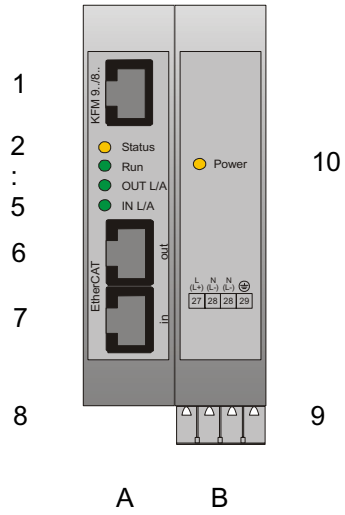
1 RJ-45 connector KFM-device
2 Status LED KFM-device
3 Run LED
4 LED connection state output
5 LED connection state input
6 RJ-45 connector EtherCAT output
7 RJ-45 connector EtherCAT input
8 Configuration interface (service) for PC-connection
9 Terminals supply voltage
10 Power LED

A EtherCAT adapter (99sec..)
B Power supply module* (99e5..)
*Existing, depending on the equipment



General:
The connection of KFM-devices to the EtherCAT fieldbus is realized by the intelligent bus adapter 99sec.., wich is configured to the address of the connected device and the requested transmission data e.g. actual value, setpoint and status word. The EtherCAT- addresses are determined automatically by the master device during network initialization.

The EtherCAT interface is able to replace separate wiring of analogue (external setpoints, signal outputs) or digital signals (via binary inputs and status bits respectively via relay outputs and control bits).

The EtherCAT-connection is carried out as a standard-ethernet-interface (100base-TX or 100base-FX; baudrate: 100 MBit/s) in accordance with IEEE 802.3, the EtherCAT-adapter is inserted directly into the bus line at the in- and output side by the appropriate RJ-45 connectors.

The communication between the adapter and the service interface of the KFM device takes place by a patch cable(1,5m), which is delivered with each adapter. 255 devices could be installed. Data modules for floating point operation are available for the data transmission. Two error bits make it possible to monitor the function of the adapter. Additionally, connection errors are registered and available for diagnosis by the use of fault memory.

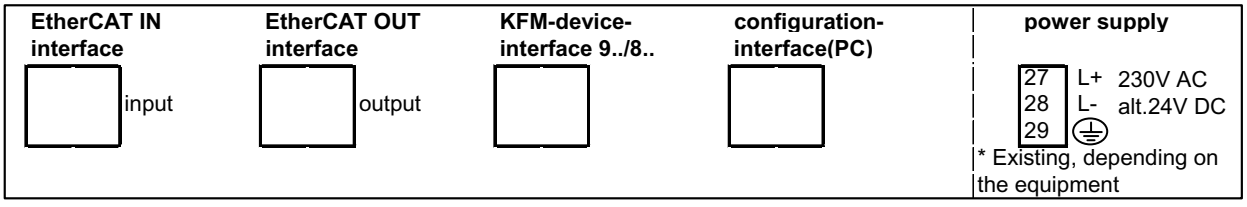
Types:
Functional module without mains supply for connection with power supply modules:
99sec120 Adapter for 12 EtherCAT values

Power supply module:
99e500 Power supply module 100-250V AC
99e508 Power supply module 24V AC or DC

Functional module for connection with power supply within already existing KFM-assemblies:
99sec120i Adapter for 12 EtherCAT values

Adjustments:
The PROFIBUS adapter is delivered preadjusted. In case of changes, the preadjustments can easily be modificated by a configuration program (WinPKS-PC-software, from version 2.15) using the configuration interface.

Connection diagram: **CPU-module** **power supply module ***



Commissioning:

Connect the supplied patch cable (1,5m) with the service- interface of the KFM device and the RJ-45 connector “KFM 9../8..“ of the EtherCAT-adapter and connect the RJ-45 connector “ECAT IN“ to the EtherCAT bus. Further optional EtherCAT-adapters can be connected using the RJ-45 connector “ECAT OUT“.

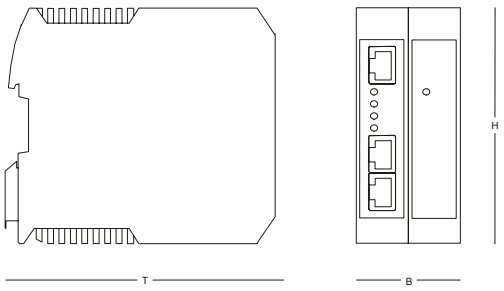
The LEDs on the front signalize the operating conditions :

LED	display	signification
EtherCAT-adapter, status KFM- device	yellow permanent	*Normal operation*
	yellow flashing	*Communication error* between KFM-device and EtherCAT-adapter Hint: all transmitted values of the respective device are set to “0“, bit 8 of the respective status byte (communication error) ist set to “0“. The respective fault memory will be increased by 1.
	red flash./ perm.	*Fault* on loading the parameter, remit device for repair.
EtherCAT-adapter, Run-LED	off	*Initialization condition*, nor mailbox-communication neither process data-communication possible
	green fast flashing	*Pre-operational condition*, mailbox-communication but no process data-communication possible
	green slow flashing	*Safe-operational condition*, mailbox- and process data-communication possible, but outputs remain in a safe condition
	green permanent	*Operational condition*, mailbox- and process data-comunication possible
EtherCAT-adapter, Out L/A-LED	off	*No connection* to the subsequent EtherCAT-module
	green permanent	*Connection* to the subsequent EtherCAT-module
	green flashing	*Communication* with the subsequent EtherCAT-module
EtherCAT-adapter, IN L/A-LED	off	*No connection* to the foregoing EtherCAT-module / master Hint: all transmitted values of the respective device are set to “0“, the respective fault memory will be increased by 1.
	green permanent	*Connection* to the foregoing EtherCAT-module / Master
	green flashing	*Communication* with the foregoing EtherCAT-module / Master
Power supply module, Power LED	yellow permanent	*Voltage supply* connected to the power supply module

Technical data:

Housing: for fastening to 35mm mounting rail Installation orientation: optional
Type of protection: IP20 according to EN 60529
Perm. ambient temperature: 0..60°C
Nominal temperature: 20°C
Power supply: 230V AC, about 12 VA
altern. 24V DC, about 12 VA

Installation dimensions:



H= 99mm, B = 45mm, T = 116mm

Wiring example: