



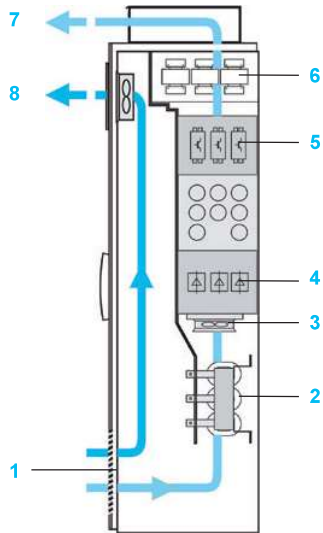
# Altivar Process ATV900

Variable speed drives

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## Altivar Process ATV900

### High Performance Drive Systems



IP23 enclosure

#### Protection degrees

The standard design of Altivar Process High Performance Drive Systems complies with the IP23 protection degree. This solution provides optimum cooling of the built-in frequency inverter modules and power components as well as maximum compactness.

For operation in harsh ambient conditions, the increased IP54 protection degree is available as an option. This solution consists of a clearly specified and tested cooling system with a separate cooling air channel, which provides excellent reliability.

About 90% of the heat losses are evacuated via the separate cooling air channel. The inside of the enclosure is cooled via fans located in the enclosure door.

#### Standard IP23 enclosure design

In order to avoid internal air short-circuits, the power sections of the components are located in the main cooling air channel.

The cooling air intake comes from a grid located in the bottom of the enclosure door. The internal fan, which is in a separate air channel, provides cooling of the power section. The air then comes out through the top of the enclosure.

The heat losses from the control section are evacuated by a fan in the enclosure door.

The incoming air temperature must be between 0 °C/32 °F and 40 °C/104 °F (-10 °C/14 °F with enclosure heating) and can reach +50 °C/122 °F with derating (class 3K3 according to IEC/EN 60721-3-3).

IP23 enclosures comprise:

- 1 An air intake (without filter mat) via a grid on the bottom of the enclosure door
- 2 A line reactor
- 3 Fans for the power section
- 4 A rectifier module
- 5 An inverter module
- 6 A dv/dt filter choke
- 7 An air outlet via a metal cover with protection against water splashes on the enclosure roof
- 8 An air outlet (without filter mat) with fans for the control section

#### Increased IP54 protection degree

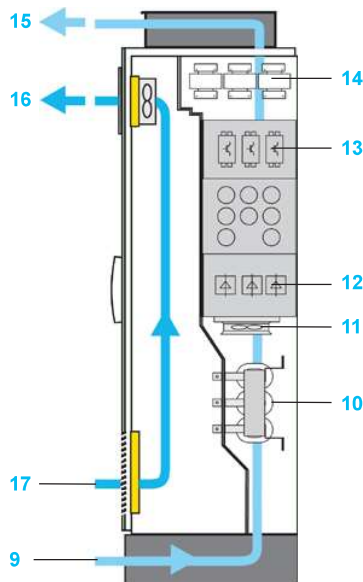
With the increased IP54 protection degree with separate channels, the cooling air intake comes from the floor and goes out through the enclosure roof.

The control section is cooled by filter fans located in the enclosure door.

The incoming air temperature must be between 0 °C/32 °F and 40 °C/104 °F (-10 °C/14 °F with enclosure heating) and can reach +50 °C/122 °F with derating (class 3K3 according to IEC/EN 60721-3-3).

IP54 enclosures comprise:

- 9 An air intake for the power section via the enclosure plinth
- 10 A line reactor
- 11 Fans for the power section
- 12 A rectifier module
- 13 An inverter module
- 14 A dv/dt filter choke
- 15 An air outlet via a metal cover with protection against water splashes on the enclosure roof
- 16 An air outlet (with filter mat) with fans for the control section
- 17 An air intake grid (with filter mat) for the control section



IP54 enclosure



Additional enclosure allowing cabling from the bottom

#### Modular offer

This consists of:

- The standard High Performance offer
- One or more options (see [pages 4/16 to 4/19](#))

#### Options (CTO)

Some of these options depend on the drive rating. They can be integrated without any need for modifications to the enclosure:

- Increased IP54 protection degree
- Enclosure plinth for basic device
- Additional enclosure allowing cabling from the top or from the bottom
- Enclosure lighting, heating
- "Local/remote" key switch
- Ethernet port on front door
- Digital and analog I/O modules and relay output modules
- Communication modules for various fieldbus systems
- Encoder interface modules
- STO - SIL 3 Stop category 0 or 1 Emergency stop
- Front display module (FDM)
- Indicator lights on front door
- Motor/bearing temperature monitoring
- dv/dt filters for long motor cables
- Motor heating
- Circuit breaker
- Undervoltage coil for circuit breaker
- Motor for circuit breaker
- Automated mains disconnection
- Setting for 415 V + 10%
- Safety labels in the local language
- Braking unit (BUO)

#### Further design variations (ETO)

These adaptations depend on the drive rating. Some may lead to modification of the size of the enclosure:

- Modified wiring colors
- Remote monitoring
- Different ranges of supply voltages
- Multipulse supply (12-pulse)
- Design without a main switch
- Increased short-circuit strength up to 100 kA
- Air intake from the back
- Other enclosure colors
- Customized documentation and labeling
- Motor contactor
- Etc.