Altivar Process

ATV660 Compact Drive Systems

The customized solution for your drive

"Ready-to-use" Drive Systems:

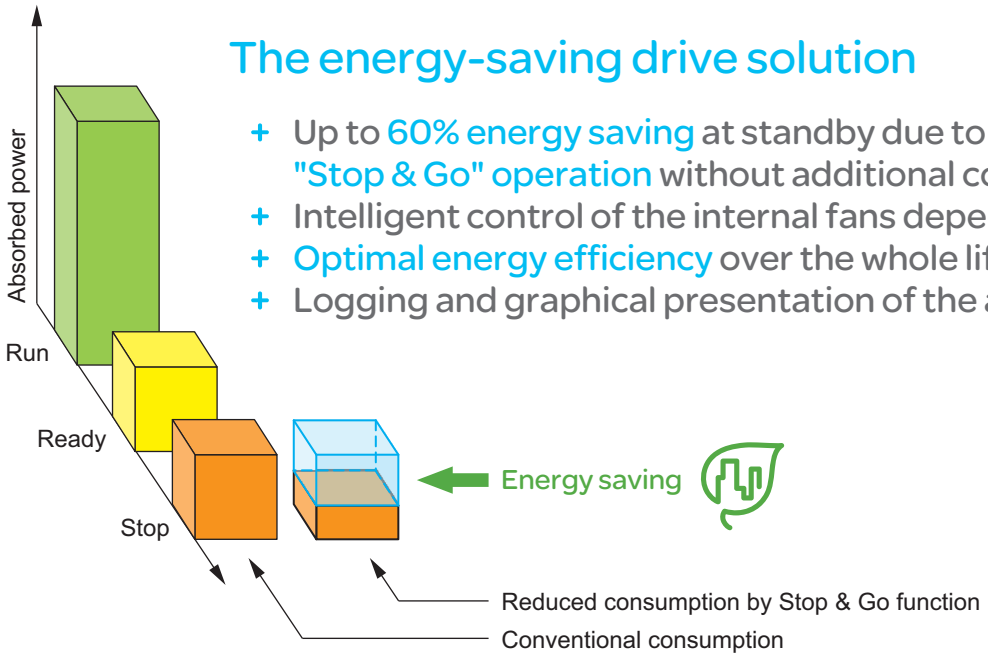
+ Developed on highest quality level
+ Manufactured according to your needs
+ Tested at full-load operating conditions
+ Pre-set appropriate to the design

Compact dimensions

+ Low space required in the control room
+ Generous connecting area for the power cables
+ Easy accessibility of all components
+ Control panel for numerous options

The energy-saving drive solution

+ Up to 60% energy saving at standby due to the innovative "Stop & Go" operation without additional costs
+ Intelligent control of the internal fans depending on the operation
+ Optimal energy efficiency over the whole life cycle
+ Logging and graphical presentation of the absorbed power



ATV660 – Compact Drive Systems

Frequency inverter as enclosure unit for speed control of asynchronous and synchronous motors.

Concept

The concept of the ATV660 Compact Drive Systems offers standard enclosures ready to connect. The modular construction makes it possible to adapt the enclosure unit to the individual requests. This economic enclosure variant makes the planning easy and supports a quick installation and commissioning of the drive.

Power versus overload

For optimum adaptation to the application you can select between two overload models when dimensioning the Altivar Process Drive System.

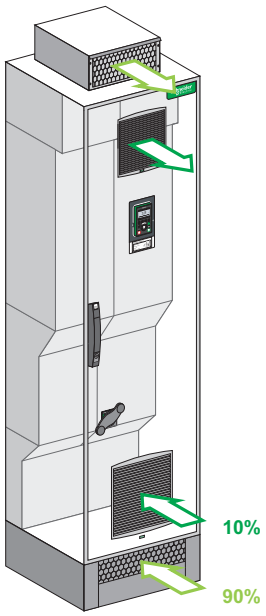
- Normal duty
  High continuous power with an overload capability of 10 % (typically pumps and fans)
- Heavy duty
  Reduced continuous power but increased overload capability of 50 % for drives with enhanced requirements regarding overload capability, starting torque, load impacts and control performance (typically compressors, mixers, rotary blowers).

Basic equipment

The basic equipment contains frequency inverter modules, semiconductor fuses, a main switch, a line reactor to reduce the harmonics, a dv/dt filter choke (from 355 kW) for protection of the motor and spacious mains and motor bars for connection of the power cables. The design is based on the standard enclosure system Spacial SF with an graphical operating panel integrated into the enclosure door.

The control is located on a spacious control panel. It provides compact dimensions, nevertheless it is enough space for additional extensions and accessibility in case of maintenance.

Device features



Enclosure system

The enclosure system Spacial SF with additional internal reinforcement elements and clearly specified cooling air channel provides optimal cooling of the built-in frequency inverter modules and maximum compactness at the same time.

Cooling concept

The power part components are cooled in a separate cooling air channel. Via this channel about 90 % of the heat losses are exhausted. The interior of the enclosure is cooled via fans in the enclosure door.

When using the option "Increased protection degree IP54" the separated air supply for the power part takes place through the enclosure plinth.

Connection

The power cables are connected on the mains side and motor side to spaciously dimensioned bars. The strain relief of the cables is realized via an own bar with solid metal clamps. Each device is equipped with an EMC screen bar for correct shield connection. At the standard design, the cables are to be connected at the bottom.

Enclosure Design 400 V

ATV660 - General technical data	
Mains voltage	3 AC 380 V -10 % ... 415 V +6 %, 50/60 Hz ±5 % for TT, TN-C or TN-S Other voltages and other types of mains possible – ETO
Maximum current	Normal duty (ND): 110 % for 60 s per 10 minutes Heavy duty (HD): 150 % for 60 s per 10 minutes
Ambient temperature	-10...+50 °C (below 0 °C with option enclosure heating, above +40 °C with derating)
Standard equipment	Enclosure system Spacial SF in RAL 7035, protection degree IP23, graphical operating panel in the enclosure door, frequency inverter including main switch, line reactor (< 48 % THDi), mains and motor terminals, cable entry from bottom
Interfaces	Pluggable control terminals, fieldbus connection via Ethernet or Modbus
Options "Light ETO"	• Increased protection degree IP54 • Enclosure plinth for basic device • Connection enclosure cable from top/bottom • Enclosure lighting • Enclosure heating • Key switch "local/remote" • Ethernet port on front door • Digital and analog I/O card • Relay output card • Communication cards for various fieldbus systems • STO - SIL 3 Stop category 0 or 1 • Front display module (FDM) • Indicator lamps on front door • Motor temperature monitoring • Bearing temperature monitoring • dv/dt filter choke • Motor heating • Circuit breaker • Undervoltage coil for circuit breaker 230 V • Motor for circuit breaker 230 V • Automated mains disconnect • Setting for 415 V +10 % • Safety labels in local language
Further design variations "ETO"	• Modified wiring colors • Remote monitoring • Seaworthy packaging • Differing mains voltages • Multipulse supply (12-pulse) • Design without main switch • Increased short-circuit strength (100 kA) • Air intake from back • Differing enclosure colors • Customized documentation • Customized labeling • Design for IT mains • Motor contactor • ...
Standards	CE, EAC, ATEX, RFI filter for second "industrial environment" C3 integrated

Type	Size	Motor rating (ND / HD)	Output current (ND / HD)	Dimensions		
				Width	Depth (1)	Height
ATV660C11Q4X1	1p	110 kW / 90 kW	211 A / 173 A	400 mm	600 mm	2150 mm
ATV660C13Q4X1		132 kW / 110 kW	250 A / 211 A	400 mm	600 mm	2150 mm
ATV660C16Q4X1		160 kW / 132 kW	302 A / 250 A	400 mm	600 mm	2150 mm
ATV660C20Q4X1	2p	200 kW / 160 kW	370 A / 302 A	600 mm	600 mm	2150 mm
ATV660C25Q4X1		250 kW / 200 kW	477 A / 370 A	600 mm	600 mm	2150 mm
ATV660C31Q4X1		315 kW / 250 kW	590 A / 477 A	600 mm	600 mm	2150 mm
ATV660C35Q4X1	3p	355 kW / 280 kW	660 A / 520 A	800 mm	600 mm	2150 mm
ATV660C40Q4X1		400 kW / 315 kW	730 A / 590 A	800 mm	600 mm	2150 mm
ATV660C45Q4X1		450 kW / 355 kW	830 A / 660 A	800 mm	600 mm	2150 mm
ATV660C50Q4X1		500 kW / 400 kW	900 A / 730 A	800 mm	600 mm	2150 mm
ATV660C56Q4X1	4p	560 kW / 450 kW	1020 A / 830 A	1200 mm	600 mm	2150 mm
ATV660C63Q4X1		630 kW / 500 kW	1140 A / 900 A	1200 mm	600 mm	2150 mm
ATV660C71Q4X1	5p	710 kW / 560 kW	1260 A / 1020 A	1400 mm	600 mm	2150 mm
ATV660C80Q4X1		800 kW / 630 kW	1420 A / 1140 A	1400 mm	600 mm	2150 mm

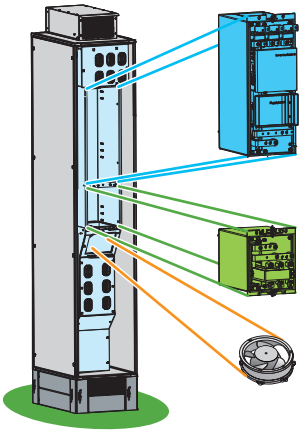
(1) Total depth including door handle and switch handle: 664 mm

Perfect monitoring of your process

+ Integrated pump curves for process optimization
+ Monitoring of the pump efficiency
+ Notification of critical operating points without additional sensors
+ Process integration with pressure-, flow- and level-control including compensation of flow losses

Simple embedding into PLC environments

+ Easy integration thanks to standardized FDT/DTM and ODVA technology
+ Support by predefined libraries
+ Easy access via PC, tablet or smartphone
+ Secure connection via "Cyber-secured Ethernet"



Sophisticated service concept with QR code

+ Modular design allows easy logistics of spare parts
+ Optimized costs of maintenance due to dynamic maintenance schedule with integrated monitoring of the individual components
+ Simple exchange of power modules and fans
+ Quick assistance with dynamic QR codes and Customer Care App

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More Information