

EtherCAT Box:
compact and waterproof design

EtherCAT IP 67 I/O modules for high performance in harsh environments

With the expansion of the Beckhoff Fieldbus Box family via the EtherCAT Box, EtherCAT I/O technology no longer needs an electrical cabinet. All modules from this IP 67-rated series feature an integrated direct interface to EtherCAT, so that the system's high performance is retained down to each I/O module. This opens up new possibilities in the "machine mount" IP 67 world: fast process data communication with eXtreme Fast Control (XFC) technology, high-precision measurement technology and integrated drive functions directly in the field.

With dimensions of only 126 x 30 x 26.5 mm (H x W x D) the modules are exceptionally small and are well-suited for applications where space is limited.

The EtherCAT Box combines the benefits of the highly robust Fieldbus Box modules with the top-level performance of the EtherCAT communication system. This makes the EtherCAT Box very suitable for applications located in harsh industrial environments. Once Beckhoff laid the groundwork with the development of EtherCAT Terminals in IP 20 protection, the transfer of this functionality to water- and dust-proof IP 67 modules was the logical next step. The EtherCAT connection is established via screened M8 screw connectors. Communication via standard Ethernet cables permits networking of the EtherCAT Box modules over distances of up to 100 m. Ready-made, molded M8 cables are offered in lengths of up to 50 m. The Beckhoff EtherCAT Box now provides the high-performance capabilities of EtherCAT on various external points throughout a machine line and offers the basis for using Beckhoff XFC technology. Through fast I/O response times, XFC enables increased machine and system throughput, since signal delay times are significantly reduced.

The EtherCAT Box modules cover the traditional range of requirements for IP 67 I/O signals: digital inputs with different filters (3.0 ms or 10 μ s),



Robust and compact: IP 67 modules with direct EtherCAT interface

The modules are fully sealed and therefore ideally suited for wet, dirty or dusty conditions. Pre-assembled cables significantly simplify EtherCAT and signal wiring. In addition to pre-assembled EtherCAT, power and sensor cables, field-configurable connectors and cables are available for maximum flexibility.

digital outputs with 0.5 or 2 A output current, analog inputs and outputs with 16 bit resolution, thermocouple and RTD inputs, and stepper motor modules. Modules with time stamp inputs are available for XFC, for example. Sensors and actuators are connected via screw-type M8 or M12 connectors as required.

The continuity of EtherCAT – from the PC through the I/O terminal world right down to each box – offers unique transparency of the control architecture. This offers machine users complete freedom in terms of ma-



Highlights of the EtherCAT Box

- | very compact and robust IP 67 modules
- | 100 Mbit/s Ethernet directly in each IP 67 box
- | outstanding performance through EtherCAT
- | fast system communication through EtherCAT (no subsystem)
- | flexible topology
- | integrated EtherCAT communication for all automation components
- | XFC now reaches IP 67.

chine design. Inside the control cabinet, the machine is wired up in classic fashion with IP 20 EtherCAT Terminals. IP 67 EtherCAT Box modules are installed directly in the machine or plant itself. Additional terminal boxes can be dispensed with, valuable installation space is gained, the installation is facilitated and, ultimately, costs are saved.