Distributed Acoustic Sensing (DAS) System

Amonics
Specialist in Optical Amplifiers

Others

Key Features

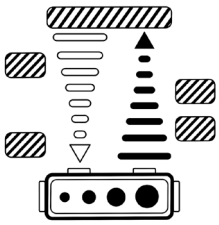
- High spatial resolution
- High fidelity measurement
- Stable System Signal to Noise Ratio
- Class 1M laser safety compliant

DAS System Mainframe

Description

Amonics Distributed Acoustic Sensing (DAS) system is a distributed acoustic sensing system which provides high spatial resolution measurement continuously along tens of km optical fiber. The system can be applied to different areas including infrastructure (bridge, railway, building, etc.) monitoring. There are some other specified applications such as earthquake monitoring, pipeline monitoring, geo-hazards, etc. With adjustable measuring parameters such as Laser pulse width, Sample frequency & resolution, etc., our DAS system is also an ideal equipment for research and development purpose.

Application



- Infrastructure monitoring
- Pipeline leak detection
- Earthquake monitoring
- Geo-hazard

- Research and development

ISO 9001 : 2015
Certificate No.: CC 5346

Our product is manufactured under a HKQAA ISO 9001 certified quality management system. The ISO 9001:2015 certification applies to the Hong Kong production site only.

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Performance at different measuring range

Measuring Range	No. of Channels	DAS system Frequency	Sample Frequency	Sampling Resolution	Gauge Length
2 km	1	0.1 Hz – 20 kHz	5 kHz – 50 kHz	0.3 – 1 m	3 m, 8 m, 10 m
5 km	1	0.1 Hz – 8 kHz	5 kHz – 20 kHz	0.3 – 1 m	3 m, 8 m, 10 m
10 km	1	0.1 Hz – 4 kHz	5 kHz – 10 kHz	0.3 – 1 m	3 m, 8 m, 10 m
20 km	1	0.1 Hz – 2 kHz	5 kHz	0.3 – 1 m	3 m, 8 m, 10 m

Lowest Strain Noise Floor in dB re nε at different DAS frequency bands

Sample Frequency; Gauge Length	0.5 – 1 Hz	1 – 10 Hz	10 – 100 Hz	100 Hz – 1 kHz	1 – 10 kHz
100 kHz; 10 m	-	-25.7	-22.4	-19.4	-21.8
50 kHz; 10 m	-	-	-	-25.7	-17.8
10 kHz; 10 m	-20.5	-25.1	-16.0	-	-
10 kHz; 8 m	-	-14.9	-15.3	-6.4	-
10 kHz; 3 m	-	-17.1	-12.0	-3.1	-

Laboratory test data obtained with optical pulse width at 30 ns and 10 ns

Maximum Signal Amplitude in dB re nε at different signal frequency bands

Sample Frequency; Gauge Length	1 Hz	10 Hz	100 Hz	1 kHz	10 kHz
100 kHz; 10 m	110	90	70	50	30
50 kHz; 10 m	104	84	64	44	24
10 kHz; 10 m	90	70	50	30	10
10 kHz; 8 m	92	72	52	32	12
10 kHz; 3 m	100	80	60	40	20

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Specifications

Model	ADAS-100-R-FA
Operation Wavelength	Typ. 1550 nm
No. of Channels	1
Measuring Range	0 – 20 km
DAS system Frequency	0.1 Hz – 40 kHz
Sample Frequency	5 – 100 kHz
Sampling Resolution	0.3 – 1 m
Gauge Length	3 m, 8 m, 10 m (Optional)

Combination of settings depends on measuring range

General Parameters

	Value
Operation Temperature	0 to 40 ˚C
Storage Temperature	-10 to 70 ˚C
Power Supply	90 – 240 VAC, 47 – 63 Hz
Dimensions (Mainframe)	485(W) x 515(D) x 90(H) mm
Control	Key-lock switch, BNC interlock key
LCD Display	Input power, Output power, Pump laser power, Pump laser current
Computer Interface	RS232 (Control software & connection cable included)
Protection	Pump laser overheat warning
Optical Connector	FC/APC
Optical Fiber	SMF-28

Ordering Information

Product Code	ADAS-100-R-FA

Amonics undertakes continuous and intensive product development to ensure its product performance at the highest technical standards. As a result, the specifications in this document are subject to change without notice.

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