
  - Mid-Range Transmitter: 58 cm (23.0 inches)
  - Short-Range Transmitter: Contact Ascension
- **MODEL 800 SENSOR**
  - Mid-Range Transmitter: 78 cm (31.0 inches)
  - Short-Range Transmitter: 46 cm (18.0 inches)

**Angular Range**
- All Attitude: ± 180° Azimuth & Roll, ± 90° Elevation

**Static Accuracy**
- Position: 0.5 mm (0.02 inch) at 30.5 cm (12.0 inches)
- Orientation: 0.1° at 30.5 cm (12.0 inches)
- Orientation: 0.5° RMS (Higher accuracies achievable in smaller tracking volumes. Accuracies vary depending on specific transmitter-sensor configurations.)

**Static Resolution**
- Position: 1.4 mm (0.055 inch) RMS
- Orientation: 0.1° at 30.5 cm (12.0 inches)
- Orientation: 0.5° RMS

**Outputs**
- X, Y, Z positional coordinates, orientation angles, orientation matrix or quaternions

**Interface**
- USB 2.0 and RS-232

**Data Format**
- Binary data records

**Communication**
- Windows API and Drivers

### Physical Specifications

**Electronics Unit**
- 29.0 cm (11.4 inches) x 18.4 cm (7.2 inches) metal box
- 5.7 cm (2.2 inches) metal box

**Transmitters**
- Mid-Range: 9.6 cm (3.8 inches) cube
- Short-Range: 6.4 cm (2.5 inches) x 4.6 cm (1.8 inches) x 5.2 cm (2.1 inches) with 3.3 m (10.9 ft.) cable

**Passive Sensors**
- **MODEL 55**
  - 0.56 mm (0.02 inch) x 80 mm (3.2 inches) to 210 mm (8.27 inches) for biopsy needle configurations only, with 3.3 m (10.9 ft.) cable
- **MODEL 90**
  - 0.9 mm (0.04 inch) x 7.25 mm (0.29 inch) with 3.3 m (10.9 ft.) cable
- **MODEL 130**
  - 1.5 mm (0.05 inch) x 7.7 mm (0.30 inch) with 3.3 m (10.9 ft.) cable
- **MODEL 180**
  - 2.0 mm (0.07 inch) x 9.9 mm (0.38 inch) with 3.3 m (10.9 ft.) cable
- **MODEL 800**
  - 8.0 mm (0.31 inch) x 20.0 mm (0.78 inch) with 3.3 m (10.9 ft.) cable
- **MODEL 55, 90, 130 & 180 only:** Ascension Medi-Mag Cable, USP class 6 jacket material. USP class 6 sensor housing.

**Power**
- The unit’s internal supplies will operate from 100 to 240V, at 50/60 Hz. Power consumption is 50 VA.

**Operating Temperature/Environment**
- 5°C to 40°C; 90% non-condensing humidity
- Ferromagnetic objects and stray magnetic fields in the operation volume may degrade performance. Contact us for assistance in using our Optimization Tools to minimize metallic distortion and noise interference.

### Regulatory Certifications
- Class I Device with Type B Applied Part (Sensors), EN60601-1 Compliant.
- RoHS and WEEE compliant.
- Medical users must comply with all pertinent FDA/CE/IRB certifications prior to using this device in human patients.

### Note on Accuracy
- Accuracy is defined as the root mean square (RMS) deviation of a true measurement of the magnetic center of a single sensor with respect to the magnetic center of a single transmitter measured over the specified translation range. Accuracy varies from one location to another over this range and will be degraded if there are interfering electromagnetic noise sources or metal in the operating environment, which have not been identified and minimized.

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