



EK1814 | EtherCAT Coupler with integrated digital inputs/outputs

The EtherCAT Couplers from the EK18xx series combine the functionalities of the EK1100 EtherCAT Coupler with standard digital I/Os in one housing. This results in a compact design that is especially suitable for applications with a low number of I/Os. Like the EK1100, the EK18xx coupler can be extended by all EL/ES terminals. The digital I/Os are implemented with a 1-wire technique. The wiring can be implemented without tools using a direct plug-in technique with solid wire conductors or ferrules.

The EK1814 has four digital inputs and four digital outputs.

Technical data	EK1814
Task within EtherCAT system	coupling of EtherCAT Terminals (ELxxxx) to 100BASE-TX EtherCAT networks
Data transfer medium	Ethernet/EtherCAT cable (min. Cat.5), shielded
Distance between stations	max. 100 m (100BASE-TX)
Number of EtherCAT Terminals	up to 65,534
Protocol	EtherCAT
Delay	approx. 1 µs
Data transfer rates	100 Mbaud
Bus interface	2 x RJ45
Nominal voltage	24 V DC (-15 %/+20 %)
Current supply E-bus	1000 mA
Current consumption from Up	40 mA + load
Current consumption from Us	100 mA + (Σ E-bus current/4)
Number of inputs	4
Specification	EN 61131-2, type 1/3
"0" signal voltage	-3...+5 V (EN 61131-2, type 1/3)
"1" signal voltage	11...30 V (EN 61131-2, type 3)
Input filter	3.0 ms
Input current	typ. 3 mA (EN 61131-2, type 3)
Number of outputs	4
Load type	ohmic, inductive, lamp load
Max. output current	0.5 A (short-circuit-proof) per channel
Short circuit current	typ. < 2 A
Reverse voltage protection	yes
Breaking energy	< 150 mJ/channel
Switching times	typ. Ton: 60 µs, Toff: 300 µs
Electrical isolation	500 V (power contact/supply voltage/Ethernet), 500 V (E-bus/field potential)
Conductor types	solid wire, stranded wire and ferrule
Conductor connection	solid wire conductors: direct plug-in technique; stranded wire conductors and ferrules: spring actuation by screwdriver
Rated cross-section	solid wire: 0.08...1.5 mm ² ; stranded wire: 0.25...1.5 mm ² ; ferrule: 0.14...0.75 mm ²
Operating/storage temperature	-25...+60 °C/-40...+85 °C
Relative humidity	95 %, no condensation

Vibration/shock resistance	conforms to EN 60068-2-6/EN 60068-2-27
EMC immunity/emission	conforms to EN 61000-6-2/EN 61000-6-4
Protect. class/installation pos.	IP 20/variable
Approvals	CE, UL

Accessories	
Cordsets	cordsets and connectors

Related products	
EK1818	EtherCAT Coupler with 8 integrated digital inputs and 4 integrated digital outputs
EK1828	EtherCAT Coupler with 4 integrated digital inputs and 8 integrated digital outputs
EK1828-0010	EtherCAT Coupler with 8 integrated digital outputs
EK1914	EtherCAT Coupler with integrated digital standard and safety I/Os