

ABB micro drives ACS255 IP66/NEMA 4X for harsh environments

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+B063+F278



ACS255+B063

ABB micro drive ACS255 with IP66/NEMA 4X enclosure is designed for applications such as; packaging machinery, mixers, pumps, fans and conveyors, which are installed in harsh environments containing dust, moisture and cleaning chemicals. The drive's design and ease of setup benefit a broad range of industries.

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
- Full voltage range from 110 to 600 V
- Enclosures IP20 and IP66
- Power range from 0.5 to 20 hp

NEMA4X/IP66 washdown protection

The drive is constructed with corrosion resistant materials for durability and increased survival in wet, dirty, or washdown applications. The drive's smooth contours, sealed ABS plastic enclosure and corrosion resistant heat sink are ideal for food and beverage applications. The integrated keypad provides straightforward drive commissioning and maintenance in extreme environments.

Key features

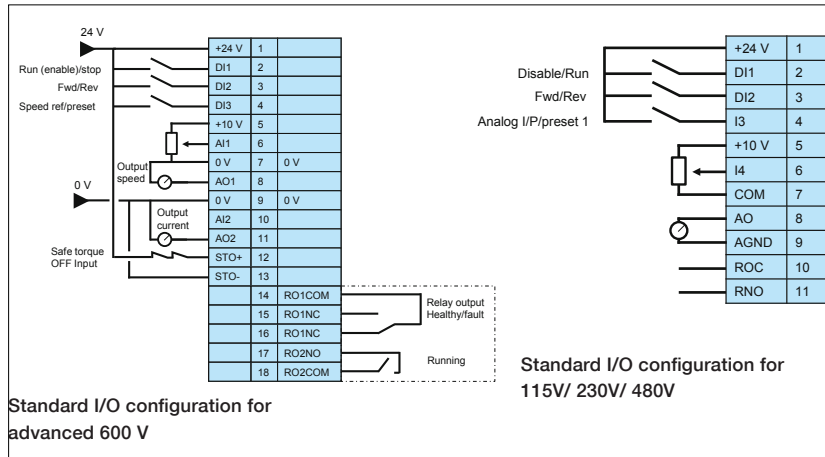
- Built-in macros and only the essential parameters make commissioning straightforward
- Can be mounted directly on processing equipment installed in extreme environments
- Conduit cable entry
- Intuitive keypad control
- +F278 operator controls option includes: Input disconnect, FWD/OFF/REV selector, and Speed potentiometer
- IP66/NEMA 4X dust and water proof design
- Designed for wash-down applications
- Specially coated corrosion resistant heat sink
- No external cooling fans to replace
- Modbus RTU fieldbus as standard
- Built-in brake chopper (except frame E1)



Output ratings			Type designation					Frame size	Height in	Width in	Depth in	Weight lb
P _{N,HD} hp	P _{N,HD} kW	I _{2N} A										
1-phase AC supply, 110 to 120 V												
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				
1-phase AC supply, 200 to 240 V												
0.5	0.37	2.3	ACS255-01U-02A3-2+B063(+F278)	E1	9.13	6.34	7.05	6.50				
1	0.75	4.3	ACS255-01U-04A3-2+B063(+F278)	E1	9.13	6.34	7.05	6.50				
1.5	1.1	6.1	ACS255-01U-06A1-2+B063(+F278)	E1	9.13	6.34	7.05	6.50				
2	1.5	7.0	ACS255-01U-07A0-2+B063(+F278)	E1	9.13	6.34	7.05	6.50				
3	2.2	10.5	ACS255-01U-10A5-2+B063(+F278)	E2	10.12	7.40	7.34	9.26				
5	3.7	15.3	ACS255-01U-15A3-2+B063(+F278)	E3	12.20	8.29	9.00	16.97				
3-phase AC supply, 200 to 240 V												
0.5	0.37	2.3	ACS255-03U-02A3-2+B063(+F278)	E1	9.13	6.34	7.05	6.50				
1	0.75	4.3	ACS255-03U-04A3-2+B063(+F278)	E1	9.13	6.34	7.05	6.50				
1.5	1.10	6.1	ACS255-03U-06A1-2+B063(+F278)	E1	9.13	6.34	7.05	6.50				
2	1.5	7.0	ACS255-03U-07A0-2+B063(+F278)	E2	10.12	7.40	7.34	9.26				
3	2.2	10.5	ACS255-03U-10A5-2+B063(+F278)	E2	10.12	7.40	7.34	9.26				
5	4.0	18.0	ACS255-03U-18A0-2+B063(+F278)	E3	12.20	8.29	9.00	16.97				
3-phase AC supply, 380 to 480 V												
0.5	0.37	1.2	ACS255-03U-01A2-2+B063(+F278)	E1	9.13	6.34	7.05	6.50				
1	0.75	2.2	ACS255-03U-02A2-4+B063(+F278)	E1	9.13	6.34	7.05	6.50				
1.5	1.10	3.3	ACS255-03U-03A3-2+B063(+F278)	E1	9.13	6.34	7.05	6.50				
2	1.5	4.1	ACS255-03U-04A1-4+B063(+F278)	E1	9.13	6.34	7.05	6.50				
3	2.2	5.8	ACS255-03U-05A8-4+B063(+F278)	E2	10.12	7.40	7.34	9.26				
5	4.0	9.5	ACS255-03U-09A5-4+B063(+F278)	E2	10.12	7.40	7.34	9.26				
7.5	5.5	14.0	ACS255-03U-14A0-4+B063(+F278)	E3	12.20	8.29	9.00	16.97				
10	7.5	18.0	ACS255-03U-18A0-4+B063(+F278)	E3	12.20	8.29	9.00	16.97				
3-phase AC supply, 500 to 600 V												
1	0.75	1.7	ACS255-03U-02A1-6+B063(+F278)	P2	10.12	7.40	9.41	4.80				
2	1.5	3.1	ACS255-03U-03A1-6+B063(+F278)	P2	10.12	7.40	9.41	4.80				
3	2.2	4.1	ACS255-03U-04A1-6+B063(+F278)	P2	10.12	7.40	9.41	4.80				
5	4.0	5.8	ACS255-03U-06A5-6+B063(+F278)	P2	10.12	7.40	9.41	4.80				
7.5	5.5	9.0	ACS255-03U-09A0-6+B063(+F278)	P2	10.12	7.40	9.41	4.80				
10	7.5	14.0	ACS255-03U-12A0-6+B063(+F278)	P3	12.20	8.29	9.88	16.10				
15	11	18.0	ACS255-03U-17A0-6+B063(+F278)	P3	12.20	8.29	9.88	16.10				

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



Mains connection	
Supply voltage	1-ph, 110 to 120 V ±10%: 0.5 to 1.5 hp 1-ph, 200 to 240 V ±10%: 0.5 to 5 hp 3-ph, 200 to 240 V ±10%: 0.5 to 5 hp 3-ph, 380 to 480 V ±10%: 0.5 to 15 hp 3-ph, 500 to 600 V ±10%: 1 to 15 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)
Control types	Scalar U/f Sensorless vector speed control PM motor vector speed control BLDC motor speed control (contact factory)
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
Analog inputs	0 - 10 VDC, 0 or 4 - 20mA, bi-polar Resolution: 12 bits 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)
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	

ACS255-PHPB03U-EN REV A Effective 1/01/2017