NEWSLETTER 2019

brehmermechatronics

NEWS

Certification according to ISO 9001:2015

With the transfer-monitoring audit according to DIN ISO 9001:2015 carried out in April 2019, the newly introduced processes were checked for the first time. Our new QM system, which is now designed also for IATF16949, was audited without any deviations. ■

brehmermechatronics at bauma

"bauma" is the world's most important trade fair for the construction and mining machinery industry and also the largest trade fair in the world in terms of floor space. The brehmermechatronics team has developed numerous products over the past 2 years, which have now been presented at this trade fair. We are proud of the success of our team and are already looking forward to the next challenges. ■

bauma

In 2019, we will continue to intensively expand our competencies and capacities in the field of environmental simulation

After the successful commissioning of the state-of-the-art system "Fully automatic vibration test stand with overlay-able climatic chamber system" in 2018, we are now pleased that Sebastian Sohn's team (head of laboratory) now also has state-of-the-art testing technology in the "high-current and high-voltage range". Here, tests for components and modules for electric and hybrid vehicles can be qualified according to the latest testing standards. ■

uFrame - Extension for more safety when using tablets in industry

The use of smart devices for the planning and control of systems in the commercial vehicle, construction machinery and automation industries is developing rapidly. Currently, special industrial tablets are used for this purpose, since only these can be integrated into the safety concept of the machine in order to meet the requirements of the DIN EN ISO 13849 standard. Conventional Consumer Smart Devices, with which the user is more familiar, do not meet these requirements. The brehmermechatronics-team is therefore developing the "SDeFS" project, an extension for Consumer Smart Devices, which supplements the important safety functions for controlling machines and thus fully complies with the safety standard. ■

New vibration testing system put into operation

Our new system offers the possibility of vibration testing with and without climatic overlay. By using a sliding table it is possible to qualify the test specimens in vertical and horizontal axes in correct mounting position.

Further key data are: 16kN / -70 up to +180°C / 10 - 98% RH, test chamber volume: 700 ltr., vibrations: Sine, noise, noise with sine superimposition (mixed form), shock up to 100 mm stroke. ■

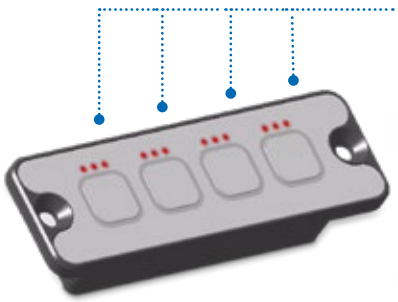
Mobile Machines 2019

brehmermechatronics exhibited the new developments at Mobile Machines 2019 in Leinfelden-Echterdingen. We thank all participants and speakers for their interest. ■

- *E1 approved*
- *Protection class: IP69K*
- *robust plastic housing*
- *Operating voltage: +10 V ...32 V*
- *Compact design: 94 mm x 30 mm x 24 mm*
- *EMV robust*

Functionally safe 4-button CAN module

The 4-button CAN module developed by brehmermechatronics enables a functionally safe control of movements and functions according to DIN EN ISO 13849. The engineers at brehmermechatornics have managed to integrate a two-color backlight for the keys as well as 12 status LEDs within the smallest possible space. Due to the redundant design of the membrane keyboard and the downstream, safety-certified microcontroller, a PL-C safety level can be achieved. Communication takes place via CAN according to SAE-J1939. ■



- *Dual redundat key design*
- *Two-colour backlight*
- *Customer-specific design of symbols*
- *12x Status LEDs*

Door control module, functionally safe

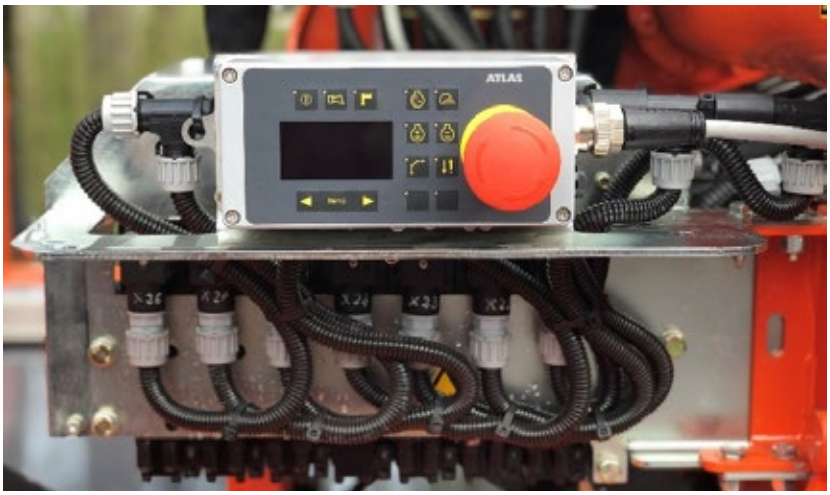
The customer-specific door control module developed by brehmermechatronics for Liebherr combines not only the control for windows, mirrors and mirror heating but also the functionally safe control according to DIN EN ISO13849 for rear axle steering in one module. For this purpose, the customer-specific design of the tactile cap shape including symbol illumination was integrated into the door control module. By producing the key caps from translucent plastic, which is then painted and lasered in the area of the symbols, all keys can give appropriate feedback on the current functional status with search or function lighting. The individual functions are controlled directly via semiconductor elements. The door control module operates in a voltage range of 10v...32V. ■

- *Driver- & passenger side*
- *Direct control via semiconductors*
- *Operating voltage: 10V...32V*
- *Search- & functionlighting*
- *Protection class: IP54*
- *Rear axle steering functionally safe according to DIN EN ISO13849*

Display & control unit, functionally safe

The new generation of the display & control unit celebrated the second bauma anniversary. The display and control unit developed by brehmermechatronics was already presented to the public at bauma 2015.

As part of the further development of the display and control unit, it was again exhibited with additional function keys and an optimised plug connection. The display & control unit operates in a voltage range of 10V...32V and in a temperature range of -40°C...+85°C. Communication with the machine takes place via CAN bus. ■



- *Temperature range: -40°C...+80°C*
- *Protection class: IP69K*
- *Operating voltage: 10V...32V*
- *Display: 128c64 px*
- *Emergency stop according to DIN EN ISO 13850*
- *CAN bus communication*

USB double charging socket compact, charging power 2 x 2,4 A

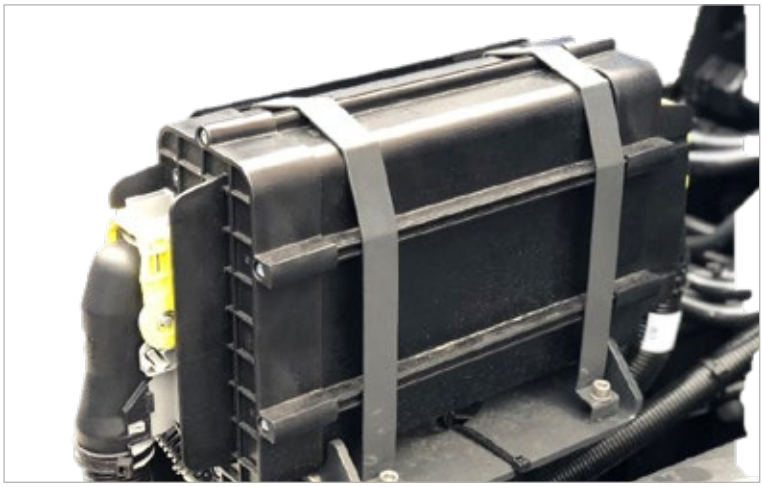
The brehmermechatronics USB double charging socket suitable for standard installation openings for established toggle switches can be easily integrated into various industrial solutions. Due to the intelligent charging system, our USB charging socket communicates with the connected device and thus provides the maximum amount of current required for the device. With a charging current of 2 x 2.4 A, two iPad-Pros can still be charged under full use. ■

- *Temperature range: -40°C...+85°C*
- *Charging according to BC 1.2*
- *Operating voltage: 12V...48 V*
- *Output voltage 5 V*
- *Standby current. 12 µA*
- *Charge current per output: 2.4 A*

remote control, functionally safe according to DIN EN ISO 13849

The specifically developed I.S.A.R³ control system for Meiller tippers was presented to interested customers and the public for the first time at bauma 2019. In this development, brehmermechatronics developed the complete system of remote control, charging cradle & control unit according to the functional safety requirements. The engineers of brehmermechatronics were responsible for the complete hardware and mechanical development as well as the later qualification of the complete system in the in-house environmental simulation laboratory. ■

- *Operating voltage: 12 V...48 V*
- *Emergency stop according to PL-C (DIN EN ISO 13849)*
- *Control via joystick and membrane keyboard*
- *Integrated acceleration sensor for "fall" detection*
- *Battery status display of the built-in LI battery*
- *Ergonomic design*
- *Radio communication (2.4 GHz)*



uFrame - Enhancement for more security when using Smart Devices

In the uFrame project, brehmermechatronics is developing an extension for so-called smart Devices, funded under the working title SDeFS by the Federal Ministry of Economics and Energy. For example, commercial tablets can be used to control safety-relevant movements on machines. This gives users the advantage that their existing planning & communication applications on the tablet can still be used. Finally, changes to apps and the application can be easily carried out without checking and verifying the safety concept. Furthermore, all functions already available on the device such as the camera, the GPS module, the microphone and the touch screen can be reused.

uFrame communicates with the machine via Bluetooth or W-Lan. If no suitable interface is available on the machine, it can be supplemented with an additional CAN or IO adapter. uFrame is to be tested with a first field test customer in 2019.

The research project is supported by the BG-Verkehr & the IFA St.Augustin, as well as by the TH-Köln.

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Bundesministerium für Wirtschaft und Energie

aufgrund eines Beschlusses des Deutschen Bundestages

- *Interfaces: W-Lan & Bluetooth*
- *Li-battery with a runtime of > 8h*
- *Operating temperature: -20°C...+80°C*
- *Protection class: IP67*
- *Functional Safe up to PL-E DIN EN ISO 13849*
- *Enable Switch*
- *Emergency stop according to EN60204-1:2006*

CONTACT

Your contacts

If you have a question or an idea, if you wish to receive more information or would like to get to know us – in short:
If we have aroused your interest, then simply get in touch with us.!

Moritz Schmidt
Management

B. Eng. Mechanical Engineering
Head of Development

+49 (0) 2262 727 17-16
m.schmidt@brehmer.gmbh

Robin Brehmer
Management

Head of Sales & Classic

+49 (0) 2262 727 17-20
r.brehmer@brehmer.gmbh

Dennis Blättermann
Director

Dipl.-Ing.

+49 (0) 2262 727 17-22
d.blaettermann@brehmer.gmbh

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brehmermechatronics.com

brehmermechatronics

Brehmer GmbH & Co. KG
Wilhelm-Grümer Weg 22
51674 Wiehl
Germany

Phone +49 2262 727 17-0
Fax +49 2262 727 17-11

info@brehmer.gmbh
brehmermechatronics.com