ACS880, industrial drives Drive selection chart

IECONIC CONTROLS INDUSTRIAL ELECTRONIC CONTROLS 10536 CROSBY CIRCLE CRANESVILLE, PA 16410-9338 PH: 814-756-4900 FAX: 814-756-5599

ACS880-01

ACS880-07

ACS880-17

ACS880-37









| Main attributes | | | | | | |
|--|--|---|--|--|--|--|
| High performance DTC wall mount drive Safe Torque Off (STO) | High performance DTC cabinet drive configurable safety options built to order | High performance DTC Regenerative cabinet drive configurable safety options built to order | High performance DTC Low Harmonic cabinet drive configurable safety options built to order | | | |
| HP range | : | : | : | | | |
| 0.75 - 100 HP at 230 VAC 0.75 - 350 HP at 480 VAC 5 - 250 HP at 575/690 VAC | 60 - 1700 HP at 480 VAC 50 - 3000 HP at 575/690 VAC | 250 - 1950 HP at 480 VAC 250 - 4250 HP at 575/690 VAC | 250 - 1950 HP at 480 VAC 250 - 4250 HP at 575/690 VAC | | | |
| Voltage range | : | : | : | | | |
| 208 - 240 VAC 3-phase 380 - 500 VAC 3-phase 525 - 690 VAC 3-phase | 380 - 500 VAC 3-phase 525 - 690 VAC 3-phase | 380 - 500 VAC 3-phase 525 - 690 VAC 3-phase | 380 - 500 VAC 3-phase 525 - 690 VAC 3-phase | | | |
| Enclosure type | · | | • | | | |
| UL type 1 (IP21) UL type 12 (IP55) | UL type 1 (IP22) UL type 1 filtered (IP42) UL type 12 (IP54) | UL type 1 (IP22) UL type 1 filtered (IP42) UL type 12 (IP54) | UL type 1 (IP22) UL type 1 filtered (IP42) UL type 12 (IP54) | | | |
| Control mode | · | · | | | | |
| DTC, Scalar (V/Hz) | DTC, Scalar (V/Hz) | DTC, Scalar (V/Hz) | DTC, Scalar (V/Hz) | | | |
| Communications options | | | | | | |
| Profibus DP, CANopen, DeviceNet, Ethernet IP, Modbus TCP, EtherCat, EtherPOWERLINK, ControlNet | Profibus DP, CANopen, DeviceNet, Ethernet IP, Modbus TCP, EtherCat, EtherPOWERLINK, ControlNet | Profibus DP, CANopen, DeviceNet, Ethernet IP, Modbus TCP, EtherCat, EtherPOWERLINK, ControlNet | Profibus DP, CANopen, DeviceNet, Ethernet IP, Modbus TCP, EtherCat, EtherPOWERLINK, ControlNet | | | |
| Operator interface | | | | | | |
| Local or remote mounted LCD display and keypad | Local or remote mounted LCD display and keypad, optional start/ stop switch and pilot lights | tart/ Local or remote mounted LCD Local or remote mounted LCD display and keypad, optional start/ stop switch and pilot lights stop switch and pilot lights | | | | |

ACS880-01 Wall-mounted Single Drives Overview

IECONTROLS INDUSTRIAL ELECTRONIC CONTROLS 10536 CROSBY CIRCLE CRANESVILLE, PA 16410-9338 PH: 814-756-4900 FAX: 814-756-5599

Our wall-mounted drives are designed on ABB's common drives architecture. They can be customized to meet the precise needs of industries such as oil and gas, mining, metals, chemicals, cement, power plants, material handling, pulp and paper, sawmills and marine. They are designed to control a wide range of applications including cranes, extruders, winches, winders, conveyors, mixers, compressors, pumps and fans. The drive comes in nine different frame sizes (R1 to R9) for easy installation and commissioning.

At the heart of the drive is direct torque control (DTC), ABB's premier motor control technology. The extensive range of options include EMC filters, encoder and resolver interfaces, du/ dt filters, sine filters, chokes and brake resistors, as well as application specific software. Built-in safety features reduce the need for external safety components. Multiple drives can be daisy-chained for synchronized drive-to-drive communication.

The drives offering includes enclosure classes UL type 1 (IP21) and UL type 12 (IP55) for dusty and wet environments.

Capabilities:

- DTC or scalar (V/Hz) control with peak overload of 150% for performance applications
- ABB's all-compatible keypad, programming structure and drive options
- Designed for demanding applications with high starting torque, speed and torque accuracy, flexible programming and certified safety options

Main features include:

- Enclosure class UL type 1 (IP21) and UL type 12 (IP55) for different environments
- Compact design for easy installation, commissioning and maintenance
- Integrated safety including safe torque off (STO) as standard and the optional safety functions module, (TÜV Nord certified)
- Intuitive control panel with USB connection
- Removable memory unit for easy maintenance
- Drive composer PC tool for commissioning and configuration
- Primary control program common software used throughout the ACS880 drive series
- Control unit supporting a wide range of fieldbuses, feedback devices and input/output options
- Coated boards as standard
- Controllable cooling fan
- Incoming air temperature measurement for protecting the drive from different temperature related failure mechanisms
- Built-in braking chopper, option for frame sizes R5 to R9
- EMC filter option
 du/dt filter option for motor protection
- Built-in choke
- ACS880-01 single drives are optimized for easy and cost efficient cabinet installation

Applications:

- Constant torque, variable torque or constant horsepower applications
- New installation, replacement and original equipment manufacture (OEM) use



ACS880-01, frame sizes R1 to R9, UL type 1 (IP21)



ACS880-01, frame sizes R1, R8 and R5, UL type 12 (IP55)

ACS880-01 Wall-mounted Single Drives Type code sheet







Construction

01 = Wall-mounted, UL type 1 (IP21), assistant control panel, built in choke, no EMC filter, primary control program, safe torque-off, conduit box, braking chopper in frame sizes R1, R2, R3 and R4, coated boards, quick guides with default set of languages, CD including all manuals with all available languages.



(Output current rating, see table below for details) Note: Wall-mount drives require four (4) digit amp rating in type code

| Frame size | | | | | | | | | | |
|------------|----------------------|----------------------|--------------|--------------|--------------|--|--------------|--------------|--------------|----------------------|
| Voltage | R1 | | R2 | R3 | R4 | R5 | R6 | R7 | R8 | R9 |
| 230 V | 04A6 07A5 | 06A6 10A6 | 16A8 24A3 | 031A | 046A 061A | 075A 087A | 115A 145A | 170A 206A | 274A | - |
| 480 V | 02A1 03A4 07A6 | 03A0 04A8 11A0 | 014A 021A | 027A 034A | 040A 052A | 065A 077A | 096A 124A | 156A 180A | 240A | 302A 361A 414A |
| 575 V | | - | | | | 07A3 09A8 14A2 018A 022A 026A 035A 042A 049A | 061A 084A | 098A 119A | 142A 174A | 210A 271A |



Voltage rating

2 = 208...240 VAC

5 = 380...500 VAC

7 = 525...690 VAC



Option codes

Letter code followed by 3 digit number (see option code pages for details)

ACS880-01 Wall-mounted Single Drives Data sheet

| 0.75 - 100 HP 208 - 240 VAC 0.75 - 350 HP 380 - 500 VAC 3 Phase - 50/60 Hz 5 - 200 HP 525 - 690 VAC | | | | | | |
|---|--------------------------------|--|--|--|--|--|
| Input ratings | Input voltage range | 208-240 V; 380-500 V; 525-690 V | | | | |
| | Input voltage tolerance | +10%/-15% | | | | |
| | Phase | Three phase | | | | |
| | Frequency | 47 to 63 Hz | | | | |
| | Short circuit rating (UL 508c) | 100,000 rms symmetrical amperes up to 600 V when input cables protected by class T or similar type fuses | | | | |
| Output ratings | Horsepower | 0.75 - 350 HP @ 480 VAC 0.75 - 100 HP @ 230 VAC 5 - 250 HP @ 575/690 VAC | | | | |
| | Overload capacity | Heavy duty = 150% for 60 seconds every 5 minutes Light duty = 110% for 60 seconds every 5 minutes | | | | |
| | Frequency | 0-500 Hz | | | | |
| | Voltage | 0 to maximum input voltage (RMS) | | | | |
| | Motor types | Asynchronous AC induction motors, permanent magnet synchronous motors and AC induction servomotors | | | | |
| Protective features | Overcurrent | Excessive output current | | | | |
| | DC overvoltage | High DC bus | | | | |
| | Overtemp | Drive heatsink above operating temperature, max ambient temperature exceeded | | | | |
| | Short circuit | Short on motor output terminals | | | | |
| | Undervoltage | Low voltage on drive input | | | | |
| | Loss of reference | Analog input programmed for 4-20 ma but signal less than 4 ma | | | | |
| | Motor overtemp | Excessive estimated motor temperature | | | | |
| | Loss of keypad | Drive will trip if under keypad control and keypad communication is lost | | | | |
| | Motor stall | Motor cannot achieve commanded speed due to excessive load | | | | |
| | Ground fault | Ground fault detected in motor or motor cabling | | | | |
| | Motor phase fault | Loss at one of the motor phases | | | | |
| Environmental | Iemperature | 0 to 40°C (32 to 104°F). 0 to 55°C (32 to 131°F) w/ derate. No frost allowed. | | | | |
| | Cooling | Forced air | | | | |
| | Enclosure | UL type 1 (IP21), UL type 12 (IP55) | | | | |
| | Altitude | Sea level to 3300 ft. (1000 m) Derate 1% per 330 ft. (100 m) up to 13,128 ft. (4000 m) | | | | |
| | Humidity | U to 95% RH non-condensing | | | | |
| | Vibration | Max. 1 mm (0.04 in.) (5 to 13.2 Hz), max. 7 m/s2 (23 ft/s2) (13.2 to 100 Hz) sinusoidal | | | | |
| Keypad display | Display Keys | 8 key keypad with tactile response | | | | |
| | Functions | Output status monitoring, digital speed control, parameter setting and display, diagnostic and fault log display, motor run, local/remote toggle, graphical monitoring | | | | |
| | Remote mount | Keypad may be mounted up to 9 ft. using appropriate cable (see Options for kit) | | | | |
| | Irip | Last three faults stored in fault history | | | | |
| Control | Switching frequency | 2.7 KHZ (average) | | | | |
| specifications | | U-1800 seconas | | | | |
| | Speed control accuracy | Tusse configurable hands 0, may append | | | | |
| | | Drive composer drive composer pro | | | | |
| | Maximum output froquency | | | | | |
| | Selectable operating modes | 2-Wire 3-Wire Motor Potentiometer Hand/Auto PID | | | | |
| Angles insute | | -10 to 10 V Pin = 200 kO | | | | |
| Analog inputs | | -20 to 20 mA, Rin = 100 Ω | | | | |
| | | 1 + 0 m $1 + 3$ gm 1 m $1 + 3$ gm 20 m $1 + 10$ | | | | |
| Analog outputs | | | | | | |
| | Resolution | 11 hit + sign hit | | | | |
| Disital investo | Six digital inputs | 15 V 21 VDC with internal or external supply | | | | |
| Digital inputs | | | | | | |
| | | | | | | |
| | | .04 ms nardware filter, digital filtering up to 8 ms | | | | |
| Digital outputs | Inree relay outputs | | | | | |
| | Nevimum continues current | | | | | |
| Safaty | | 2 AVOU VDU OF 200 VAU STO standard input: 17 - 30 VDC 55 mA | | | | |
| Galety | Sale loique Oli (STO) | oro standard input, 17 | | | | |