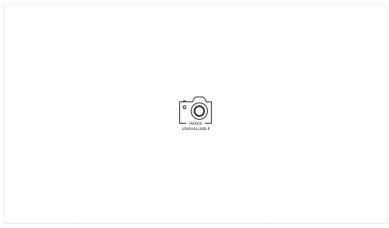

Allen-Bradley
by ROCKWELL AUTOMATION

Catalog #: 20AD014A3AYNANC0

PowerFlex 70 AC Drive 14 A at 10 Hp 20A

Lifecycle status: DISCONTINUED

Rockwell Automation announces that as of June 1, 2023, the PowerFlex 70 AC Drive 14 A at 10 Hp 20A will be discontinued and no longer available for sale. Customers are encouraged to remove references to the affected product(s).

Discontinued Date:	June 1, 2023
Replacement Category:	Direct Replacement

Technical Specifications

Mechanical

Degree of protection (IP)	IP20
Shock	15 G peak for 11 ms duration (±1.0 ms)
Vibration	0.152 mm (0.006 inch) displacement, 1 G peak

Electrical

Number of analogue outputs	1
Mains voltage	480 V
Integrated breaking resistance	No
Internal dynamic brake resistors	115 Ohm
Brake IGBT	Brake IGBT installed
Bus undervoltage output shutoff	437V DC @ 480V
Bus undervoltage fault level	300V DC @ 480V
Internal communication module	No communication module
AC input undervoltage trip	280V AC @ 480V
Bus voltage, nom	648V DC @ 480V
Bus overvoltage trip	810V DC @ 480V
Circuit breaker current rating, max	50 A @ 480V AC, 3-phase

Motor circuit protector current rating, max	20 A @ 480V AC, 3-phase
Output current rating, continuous	7 A @ 480V AC, 1-phase
Output current rating, 1 min	8.3 A @ 480V AC, 1-phase
Output current rating, 3 sec	22 A @ 480V AC, 3-phase
Logic control ride-thru	0.5 seconds minimum, 2 seconds typical
Brake resistor	Without drive mounted brake resistor
Input current rating	12.5 A @ 480V AC, 1-phase
Documentation	Manual
Carrier frequency	Standard control: 2, 3, 4, 5, 6, 7, 8, 9, and 10 kHz, vector control: 2, 4, 8, and 12 kHz, drive rating based on 4 kHz
Encoder quadrature	90° ±27°
AC input overvoltage trip	570V AC @ 480V
Input power rating	5.2 kVA @ 480V AC, 1-phase
Dual element time delay fuse current rating	20...30 A @ 480V AC, 3-phase
Non-time delay fuse current rating	20...50 A @ 480V AC, 3-phase
Heat sink thermistor	Monitored by microprocessor overtemp trip
Drive to motor power ratio, max	Recommended not greater than 2:1 ratio
Stop modes	Multiple programmable stop modes including — Ramp, Coast, DC-brake, Fast brake, Ramp-to-hold and S-curve
Frequency accuracy	Digital input: within ±0.01% of set output frequency
Acceleration/deceleration	Two independently programmable accel and decel times. Each time can be programmed from 0...3600 seconds in 0.1 second increments
Number of digital inputs	6
Number of digital outputs	2
Number of analogue inputs	2
Internal watts loss	32.0 W @ 480V, 10 Hp normal duty
Supporting protocol for DeviceNet	Yes
Human interface model	LCD display, full numeric keypad
Application in industrial area permitted	Yes
External watts loss	193.3 W @ 480V, 10 Hp normal duty
Total watts loss	225.3 W @ 480V, 10 Hp normal duty
Supporting protocol for EtherNet/IP	Yes
Mains frequency	50 Hz

Output frequency range	Standard control: 0...400 Hz, enhanced control: 0...500 Hz
Internal EMC filtering	Second environment filter per CE EMC directive (89/336/EEC)
Feedback option	No feedback
Torque regulation	Without feedback +/-10%, with feedback +/-5%
Enclosure type	Panel mount-IP20/NEMA Type 1
Output current rating	14 amps, 10 Hp normal duty, 7.5 Hp heavy duty, frame C
Cooling fan operation	Frames B, D, and E: fan operates when power is applied and in run condition
Control options	Enhanced control with 24V I/O
Drive overcurrent trip	Software current limit: 20...160% of rated current
Efficiency	97.5% at rated amps, nominal line volts
Encoder supply	5V/12V configurable ±5%
Speed control-speed regulation	Without feedback (Vector Control mode): 0.1% of base speed across 120:1 speed range, 120:1 operating range, 30 rad/sec bandwidth
Current limit capability	Proactive current limit programmable from 20...160% of rated output current, Independently programmable proportional and integral gain
Selectable motor control	Sensorless vector with full tuning. Standards V/Hz with full custom capability and vector control
Frequency control-speed regulation	With slip compensation (Volts per Hertz mode): 0.5% of base speed across 40:1 speed range, 40:1 operating range, 10 rad/sec bandwidth
Input phases	Three-phase input provides full rating for all drives. single-phase operation provides 50% of rated current
Control method	Sine coded PWM with programmable carrier frequency. Ratings apply to all drives
Number of HW-interfaces RS-232	2
Number of HW-interfaces RS-485	2
Number of HW-interfaces USB	2
Number of phases output	3
Number of phases input	3
Relative symmetric net voltage tolerance	10 %
With control element	Yes
Supporting protocol for TCP/IP	Yes
Supporting protocol for PROFIBUS	Yes

Supporting protocol for CAN	Yes
Supporting protocol for Modbus	Yes
Application in domestic- and commercial area permitted	Yes
Motor overload protection	Class 10 motor overload protection according to NEC article 430 and motor over-temperature protection according to NEC article 430.126 (A)(2). UL 508C file E59272
Input frequency tolerance	47 Hz
Encoder duty cycle	50% ±10%
Voltage tolerance	-10 %
Displacement power factor (all drives)	0.98 across speed range
Short circuit rating, max	200000 amps symmetrical
Output voltage range	0 to rated motor voltage
Encoder type	Incremental, dual channel
Power ride-thru	15 milliseconds at full load
Short circuit trip	Phase-to-phase on drive output
Ground fault trip	Phase-to-ground on drive output
Drive to motor power ratio, min	Recommended not less than 1:2 ratio
Control logic noise immunity	Showering arc transients upto 1500V peak
Line transients	Up to 6000 volts peak per IEEE C62.41-1991
Short circuit current rating, max	Maximum short circuit current rating to match specified fuse/circuit breaker capability
Intermittent overload	110% overload capability for up to 1 minute, 150% overload capability for up to 3 seconds

Construction

Height, approx	IP20, NEMA/UL Type 1: 300 mm
Depth, approx	IP20, NEMA/UL Type 1: 179.8 mm
Width, approx	IP20, NEMA/UL Type 1: 185 mm
Weight, approx	IP20, NEMA/UL Type 1: 6.89 kg

Environmental

Altitude	1000 m (3300 ft.) maximum without derating
Degree of protection (NEMA)	1
Surrounding air temperature, max	IP20, NEMA/UL Type 1: 0…50 °C (32…122 °F) without derating

Atmosphere	Drive must not be installed in an area where the ambient atmosphere contains volatile or corrosive gas, vapors or dust, If the drive is not going to be installed immediately, store the drive where it is not exposed to a corrosive atmosphere
Storage temperature	-40 °C
Relative humidity	5...95% noncondensing
Pollution degree 1 according to EN 61800-5-1	No pollution occurs, only dry non-conductive pollution occurs, and has no influence
Pollution degree 4 according to EN 61800-5-1	The pollution generates persistent conductivity caused, for example, by conductive dust, rain or snow
Pollution degree 3 according to EN 61800-5-1	Conductive pollution occurs, dry non-conductive pollution occurs and becomes conductive due to condensation
Pollution degree 2 according to EN 61800-5-1	Normally only non-conductive pollution occurs, Occasionally a temporary conductivity, caused by condensation is expected when the drive is out of operation
Surrounding environment pollution degree	All enclosures are acceptable for pollution degree 1 and 2, an enclosure that meets or exceeds IP54, NEMA/UL type 12, is required for pollution degree 3 and 4