

ACS880, industrial drives

Drive selection chart

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

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250 - 4250 HP at 575/690 VAC

Voltage range

208 - 240 VAC 3-phase
380 - 500 VAC 3-phase
525 - 690 VAC 3-phase

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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)

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DTC, Scalar (V/Hz)

Communications options

Profibus DP, CANopen, DeviceNet,
Ethernet IP, Modbus TCP, EtherCat,
EtherPOWERLINK, ControlNet

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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

Local or remote mounted LCD
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ACS880-01 Wall-mounted Single Drives

Overview

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

A	C	S	8	8	0	-	0	1	-				A	-	+				
Product series					Construction				Size			Voltage			Options				

- 0 1

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.

- **A**

Size

(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	06A6	16A8	046A	075A	115A	170A	274A	-
	07A5	10A6	24A3	061A	087A	145A	206A		
480 V	02A1	03A0	014A	027A	040A	065A	096A	156A	302A
	03A4	04A8	021A	034A	052A	077A	124A	180A	240A
	07A6	11A0							414A
575 V	---	---	---	---	07A3	09A8			
					14A2	018A			
					022A	026A	061A	098A	142A
					035A	042A	084A	119A	174A
					049A				210A

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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
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	Temperature	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	0 to 95% RH non-condensing
	Vibration	Max. 1 mm (0.04 in.) (5 to 13.2 Hz), max. 7 m/s ² (23 ft/s ²) (13.2 to 100 Hz) sinusoidal
Keypad display	Display	LCD graphical
	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)
	Trip	Last three faults stored in fault history
Control specifications	Switching frequency	2.7 kHz (average)
	Accel/decel	0-1800 seconds
	Speed control accuracy	10% of motor slip, DTC, no encoder
	Skip frequencies	Three configurable bands 0-max speed
	PC setup software	Drive composer, drive composer pro
	Maximum output frequency	500 Hz
	Selectable operating modes	2-Wire, 3-Wire, Motor Potentiometer, Hand/Auto, PID
Analog inputs	Two differential current or voltage	-10 to 10 V, Rin = 200 kΩ -20 to 20 mA, Rin = 100 Ω
	Resolution	11 bit + sign bit
Analog outputs	Two current outputs	0 to 20 mA, load < 500 Ω
	Frequency range	0 to 300 Hz
	Resolution	11 bit + sign bit
Digital inputs	Six digital inputs	15 V...24 VDC with internal or external supply
	Input impedance	Pull-up or pull-down (PNP or NPN) (DI1 to DI5); NPN (DI6) 2.0 kΩ
	Filtering	.04 ms hardware filter, digital filtering up to 8 ms
Digital outputs	Three relay outputs	Form C
	Maximum switching voltage	250 VAC/30 VDC
	Maximum continuous current	2 A/30 VDC or 250 VAC
Safety	Safe torque off (STO)	STO standard input; 17...30 VDC, 55 mA