

Frequency inverters

3~ Fcontrol, universal controller with display



The Fcontrol frequency inverters provide special advantages. Fcontrols have an all pole effective sine filter integrated which provides sinusoidal output voltage that is comparable with the standard mains. That means the frequency inverter enables reliable, demand-oriented and energy-saving control of asynchronous motors (external rotor motors, internal rotor motors) without having to take measures into consideration required by standard frequency inverters.

The advantages provided by the Fcontrol frequency inverter are:

- Operation without shielded motor feed lines
- The line length is not restricted by Fcontrol
- Operation without electromagnetic motor noises (ideal for noise sensitive areas)
- No risk to motors (they do not have to be frequency inverter compatible) since they are supplied with sinusoidal voltage that corresponds to the line voltage.

The benefits are especially advantageous in plants in which motors or fans are operated in parallel on a frequency inverter. Motors connected in parallel often means long cable lengths which is no problem with the Fcontrol. On top of that, unshielded cables can be used.

The Fcontrol universal devices are ideal for the following applications: refrigeration, air conditioning, agriculture, general air supply and ventilation tasks, clean room technology.

Fast commissioning for typical applications in the stated sectors by selecting pre-programmed operating modes possible.

Input for sensors or speed settings through



Setting of the desired speed through device or by external default, e.g. 0...10 V



Connecting pressure sensors (refrigeration), e.g. type MBG.. sensors, measuring range 0-435 psi, 0-725 psi



Connection of thermistors, e.g. sensors type TF.. e.g. active sensor type MTG..



Connecting differential pressure sensors (air conditioning), e.g. type MPG.. sensors, measuring range 0-24.09 in.wg, acquisition of volume flows up to 38,258 CFM

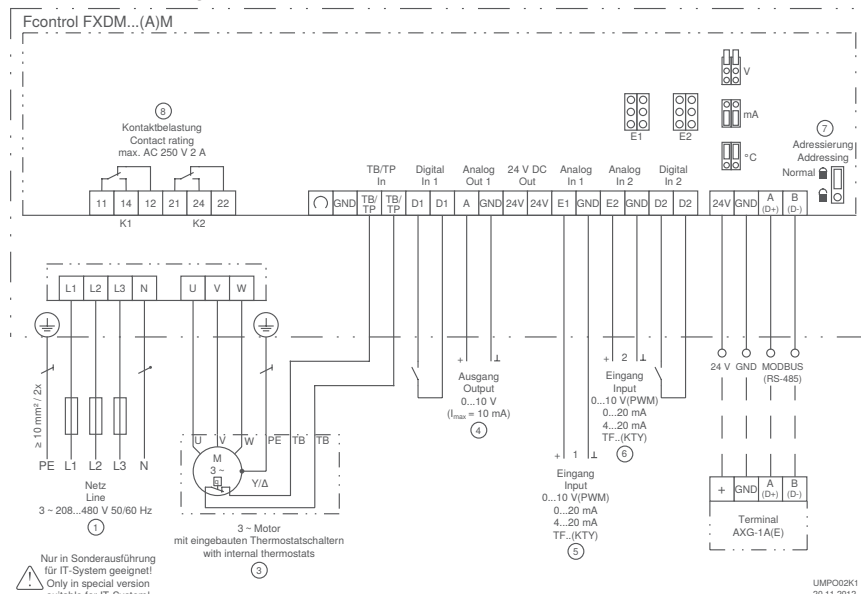


Connecting air velocity sensors, e.g. MAL.. type sensors, measuring range 0-3.28 ft/s, 0-32.8 ft/s



Connecting additional sensors, e.g. combination sensors, CO₂, sensor signal 0...10 V / 0...20 mA / 4...20 mA

Connection diagram



- ① Line
- ② Only in special version suitable for IT system!
- ③ Motor feeder cable
- ④ Output
- ⑤ Input
- ⑥ Addressing
- ⑦ Contact rating

Nur in Sonderausführung für IT-System geeignet
 Only in special version suitable for IT-System!

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Interference emission according to EN 61000-6-3 (domestic)
Interference immunity according to EN 61000-6-2 (industrial)

Equipment/Characteristics

Integrated all pole effective sine filter

Phase to phase and phase to grounded conductor which means sinusoidal output voltage. Measures typical for frequency inverters such as shielded motor feed lines are not required.

LC-multifunction display with plain text:

Various menu languages can be selected

Simple commissioning through operating modes:

Typical operating modes, e.g. for air-conditioning, refrigeration or ventilation technology can be selected.

Easy to program:

Typical settings can be made: e.g., default a minimum speed, limit the maximum speed, inverting and limits. Setting, e.g. for 2-stage mode

2 analogue inputs for sensors or setpoint signals:

Analogue input E1 and E2: Setting through operating modes or manually programmable, e.g. 0-10 V, 0-20 mA, 4-20 mA

Analogue input E2: programmable, e.g. comparison to Sensor 1, difference to Sensor 1, average calculation, setpoint input, setpoint adjustment (e.g. dependent on outdoor temperature)

Two digital inputs. D1 and D2:

Programmable, e.g. enable, switchover Setpoint 1 or 2, switchover control or manual operation, switchover E1 or E2, reverse control function, limit output, display external fault, reset, reverse the rotary direction

1 analogue output A1:

Setting through operating modes or manually programmable, e.g., output signal proportional modulation, output signal proportional input signal, invertible, 10 V constant voltage, group control

2 digital outputs (relays) K1 and K2:

Setting through operating modes or manual programming, e.g. operating status, limits, external fault on digital input, enabling external devices, e.g. heating, dampers, group control of fans, etc.

Integrated motor protection function:

Connection facility for PTC thermistors or alternatively thermostats (TB or TP).

Interface RS485 MODBUS RTU:

Integration into bus system

Setting protection / memory for settings:

Enable settings protection from unauthorised access, restore implemented settings

Event memory:

Query events that have occurred, operating times, etc.

Expansion module for frequency inverter

- IO-add-on module type Z-Module-B, Art. no. **380052**
if the integrated inputs and outputs are not sufficient, add more inputs and outputs with the Z-Module-B. They can also be programmed:
 - 1 analogue input
 - 1 analogue output
 - 3 digital inputs
 - 2 digital outputs (relay)
- LON® Expansion module type Z-Module-L, Art. no. **380086**
For integration into a bus system LON® via 2-conductor wire

Information

MAXventowlet

System components

Control technology

General notes

Fcontrol, universal controller with display, UL

3~ 208...480V 50/60Hz

Type	Article no.	Rated voltage	Rated current	Rated temperature	Max. line fuse	Max. heat dissipation	Maximum ambient temperature	Protection class	Weight	Dimensions (W x H x D)
		V	A	°F	A	W	°F		lbs	inch
FXDM32AM	308009-UL	400	32	122	35	700	131	IP54	62.8	15.20 x 20.67 x 11.14
FXDM32AME	308008-UL		32	122	35	700	131	IP20	73.0	13.50 x 23.62 x 11.02

Devices with a rated temperature below 131 °F can be used up to 131 °F with a reduction in performance.