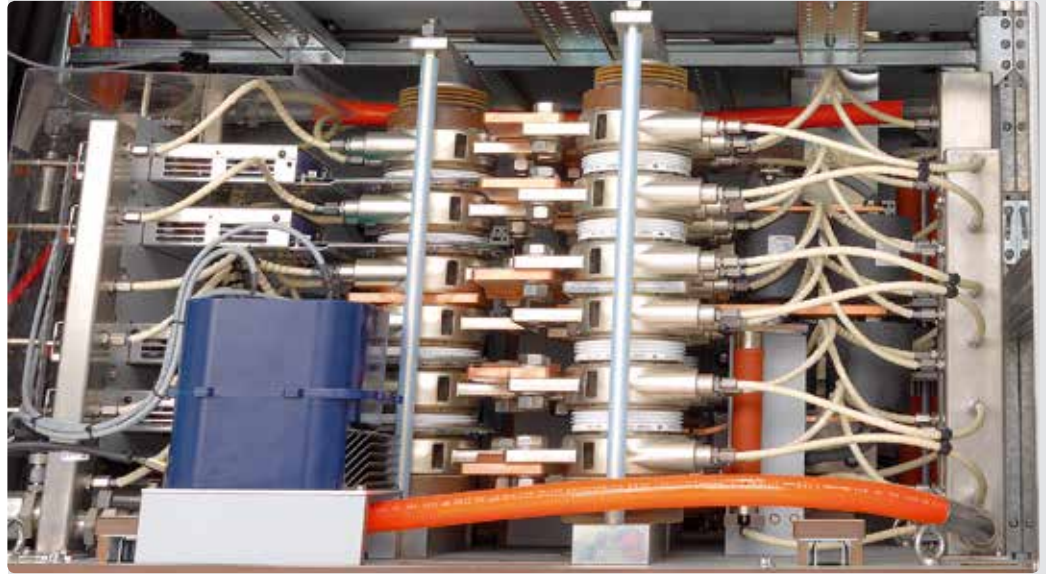


INGEDRIVE

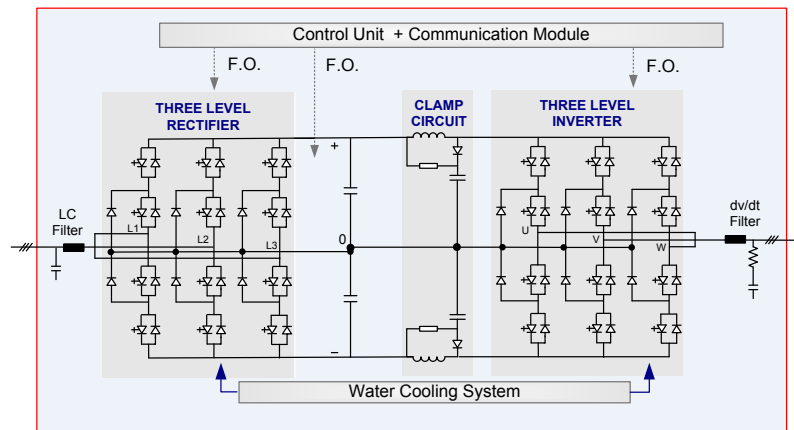
MV 500

Frequency converters
water-cooled, medium-voltage



The **MV500** series of the INGEDRIVE™ converter range is composed of medium-voltage, IGCT-based, water-cooled frequency converters. They are designed to control induction, synchronous or permanent magnet motors in a wide range of industrial and marine applications. Its modular design makes it possible to encompass a wide range of powers while its intuitive structure facilitates its use and maintenance. The whole Ingedrive converter range offers a powerful configuration tool enabling the user to view and parameterise drives both locally using the touch screen and remotely via an Ethernet connection.

with IGCTs Power Semiconductors



Applications:

Metals, water treatment, cement,
oil&gas, power generation, chemical and
marine

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Ingeteam

General data	MV500		
Inverter Type Rectifier Type Output Power Range Main Supply Voltage ⁽¹⁾ Supply Voltage Tolerance Supply Frequency Input Power Factor Output Voltage ⁽²⁾ Output Frequency Efficiency at Rated Load Motor Types Converter Cooling	Three-Level NPC Voltage Source Inverter with IGCT Power Semiconductors Diode Front End (DFE) 12P Diode Front End (DFE) 24P Active Front End (AFE) 6MVA - 44MVA 4 x 1850V CA 3300V CA Typically ± 10% 50 / 60 Hz (± 5 %) > 0.96 1 0 to 3150 V AC 0 to 3150 V AC 0 to 3300 V AC 0 to 70Hz (higher on request) Typically > 0,98 Typically > 0,97 Induction, Synchronous or Permanent Magnet Motor De-ionized Water Cooled with Built-In Water to Water Heat Exchanger		
Control properties Control types Static Speed Acc. (closed loop) ⁽⁴⁾ Static Torque Acc. (closed loop) ⁽⁴⁾ Static Torque Acc. (open loop) ⁽⁴⁾ Torque Response Time Shaft Torque Ripple ⁽⁴⁾ Drive Protection Functions Motor Protection Functions	Vector Control (VC), Voltage Frequency Control (VF) ⁽³⁾ < 0.01% in field weakening / < 0.01% in constant flux < 1% in field weakening / < 1% in constant flux < 2% in field weakening / < 2% in constant flux (for synchronous motors) < 5% in field weakening / < 3% in constant flux (for induction motors) < 10ms ± 1 % Overcurrent, overvoltage and undervoltage monitoring; earth fault; short-circuit detection and protection; semiconductor failure monitoring; cooling supervision; phase loss and others Overload ⁽⁵⁾ , overspeed		
Enviromental cond. Ambient Temp. for Storage Ambient Temp. for Transport Operation Altitude Relative Air Humidity Paint Colour Compliance with Standards Noise Ambient Temp. for Operation Degree of Protection Primary Circuit Coolants Allowed Primary Coolant Temp. Allowed Primary Circuit Pressure Drop Max. Primary Service Pressure Max. Primary ΔT Secondary Circuit Coolant Secondary Circuit Features	-15 °C to +75 °C (for empty cooling system in water cooled version) -15 °C to +75 °C (for empty cooling system in water cooled version) < 1000m above sea level (100% load capacity) > 1000m above sea level (with derating) 5% to 95% (condensation not permitted) RAL 7035 (others on request) IEC 61800-4, IEC 60146-1-1, marine standards < 80dB (A) at a distance of 1m from the cubicle +0 °C to +45 °C (higher with derating) IP44 (others on request) Seawater or freshwater +0 °C to +38 °C (higher with derating) < 1,5 bar 6 bar 5 °C Deionized water (< 2µS/cm) Redundant pump and redundant deionising set		
Options Main Options	Dynamic braking chopper, different communication modules, sinusoidal filter, input/output isolation switch, motor grounding switch, marine customization and others		

(1) Typical no-load transformer secondary voltage. Depends on supply voltage tolerance
 (2) Depends on application characteristics
 (3) Only for induction motors and quadratic torque loads. No speed sensor needed
 (4) Refers to maximum values of equipment
 (5) Depends on electrical characteristics