

Laser Precipitation Monitor

Model Nr. 5.4110.00.000

Instruments for:
METEOROLOGY
HYDROLOGY
WATER QUALITY
AIR QUALITY
INDOOR CLIMATE
VENTILATION

KRITECH

The new generation of high quality and reliable precipitation identification sensor

Laser precipitation monitor (Disdrometer)

State of the art technology with best cost-performance ratio

The Thies Laser Disdrometer is especially designed for the use in several applications. The optical laser basing measuring principle guarantees a reliable and accurate measurement of all known kinds of precipitation. It is possible to measure the amount, the intensity also as the particle size and the velocity of precipitation. A main advantage of the disdrometer is to measure particles down to 0,16 mm diameter.



The disdrometer detects and discriminates the different arts of precipitation as drizzle, rain, hail, snow, snow grains, graupel (small hail / snow pellets), and ice pellets with his reliable Laser optic. The disdrometer calculates the intensity (rain rate), volume and the spectrum of the different kinds of precipitation and makes necessary plausibility checks.

Latest state of the art technology like DSP, and high quality optical components stand for safely measurement.

All data will be transmitted via a galvanic isolated RS485 interface to further systems with different protocols and formats. SYNOP according table 4680, and METAR according table 4678 are implemented.

Typical applications

- traffic control
- meteorological monitoring
- scientific examination
- airport observation systems
- hydrology



Also for use in harsh environmental conditions

The main advantages in one view

- rugged, compact, and light
- nearly maintenance-free
- easy mounting
- DSP for computing power
- EMC protected housing
- particle size from 0,16 mm diameter
- extended heaters for use in harsh environmental conditions

The disdrometer is nearly maintenance-free, and the optical components are secured against environmental influence. Integrated heaters guarantee a reliable use all over the year.

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A special technology eliminates a possible influence of extrinsic light. The disdrometer controls itself via different features in order to compensate temperature and dirt influences. For communication the RS 485 output as well as two digital outputs are available.

In order to integrate other important meteorological parameters, the disdrometer is prepared to connect additional sensors like wind speed, wind direction, temperature and humidity.

All measured values will be transmitted via the RS485 output.

The use of flash memory allows remote software uploads.

Main characteristics

| | |
|------------------------|--|
| Principle of operation | Laser 785 nm, max 0,5 mW optical power, Laserclass 1M |
| Measuring area | 46 cm ² (23 x 2.0 cm) |
| Environmental | -40...+70°C; 0 ..100% rH, Optional -60...+70°C; 0...100%rH |
| Protection | IP 65 |
| Mounting | Mast 48 mm... 102 mm; 1.9...4 inch |
| Power | 24 V AC /750 mA, alternative 230 VAC or 115 VAC incl. std. heaters |
| Housing | al, die cast, stainless steel, 270x 170x 540 mm |
| Weight | 4.8 kg |
| Data output | RS485 1200...115200 Bd, full duplex 2 opt. coupler 24 V DC 1 mA |
| Optional inputs | PT100, 0-1 V, 0-1000 Hz, serial synchronous |

Precipitation

| | |
|---|---|
| Particle size | 0.16...8 mm |
| Particle velocity | 0.2 ... 20 m/s |
| Distinction for kind of precipitation drizzle, rain, hail, snow | > 97 % in compar. with synopt. observer |
| Minimum intensity | 0.005 mm/h drizzle |
| | 250 mm/h |