DRIVES TECHNOLOGY

KOSTAL

KOSTALize

your application

Data sheet

INVEOR MC1

INVEOR MC1 – Build your own System

INVEOR MC1

IP65 protection class

Robust and vibration-resistant housing

Bluetooth Stick

microSD card slot

Status LEDs

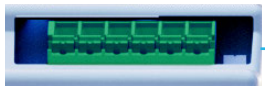
3~ AC : 0.55 – 4.0kW /
1~ AC : 0.55 – 2.2kW

Overload capacity up to 250 %

Specialized variants

MC101 - 104

Plugin option



2 relays

1-channel STO with relay

2-channel STO

Universal adaptation

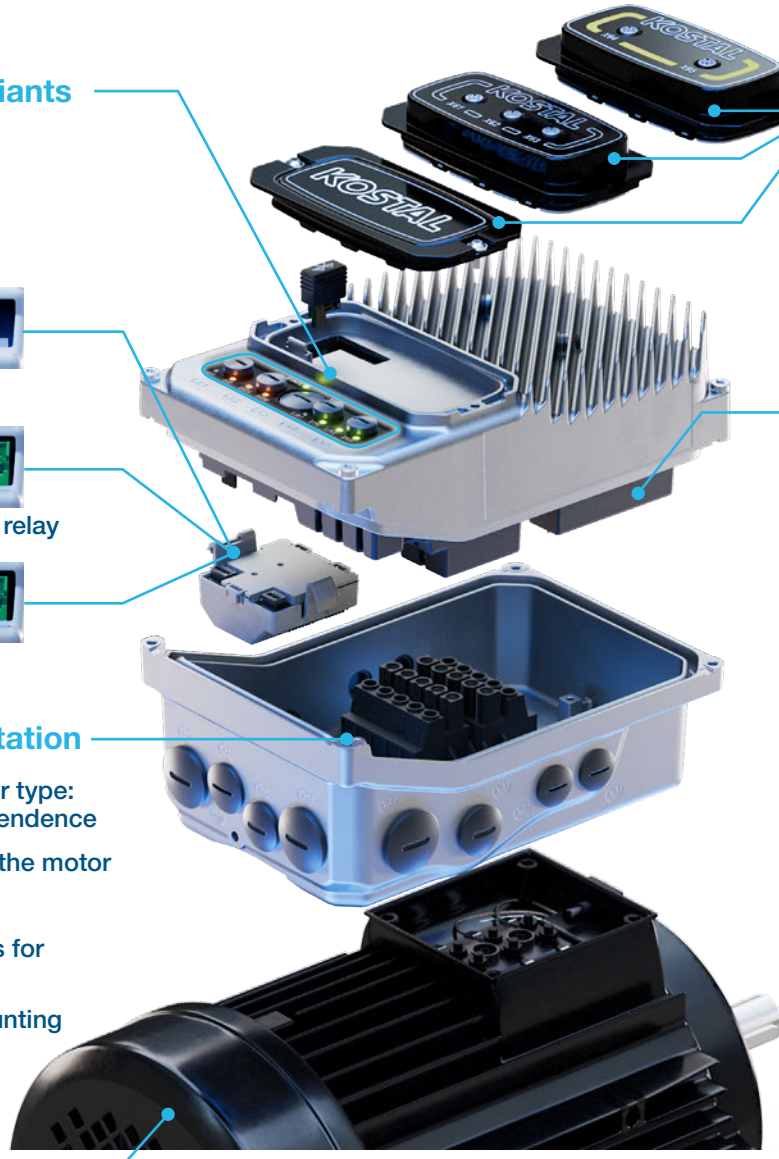
Free choice of motor type: manufacturer independence

Direct mounting on the motor

Cable glands

Optional connectors for signal and power

Alternative wall mounting possible



Motor control

Support for all synchronous reluctance, synchronous and asynchronous motors

Sensorless control

Maximum energy efficiency

Housing options

IO extension (M12 connector)

Display*

Functionally safe communication (PROFIsafe/FSoE)*

Integrated functions

Vibration monitoring

Extensive signal inputs and outputs

Universal brake control

Integrated soft PLC

Sensorless positioning

Optional braking resistor

* In preparation

Communication

CANopen · PROFINET · MODBUS RTU · EtherNet/IP · EtherCAT · Bluetooth

Download on the App Store · GET IT ON Google Play

ECODESIGN EN 61800-9-2 IE2 – ENERGY-EFFICIENT FREQUENCY INVERTERS

IEC/EN 60034-30-1 – SUPPORT FOR IE5 SYNCHRONOUS MOTORS

SIL3 PLe SIL2 PLd – FUNCTIONAL SAFETY

Technical data INVEOR MC1

3-phase frequency inverters

	Size	A				B		
Electrical data	Recommended motor rating[1] [kW]	0.55	0.75	1.1	1.5	2.2	3	4
	Supply voltage	3 x 200 V AC -10 %...480 V AC +10 % 280 V DC -10 %...680 V DC +10 % [2]						
	Grid frequency	50/60 Hz ± 6%						
	Network configurations	TN / TT / IT						
	Line current [A]	1.4	1.9	2.6	3.3	4.6	6.2	7.9
	Rated current output, eff. [IN at 4 kHz]	1.7	2.3	3.1	4	5.6	7.5	9.5
	Min. brake resistance [Ω]	100				50		
	Overload for 60 sec. [%]	200				200		
	Overload for 3 sec. [%]	250			200	250		200
	Switching frequency	Automatic regardless of temperature, 2 kHz, 4 kHz, 6 kHz, 8 kHz, 12 kHz, 16 kHz (factory setting 4 kHz)						
	Output frequency	0 Hz – 1.000 Hz						
	Mains cycles of operation / restart	unlimited [3]						
	DIN EN 61800-9-2 touch current	< 3,5 mA [4]						
Functions	Protective function	Overvoltage and undervoltage, I^2t restriction, short-circuit, ground leak, motor and variable frequency drive temperature, stall prevention, blocking detection, PID dry run protection, functional safety (SIL 3/PLe)						
	Software functions	Torque control [5], (PID controller), fixed frequencies, data record changeover, flying restart, motor current limit						
	Soft PLC	IEC61131-3, FBD, ST, AWL						
Mechanical data	Housing	Two-part aluminium die-cast housing						
	Dimensions including standard adapter [L x W x H] mm	225.5 x 142.5 x 118				260 x 180 x 155		
	Weight including standard adapter [kg]	2.3 kg				3.9 kg		
	Protection class [IPxy]	IP65 / UL 50E Type 4X comparable to NEMA 4X						
	Cooling	Passive Cooling						
Environmental conditions	Climate class (DIN EN 60721-3-3:1995)	3K3 (50°C)						
	Ambient temperature	-30 °C (non condensing) up to +40 °C (+50 °C with derating)						
	Storage temperature	-40 °C…+85 °C						
	Altitude of the installation location	Up to 1000 m above sea level / over 1000 m with reduced performance (1 % per 100 m) / above 2000 m see operating manual						
	Relative air humidity	≤ 96 %, condensation not permitted						
	Vibration class (DIN EN 60721-3-3:1995)[6]	3M7 (3g)						
	EMC (DIN-EN-61800-3)	C2 industrial sector						
	Energy efficiency class (EN 61800-9-2)	IE2						
	Certificates and conformity	RoHS 2011/65/EU, CE, cULus LISTED *						

* In preparation

Technical data for INVEOR MC1 (subject to technical changes)

[1] Recommended motor rating (4-pole asynchr. motor) is given based on the 400 V AC / 230 V AC supply voltage.
[2] In compliance with the overvoltage category.
[3] < 3s may result in power failure/intermediate circuit undervoltage faults.
[4] With 1LA7 asynchronous motor, motor-mounted.
[5] Only for synchronous and reluctance motors.
[6] Installation- and application-related resonant frequencies can damage the devices.

1-phase frequency inverters

	Size	A			B	
Electrical data	Recommended motor rating[1] [kW]	0.55	0.75	1.1	1.5	2.2
	Supply voltage	1 x 100 V AC -15 %...230 V AC +10 % 140 V DC -15 %...320 V DC +10 % [2]				
	Grid frequency	50/60 Hz ± 6%				
	Network configurations	TN / TT / IT				
	Line current [A]	In preparation				
	Rated current output, eff. [IN at 4 kHz]	In preparation				
	Min. brake resistance [Ω]	In preparation				
	Overload for 60 sec. [%]	200			150	
	Switching frequency	Automatic regardless of temperature, 2 kHz, 4 kHz, 6 kHz, 8 kHz, 12 kHz, 16 kHz (factory setting 4 kHz)				
	Output frequency	0 Hz – 1.000 Hz				
	Mains cycles of operation / restart	every 2 minutes [3]				
	DIN EN 61800-9-2 touch current	< 10 mA [4]				
Functions	Protective function	Overvoltage and undervoltage, I^2t restriction, short-circuit, ground leak, motor and variable frequency drive temperature, stall prevention, blocking detection, PID dry run protection, functional safety (SIL 3/PLe)				
	Software functions	Torque control [5], (PID controller), fixed frequencies, data record changeover, flying restart, motor current limit				
	Soft PLC	IEC61131-3, FBD, ST, AWL				
Mechanical data	Housing	Two-part aluminium die-cast housing				
	Dimensions including standard adapter [L x W x H] mm	225.5 x 142.5 x 118			260 x 180 x 155	
	Weight including standard adapter [kg]	2.3 kg			3.9 kg	
	Protection class [IPxy]	IP65 / UL 50E Type 4X comparable to NEMA 4X				
	Cooling	Passive Cooling				
Environmental conditions	Climate class (DIN EN 60721-3-3)	3K3 (50°C)				
	Ambient temperature	-30 °C (non condensing) up to +40 °C (+50 °C with derating)				
	Storage temperature	-40 °C…+85 °C				
	Altitude of the installation location	Up to 1000 m above sea level / over 1000 m with reduced performance (1 % per 100 m) / above 2000 m see operating manual				
	Relative air humidity	≤ 96 %, condensation not permitted				
	Vibration class (DIN EN 60721-3-3:1995)[6]	3M7 (3g)				
	EMC (DIN-EN-61800-3)	C2				
	Energy efficiency class (EN 61800-9-2)	IE2				
	Certificates and conformity	RoHS 2011/65/EU, CE, cULus LISTED *				

* In preparation

INVEOR MC1 – Specialized variants

INVEOR model MC101

X1	X2	X3	X4	X5
Potentio-meter		USB-C		

INVEOR model MC102

X1	X2	X3	X4	X5
Potentio-meter	Modbus/ RS485	USB-C		CANopen

INVEOR model MC103

X1	X2	X3	X4	X5
	Modbus/ RS485	USB-C	Ethernet	Ethernet

INVEOR model MC104

X1	X2	X3	X4	X5
DI1 + DI2	DIO1 + DIO2	USB-C	Ethernet	Ethernet

Features of the variants

INVEOR model	MC101	MC102	MC103	MC104
Digital input (DI)	4	4	4	2 via M12 connector to X1
Bidirectional digital I/O	2	2	2	2 via M12 connector to X2
Analog input (AI)	2	2	2	
Bidirectional analog I/O	1	1	1	
PT1000	1	1	1	
microSD card slot		1	1	1
Motor PTC	1	1	1	1
Rotary encoder	HTL via digital inputs	HTL via digital inputs	HTL via digital inputs	HTL via digital inputs
24V DC power supply	internal	internal	internal / external	internal / external
Potentiometer	to X1	to X1		
USB-C	to X3	to X3	to X3	to X3
MODBUS RTU		via M12 to X2	via M12 to X2	
CANopen		via M12 to X5		
EtherNet/IP, EtherCAT, PROFINET			via M12 to X4 and X5	via M12 to X4 and X5
Vibration monitoring			integrated	integrated
1-phase	Without brake control			
3-phase	With or without brake control			
Example applications	basic applications	mechanical engineering	intralogistics	

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