



I/O system: Local energy distribution concept for IP 67 systems

## EtherCAT power box delivers higher, better monitored power in the field

The new EP9214 power distributor box enables the local distribution and switching off of the power supply, providing the ability to exceed the power limitation specified by typical M8 plug connectors. This innovative I/O solution also provides complete diagnostics and control functionality for up to eight 24 V DC branch circuits per power box.

The IP 67-rated EtherCAT Box I/O modules typically use M8 plug connectors for supplying power, which according to the plug connector standard are only suitable for a maximum amperage of 4 A. Therefore, it may not be possible to simply loop the supply through when modules have a large number of outputs. A further limitation concerns the cables: the M8 plug connectors can only be used up to a maximum cable cross-section of 0.34 mm<sup>2</sup>. If the cables from the control cabinet to the machine are long, an excessive voltage drop can occur at higher currents. As a result, the 24 V DC voltage ( $\pm 15/20$  %) can no longer be maintained and the modules or connected sensors/actuators may no longer work properly.

The EP9214 power box is the ideal solution for these challenges. Equipped with 7/8-inch plug connectors, it maintains a total current of 16 A for each control and peripheral voltage with cable cross-sections of 1.5 and 2.5 mm<sup>2</sup>. Even considerably higher starting currents are briefly permissible at the outputs, so that a trouble-free start-up of the connected devices is guaranteed.

Wiring in the field using the power distributor box is significantly simpler and less expensive than equipping the system with additional terminal boxes with fuses.

The diagnostic and control functions of the EP9214 provide additional benefits. Apart from monitoring the input current, the currents in the control channel and the peripheral voltage channel are also monitored separately. In addition, the monitoring, limitation and, if necessary, the switching off of the power supply is possible for both channels. The EP9214 power box can be fully controlled via the EtherCAT network and the current diagnostics can be carried out conveniently via the controller. The eight 24 V DC voltage circuits can also be separately switched on or off directly via EtherCAT in order to increase the energy efficiency of the plant.

Further Information:

[www.beckhoff.com/EP9214](http://www.beckhoff.com/EP9214)