ACS400 Technical Specification

Mains connection

Power range: 2.2 - 37 kW
Voltage: 3-phase, 380 to 480 V, ±10%
Frequency: 48 to 63 Hz
Power Factor: 0.98

Motor connection

Voltage: 3-phase, from 0 to U_{SUPPLY}
Frequency: 0 to 250 Hz

Continuous loading capability (constant torque at a max. ambient temperature of 40°C): Rated output current I_{2N}.

Overload capacity (at a max. ambient temp. of 40°C):
- at constant torque 1.5 x I_{2N}, for 1 minute every 10 minutes
- at constant torque 1.25 x I_{2N}, for 2 minutes every 10 minutes

Characteristic data for short-time, intermittent and periodic load cycles are available on request.

Switching frequency:
Standard 4 kHz, Low-noise: 8 kHz

Acceleration time: 0.1 to 1800 s
Deceleration time: 0.1 to 1800 s

Programmable control connections

Two analog inputs:
- Voltage signal: 0 (2) to 10 V, 200 kΩ single-ended
- Current signal: 0 (4) to 20 mA, 500 Ω single-ended
- Potentiometer reference value: 10 V ±2% max. 10 mA, 1 kΩ ≤ R ≤ 10 kΩ
- Response time: ≤ 60 ms
- Resolution: 0.1%
- Accuracy: ±1%

One analog output: 0 (4) to 20 mA, load <500 Ω

Auxiliary voltage: 24 V, max. 250 mA
Five digital inputs:
- 12 V... 24 V DC with internal or external supply, PNP and NPN
- Input impedance: 1.5 kΩ
- Response time: ≤ 9 ms

Two relay outputs:
- Switching voltage: 12 to 250 V AC or max 30 V DC/0.5 A
- Maximum continuous current: 10 mA to 2 A

Serial communication for the control panel or external control: Modbus protocol

Protection limits

Overvoltage:
- Running V DC: 842 (corr. to 595 V input)
- Start inhibit V DC: 661 (corr. to 380 - 415 V input)
  765 (corr. to 440 - 480 V input)

Undervoltage:
- Running V DC: 333 (corr. to 247 V input)
- Start inhibit V DC: 436 (corr. to 380 - 415 V input)
  505 (corr. to 440 - 480 V input)

Environmental limits

Ambient temperatures:
- Output current = I_2, f_{switch} = 4 kHz: 0 to 40°C
- Output current = 0.9 · I_2, f_{switch} = 4 kHz: 40 to 50°C
- Output current = 0.8 · I_2, f_{switch} = 8 kHz: 0 to 40°C

Altitude:
- Output current = I_2: 0 to 1000 m
- Output current reduced by 1% per 100 m over 1000 m to 2000 m

Relative humidity: lower than 95% (without condensation)

Protection class: IP 21 or IP 54

Paint colour: NCS 1502-Y, RAL 9002, PMS 420 C

Contamination levels: no conductive dust, corrosive liquids or gases (IEC 721-3-3).

Product compliance

- Low Voltage Directive 73/23/EEC with supplements
- EMC Directive 89/336/EEC with supplements
- Quality assurance system ISO 9001 and ISO 14001
- CE, UL, ULc and C-Tick approvals

Options

- Control panel ACS-PAN-A
- Control panel ACS 100 - PAN
- Extension cable 3 m with IP 65 Kit for control panels PEC-98-0008
- RS 485/232 adapter
- DriveWindow Light 2
- DDCS adapter for fieldbus modules
- ACS400 Extended Output Option Module
- Fieldbus modules
- Embedded fieldbus protocols (Modbus, N2)
- EMC input filters are required only in 1st Environment
- Braking units and choppers
- Input and output chokes
- Flange mounting kits for IP 21 units