

i550/i650 motec frequency inverters



The i550 motec and i650 motec frequency inverters for wall mounting and motor mounting in protection class IP66 (UL Type 4X indoor) are the ideal decentralized drive solution. The inverters can be extended for universal use with an extension box with disconnect switch with/without Type E combination motor controller and operating elements.

Fast mounting and easy commissioning thanks to user-friendly tools as well as connections for commercially available connectors are the focus of these inverters. Parameters, drive behavior and usability correspond to our proven frequency inverters. Rounded off by high energy efficiency, we thus offer a modern and sustainable drive solution.

The i650 motec frequency inverter stands out from the i550 motec due to its extended range of functions: For simple automation tasks, a logic PLC based on CODESYS in accordance with the IEC 61131-3 standard is integrated in the i650 motec. Table positioning is available for the realization of independent axes and machine modules. The "Extended Safety" option (safety technology with various functions) rounds off the overall package.

Highlights

- Compact solution for decentralized drive technology, wall-mounted or motor-mounted, with high protection class IP66 (UL Type 4X indoor)
- Wall-mounted expandable: Extension box with disconnect switch with/without Type E combination motor controller and operating elements
- Fast mounting due to pluggable, standardized connections (plug & play)
- Four IO-Link ports with limited IO-Link master functionality for easy data exchange between IO-Link sensors and actuators
- Integrated regenerative module for very high energy efficiency - a brake resistor is no longer required
- Extended range of functions with the i650 motec: Logic PLC, Table positioning, and Extended Safety

Inverters



Design/mounting	Wall or motor	Wall or motor
Degree of protection	IP66	IP66

Mains connection/power range

	i550 motec	i650 motec
3 AC 230/240 V	0.37 ... 22 kW	0.37 ... 22 kW
3 AC 400 V	0.37 ... 45 kW	0.37 ... 45 kW
3 AC 480 V	0.37 ... 45 kW	0.37 ... 45 kW

Market approvals

	i550 motec	i650 motec
CE	✓	✓
UKCA	✓	✓
cULus	✓	✓
RoHS	✓	✓
Energy efficiency	Class IE2	Class IE2

Ambient conditions

	i550 motec	i650 motec
Degree of pollution	2	2
Vibration resistance during operation	Up to 1 g	Up to 1 g
Insulation resistance	Category III	Category III
Operation (EN 60721-3-3)	3K3 (-30 ... +60 °C)	3K3 (-30 ... +60 °C)
Derating	2.5 % / °C above 40 °C	2.5 % / °C above 40 °C
Storage (EN 60721-3-1)	1K3 (-30 ... +60 °C)	1K3 (-30 ... +60 °C)
Transport (EN 60721-3-2)	2K3 (-30 ... +70 °C)	2K3 (-30 ... +70 °C)

Control connections

	i550 motec	i650 motec
Digital inputs	4/3 or 8/4	8/4
Digital outputs	0/1 or 0/4	0/4
Analog inputs	-	-
Analog outputs	-	-
Relay	-	-

Operation on public supply systems

	i550 motec	i650 motec
Devices below 1 kW (EN IEC 61000-3-2)	✓	✓
Devices above 1 kW up to 16 A (EN IEC 61000-3-2)	✓	✓
Devices above 16 A up to 75 A (EN IEC 61000-3-12)	Rsce ≥ 250	Rsce ≥ 250

Communication

	i550 motec	i650 motec
EtherCAT	✓	✓
EtherNet/IP	✓	✓
IO-Link	✓ (Master)	✓ (Master)
Modbus TCP	✓	✓
PROFINET	✓	✓

Feedback

	i550 motec	i650 motec
HTL incremental encoder	✓	✓

Motor controls

	i550 motec	i650 motec
V/f characteristic control	✓	✓
Vector control for asynchronous motors	✓	✓
Vector control for synchronous motors with frequency support at low speeds	✓	✓
V/f characteristic control with feedback	✓	✓
Vector control for asynchronous motors with feedback	✓	✓

Additional functions for the motor controls

	i550 motec	i650 motec
Boost	✓	✓
Slip compensation	✓	✓
Oscillation damping	✓	✓
Torque control	✓	✓
Skip frequencies	✓	✓
Stall protection	✓	✓
Motor monitoring	✓	✓

Component control

	i550 motec	i650 motec
Fixed frequencies (jog values)	✓	✓
Motor potentiometer	✓	✓
Logic PLC		✓ (Version Logic PLC & Table positioning)
Table positioning		✓ (Version Logic PLC & Table positioning)
PID controller	✓	✓
Position counter	✓	✓
Parameter set changeover	✓	✓

Energy efficiency

	i550 motec	i650 motec
Energy-saving function "VFC eco"	✓	✓
Regenerative feedback mode	✓	✓

Additional motor functions

	i550 motec	i650 motec
Flying restart circuit	✓	✓
DC-injection brake	✓	✓
Holding brake control	✓	✓
Switching frequency setting	✓	✓

Safe stop functions

	i550 motec	i650 motec
Safe torque off (STO)	✓	✓
Safe stop 1 (SS1)	-	✓

Auxiliary and maintenance functions for functional safety

	i550 motec	i650 motec
Safe Muting (MUT)	-	✓

Safety bus

	i550 motec	i650 motec
CIP Safety	-	✓