



1. Control of the presence of fibers in an aluminum tube

In aluminum tubes with a length of approximately 160mm and an inner diameter of 14mm the presence of fibers should be checked, at which a good tube is a tube without any fibers. The tubes can be positioned and turned 360° around, around both ends of the tube there is space enough for mounting the sensors. At this a laser through beam system type **A-LAS-08-0,5x0,2-C** in connection with a control electronic **A-LAS-CON1** is used. The transmitter- / receiver- distance is about 180mm and the aperture at the transmitter side around 0,5mm x 0,2mm. The system can be calibrated during IN0 = high and the signal will be evaluated while IN1 = high (as long as the tube is turning around). The threshold is adjusted to 4000 and the signal lies after the calibration at 4095. If a fiber covers partly the laser beam, the signal at the receiver side will be attenuated and passes the threshold; simultaneously the digital output will be set. Additionally there is also an analog signal at the output of the control electronic available, which is proportional to the normalized signal, which is shown on in the diagram (blue signal). As shown in the screenshots a proper detection of the fibers in the tubes is possible.

