CiA member Dunkermotoren, a brand of Ametek, exhibited on the Passenger Terminal Expo 2024 trade show its drive solutions for the door automation. They are used for sliding and swing doors. They provide CANopen interfaces compliant with the CiA 402 profile, internationally standardized in IEC 61800-7 series. Tobias Johnston, key account manager building automation at Dunkermotoren, explained: “Equipped with brushless DC motors and integrated or external motor control units, those access gates provide additional safety for passengers. Customized and parametrizable motion profiles contribute to smooth and safe airport operation.” Due to its expansive modular system including motors, gearboxes, encoders, brakes, and control electronics, drive system combinations can be configured for any application. At airports or metro stations, for example, entry systems such as access gates ensure that only authorized persons get access to the airport terminal, or that the door to a platform is only released after the metro has stopped.

Different types of access gates, such as a one-way corridor or automated passport control, provide different installation spaces for the drive solution. The option to select from both, planetary as well as angular gearboxes such as worm or bevel gearboxes, allow Dunkermotoren to configure the suitable drive solution for each entrance system no matter the space constraints.

When using appropriate control electronics from the drive supplier, the motor can be set torque-free via appropriate safety functions. Reversible gearboxes allow a manual opening for escape and rescue routes.

One of the customers is the Gunnebo Group headquartered in Gothenburg, Sweden. The group provides access gates and turnstile products. They embed several drives by Dunkermotoren communicating via CANopen with the host controller. The human machine interfaces are not yet CANopen-connected, but some sensors are.

There are also CANopen drives by CiA member EBM-Papst used in access gates, rotating doors, etc. The company offers motors and drive controllers. As the competitors, the modular drive systems are designed for customer-specific solutions with generic building blocks.

The EN 17352 standard

By publishing the EN 17352:2022 standard, suppliers of power-operated access control devices such as turnstiles, swing lanes, and retractable lanes have been confronted with additional requirements and test methods. This European standard covers safety in use of pedestrian entrance control equipment used for normal access as well as in escape routes and emergency exits.

Thus, manufacturers of such products are required to take further safety characteristics into account when designing their product. Dunkermotoren helps to contribute to the compliance of these requirements. Reversible gearboxes, for example, allow a manual opening for escape in case of emergencies, ensuring the vital safety of passengers. Additionally, the motor controllers can safely switch off the drive torque so that no one is harmed on their escape route. They are certified to EN ISO 13849-1 for Performance Level d (PL d) / Category 3.

The EN 17352 standard applies also for revolving doors. In 2021, Boon Edam has already introduced the Tourlock series of security doors. The Tourlock 180 (4-winged) and Tourlock 120 (3-winged) doors now offer compliance with the EN 17352 standard. These doors have been updated to provide security protection through anti-tailgating and piggybacking functions. They use embedded CAN networks to communicate with sensors and actuators.
CiA member Sick presented in Frankfurt on the Passenger Terminal Expo 2024 its sensors able to sense baggage. The company offers different sensing technologies: laser, camera, and RFID. These products can be combined to detect and to identify the baggage. The communication between them is possible by means of CAN networks. Multiple of such stations installed along the conveyors allow an end-to-end tracking.

(Source: Sick)

The company has set the goal of implementing gapless baggage tracking hand-in-hand with customers in line with IATA (International Air Transport Association) Resolution 753. Roland Karch, Global Industry Manager airports at Sick, said: “We are market-leading in this application with a market share of more than 70 percent.”

CiA member Nord Drivesystems offers CANopen-connectable drives to move the baggage conveyors. The Logidrive product family comes with Duodrive, Nordac-on, or IE5+ synchronous motors. The integration of the drive into the gear unit housing reduces installation space, the number of wear-prone parts, and thus also the maintenance effort.

There are also self-contained transport vehicles moving and loading baggage carriers to aircrafts such as the Intrac pallet mover by Dimos, Germany. Such special airport vehicles often use embedded CAN networks to drive the vehicle and to control the lifting equipment. Some of them drive already autonomously.

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