

MFC710

MFC710/AcR

Frequency Converter

0,55 – 500 kW: 400V
15 – 800 kW: 500V, 690V



- Input: **3x400V** or **3x500V** or **3x690V**, 45-66 Hz
- Output: 0–400 Hz (U/f mode), 3 x400 V
- Operating modes:

U/f: linear and exponential

Vector: sensor and sensorless

- **AFE** technology in MFC710/AcR converters
- Removable operation **LCD panel**
- Build-in **PLC controller**
- Internal **PID regulator**
- Motor parameters identification

- Build-in **reeling calculator**
- Build-in **pump/fan controller**
- Build-in communication module **RS-232/RS-485 MODBUS RTU**
- Programmable **constant speeds**
- **Motopotentiometer** functions
- Build-in **incremental encoder interface** (line driver 5V)
- Resonance **frequencies elimination**
- Definable type of **speed curves** (linear, “S” curve)
- Operating with **torque control mode**
- **Programmable structure:**
 - **Switchable variants of control** (A,B)
 - **Speed setting sources:** control panel, analog inputs, PID regulator, motopotentiometer, function blocks, RS-232/RS-485
 - **Torque setting sources:** analog inputs, function blocks
 - **START/STOP and direction control sources:** control panel, digital inputs, function blocks
 - **Programmable digital inputs:** start, direction, blockade, external fault source, fault reset
 - **Programmable digital outputs** (3 relays and 1 open collector): ready, operating, fault, warning, converter overheating, set speed value achieved, current limitation, function blocks
 - **Programmable analog outputs:** frequency, rotating speed, output current, voltage, load, function blocks
- Total **worktime counter**
- Blockades and diagnostics system
- Build-in **RFI filter** (up to 18,5 kW)
- Store up to 4 sets of motor parameters
- **Predefined factory settings** for the most typical applications

TECHNICAL DATA

MFC710 400V converter power	Constant-torque load		Variable-torque load		Overload current (60 seconds every 10 minutes) [A]	Dimensions (w. x h. x d.) [mm]
	Power [kW]	Current [A]	Power [kW]	Current [A]		
MFC710/0,37kW	0,37	1,5	0,55	2,0	2,25	114 x 267 x 154
MFC710/0,55kW	0,55	2,0	0,75	2,5	3,0	114 x 267 x 154
MFC710/0,75kW	0,75	2,5	1,1	3,5	3,75	114 x 267 x 154
MFC710/1,1kW	1,1	3,5	1,5	4,0	5,25	114 x 267 x 154
MFC710/1,5kW	1,5	4,0	2,2	5,5	6,0	114 x 267 x 154
MFC710/2,2kW	2,2	5,5	3,0	7,8	8,3	114 x 267 x 154
MFC710/3,0kW	3,0	7,8	4,0	9,5	11,7	114 x 267 x 154
MFC710/4kW	4,0	9,5	4,0	9,5	15,8	114 x 267 x 154
MFC710/5,5kW	5,5	12	7,5	16	18	130 x 337 x 188
MFC710/7,5kW	7,5	17	11	23	25	130 x 337 x 188
MFC710/11kW	11,0	24	15	29	36	130 x 337 x 188
MFC710/15kW	15,0	30	18,5	37	45	130 x 337 x 188
MFC710/18,5kW	18,5	39	22	39	60	130 x 337 x 188
MFC710/22kW	22	45	30	60	68	220 x 450 x 225
MFC710/30kW	30	60	37	75	90	225 x 600 x 247
MFC710/37kW	37	75	45	90	112	225 x 600 x 247
MFC710/45kW	45	90	55	110	135	256 x 615 x 266
MFC710/55kW	55	110	75	150	165	256 x 615 x 266
MFC710/75kW	75	150	90	180	225	256 x 615 x 266
MFC710/90kW	90	180	110	210	270	283 x 865 x 400
MFC710/110kW	110	210	132	250	315	283 x 865 x 400
MFC710/132kW	132	250	160	310	375	460 x 920 x 345
MFC710/160kW	160	310	200	375	465	460 x 920 x 345
MFC710/200kW	200	375	250	465	570	460 x 920 x 345
MFC710/250kW	250	465	250	465	690	460 x 920 x 345
MFC710/315kW	315	585	355	650	850	640 x 940 x 345
MFC710/355kW	355	650	400	730	940	640 x 940 x 345
MFC710/400kW	400	730	400	730	1100	640 x 940 x 345
MFC710/450kW	450	820	500	910	1190	800 x 1127 x 345
MFC710/500kW	500	910	560	1020	1365	800 x 1127 x 345

The above data applies to MFC710 400V converters.

Data for voltage converters 500V and 690V as well as AcR versions are available on request.

Power supply	Voltage U_{IN} / frequency	MFC710 400V: 3-phase power: 400 V (-15% +10%), 45-66 Hz MFC710 500V: 3-phase power: 500 V (-15% +10%), 45-66 Hz MFC710 690V: 3-phase power: 690 V (-15% +10%), 45-66 Hz
Output	Voltage / frequency	0- U_{IN} / 0,0-400 Hz (0,0-200 Hz in vector mode)
	Frequency resolution	0,1 Hz / 1 rpm
Control system	Operation mode	Scalar U/f: linear or exponential Vector DTC-SVM: with speed sensor or sensorless
	Switching frequency	2..15 kHz (switching frequency range depends on the rated power of the converter)
Control inputs/outputs	Analog inputs	3 analog inputs: AI0: voltage mode 0(2)..10V, $R_{in} \geq 200k\Omega$ AI1, AI2: voltage mode 0(2)..10V, $R_{in} \geq 100k\Omega$; current mode 0(4)..20mA, $R_{in} = 250\Omega$
	Digital inputs	6 digital galvanic separated inputs 0(15..24)V, $R_{in} \geq 3k\Omega$
	Analog outputs	2 voltage-current outputs: 0(2)..10V / 0(4)..20mA
	Digital outputs	3 relays K1, K2 and K3 – breaking capacity: 250V/1A AC, 24V/1A DC 1 transistor open-collector output: 100mA/24V.
Braking	MFC710 series frequency converters enable variable braking types: coasting, ramp and DC braking. Converters with a built-in braking transistor allow the additional connection of a braking resistor. AcR subtype frequency of MFC710 converters enable recovery of braking energy into the power grid. <i>Note: Frequency converters for voltage 3x400V and 3x500V with power up to and including 18.5 kW have a braking transistor built-in as standard. Other converters are only equipped with a braking transistor if this was clearly indicated when placing the order. This is important because the braking transistor is installed at the stage of converter production and cannot be added later.</i>	

For more information, please contact us! We may make changes to specifications and product descriptions at any time, without any notice.

TWERD ENERGO-PLUS Sp. z o.o.

ul. Aleksandrowska 28-30
87-100 Toruń, Poland

tel. +48 56 654 60 91
e-mail: twerd@twerd.pl

www.twerd.pl



fy-23/09-en

DESIGN – PRODUCTION – SERVICE