

ALM - Cabinet Door Sensor

Fiber-Based Passive Sensor for Door Monitoring

ADTRAN's passive cabinet door sensors enhance the ALM fiber assurance platform by providing **real-time monitoring of enclosure** access points across the network. Designed for railway and utility environments, these completely passive sensors help operations teams detect unauthorized access, vandalism, and security breaches instantly — without requiring local power at field locations.

Whenever the cabinet door is opened, the reflection disappears and the ALM can identify the location of the cabinet door that was opened. Any changes in the sensor status are reported by the ALM in seconds, allowing the end user to quickly pinpoint the change and alerting the operations team to the specific location being accessed.



Multiple sensors can be “**daisy chained**” together supporting fiber links **up to 100km** and further simplifying installation, monitoring and operations. The event information provided by the ALM can then be viewed on a network management system such as Adtran's Ensemble Controller with Fiber Director or a number of third-party NMS/GIS systems.

Key Features

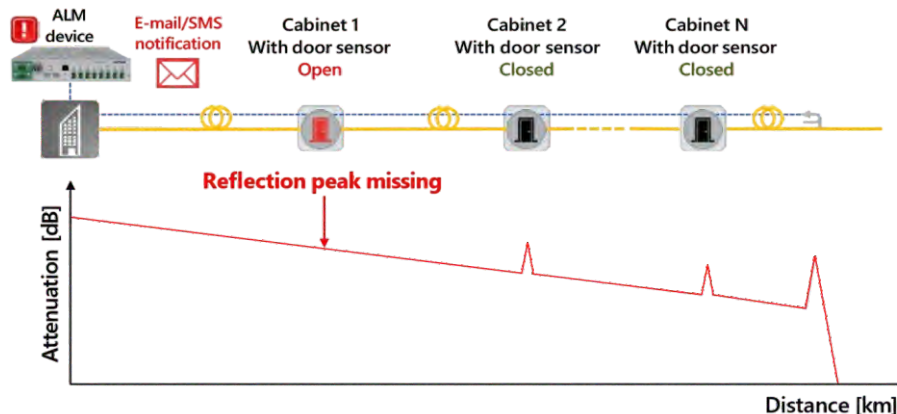
- **Simplified Installation:** Completely passive solution connects directly to fiber optic cable for monitoring of remote locations
- **Zero Maintenance:** No power or battery replacement requirements, eliminating outages and downtime
- **Ease of operation:** No wireless or protocol dependencies or setup needed
- **Improved security:** Passive design eliminates opportunity to “jam” monitoring operations
- **Wide network coverage:** Links up to 100 km are supported with multiple sensors, providing end-to-end network coverage
- **Management visibility:** 24/7 location monitoring via Adtran's Ensemble Controller with Fiber Director as well as third-party GIS platforms

Applications

- Improve network reliability and security with instant event notifications
- Continuous real-time monitoring of cabinet and facility doors from a central location
- Precise detection and location information reporting for events
- Monitor unstaffed remote locations to reduce operational expenses

How does it work?

- The illustration nearby shows multiple sensors deployed in a fiber optic network on a single fiber.
- The ALM monitoring device is located in the central office and continuously monitors the optical link. Each door or cabinet location is equipped with a passive sensor that generates a reflection peak.
- In the event that a door is opened the ALM will generate an alarm identifying which of the sensors experienced a change in status.



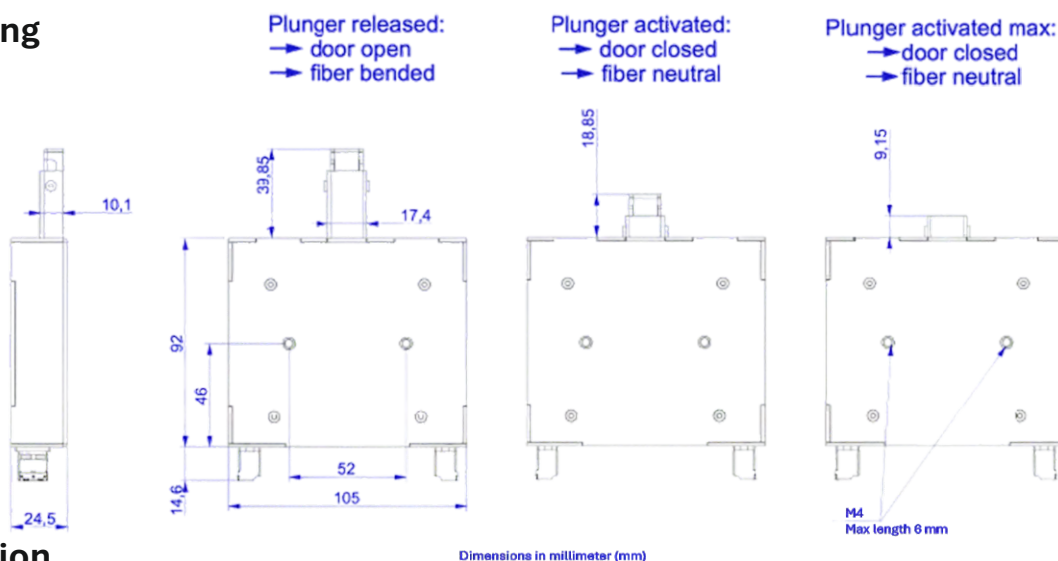
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Technical Specifications:

Parameter	Description	Specification	Units
Mechanical Specification			
Dimension (HXWXD)	H X W X D with plunger compressed and fiber connectors	23.75 x 125.45 x 92	mm
	H X W X D with plunger open and fiber connectors	23.75 x 146.45 x 92	mm
Dimensions for Mounting Options	Screw type	M4	
	Max screw length	6	mm
	Mounting holes placement	52	mm
Weight		180	grams
Plunger Force	Minimum - Maximum	3-8	Newtons
Cycle Count		20000	cycles
Optical Specification			
Reflection	Reflect band wavelength	1638~1700	nm
	Insertion loss including connectors (typical)	0.6	dB
	In closed state - In opened state	>-27 - <-35	dB
Long-Range Mode Performance	Maximum fiber length	100	km
	Maximum fiber loss (including all sensors on link)	32	dB
	Minimum spacing between sensors	200	meters
Short-Range Mode Performance	Maximum fiber length	20	km
	Maximum fiber loss (including all sensors on link)	28	dB
	Minimum spacing between sensors	5	meters
Temperature Specification			
Temperature Range		-35 to +75	°C
Environmental, Certification and RoHS Compliance			
IP Protection	IP20	Compliant	
RoHS Compliance	Directive 2011/65/EU and Delegated Directive (EU) 2015/863	Compliant	

Mechanical Drawing



Ordering Information

Product Code	Product Name	Product Description
1043709876-01	ALM/DS	Sensor for door or cabinet, LC/APC connectors