

Electrified units for eco-friendly municipal vehicles

Electric motors with CAN protocol allow applications on vehicle bodies to be electrically driven for use during winter, for sweeping machines, or for refuse collection vehicles. They enable a range of auxiliary units to be electrically powered.



The CPM90 motor mounted on a hydraulic pump (Source: Sonceboz)

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New Euro standards, stricter regulations regarding fine dust pollution and concern for citizens' health mean that cities and local authorities are looking for more ecofriendly ways to operate their municipal vehicles. Older vehicles are no longer energy efficient enough to comply with the latest standards. Sonceboz offers a means of achieving environmentally friendlier, more powerful operation – by switching to electric units. Modern CPM90 high performance electric motors with CAN protocol allow various applications on vehicle bodies to be fully electrically driven for use during winter, for sweeping machines, or for refuse collection vehicles, and enable a range of auxiliary units to be electrically powered.

The Swiss company recommends the CPM90 product range, which boasts a degree of efficiency higher than 90 %, specifically for drive work in industrial and mobility applications. With the

CPM90, hydraulic pumps can be driven and controlled as needed at variable speeds in hydraulic systems that are complicated to control, completely independent of the combustion engine. One application example is activating lifting devices. It even allows fully autonomous "piggyback structures" to be fitted on vehicles – these replace components which were previously driven by external mobile hydraulics. Electrification as an addition to industrial drives such as planetary gears or worm gears for linear or rotating drive applications is also an advantageous alternative that can be implemented using the CPM90 24 V or 48 V versions due to their compact design. Even the fans in suction units on smaller municipal vehicles can be electrically driven in this manner.

CPM90 for electrohydraulic pumps

The compact, lightweight, robust BLDC electric motor is also ideal for driving hydraulic pumps at variable speeds. It enables needs-based energy provision for mobile working machines' hydraulic systems that are complicated to control. In doing so, it solves the core problem posed by previous drives – that the pumps are continuously mechanically driven by a combustion engine and therefore hydraulic power is continually generated even when it is not required. It also eliminates inefficient pump operation in the partial load range, caused by the pump needing to provide the system with sufficient volume flow at all combustion engine speeds. The highly efficient BLDCs, disconnect the hydraulic pump from the combustion engine and provide needs-based regulation, even on battery power when the engine is switched off. This reduces overall emissions and energy demand. The robust CPM90 systems also enable easier construction when compared to valve-controlled drives. The mechanical disconnection of the components and the electric operation – independent of the combustion engine – eliminate the need for decentralized hydraulic supply using long hydraulic hoses in mobile systems and the resulting hydraulic losses.

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