



i EKM1101 | EtherCAT Coupler with ID switch and diagnostics

The EKM1101 EtherCAT Coupler connects the ELMxxxx EtherCAT measurement modules with EtherCAT. A station consists of an EKM1101 coupler, any number of EtherCAT Terminals and a bus end cap or an EtherCAT extension such as EK1110 or EK1122. The coupler converts the passing telegrams from Ethernet 100BASE-TX to E-bus signal representation. The EKM is designed in particular to meet the needs of high-precision analog measurement technology, e.g. with ELM3xxx terminals: to reduce interference in the connected measurement technology, both the E-bus supply U_s and the 24 V power contact supply U_p are electrically isolated and filtered in the coupler. The power contact supply can carry a maximum load of 2 A. The extensive voltage and temperature monitoring provides assistance with commissioning and operation; results are displayed by LED and in the process image. As a result, the EKM1101 can be used in special measuring situations instead of the conventional EK1100 EtherCAT Coupler. Mixed operation with EL9410 is possible, but this negates the concept of electrical isolation. The EKM1101 has two hexadecimal ID switches for assigning an ID to a group of EtherCAT components. This group can then be located at any position within the EtherCAT network. Variable topologies are therefore easily implementable.

Technical data	EKM1101
Task within EtherCAT system	coupling of EtherCAT Terminals (ELxxxx) to 100BASE-TX EtherCAT networks, with identity verification
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
Type/number of peripheral signals	max. 4.2 GB addressable I/O points
Number of configurable IDs	256
Protocol	EtherCAT
Delay	approx. 1 μ s
Data transfer rates	100 Mbit/s
Bus interface	2 x RJ45
Power supply	24 V DC (-15 %/+20 %)
Current consumption E-bus	–
Current consumption from U_s	50 mA + (Σ E-bus current/4)
Current consumption from U_p	50 mA + load
Current supply E-bus	2000 mA
Power contacts	max. 24 V DC/max. 2 A
Special features	electrically isolated output voltages, reverse polarity protection, diagnostics of supply and output voltages
Electrical isolation	500 V (power contact/supply voltage/EtherCAT)
Weight	approx. 450 g
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/markings	CE

Accessories	
Cordsets	cordsets and connectors
System	
EtherCAT	For further EtherCAT products please see the system overview
i Product announcement	estimated market release 2nd quarter 2019