

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



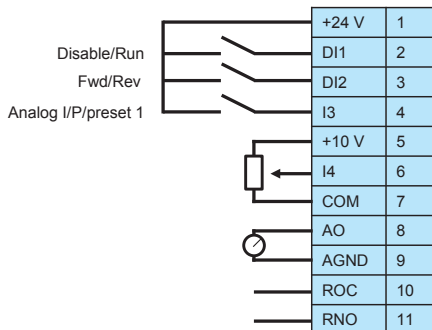
| Mains connection | |
|---|--|
| Supply voltage | 1-ph, 110 to 120 V ±10%: 0.5 to 1.5 hp * 1-ph input drives produce 3-ph 230V output |
| Frequency | 48 to 63 Hz |
| Phase imbalance | 3% maximum allowed |
| Motor connection | |
| Motor types | Asynchronous induction motors Permanent magnet synchronous 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



For more information please contact your local ABB representative or visit:

www.abb.com/drives

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