Sensitive 1/2017
The magazine for non contact measurement gauges

Dear readers,

the ASTECH team is pleased to present the first edition of the *Sensitive* in 2017.

The current edition illustrates the success story of the non-contact laser distance measurement sensor LDM41.
The distance meter has been an integral part of the ASTECH product portfolio for the last ten years. The sensor is characterized by a high accuracy, a great independence from the surface of the measuring object and a wide distance range.

News about the CROMLAVIEW® color sensors and the speed and length gauge VLM can be found as well in this edition.

We hope you enjoy reading our new *Sensitive*,
Your ASTECH team

In this edition

It works… and works… and works… and works… and works

For more than ten years ASTECH has offered laser-based distance meters for industrial purposes. From the beginning, the LDM41A was a part of the product portfolio.
Meanwhile thousands of these gauges are used to solve applications distributed over all branches of the industry. All of them share one common purpose – an accurate and reliable distance measurement.

When ASTECH first started to sell laser distance meters right after the millennium, nobody estimated the great extent of this success story.

Devices of the earlier LDM30 series were still based on the electronics of simple handheld devices. Distance gauges like those where quite hard to find even on modern construction sites. Based on market monitoring and the requirements of well-known customers from the metal industry, the successor LDM40 and finally the LDM41 were developed.

With its outstanding measurement capabilities and the well-known 4-20 mA interface the new model attracted great interest on the market. Additionally, the easy handling and the consistently proven reliability made the LDM41A really successful. For customers it was now easy to realize a highly accurate reflector-less distance measurement up to 30 m onto nearly every solid surface with affordable cost. With the use of targets made of special reflectors and reflecting foils the detection range of the gauge could be extended to more than 100 m.

Application-driven development

From now on the LDM41A replaced fault-prone cable extension encoders for fill-level measurement in silos or storages. Big parts of transportation machines for steel coils or paper rolls were moved exactly to the correct position by laser distance meters from ASTECH.

With overhead crane position monitoring the LDM41A established a new special field of applications.

Due to the comparative phase-shift principle the LDM41A provides a distance independent measuring uncertainty. No matter if the distance is 3 m or 30 m, the accuracy of the distance measurement is always ±2 mm. During the development of the LDM41 much emphasizes were put on the reliability and a robust construction. All internal optical parts are mounted in or on a solid metal bracket. The massive front tube prevents the receiver from extraneous light and prevents the lenses from scratches and damages caused by the harsh industrial environment.

LDM4x on mounting angle

Over the yeas more and more new application cases were added. Today there are historic buildings like castles or old churches, where the LDM41A monitors unwanted movements or changes of the constructions. In combination with programmable data logging devices the LDM41 observes the roof sag of big warehouses. The same setup is used to observe a street tunnel in

the south of Germany for deformations of the concrete cover caused by surrounding rocks.

Not only the robust construction and the powerful measurement principle are responsible for the success of the LDM41 on the market. With the ongoing digitization and higher grade of automation the requirement for flexible and modern ways of communication arose. Therefore ASTECH presented a flexible concept of digital interfaces to transmit the measured distance values via fieldbus to the PLC world. The LDM41P with Profibus and later on the LDM41PN with Profinet interface spread the spectrum of the distance meter series. With the LDM42 ASTECH also presented an enhanced version with a faster measurement mode.

Worldwide use

For reasons of laser safety the LDM41 is not to be used if the inner temperature goes below 0° C. Therefore there is an option with an internal temperature controlled heating and a pressure regulation element available. This enables the device to be used in outdoor applications like fill level measurements on top of a grain silo in the north of Sweden. For a higher grade of protection ASTECH offers an additional protection case made of stainless steel in IP67.

Protective housing PHSS4x

ASTECH and its distribution partners helped to provide worldwide success to the LDM41 series. In Australian open cast mines the depth of drill holes for explosive charges is measured by those devices. American saw mills measure the height of wood bins with the LDM41A, Chinese aluminum plants acquire the fill level of liquid aluminum or Danish flood protection facilities determine the position of big tide gates.

Customer-specific solutions

With much know-how about the different applications, ASTECH becomes capable to offer custom tailored solutions.

Aluminum rolling mills use very aggressive and extremely penetrating rolling lubricants. For the standard LDM41 this would lead to disintegrated gaskets and the gauges would be destroyed within short time. Together with the customer, ASTECH developed a solution where all the gaskets of the LDM41A are made of Viton which is a very resistant sealing material. With this setup the customer is able to measure the correction position and diameter of freshly rolled aluminum coils despite of the ubiquitous influence of the aggressive rolling lubricant.

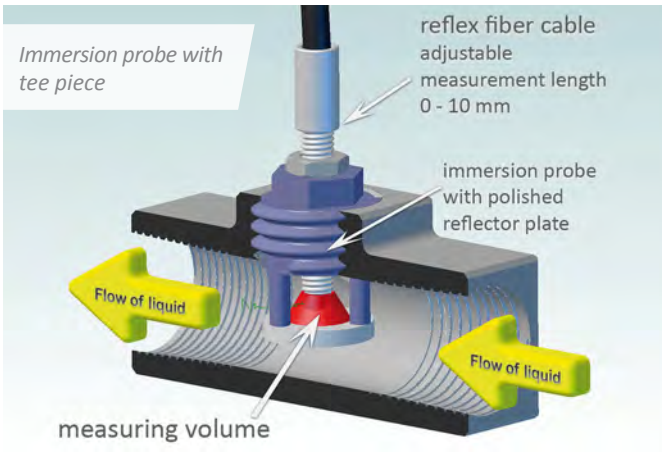
All these examples show that the LDM41A and its variations don't belong on scrap heap yet. Based on the various solved applications and all the gained experiences over the years ASTECH offers a whole system of products around the LDM41A which enables to provide solutions for nearly every thinkable application regardless how unusual they might be.

For more information about the laser distance meters of the LDM41 series please visit *www.astech.de/en/*

In-situ color measurement in flowing liquids

With the development of an immersion probe ASTECH meets the frequent requirements for in-situ color measurement in liquids.

In chemical industry, color and color saturation of liquids is often an indicator for the concentration of a solution to be determined or indicates the state of a chemical reaction.
The same applies to the analysis of water, cleaning fluids or solvents. Areas of application are, for example, the detection of dye residuals, active oxygen or suspended particles. A tee piece with 3/4“ thread connections makes it easy to connect the probe in such applications. The immersion probe is connected to a color sensor of the CROMLAVIEW® color sensor family by means of a temperature stable (up to 180 ° C) and liquid-tight reflex mode fiber cable.



The combination of an adjustable measuring length (0-10 mm), a 12-bit control of the illumination LED, as well as a 1:800 input sensitivity of the sensor ensures a large dynamic range.

VLM 500 – Comfortable distance set up of two light barriers

The latest revision of the firmware of the newest VLM-generation comes with an additional parameter. Now it is possible to add an offset value to the optical non-contact measured length with a simple command called “LENGTHOFFSET”. In this manner the distance of two light barriers can be programmed directly with the help of the VLMTool. This can be done with a command input or with the parameter mask. So far an input of the light barrier distance was only possible by formatting the text output. The text output is used by the digital interfaces (USB, RS232/RS422/RS485 or Fieldbus) of the VLM500. In order to be compatible to older software revisions it is still possible to format the text output.
In contrast to older models two light barriers can be connected directly to the VLM500. The 24V power supply comes from the VLM. This reduces the cable work for the customer. To adjust the new parameter comfortable with the VLMTool an update is recommended.

Both device firmware and VLMTool can be downloaded from the ASTECH website under *www.astech.de/en/download.html*.

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