# D-5 Dual Channel Perimeter Security

FOTAS D-5 is a fiber optic distributed acoustic sensing system that can be used easily in different situations. D-5 keeps your fences and borders safe and sends early warnings of threats. It is one of the proven early warning systems for security. FOTAS detects third-party intervention, illegal crossing attempts, and unauthorized excavations. D-5 has two channels. Two channels make this system cut resilient and also redundant. The D5 model has no server since it uses an AI card embedded in the analyzer.


# D-5 Technical Details

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| **Fiber Optic Cable** | Single-mode fiber optic cable |
| **Detection Channels** | Two fiber channels of simultaneous, real-time and independent intrusion detection per device |
| **Detection Distance** | 5 km |
| **Sensing Technology** | Coherent Optical Time Domain Reflectometer (COTDR) |
| **Maximum Fiber Loss** | 10dB (typical max distance ~ 5km /ch) |
| **Operating Life** | > 10 years (dependent on operating environment and regular maintenance) |
| **Artificial Intelligence** | Deep-learning-based intrusion detection algorithms optimize sensitivity and probability of detection. Locations can be changed with parameters to avoid nuisance alarms. Different algorithms exist for buried and fence applications. The system is hybrid since both are applicable. |
| **Detection Resolution** | 10 m (32.8 ft) between detection points along sensing fiber (100 measurements per km of sensing fiber) 100 m (328 ft) minimum cable separation between individually reported disturbances (simultaneous) |
| **System Interface** | Web 2.0 |
| **Cut Resilience and Redundancy** | You can still detect intrusions from the controller within 50m of a fiber optical cable cut. Detection can be within 50m on either side of a cable cut for a redundant loop configuration. |
| **Sensor Sections** | Software configurable, independent sensor sections (detection zones) |
| **Temperature Range** | Sensing Cable: -40~70 °C / D-5 Device: 0~40 °C (AC environment) |
| **Connection Ports** | TCP/IP (Ethernet), relay closures (via FOTAS connected PLC or ADAM module or alternatives) |
| **Inputs and Outputs** | 2 x FC/APC single mode optical connectors (back, for sensing cables) 1 x USB2 ports (on back) 1 x Ethernet ports (10/100/1000 Mbps, on back) |
| **Data Storage** | 1 x 1TB internal NVMe |
| **Power Supply** | Dual (for redundancy) power supplies. Hot-swappable (one power supply can be removed/replaced while the controller continues operating) 110 to 240 Vac, 47 to 63 Hz, auto-ranging |
| **Power Consumption** | 85 W typical, 125 W max |
| **Dimensions / Rack -Clearance / Weight** | 49 cm (19”) x 50 cm x 8.9 cm(2U), 8 kg |
| **Laser Safety Class** | Class 1 (IEC 60825-1, 21CFR1040.10), shutoff: key switch on front panel |
| **MTBF** | > 80,000 hours |
| **Warranty** | 2 years, with optional per year warranty extension available. |
| **Regulatory Certification** | ISO9001 accredited design and manufacturing is CE certified (Electromagnetic compatibility Directive (EMC) 2014/30/EU (EN 55032:2015 Class A, EN IEC 61000-3-2:2019+A1:2019, EN 61000-3-3:2013+A1:2019, EN 55035:2017+A1:2020, EN 61000-4-2:2009, EN 61000-4-3:2020, EN 61000-4-4:2012, EN 61000-4-5:2014+A1:2017, EN 61000-4-6:2014, EN 61000-4-8:2010, EN 61000-4-11:2020), The low voltage directive (LVD) (2014/35/EU), (IEC 62368-1:2018, EN IEC 62368-1:2020 + A11:2020) |

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# FOTAS™

## Fiber Optic Distributed Acoustic Sensing System

## Applications

- *Perimeter Security*
- *Smart Cities*
- *Railway Monitoring*
- *Pipeline Surveillance*
- *Highway Monitoring*
- *Infrastructure Monitoring*

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