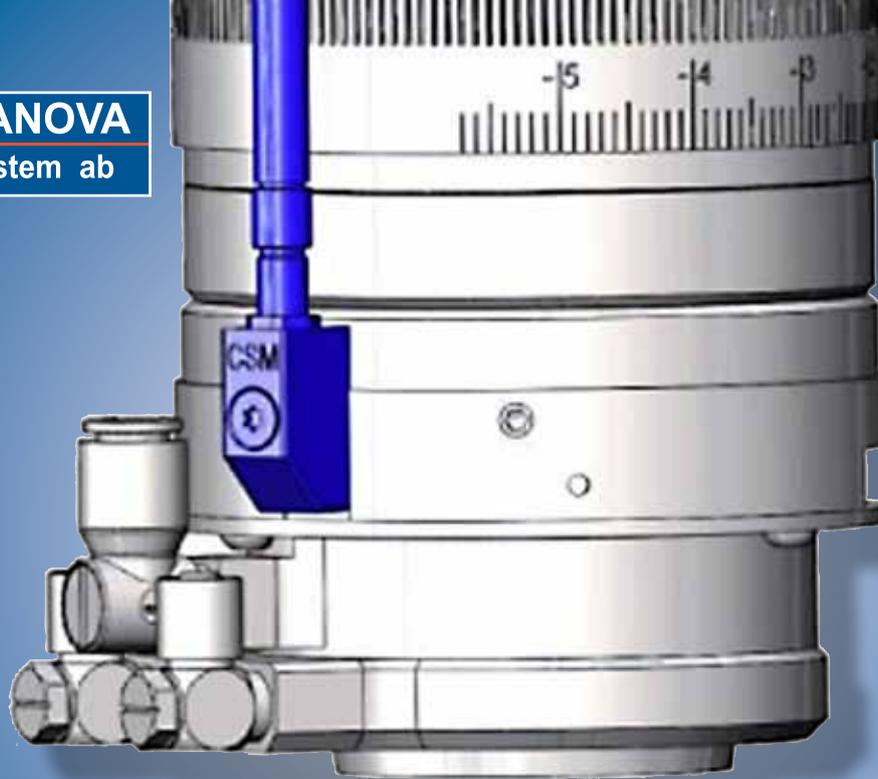




**PERMANOVA**  
Lasersystem ab



# PERMANOVA COVER SLIDE MONITOR – CSM

The Permanova CSM monitors the status of the cover slide during laser processing, mainly laser welding, cladding and cutting. An optical sensor measures the amount of spatter on the slide and a thermal sensor monitors the amount of dust on the slide.

The CSM is reliable, with small dimensions, easy to install and calibrate. Just connect the two signals into your controller and set your levels of warning and alarm.

### **Some good reasons to choose CSM**

The CSM gives you an early warning that a cover slide exchange is necessary, hours before the cover slide risks to break.

- You can do a planned swift cover slide exchange, before it breaks and leads to costly damages to your focussing optics and hours of lost production.
- Improves monitoring of your laser process, with a warning before you risk to lose it.



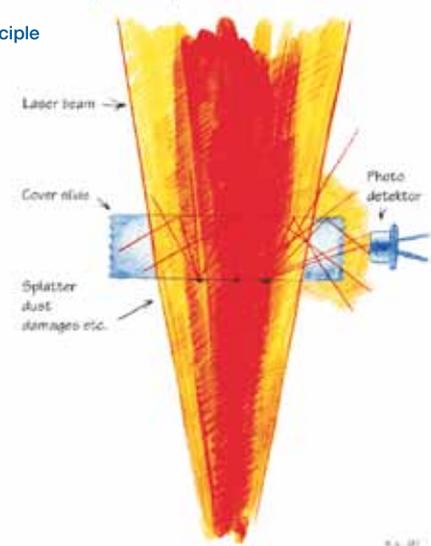
## Optical and thermal detection with separated electronics

The Cover slide monitor detects scattered light from particles on the cover slide, as well as measures the temperature of the unit in order to also observe contamination by smoke. The amplification of the optical signal is adjustable to suit different power levels, geometries etc.

The detector has a separate sensor unit, connected via a 300 mm long cable to the electronics, making it suitable when mounting space is limited and/or freedom of movement is important. The cable has connectors on both ends and can be easily removed if damaged.

A mounting surface has to be prepared on the cover slide holder or nozzle, according to the sketch below (the method in the example is recommended) where the ØD hole overlooks the rim of the cover slide. ØD should typically be 20% to 80% of the cover slide thickness.

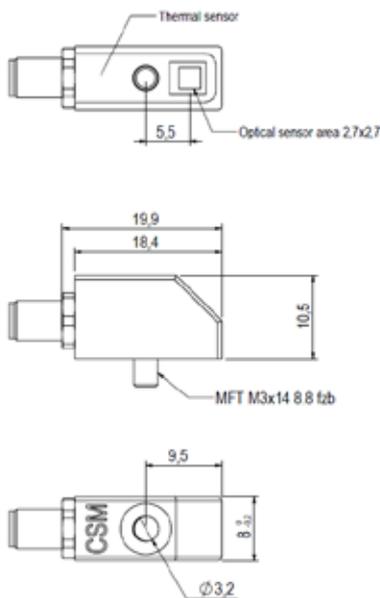
The principle



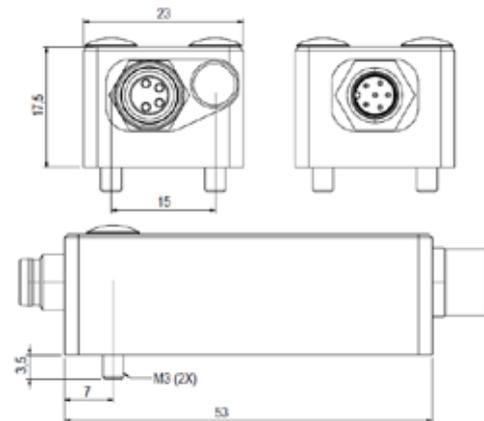
## Technical Data

Permanova CSM - Cover Slide Monitor CSM-OT-S	
Power Supply	24 VDC, 50 mA
Output signal (optical)	0-10 V DC
Output signal (thermal)	1 V DC per 10°C
Rise time (optical)	Less than 3 ms
Interface	open end

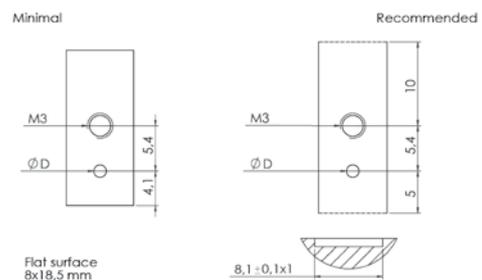
Sensor Unit



Connector Box



Suitable surface for the sensor



## Permanova Lasersystem AB

Krokslätts Fabriker 30, SE-431 37 Mölndal, Sweden

Phone: +46 31 706 19 80, Fax: +46 31 86 46 12, info@permanova.se

[www.permanova.se](http://www.permanova.se)

