

ABB micro drives

ACS255 120 V AC, 0.5 to 1.5 hp

ACS255 is an enhanced version of the popular ACS250 drive series.

New features include: sensorless vector control for both AC induction and PM motors, enhanced short circuit protection, and operating mode selection. New ratings have been added to fill out the product line. All of the existing features of the ACS250 - parameters, external dimensions, mounting locations, etc. - are the same for the ACS255. An Advanced parameter menu has been added for additional functionality.



ACS255 120 V AC product is an easy-to-use micro drive for applications in 0.5 to 1.5 hp power range. The built-in Modbus RTU serial communication provides a straightforward integration with control and monitoring systems. Available with two types of enclosures – IP20 drives have feed thru wiring for ease with panel mounting & IP66 enclosures for washdown environments. Typical applications include pumps, fans, grinders, mixers or conveyors.

Part of ABB micro drives portfolio

The ACS255 drive is part of ABB's complete micro drive range, which offers a solution for every need:

- Drives for simple to more complex machines
- Complete input voltage range from 1~110 to 3~600 V AC
- IP20 and IP66 enclosures
- Power range from 0.5 to 20 hp

Key features

- Built-in macros and only the essential parameters make commissioning straightforward
- Intuitive integrated keypad control
- Modbus RTU fieldbus as standard
- Power range from 0.5 to 1.5 hp
- 1~115 V input/3~230 V output
- IP20 or IP66/NEMA 4X protection class
- Feed thru wiring on IP20 drives for easy motor starter replacement
- Variable torque or constant torque V/Hz characteristics
- Sensorless vector speed control for asynchronous AC induction motor and synchronous permanent magnet AC (PMAC) motors.
- Operating mode selection provides added setup macros for industrial, pump, or fan applications.

Supporting options

- Remote keypad (RCRP-02) provides easy cabinet installations
- Parameter upload/download tool (RCCS-01) for straightforward commissioning
- Relay output card (RCRO-01)
- UL Type 4X/IP66 frames for harsh environments
- Drive-mounted operator controls (disconnect, Fwd/Off/Rev, & speed potentiometer for UL Type 4X/IP66 enclosures
- Modbus RS485 RJ45 cable splitter



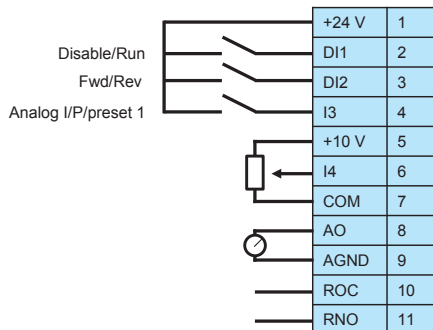
Mains connection	
Supply voltage	1-ph, 110 to 120 V ±10%: 0.5 to 1.5 hp * 1-ph input drives produce 3-ph 230V output
Frequency	48 to 63 Hz
Phase imbalance	3% maximum allowed
Motor connection	
Motor types	Asynchronous induction motors Permanent magnet synchronous motors
Frequency	0 to 500 Hz, 0.1 Hz resolution
Overload capacity	150% of rated amps for 1 minute 170% of rated amps for 2 seconds
Switching frequency	4-32kHz (8kHz default) Scalar U/f
Control types	Sensorless vector speed control PM motor vector speed control BLDC motor speed control (contact factory)
Environmental limits	
Temperature	Storage: -40 to 60°C Operating: -10 to 50°C
Relative humidity	Lower than 95% (without condensation)
Vibration	Conforms to EN61800-5-1
Product compliance	
UL, cUL, C-Tick, CE listing/conformance; RoHS Compliant	

Programmable control connections	
Power supply	24 Volt DC, 100mA, Short Circuit Protected 10 Volt DC, 5mA for Potentiometer
Programmable Inputs	4 Total 2 Digital 2 Analog / Digital selectable
Digital inputs	8 - 30 Volt DC, internal or external supply Response time < 4ms 0 - 10 VDC, 0 or 4 - 20mA, bi-polar Resolution: 12 bits
Analog inputs	Response time: < 4ms Accuracy: ± 2% full scale Parameter adjustable scaling and offset
Programmable outputs	2 Total 1 Analog / Digital 1 Relay
Relay output	Maximum Voltage: 250 VAC, 30 VDC Switching Current Capacity: 6A AC, 5A DC
Analog outputs	0 to 10 Volt
PI control	Internal PI Controller Standby / Sleep Function
Serial communication	Modbus RTU (EIS-485)

Output ratings			Type designation	Frame size	Height in	Width in	Depth in	Weight kg
P _{N,HD} hp	P _{N,HD} kW	I _{2N} A						
1-phase AC supply, 110 to 120 V -- IP 20 Enclosure								
0.5	0.37	2.3	ACS255-01U-02A3-1	E1	6.81	3.23	4.84	2.20
1	0.75	4.3	ACS255-01U-04A3-1	E1	6.81	3.23	4.84	2.20
1.5	1.1	5.8	ACS255-01U-05A8-1	E2*	8.70	4.29	5.91	3.75
1-phase AC supply, 110 to 120 V -- IP66 / NEMA4X Enclosure								
0.5	0.37	2.3	ACS255-01U-02A3-1+B063(+F278)	E1	9.13	6.34	7.05	6.50
1	0.75	4.3	ACS255-01U-04A3-1+B063(+F278)	E1	9.13	6.34	7.05	6.50
1.5	1.1	5.8	ACS255-01U-05A8-1+B063(+F278)	E2*	10.12	7.40	7.34	9.26

* = Drives with E2 frame size have built-in braking chopper
P_N for kW = Typical motor power at 400V in normal use
P_N for Hp = Typical motor power at 480V in normal use
I_{2N} for A = Continuous rms current. 50% overload is allowed for one minute in ten minutes
U within the type code = no EMC filter
+B063 = IP66/UL TYPE 4X enclosure without input disconnect.
+B063+F278 = IP66/UL TYPE 4X enclosure with input disconnect and operator controls.

Standard I/O configurations



© Copyright 2016 ABB. All rights reserved
Specifications subject to change without notice.