

# DRAB POL<sup>®</sup>

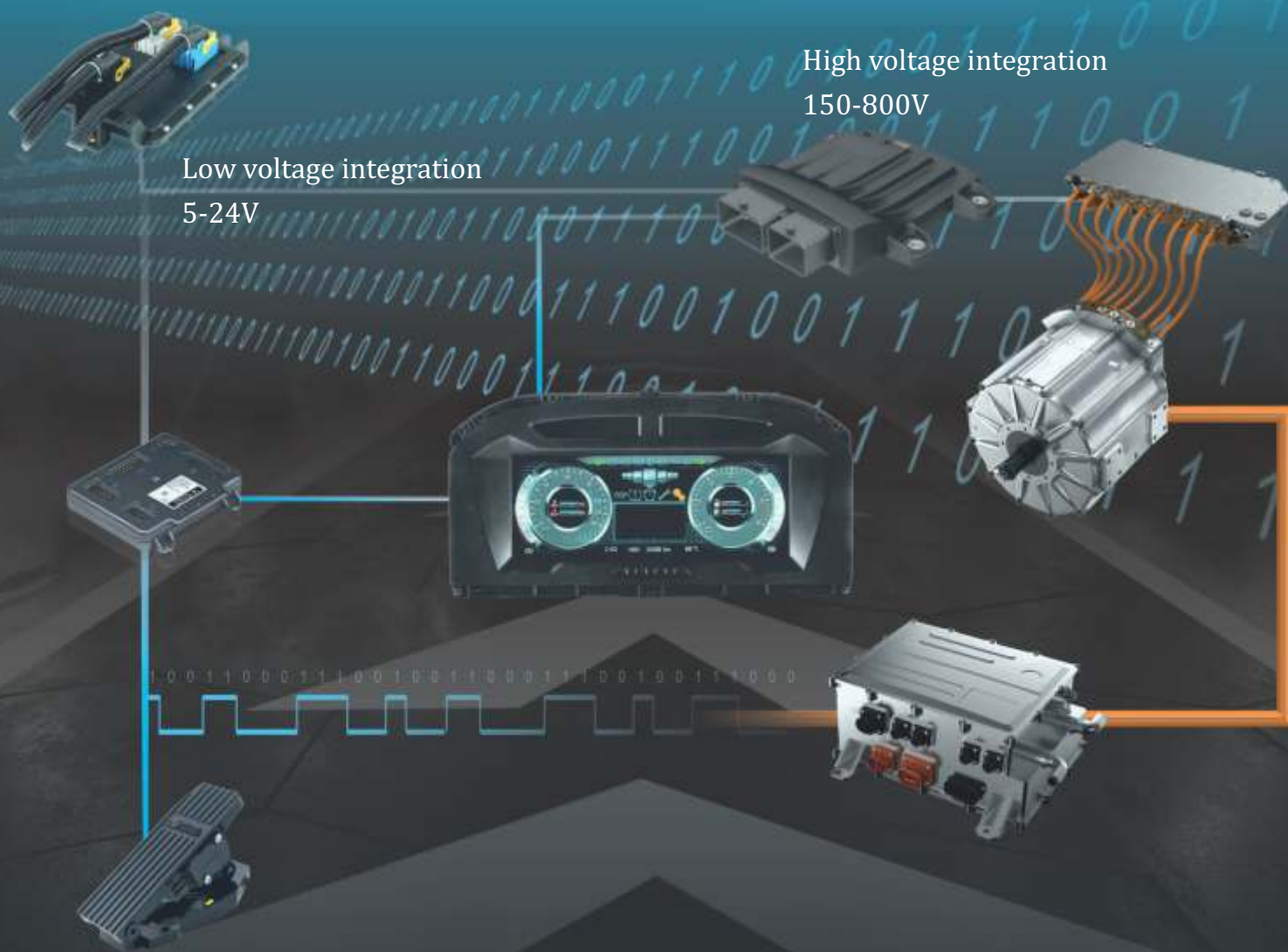
## AUTOMOTIVE NEWS

www.drabpol.pl

Quarterly Newsletter no 4(85) October - November - December 2019

# Limitless INTEGRATION!

For all vehicles over 2.8 t



„The fundamental principle of transportation is its safety”

## FROM THE EDITOR

### Ladies and Gentelman, Dear Readers!

Another busy year is behind us. It brought us many new challenges and opened new opportunities. We managed to finalize a cooperation agreement with the American corporation, Curtiss-Wright, thanks to which we can offer a variety of electronic systems - from transmission shift controllers to joysticks for all kinds of vehicles.

We have expanded our offer by comprehensive services related to the manufacturing of products on a 3D printer. Services in this field are provided by our Design Office.

The past year brought us also some organizational changes. As a consequence, we created the Research & Development Department that provides comprehensive services in the field of professional technical integration. Noteworthy is the project of integrating the entire vehicle in the low-current area implemented this year in Banke's first electric garbage truck.

Services of the department were promoted at this year's Busworld, where we were present as exhibitors for the second time. For more details, please see our coverage from this event in this issue.

Finally, we can not forget that this year brought us the premiere of the new generation of digital tachograph - DTCO 4.0., as well as the obligation to equip all registered or newly equipped vehicles over 3.5 tons with a smart digital tachograph. So it was a time of intensive calibration of new devices at authorized service centers that are equipped with all necessary tools supporting new digital tachographs.

For the New Year I wish you peace, optimism, health, and every success in both your private and professional life.

Alicja Drabczyńska



### IN THIS ISSUE YOU CAN FIND:

#### 3 EVENTS

- 3 Among the laureates
- 3 News – 4th Quarter 2019
- 3 Review of trainings
- 4 Second time at BUSWORLD
- 10 Premiere of "an electric bus with a stork symbol"
- 12 Service facilities for domestic customers of CURTISS-WRIGHT
- 14 Actions for railway transport
- 15 Our visit at CZECHBUS
- 15 Accident data recorder of the third generation
- 17 Mobile laboratory with PRO VIU 360 system



4| For the second time  
at Busworld



15| Third generation of  
accident data recorder



12| Service facilities for  
CW customers



17| Mobile laboratory with  
the ProViu 360 system

**DRABPOL**  
AUTOMOTIVE NEWS

Published by DRABPOL  
Editor:  
Drabpol sp. jawna P. Drabczyński i Wspólnik  
42-233 Mykanów, ul. Akacyjowa 24/26  
tel.0-34 366 00 22, fax 0-34 366 01 02  
centrala@drabpol.pl, www.drabpol.pl

*On behalf of myself and the whole Drabpol team, I would like to wish all our Readers, Customers, Business Partners, Colleagues and Company Friends, the achievement of all objectives and a lot of satisfaction from the challenges taken in the New Year.*

*I would like to thank everybody for our cooperation in the previous year. I hope the upcoming New Year will be also full of professional success and many other reasons for joy.*

*I would like to wish you all a good health, peace, optimism and all the success in your personal life.*



Paweł Drabczyński  
President of DRABPOL

**2020**  
HAPPY NEW YEAR!

# AMONG THE WINNERS

We are pleased to inform our readers, that our company was among the winners of the 2nd edition of Forbes monthly ranking – Family Business Forum 2019.

The Forbes' family business ranking is a pioneering list of the most dynamically growing family companies – reliable, solid, credible and transparent. Most of these companies have been on the market for several decades.

Our company has 36 years of experience supported by tradition, continuous development, next family generations and a team of several dozen people.

The verdict and award ceremony to the best family companies located in the Silesian and Opole Voivodeships took place on November 21st at the Monopol Hotel in Katowice. Congratulations to all laureates of the 2nd edition.

Ranking of companies from the Silesian Voivodeship is available at:  
<https://www.forbes.pl/forum-firm-rodzinnych/2019/ranking-firm-rodzinnych-slaskie/q2khygz>.

## News on 4th quarter

- ▶ The Municipal Transport Company in Wrocław expanded its fleet with 17 Solaris buses equipped with 51 USB chargers (3 per bus).
- ▶ 45 USB ports were installed on 15 Solaris electric buses, purchased by MTC in Poznań.
- ▶ One Solaris bus with one USB charger was purchased by the Municipal Transport Company in Sieradz.

## Trainings on 4th quarter

### 18th October

The periodic training for the Workshop Technicians on the installation, verification, inspection and repair of the digital tachographs.

This training was carried out for the Agricultural Production Cooperative in Sulmierzyce and was held at the Warsaw headquarters of our company.

### 28th October

WorkshopTab training for Volkswagen, carried out at the customer's headquarters in Września.

### 8th November

WorkshopTab technical training for "Leta Auto-Test" at the Warsaw headquarters of our company.

### 23-24th October

Authorization training on digital tachographs for METAL LAND, at the Warsaw headquarters of our company.

### 24th October

KIPAS 2.0. training for METAL LAND, it was part of the authorization training.



**Busworld Europe 2019**  
**18th – 23rd October**

# SECOND TIME AT BUSWORLD

Two years ago we made our debut as an exhibitor on the largest and most important bus fair in the World – “BUSWORLD”. This year we were present for the second time. This year's fair took place for the first time in Brussels, and not in Kortrijk as before.



At our stand, we presented our own solutions for comprehensive and professional technical integration, dedicated to both bus manufacturers and public transport companies.

These services are provided by our Research & Development Department which has developed a visualization of all necessary information on the dashboard's digital displays for such manufacturers as Ursus Bus, Autosan, Autobox and AMZ.

The complete design of dashboard – an initialization screen with password or graphics, an arrangement of indicators, etc. is always tailored to the particular users needs. An integration of systems supporting driver's and passengers safety with dashboard is

possible thanks to our proprietary MPCB technology that allows to combine the solutions of the independent manufacturers into the one system.

The R&D Department also integrates the electrical drive and train systems. We rely on the components of our Canadian partner DANA TM4 (also present at Busworld) such as: motor, inverter,



controller and control software. We choose the rest of the components.

At Busworld we have also presented this year's novelty for the first time in our offer - comprehensive 3D printing service by the company's Design Office. Our office, supported by a park of 3D printers, provides services in the manufacturing of parts with industrial quality. It is an advanced manufacturing system based on FDM (Fused Deposition Modeling) technology.

Thanks to servo drives and a working chamber heated to 20000 C, we can manufacture highly specialized tools as well as functional, durable prototypes.

Most importantly, the Design Office creates the comprehensive projects – from creating from scratch a 3D model on professional software, working with 3D printing technology, to print the product with final processing.



*Women's representation of "Targi Kielce - Trans Expo" with a visit at our stand.*

As one of the few companies in Poland, we also have a full material license for all types of prints that meet applicable standards for the aeronautical industry, medical applications and intended for contact with food.



Our stand, and thus the solutions we presented this year, enjoyed a great interest from visitors to the fair.

We were pleased to host representatives of such companies as Autosan, Solaris, NYSA, Automet, Tribus, Rafako, Temsa, Ebusco, Continental, as well as Polish public transport companies from Piła, Inowrocław, Poznań and Zielona Góra.

*We were pleased to host Mr. Robert Smirnow, President of Nysa Zakład Pojazdów, a company which we cooperate with on the development of the project within the scope components supply for Nysa prototypes.*

# OUR PARTNERS AT BUSWORLD 2019



Our automotive strategic partner – Continental confirmed at the fair with its strong position on the bus market, where there are currently many administrative requirements imposed on both drivers and bus carriers.

Continental has been trying to meet these requirements for years, thanks to many years of experience in the field of electronics and software as well as solutions that ensure both safety and comfort of driving.

We mean the ergonomic workplace of the driver – mFAP, presented at the German manufacturer's stand.

Not coincidentally this stand was located in close proximity to our exhibition. On the basis of mFAP, we provide services in the field of integration and implementation of systems used in public transport, with the simultaneous design of the displays used in it.

A new full preview system around the second generation ProViu 360 has appeared at Busworld. The official premiere of this solution is to take place at the end of March 2020. The new version of the system is to be even more adapted to current capabilities and bring numerous additional benefits to its users. We are looking forward to this premiere.



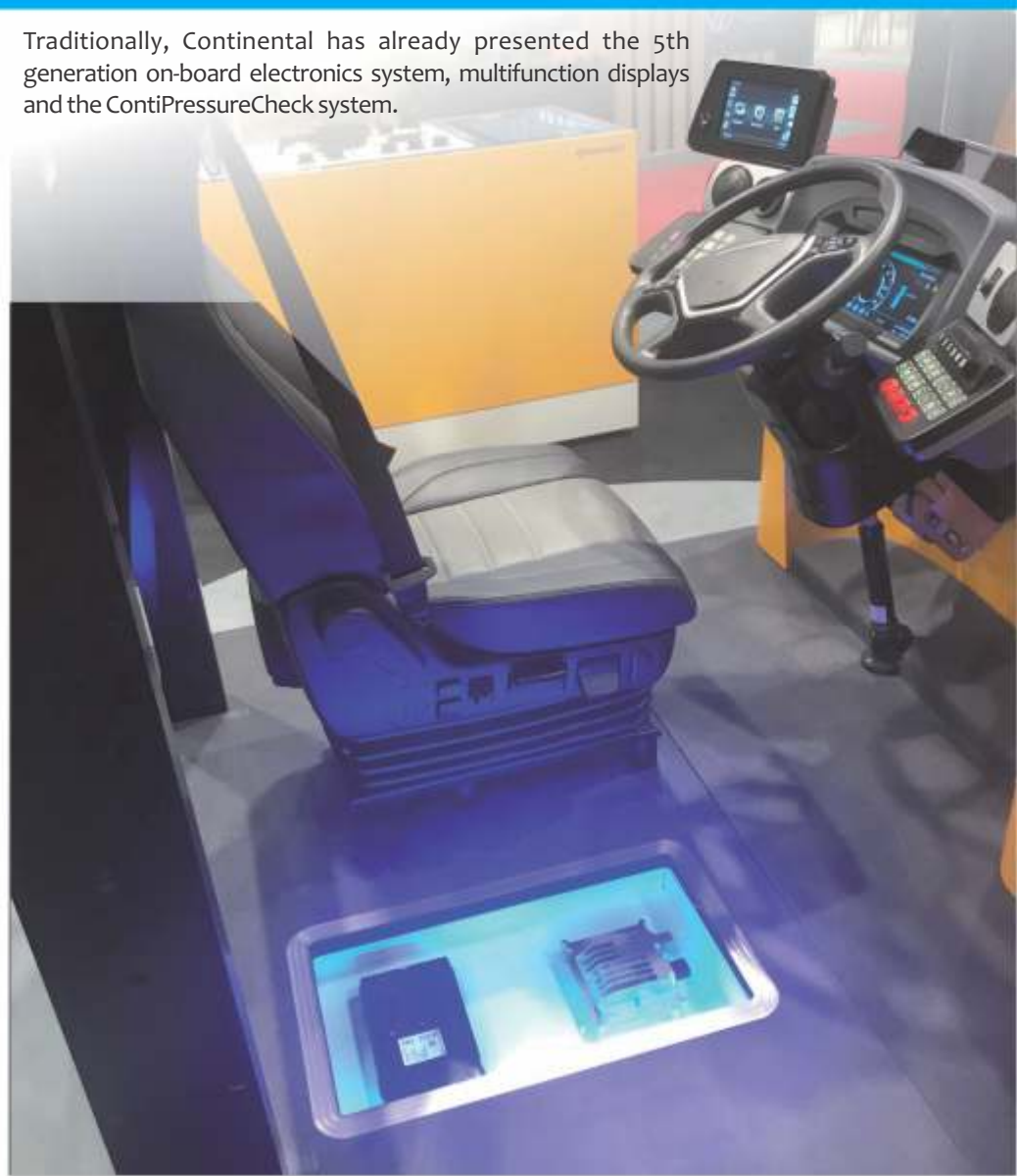
At this year's Busworld Konvekta promoted the HEAT2GO that is energy-saving heating of electric buses. It is a joint solution of Konvekta and the Fraunhofer Institute for Transport Systems and Infrastructure.

HEAT2GO is a modular heat storage system with fast charging function for city electric buses. The heat accumulator absorbs thermal energy in a short period of time caused by changing the state of matter from solid to liquid.





Traditionally, Continental has already presented the 5th generation on-board electronics system, multifunction displays and the ContiPressureCheck system.



The accumulated thermal energy is constantly transferred during the drive to the driver's workplace, passenger space, as well as other additional receivers depending on temperature. The system does not use energy from on-board batteries.

Thanks to the modular design, the performance can be adjusted in accordance with the various requirements of the customers.

*In addition to the presentation of bus air conditioners, Konvekta promoted the HEAT2GO project for energy-saving heating of electric buses.*

# OUR PARTNERS AT BUSWORLD 2019



This Slovak company presented its comprehensive offer of induction chargers. It could be seen installed on a table with additional USB and USB-C chargers. After the New Year, the induction charger will also have railway approvals.

The USB chargers currently use the fastest and most efficient charging technology. - Qualcomm Technologies Quick Charge 3.0., allowing the mobile device to select the required power level at any time.



*Molpir has presented the newest solutions within the scope of USB chargers and Funtoro multimedia.*

Molpir also presented aluminum housings for USB chargers, making them more resistant to damage caused during operation in the public transport.

The multimedia solutions were also present, such as the Funtoro multimedia system with accessories, cameras and mobile vehicle recorders.



DANA TM 4 presented two new products at its stand. The first was the electric-hydraulic power steering system, the second was the portal axle, dedicated to buses. The latter was supplemented by the MD series Sumo engine. Of course, Busworld is a great opportunity to promote electric motors for buses from the Sumo family, which consists of 11 drive system options. DANA TM4 solutions are used in school buses, 12-meter long buses or articulated buses around the world, including our country.

Recently, the Polish company Rafako joined this group with its e-bus, which we write about below.





# The world debut of RAFAKO E-bus equipped with our systems



The RAFAKO company from Racibórz had its debut at this year's Busworld, and thus the Rafako E-Bus electric bus had its world premiere.

Polish customers had the opportunity to familiarize with this bus during the fair in Sosnowiec or during the conference in Katowice. Now is the time to conquer the world market.

The new electric bus uses several solutions we offer. The TM 4 electric drive from the SUMO MD series, dedicated to medium-sized vehicles, comes to the fore. The drive is complemented by an inverter and a Neuro 200 controller.

The Sumo MD electric motor used in the E-bus installed on a special demonstrator was additionally presented at the RAFAKO stand. Thanks to this, visitors had the opportunity to see it closely and learn about its detailed parameters. Our company representative responsible for e-mobility, as well as the manufacturer's representative supported RAFAKO by providing all necessary information.



*E-BUS has been equipped with an ergonomic FAP+ driver's workplace along with a 12 - inch MVP display, with visualizations of all information for the driver developed by our company.*

The electric motor is not the only our solution in the presented E-bus. After entering the vehicle, the eye catches the ergonomic driver's work place FAP+ along with the 12-inch MVP display. Our engineers have developed a visualization of all information necessary for the driver, strictly for the needs of RAFAKO.

In addition, this bus is equipped with 6 USB ports for charging the mobile devices.

After the world premiere of the E-bus, it was time to check the vehicle in the field. From December 17th, for two weeks, the Municipal Transport Company in Toruń tested the RAFAKO electric bus. According to the information obtained, the tests went very well.

*Sumo MD DANA TM4 electric engine used in E-BUS was presented at RAFAKO's stand on a special demonstrator.*



## The AUTOSAN technical and sales conference in Arłamów

6-8 November



# Premiere of "an electric bus with a stork symbol" AUTOSAN

At the invitation of Autosan company, we took part in an annual conference organized by Sanok manufacturer for its customers, suppliers and business partners.

The conference was an opportunity for the first official presentation of a new Autosan electric bus with an electric powertrain - "SANCITY 12LFE" - prepared especially for the customers and business partners of the company. Electric bus with a stork symbol was undoubtedly the main and the most important point of the meeting, however the organizers did not forget also about other vehicles from the company's offer.

*Presentation of graphic layouts on the displays we offer, including MultiViu Professional 12, attracted a great number of conference participants.*



By presenting the new electric bus, the Autosan Management Board emphasized the relation of the Polish, fully ecological bus with the historic trademark, which is a stork, associated not only with Poland, but also with a clean natural environment.

We are very pleased that the bus incorporates our solutions. The new Sancity has been equipped with an ergonomic FAP+ driver's workplace with a 12-inch MultiViu Professional display. It is characterized by great flexibility in programming – both in terms of shape individualization, fitting/expansion and visualization of information depending on the driving mode and time. One of the components of Autosan bus equipment, including the new electric bus, is also on-board electronics system with MUX+ and ZR+.

A permanent point of the conference is presentation of exhibitors' offer during the so called "Wieczór wystawców" (Exhibitor's evening). It was a great possibility for us to present our comprehensive solutions for the bus market at our stand. We were pleased to host the representatives of the carriers, providing services in the city and intercity passenger transport. All interested visitors could get acquainted with the capabilities of the KIBES 5



At the stand, we promoted a comprehensive offer for the bus market – from the new KIBES 3 system, through Konvekta air conditioners and electric powertrain systems, to ATG articulations and ContiPressureCheck system.

system and presentation of graphic layout available on presented displays, including MultiViu Professional 12. Our offer for the bus market is much wider, and includes: ATG articulations, ContiPressureCheck system, Konvekta air conditioners for public transport buses and coaches or integrated electric powertrain systems.

One of the points of the conference agenda was viewing the grand exhibition of Autosan buses located in front of the Arłamów hotel. The visitors could see the SANCITY city bus, diesel or gas -powered and of course the one with the electric powertrain, as well as EUROLIDER 9 intercity bus.

The culmination of the conference was a new bus tour across Bieszczady roads, during which the participants could directly get familiar with the advantages of the new electric bus with a stork.

Finally, it is impossible not to mention the location of this year's conference – the Arłamów hotel, located in the heart of Bieszczady Mountains. During a special evening called "Arłamów bez kurtyny" (Arłamów without a curtain) all participants discovered various secrets of the hotel, that was integrally related with the PRL authorities. Those who succeeded, including our representatives, received a honourable certificate "Znawcy Arłamowa" (a connoisseur of Arłamów).



## Technical training on Curtiss-Wright products

19-22 November

# Service facilities for domestic customers of **CURTISS-WRIGHT**



In the previous issue of our newsletter, we have widely presented our new partner, American company, Curtiss Wright. It is worth reminding that due to our agreement with its Industrial Division, we have expanded our product offer by the electronic systems for all kinds of vehicles.

**CURTISS -  
WRIGHT**

The next stage of the established cooperation was a few day training on a wide range of CW products. The training dedicated to our representatives took place in the European headquarters of Curtiss-Wright in Christchurch, Great Britain, in November.

During the training, strong emphasis was placed on three main product groups such as: electronic throttle controls, joysticks and transmission shifters.

The first group was briefly presented in our latest newsletter. Therefore, now we would like to focus on transmission shift controllers and joysticks, which we had a chance to learn during the training.

Curtiss-Wright has been providing a world-class transmission shift controllers for many years. These products are characterized by an excellent design, which is often created in a close cooperation with the constructors working for vehicle manufacturers, as well as remarkable durability and precision of operation running into millions of cycles of use.

### Transmissions shift controllers



T75 automatic transmission controls



T12 & T20 powershift transmissions controls



Automatic transmission controls with the option of individual icons and highlights



The T83 Automatic Transmission Shifter for trucks and buses



Our new partner is also a world leader in the construction and production of joysticks and manipulators used by vehicle manufacturers – from large mining and construction machinery to specialized on-road and agricultural vehicles or recreational vehicles and medical transport.

Also in this case Curtiss-Wright closely cooperates with OEM manufacturers providing devices that are precisely tailored and meet all requirements, and enabling even selection of icons, indicator lights or the colors of joystick buttons.

CW devices use non-contact sensors based on Hall-effect which ensure them long service life and reliability, even in extremely difficult conditions.

The joysticks are primarily intended for installation in specialized vehicles, especially where reliability and durability are crucial, e.g. platforms for working in open air.

**We provide our customers with a device selection service, installation support, first start ups and after-sales service.**

These simple and easy-to-use devices ensure high mechanical strength – even a record number of 40 million working cycles under difficult conditions.

All constructions, before they are approved for manufacturing and receive the appropriate certificate, are extensively tested in a specialistic laboratory.

The entire course of deliveries, assembly and subsequent servicing are watched over by a global network of 45 technical partners - including our company.

Thanks to an intensive training course our team is fully prepared for both commercial and technical activities. We offer any assistance in the field of comprehensive device selection, as well as support during assembly and first start-ups. We also provide service facilities and after-sales support.

Please send any e-mail inquiries concerning new Curtiss-Wright products to our special address: [cw@drabpol.pl](mailto:cw@drabpol.pl)

The main recipients of these systems are manufacturers of construction, agricultural and special machinery, trucks and buses, as well as material handling vehicles.

Due to proprietary constructional solutions these devices cooperate with engines/motors of all of the world's largest companies. They enable electrical, electronical and hydraulic control of transmission shifters.

Transmission shift controllers have a stylish, ergonomic design and robust and damage resistant construction. Their production complies with ISO standards.

## Joysticks and manipulators



Joystick



JC1210 joysticks with minimized under-panel depth and replaceable colorful overlays



JC8000 joystick - CAN controlled, for vehicles working in tough conditions



JC4000 joysticks for machines

## The 8th Technical and Repair Conference 'PKP Intercity' S.A. in Sopot November 20-22



# ACTIONS FOR RAILWAY TRANSPORT



As a member of the Polish Chamber of Products and Services Producers for Railway, we took part in another conference organized by the Chamber.

The conference was mainly dedicated to "PKP Intercity SA". Therefore, the meeting was joined by the Management Board of the "PKP Intercity" S.A., representatives of the Rolling Stock Office, as well as Directors and Heads of individual Workshops. The issues covered at the conference included development plans of "PKP Intercity", potential of the company and current rolling stock projects.

One of the main topics of the conference was also the presentation of the latest solutions ensuring safety and passenger's comfort. The systems we offer fit these criteria perfectly, hence our presence in Sopot.

The conference created a great opportunity to meet and talk with representatives of the railway market about Konvekta air conditioners that are successfully used in many rail vehicles. Heating, ventilation and air-conditioning systems are installed on rail vehicles of Modertrans, Newag or Pesa on a regular basis. The last two manufacturers regularly install also our USB chargers. This solution still enjoys popularity among customers – on buses, trams and trains. Trains joined the list at the end of 2015 when the Fast City Rail (Szybka Kolej Miejska, SKM) in Warsaw installed dozens of USB ports in its Newag wagons. USB chargers can be attached to handrails, installed in the headrests of passengers seats, fastened to vehicle walls or to the locomotive instrument panel.

The ceremony of granting certificates to new companies joining the Chamber took place, as usual, during the conference. And this time, the Chamber has enlarged by four new members.



**9th edition of CZECHBUS in Prague**

**26-28 November**

**MOLPIR**  
TOUCH THE FUTURE. TODAY!

# Our visit at CZECHBUS

This year, we went once again to Prague for the annual trade fair of buses, public transportation, garage and service technology, known as "CZECHBUS".

A year ago, we made our debut as an exhibitor with our comprehensive offer for the bus market. This year, on the other hand, we were guests at the stand of our Slovak business partner - Molpir company, supporting it in servicing Polish customers. Since CZECHBUS takes place after Busworld, it creates a great opportunity for meetings with the Polish customers and closing negotiations initiated at the Belgian trade fair.

Czech trade fair confirmed plans concerning new products in 2020. Without a doubt, the most awaited were Qi induction chargers for fast and fully safe charging. Another interesting solution will be a ready table with a built-in Qi induction charger and USB and USB C chargers placed on the other side.

Noteworthy is also a completely innovative solution unprecedented even in passenger cars – an induction charger in the form of a pocket into which the phone is inserted.

Combined with two fast USB chargers it is a solution strongly dedicated to public transport – thanks to the possible mounting onto vertical handrails.

It should be mentioned that this year's trade fair took place on the outskirts of Prague. Unfortunately, the charm of the former halls has been lost and the event attracted less interest of the visitors. Nevertheless, the event was worth visiting.

**Technical and commercial training on the new UDS AT functionalities**

**9-10 October**

## Accident data recorder of the third generation



In the middle of October, we took part in a technical and commercial training dedicated to the new functionalities of the flagship product of Kienzle Argo - the UDS-AT accidental data recorder. The training was organized in our headquarters in Mykanów.

The new features are associated with the new software version. The changes have also resulted in numerous facilitations for system installers. The training was conducted by representatives of the German manufacturer - Kienzle Argo with the President of the company at its head.

The current version of UDS AT has been enriched with several new functions that increase the functionality of the system even more. We would like to remind that the recorder itself, by applying the latest 3D sensors with high resolution and accuracy ensures precise and complete accident reconstruction.

All sensor data and vehicle status signals, such as: speed, use of the brake, direction-indicators, emergency lights or police sirens are saved by the UDS AT, 30s before and 15s after a given event.

**New generation of UDS** – this is primarily a change in the software that enables maintaining compatibility with previous versions of the device. During the training we were presented features of the new gyroscopes, new iButton and new (not present before) display.

The new version of UDS means also hardware, that enables more precise records, and enlarged built-in memory. The new Premium cable set allows the GS module to be connected, along with registration in UDS of vehicle location. Thanks to the use of „Premium” set, we can supplement all existing functional extensions with a little installation effort. All new functions can also be activated after installing the software. For activation of these functions, parameterization and visualization of GPS functions we need UDS-AT Software Version 1.1, available as an upgrade.

At the training we also got familiar with a new method of activating UDS-AT functionality on existing equipment by using activation codes provided by



During the training, a representative of Kienzle Argo - Mr. Walter Gerlach, shared his knowledge about the new version of UDS.

Kienzle Argo. Additionally, thanks to the opportunity to create personalized configuration files, the process of serial installation of the UDS-AT has been simplified from the installer's perspective.

Kienzle Argo has also made available a technical portal, where in addition to technical documentation, it is possible to download the UDS-AT configuration for CAN bus signals of various vehicle manufacturers. Thanks to the introduced changes, the process of the UDS-AT start up has been significantly simplified.

At the end, it is worth noting that all novelties are compatible with all previous versions of UDS-AT. And what is most important, the highest possible flexibility obtained on all devices does not imply an overall increase in costs.

The autumn training was the occasion to say goodbye to our long-time business partner, President of Kienzle Argo company – Mr. Walter Gerlach, that was replaced by Mr. Juergen Daucher



After the training in Mykanów, we had the pleasure to host both Presidents of Kienzle Argo company in our Office in Warsaw.



## Installation of the around the vehicle monitoring system in Volkswagen Crafter of Orlen Eko.

# Mobile laboratory with PRO VIU 360 system

In November, our company's service installed a ProViu TM ASL 360 system, providing the driver with a full view of the vehicle in just one second. The system was installed on the VW Crafter vehicle.

The above vehicle belongs to ORLEN EKO fleet – a rapidly growing company that has been operating, for 15 years now, on the market of the waste management market, environmental monitoring and OHS services provided throughout the country.

Thanks to multifunctional construction and specialized equipment VW Crafter serves as a mobile laboratory, used for measuring pollution emissions into the environment. Measurements are made both in small and large industrial plants, on various installations, where there are plenty of narrow streets, posts, barriers, hydrants, or other hard-to-reach places. In such cases moving and manoeuvring the vehicle is very difficult and stressful for the driver.

Thanks to the ProViu ASL360 camera system, the manoeuvring of the above mentioned laboratory is not only easier, but also fully safe.

Images coming from four cameras are processed in an electronic control unit (ECU), that „glues up” them in a real time, avoiding any deformities.



Thanks to this instead of four image on the screen, coming from four different cameras, the driver receives one integrated image which is like a situational picture of the vehicle seen from the above.

The driver sees all objects around the vehicle, which you can not see in the side mirror or even via rear cameras. Depending on the situation the driver can choose 2D or 3D view. The display in the vehicle cabin displays a picture, both birds eye and from the individual camera, showing the desired area of a given vehicle side.

We would like to emphasize that VW Crafter mobile laboratory is another vehicle on the Polish market, in which the ProViu 360 system is used.

**Krzysztof Karpiński**, – Senior Inspector for Environmental Protection, Environmental Monitoring Department in ORLEN Eko Sp. z o.o.

“ Our mobile laboratory measures pollution emissions into the environment in very diverse conditions – both in small and large industrial plants, on various installations, where there are plenty of narrow streets, posts, barriers, hydrants, or other hard-to-reach places. So we were looking for a system that would provide us with a full preview of our vehicle from all sides, and thus allow a collision free access to the installation. For this reason, we decided to install the ProViu 360 system, which enables faster and safer manoeuvring and parking in hard-to-reach places, and thus contributes to increasing the safety of driving and reducing the risk of various collisions. Besides, the driver sees the entire environment around the vehicle – without blind spots.

I have to admit that the system fully meets our expectations, therefore we are fully satisfied with ProViu and we recommend it to everyone who has similar problems with manoeuvring in hard-to-reach places. ”