

DRIVES TECHNOLOGY

KOSTAL



Data sheet

KOSTAL^rize

your application

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
Intralogistics
Mechanical engineering
Basic applications

Plugin Option

Functional Safety (STO)
Relay

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 expansion (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

* In preparation

Communication

CANopen

PROFINET

MODBUS RTU

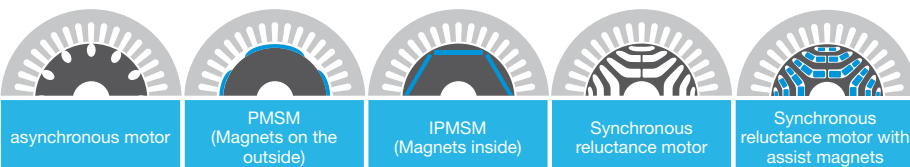
EtherNet/IP

EtherCAT

Bluetooth

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SIL3 PLc
SIL2 PLd
FUNCTIONAL SAFETY



INVEOR MC1 – Specialized variants

INVEOR model MC101



X1	X2	X3	X4	X5
Potentiometer	-	USB-C	-	-
Digital input (DI)		4		
Bidirectional digital I/O		2		
Analog input (AI)		2		
Bidirectional analog I/O		1		
PT1000		x		
microSD card slot		-		
Rotary encoder		HTL via digital inputs		
24V DC power supply		internal		

INVEOR model MC102



X1	X2	X3	X4	X5
Potentiometer	Modbus/RS485	USB-C	-	CANopen
Digital input (DI)		4		
Bidirectional digital I/O		2		
Analog input (AI)		2		
Bidirectional analog I/O		1		
PT1000		x		
microSD card slot		x		
Rotary encoder		HTL via digital inputs		
24V DC power supply		internal		

INVEOR model MC103



X1	X2	X3	X4	X5
-	Modbus/RS485	USB-C	Ethernet	Ethernet
Digital input (DI)		4		
Bidirectional digital I/O		2		
Analog input (AI)		2		
Bidirectional analog I/O		1		
PT1000		x		
microSD card slot		x		
Rotary encoder		HTL via digital inputs		
24V DC power supply		internal / external		

INVEOR model MC104



X1	X2	X3	X4	X5
DI1 + DI2	DIO1 + DIO2	USB-C	Ethernet	Ethernet
Digital input (DI)		2		
Bidirectional digital I/O		2		
Analog input (AI)		-		
Bidirectional analog I/O		-		
PT1000		-		
microSD card slot		-		
Rotary encoder		HTL via digital inputs		
24V DC power supply		internal / external		

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 – 2.000 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 ² t 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 casing						
	Dimensions including standard adapter [L x W x H] mm	225.5 x 142.5 x 118				260 x 180 x 155		
	Weight including adapter plate [kg]	2.3 kg				3.9 kg		
	Protection class [IPxy]	IP65 / UL4X						
Environmental conditions	Cooling	Passive Cooling						
	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								

* 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 – 2.000 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 ² t 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				
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Mechanical data	Housing	Two-part aluminium die-cast casing				
	Dimensions including standard adapter [L x W x H] mm	225.5 x 142.5 x 118			260 x 180 x 155	
	Weight including adapter plate [kg]	2.3 kg			3.9 kg	
	Protection class [IPxy]	IP65 / UL4X				
	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)				
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	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					

* In preparation



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