A powerful new range of highly flexible medium voltage drive solutions for demanding industrial applications
ATV1260 Drives Family
Full range of MV solutions

Uncompromising design with advanced features

Simple, high quality design

- **>10 years experience**
- **>15 year life expectancy**
- **2 main control modules** (via 1 fiber optic link)

Clean, intuitive architecture that combines the latest vector control strategies with the latest semiconductor technologies commanded via fiber optic cables.

Grid and motor friendly

- **24 or 36 pulse DFE**
- **<2% THDi**
- **< 50V / microsecond**

Designed to minimize harmful harmonics that can get passed onto the power system while providing a smooth wave form that puts less stress on motor bearings and insulation.

Powerful operator interfaces

- **7.5” local HMI screen**
- **256 parameters monitored**
- **0 special software required**
- **100 user type access levels**
- **>9 communication protocols**

Help raise your productivity and uptime and maximize the power of data with local and remote tools to control, monitor and diagnose drive and process conditions.

Lower total cost of ownership

- **12 IGBT’s (up to 2,400 HP)**
- **> 75,000 hrs MTBF**
- **< 30 mins MTTR**
- **97.7% efficiency * **
- **99.7% availability * **

Engineered from the inside-out to provide years of operation using high quality components and assemblies that save you money throughout the life cycle.

*For converter only.
ATV1260 Drives Family
Full range of MV solutions

A drive that consistently delivers performance and value

Altivar 1260 medium voltage drives include:

- Integrated Phase-Shift transformer (Dry Type) (ATV1260C)
- Integrated fused disconnect switch (ATV1260C)
- Two analog inputs (expandable to 4)
- Two analog outputs
- Nine digital inputs
- Nine digital outputs
- Enclosed drive grounding system
- Emergency stop (button in cabinet door)
- Isolation meter - ask Ingeteam
- Operation touch screen (with SCADA)
- Output sine wave filter (LCR filter)
- Internal precharge and discharge system
- Security interlock system
- Fan heater to help prevent condensation in enclosure
- Varnished boards
- Flying restart function
- Voltage drop functionality
- Integrated UPS
- Integrated PLC
- Local HMI
- Web Application for remote monitoring

Part of a full line of complementary MV equipment all backed by Schneider Electric’s global energy management experience and world-class customer support services.

500 HP to 6,500 HP
4.16 KV
3 phase
Air cooled
Easily configured to your application needs

The Altivar 1260 is a versatile medium voltage pump, fan and compressor drive serving multiple segments. Its modular design allows a wide range of ratings and the intuitive architecture makes it easy to operate across the full life cycle. This proven design is easily applied across different applications.

Oil & Gas
- Electric submersible pumps
- Reciprocating and centrifugal compressors
- Pipeline, booster and unloading pumps
- Water injection pumps
- Feed pumps

Mining, Minerals & Metals
- Furnace fans
- Hydro-transport pumps
- Conveyors
- Quenching pumps
- Dust collection fans
- Induced draft fans

Power
- Induced and forced-draft boiler fans
- Reactor re-circulation pumps
- Feed water, cooling, circulation and condensate pumps
- Dust collection fans

Water & Wastewater
- Influent & effluent pumps
- High-service pumps
- Desalination pumps
- Booster pumps
Altivar 1260C MV Drive
500 HP to 1650 HP

Quality and reliability

High quality enclosure
- Type 1 (IP21) protection
- Front access enables easy maintenance and repair

Integrated disconnect and transformer

Grid friendly 24-pulse rectifier
- Press pack diodes helps reduce losses
- Easy to repair slide out modules
- Provided with ultra fast fuses with blown fuse detection and thermal protection

Low component count inverter
- Medium voltage IGBT’s (6,500V)
- Easy to repair slide out modules
- Fiber optic control cables
- Driver card protective functions

Film capacitors

Motor friendly waveform
- Standard sine wave filter limits the effects of voltage derivatives that translate into overvoltage on the load terminals
- Sine wave filter can accommodate cable lengths >250 meters and standard non-converter duty motors

Flexibility and safety

Power management module
- Communications, semiconductor drivers, signal reading, internal I/O

Control converter unit
- Powerful CPU for regulation & control
- Integrated PLC logic
- RS-485 and Ethernet modules compatible with major protocols
- Web Application for remote diagnostics, monitoring and control

Barriered control components
- Accessible door-in-door low voltage compartment
- Circuit breakers and protective relays
- Isolation meter detects ground current at any point in the medium voltage line
- Uninterruptable power supply (UPS) + lithium battery
- Human-Machine-Interface (HMI) on door

1650 HP – 95” wide by 54” deep
ATV1260
1750 HP-6500 HP

A proven, scalable, modular architecture with a configurable, high performance design

Powerful protective, communication and control functionalities

High quality enclosure
- Type 1 (IP21) protection
- Front access enables easy maintenance and repair

Control converter unit
- Powerful CPU for regulation & control
- Integrated PLC logic
- RS-485 and Ethernet modules compatible with major protocols
- Web Application for remote diagnostics, monitoring and control

Other quality control components
- Accessible door-in-door low voltage compartment
- Circuit breakers and protective relays
- Isolation meter detects ground current at any point in the medium voltage line
- Uninterruptable power supply (UPS) + lithium battery
- Human-Machine-Interface (HMI) on door

Close-coupled transformer (not shown)
- Dry Type 24/36 Pulse Rectifier Transformer - VPI Impregnated
- 4,160 Volt Primary (+/- 10%)
- Rugged UL type 1 Enclosure
- Aluminum Windings
- Forced Air Cooling – 150C Temperature Rise

Efficient cooling
- Temperature driven multi-speed fan
- Air input filters

Energy management
- Ground switch helps ensure the DC bus is grounded prior to cabinet access
- Key interlock system
## General technical specifications

### Overview

<table>
<thead>
<tr>
<th>Converter type</th>
<th>Voltage Source Inverter (VSI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power range</td>
<td>1750 to 6500 HP</td>
</tr>
<tr>
<td>Motor voltage range</td>
<td>4.16 KV</td>
</tr>
<tr>
<td>Output topology</td>
<td>3 Level NPC</td>
</tr>
<tr>
<td>Line side topology</td>
<td>24 /36 pulse diode front end (DFE)</td>
</tr>
</tbody>
</table>

### Technical description

<table>
<thead>
<tr>
<th>Transformer</th>
<th>Rectifier duty, VPI, AA/FA, 8% impedance, K-factor, 150 degree C rise, AL conductor, 60KV BIL primary, 30KV BIL secondary, 55-71 dB(a) sound level based on rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>Vector, sensorless (in some applications)</td>
</tr>
<tr>
<td>Cooling</td>
<td>Forced air with multi-speed fan</td>
</tr>
<tr>
<td>Output frequency</td>
<td>0 to 100 HZ</td>
</tr>
<tr>
<td>Drive efficiency</td>
<td>DFE 97.7% @ 100% rated operating point (converter only)</td>
</tr>
<tr>
<td>Semiconductors</td>
<td>Press pack diodes / MV IGBT's (6,500 V for 4,160V drives)</td>
</tr>
<tr>
<td>Drive protections</td>
<td>Overcurrent, Ground Fault, Output Short Circuit, Over / Low Voltage on DC Bus, Semiconductor status, Cooling status, Motor Phases Unbalance; Motor protection: Overload, Overspeed</td>
</tr>
<tr>
<td>Max dv/dt</td>
<td>50V / microsecond</td>
</tr>
<tr>
<td>Static speed accuracy*</td>
<td>Constant flux &lt; .01%; Field Weakening &lt; .01%*</td>
</tr>
<tr>
<td>Static torque accuracy*</td>
<td>Constant Flux &lt; 1%; Field Weakening &lt; 1%*</td>
</tr>
<tr>
<td>Shaft torque ripple</td>
<td>Constant Flux &lt; 1%; Field Weakening &lt; 1%</td>
</tr>
<tr>
<td>THDi</td>
<td>&lt;2%</td>
</tr>
<tr>
<td>Torque response</td>
<td>&lt; 6 ms</td>
</tr>
<tr>
<td>Protection</td>
<td>Type 1 (IP21)</td>
</tr>
<tr>
<td>Environmental</td>
<td>40 degrees C ambient, &lt; 1000m elevation, &lt; 80 dB(A) @ 1 meter</td>
</tr>
</tbody>
</table>

* Closed Loop

### Options

- dv/dt Filter, Redundant Fan Set, NEMA 2 (IP42), Dynamic Braking Chopper, Input/Output Isolation Switch, top cable connection, Multi-motor, Multi-winding, Redundant Encoder, Profibus DP or CAN Open Communications, Regenerative Active Front End Drives

### Included features

- Analog Inputs Available: 4
- Analog Outputs Available: 4
- Digital Inputs Available: 20
- Digital Outputs Available: 20
- Drive Grounding System
- Emergency stop (on cabinet door)
- Isolation Meter
- Touch Screen (with SCADA)
- Output sine wave filter (LCR low pass filter)
- Pre-charge and Discharge System
- Key Interlock System
- Fan Heaters to Avoid Condensation in Enclosures
- Conformal Coated Boards
- Flying Restart Function
- Voltage Drop Functionality
- Integrated UPS
- Integrated PLC (inside CCU)
- Human-Machine-Interface (HMI)
- Web Application
- Front access quality enclosure
- Close-coupled or separate transformer
- Integrated input contactor (ATV1260C only)
Motor friendly waveform
- Standard sine wave filter limits the effects of voltage derivatives that translate into overvoltage on the load terminals
- Sine wave filter can accommodate cable lengths >250 meters and standard non-converter duty motors

Easily accessible terminations
- Incoming and outgoing cable terminations
- Power ground bus bar
- Control terminals with protective ground bus bar

Flexible cable entry
- Bottom cable entry is standard, top cable entry is optional

Condensation prevention
- Heating resistor

Local user interface
- Easy to navigate HMI

Power management module
- Communications, semiconductor drivers, signal reading, internal I/O

Low component count inverter
- Medium voltage IGBT’s (6,500V)
- Easy to repair slide out modules
- Fiber optic control cables
- Driver card protective functions

DC link copper bus
- Film capacitors

Grounding switch

Grid friendly 24/36-pulse rectifier
- Press pack diodes helps reduce losses
- Easy to repair slide out modules
- Provided with ultra fast fuses with blown fuse detection and thermal protection

Pre-charge module
Flexible, modular and scalable architecture

The air cooled Altivar 1260 is composed of a medium voltage IGBT inverter and a 24/36 pulse diode rectifier designed to control both synchronous and induction AC motors.

### 500 to 1,650 HP (420 to 1450 KVA) 24 Pulse Integral Transformer & Switch

<table>
<thead>
<tr>
<th>Drive</th>
<th>Width* (inches)</th>
<th>Weight (Lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive</td>
<td>95</td>
<td></td>
</tr>
<tr>
<td>Transformer</td>
<td>Included</td>
<td>Included</td>
</tr>
<tr>
<td>Switch</td>
<td>Included</td>
<td>Included</td>
</tr>
</tbody>
</table>

- Standard height: 91” (including fan)
- Standard depth: 51”

### 1,750 to 2,400 HP (610 to 2,083 KVA) 24 Pulse DFE

<table>
<thead>
<tr>
<th>Drive</th>
<th>Width* (inches)</th>
<th>Weight (Lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive</td>
<td>79</td>
<td>4,406</td>
</tr>
<tr>
<td>Transformer +</td>
<td>67 to 87</td>
<td>6,500 to 11,200</td>
</tr>
<tr>
<td>Switch (optional)</td>
<td>20</td>
<td>1,756</td>
</tr>
</tbody>
</table>

- Standard height: 90” (110” with fans)
- Standard depth: 43” (Switch is 37”)

### 2,500 to 4,800 HP (2,182 to 4,185 KVA) 24 Pulse DFE

<table>
<thead>
<tr>
<th>Drive</th>
<th>Width* (inches)</th>
<th>Weight (Lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive</td>
<td>158</td>
<td>8,375</td>
</tr>
<tr>
<td>Transformer +</td>
<td>87 to 120</td>
<td>11,200 to 16,400</td>
</tr>
<tr>
<td>Switch (optional)</td>
<td>20</td>
<td>1,756</td>
</tr>
</tbody>
</table>

- Standard height: 90” (110” with fans)
- Standard depth: 43” (Switch is 37”)
- For 4000, 4600, & 4800 HP the switch is 49.5” wide and weights 2,423 lbs

### 4,900-6,500 HP (4,278 to 5,668 KVA) 36 Pulse DFE

<table>
<thead>
<tr>
<th>Drive</th>
<th>Width* (inches)</th>
<th>Weight (Lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive</td>
<td>236</td>
<td>11,464</td>
</tr>
<tr>
<td>Transformer +</td>
<td>120 to 132</td>
<td>16,400 to 19,400</td>
</tr>
<tr>
<td>Switch (optional)</td>
<td>49.5</td>
<td>2,423</td>
</tr>
</tbody>
</table>

- Standard height: 90” (110” with fans)
- Standard depth: 43” (Switch is 37”)

* Depending on KVA rating  
* Based on motor pf of .89 and efficiency of .96, With standard sine wave output filter, 4,160V
Easy to use human-machine-interface (HMI), Broad communications and web application

The HMI operator panels communicate with the converter CCU (Converter Control Unit) through the Modbus™ RTU communications or Modbus TCP communications protocol. A series of panels are used to monitor and control the most common features of the converter. The most common panels, such as those that display the trips and alarms of the converter, are accessible from any level of the application.

**HMI capabilities**

- Control the converter: start/stop status and sequencing, view ready-for-use / ready-to-run status
- Access drive measurements: DC bus voltage, output voltage, output current, output active power, speed, torque
- Identify the source of power and torque limitations
- Adjust converter IP configuration
- View sensor temperatures, alarms and trips
- Evaluate conditions necessary to run
- Access and set software limits and conditions
- Work on encoders in manual or automatic mode
- Export data for further analysis
- Establish multiple access levels per user type

**Color code**

To make relevant information more visible, some buttons and tags will take different colors according to the following code:

- Inactive signal / conditions not fulfilled
- Conditions fulfilled
- Active signal
- Lockout or Shutdown Trip
Web application is an easy to use software tool designed to support the drive’s full life cycle including: start-up, monitoring, backup, configuration, diagnostics, data recording & commissioning- either locally or remotely without any need for special software.

Key capabilities
- Monitor signals graphically
- Save and compare parameters
- View and set parameters
- Edit your engineering panels
- Variable recorder configures triggers
- Event & historical alarm modules
- Different access levels
- Custom monitor viewer
- Share data via FTP
- Floating panels
- Multiple CPU panel
- Easily update firmware
- Log viewer shows all user operations, system status, application events

Communication modules
RS-485 and Ethernet are basic communication modules. Any communication protocol based on these are available, such as: EtherCat™, CANopen™, CC-Link™, DeviceNet™, Modbus™, InterBus™, ProfiBus™, ProfiNet™ and EtherNet/IP™.
Multi-motor configuration

Up to three inverters can be connected to one single DC bus. While some motors can be braking, others can be motoring, thus transferring energy between themselves through the DC bus. Each motor can have its own speed set-point and protections all controlled by a single CPU, thus providing excellent dynamic response and load sharing characteristics while saving valuable floor space.

Sequential starting for multiple motor control

Start multiple motors from one VSD
- For high torque applications
- Starting loaded conveyers
- Flow control for pumping applications
- Reduces mechanical stress on equipment
- Minimizes network impact when starting
Engineering Motorpact disconnect switch
20” and 49.5” wide

Optional with ATV1260

Latched FVNR controller, draw-out 4.0/4.16kV
Motorpact, 3 phase, 60 Hz 60 KV BIL, 1.0 Service
Factor, 40 degrees C 200, 400, 450 and 720 Amps
20 inches + 29.5” for higher current (720amp)
240 VAC control power- user/customer supplied
Type 1 Indoor construction (option for NEMA 3R)
Front and rear access

Features

- Contactor for isolation
- Manual disconnect, and class E fuse protection
- Latched trip coil voltage- capacitor trip unit
- SEPAM monitoring relay for under voltage and phase loss
- 3 KVA CPT
- 3 phase CT’s, on for the protective relay
- Shorting TB for 3 phase CT
- 3-phase VT
- Cable support
- Copper ground bus

200-450 amp, 20” wide (indoor)
Solutions designed to meet your challenges

We design energy management solutions
The Altivar 1260 is one component of an overall Schneider Electric medium voltage power system comprised of key distribution products and services designed to meet your challenges. At Schneider Electric we strive daily to be your first choice in quality energy solutions.

Life-cycle solutions
Schneider Electric provides services from system design and consulting, to maintenance support, modernization of your installation, and project delivery. Schneider Electric provides the people, tools, and processes to help maximize your business's infrastructure.

- Start-up and commissioning
- Technical training
- Remote technical support
- On-site technical support
- Preventative maintenance
- Industrial repair services
- Spare parts management
- Migration and modernization
- Software renewals
- Extended warranty

Electric substation

GIS switchboard  MV/MV power transformer  AIS 12 MV switchboard
MV motor and drive  MV motor starter control  AIS MV switchboard  MV/MV transformer
LV switchboard  LV motor control switchboard  LV variable speed drive
ATV1260 Drives Family
Full range of MV solutions

Notes
The information provided in this documentation contains general descriptions and/or technical characteristics of the performance of the products contained herein. This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications. It is the duty of any such user or integrator to perform the appropriate and complete risk analysis, evaluation and testing of the products with respect to the relevant specific application or use thereof. Neither Schneider Electric nor any of its affiliates or subsidiaries shall be responsible or liable for misuse of the information contained herein.