







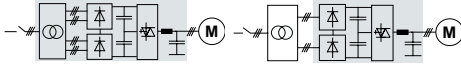
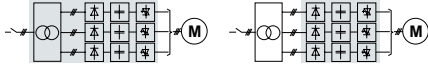
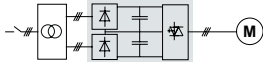
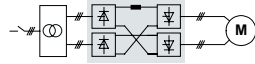


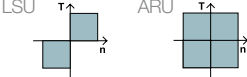



# Medium Voltage AC Drives

Product	ACS 1000 	ACS 5000 	ACS 6000 	MEGADRIVE-LCI 
Type of converter	VSI-NPC Voltage Source Inverter Neutral-Point Clamped	VSI-MF Voltage Source Inverter Multilevel-Fuseless	VSI-NPC Voltage Source Inverter Neutral-Point Clamped	LCI Load Commutated Inverter
Typical applications	Pumps, fans, conveyors, extruders, mixers, compressors, grinding mills, suitable for retrofit of existing motors	Compressors, extruders, pumps, fans, grinding mills, conveyors, blast furnace blowers, gas turbine starters	Rolling mills, marine propulsion, mine hoists, pumps, fans, compressors, grinding mills, extruders, conveyors	Compressors, pumps, fans, blast furnace blowers, pump storage plants
Typical photo	 ACS 1000i    ACS 1000	 ACS 5000	 ACS 6000	 MEGADRIVE-LCI
Typical system diagram				
Converter cooling	Air (A) / Water (W)	Air (A) / Water (W)	Water (W)	Air (A) / Water (W)
Power range	A: 315 kW – 2 MW W: 1.8 – 5 MW	A: 2 – 7 MW W: 5 – 22 MW / higher on request	W: 3 – 27 MW	A: 2 – 31 MW W: 7 – 72 MW / higher on request
Input section	Diodes: 12/24-pulse rectifier	Diodes: 36-pulse rectifier	Diodes: 12/24-pulse rectifier (LSU) or IGCT: Active rectifier (ARU)	Thyristors: 6/12/24-pulse rectifier
Output section	IGCTs: 3-level VSI, sinusoidal output	IGCTs: 5-level VSI-MF, 9-level output waveform	IGCTs: 3-level VSI, 5-level output waveform	Thyristors: 6/12-pulse inverter
Output voltage	2.3 / 3.3 / 4.0 / 4.16 kV Optional: 6.0 / 6.6 kV with step-up transformer	6.0 – 6.9 kV Optional: 4.16 kV	3.0 – 3.3 kV Optional: 2.3 kV	2.1 – 10 kV
Maximum output frequency	66 Hz (optional 82.5 Hz)	75 Hz (optional 250 Hz)	75 Hz (Twin: 250 Hz)	60 Hz (optional 120 Hz)
Field weakening	> 45 Hz (max. 1:1.5)	> 35 Hz (max. 1:2, higher optional)	> 3 Hz (max. 1:4.5)	Customized
Speed-torque quadrants				
Special features & benefits	<ul style="list-style-type: none"> <li>* Sinusoidal output</li> <li>* Constant network power factor over whole speed range</li> <li>* DTC (Direct Torque Control)</li> <li>* Fuseless</li> </ul>	<ul style="list-style-type: none"> <li>* Constant network power factor over whole speed range</li> <li>* DTC (Direct Torque Control)</li> <li>* Fuseless</li> </ul>	<ul style="list-style-type: none"> <li>* Constant network power factor over whole speed range</li> <li>* Optimized pulse pattern to minimize network harmonics (with IGCT)</li> <li>* DTC (Direct Torque Control)</li> <li>* Multi-motor drives with common DC bus</li> <li>* Fuseless</li> </ul>	<ul style="list-style-type: none"> <li>* Soft start of large synchronous motors and generators</li> <li>* Fuseless</li> </ul>
Examples of options	<ul style="list-style-type: none"> <li>* Braking chopper</li> <li>* Synchronous bypass</li> <li>* Integrated input transformer</li> </ul>	<ul style="list-style-type: none"> <li>* Braking chopper</li> <li>* Application I/O supervision, interlockings</li> <li>* Integrated input transformer</li> </ul>	<ul style="list-style-type: none"> <li>* Reactive power compensation (ARU)</li> <li>* Braking chopper</li> <li>* Customized</li> </ul>	Customized
Type of motor	Induction motor	Induction, synchronous or permanent magnet motor	Induction, synchronous and/or permanent magnet motor	Synchronous motor