ACCU-Torq® Vector Duty 3-Phase AC Motors

56C – 256TC Frame – 1/4hp to 20hp

Available with or without encoder installed

U.S. MOTORS® ACCU-Torq® series AC motors offer a solution to applications requiring accurate positioning or precise speed control without the rapid acceleration dynamics of a servomotor. ACCU-Torq motors are designed to be used with AC drives, including full closed-loop vector drives, in applications requiring up to a 5000:1 constant torque speed range.

Standard Features

- 230/460 VAC
- Rated output: 1/4 - 20hp
- 1800 rpm, with or without encoder
- 1200 rpm up to 10hp
- Encoder Motors are pre-built with Avtron HS35A encoders. Complete encoder kit is also available for separate purchase.
- Standard motors have dual shaft for encoder mounting.
- Class F insulation (155° C), inverter duty NEMA MG1 Part 31
- Constant torque operation; zero to base speed on vector drives
- Constant horsepower operation to twice base speed
- Optimized for operation with IGBT and intelligent power module drives (NEMA®† Design A)
- F-1 Standard, field convertible to F-2 for 180 frame and above
- Normally closed thermostats standard
- Horizontal or Vertical mounting
- Continuous duty at 40°C ambient

Applications

- Packaging machinery
- Extruders
- Material handling
- Indexing and positioning
- Positive displacement pumps
- DC Motor Replacements

UN5T2BC

UN5T2BC-HS35A

Cover can be removed to reveal second shaft

HS35AY1CDU1EA000

ACCU-Torq® Vector Duty 3-Phase AC Motors

Motor Specifications – 3-phase												
Part Number	Price	HP*	Base RPM	Volts	Enclosure	Encoder Included	NEMA Frame	Service Factor	NEMA Design	Weight (lb)	Data Pack Links*	Drawing Links
Rigid Base With C-face - 1800 RPM												
UN14T2BC	$05yn6:	1/4	1800	230/460 VAC	TENV	No	56C	1.0	A	35	PDF	PDF
UN14T2BC-HS35A	$;;006fh1:					Yes				30	PDF	PDF
UN12T2BC	$05yn7:	1/2				No				42	PDF	PDF
UN12T2BC-HS35A	$;;006fh2:					Yes				30	PDF	PDF
UN1T2BFC	$05yn9:	1				No	56C			43	PDF	PDF
UN1T2BFC-HS35A	$;;006fh4:					Yes				30	PDF	PDF
UN1T2BC	$05yn8:					No	143TC			43	PDF	PDF
UN1T2BC-HS35A	$;;006fh3:					Yes				30	PDF	PDF
UN32T2BC	$05ynb:	1 1/2				No	145TC			50	PDF	PDF
UN32T2BC-HS35A	$;;006fh5:					Yes				35	PDF	PDF
UN2T2BC	$05ync:	2				No				57	PDF	PDF
UN2T2BC-HS35A	$;;006fh6:					Yes				60	PDF	PDF
UN3T2BC	$05yne:	3				No	182TC			65	PDF	PDF
UN3T2BC-HS35A	$;;006fh7:					Yes				60	PDF	PDF
UN5T2BC	$;05ynf:	5				No	184TC			85	PDF	PDF
UN5T2BC-HS35A	$;;006fh8:					Yes				60	PDF	PDF
UN7T2BC	$;005ynh:	7 1/2				No	213TC			135	PDF	PDF
UN7T2BC-HS35A	$;;006fh9:					Yes				105	PDF	PDF
UN10T2BC	$;-005ynj:	10				No	215TC			178	PDF	PDF
UN10T2BC-HS35A	$;;006fha:					Yes				120	PDF	PDF
UN15T2BC	$;-005ynl:	15				No	254TC			255	PDF	PDF
UN15T2BC-HS35A	$;;006fhb:					Yes				120	PDF	PDF
UN20T2BC	$;005ynn:	20				No	256TC			266	PDF	PDF
UN20T2BC-HS35A	$;;006fhc:					Yes				230	PDF	PDF
Rigid Base With C-face - 1200 RPM												
UN1T3BC	$05yna:	1	1200	230/460 VAC	TENV	No	145TC	1.0	A	35	PDF	PDF
UN2T3BC	$05ynd:	2					184TC			75	PDF	PDF
UN5T3BC	$;005yng:	5					215TC			60	PDF	PDF
UN7T3BC	$;-005yni:	7 1/2					254TC			211	PDF	PDF
UN10T3BC	$;005ynk:	10					256TC			266	PDF	PDF

*See Motor Data Pack for additional specifications

ACCU-Torq® Vector Duty 3-Phase AC Motors

Performance Data – 3-phase

Part Number	HP*	Full Load RPM*	Volts*	Current (230V/460V)			Torque			Resistance Main		Torque Speed Rating		Full Load Effic. %	Full Load Power Factor	Moment of Inertia (lb·ft²)
				No Load Current	Full Load Amps	Locked Rotor Amps	Full Load (lb·ft)	Locked Rotor % of Full Load Torque	Break-down % of Full Load Torque	230V	460V	Constant	Variable			
Rigid Base With C-face - 1800 RPM																
UN14T2BC	1/4	1765	230/460 VAC	0.8 / 0.4	1 / 0.5	8.2 / 4.1	0.70	419	586	12.42	49.69	5000:1	5000:1	77.0	61.1	0.070
UN14T2BC-HS35A					1 / 0.5						49.69					
UN12T2BC	1/2	1750		1 / 0.5	1.5 / 0.8	12.1 / 6	1.50	335	457	6.47	25.87			84.0	74.2	0.105
UN12T2BC-HS35A					1.5 / 0.8						25.87					
UN1T2BC	1	1755		2.2 / 1.1	3.2 / 1.6	32 / 15.8	3.00	480	606	2.72	10.88				69.5	0.107
UN1T2BC-HS35A					3.2 / 1.6						10.88					
UN1T2BFC					3.2 / 1.6	31 / 15.6		476	600	2.66	10.64				69.3	
UN1T2BFC-HS35A					3.2 / 1.6						10.64					
UN32T2BC	1 1/2	1760		3.2 / 1.6	4.6 / 2.3	52 / 25.9	4.50	518	665	1.55	6.18			86.5	69.7	0.14
UN32T2BC-HS35A					4.6 / 2.3						6.18					
UN2T2BC	2	1750		3.3 / 1.7	5.6 / 2.8	56 / 28	6.00	425	543	1.37	5.46				76.8	0.174
UN2T2BC-HS35A					5.6 / 2.8						5.46					
UN3T2BC	3	1770		7.9 / 4	10.1 / 5	92 / 46	8.90	400	573	0.77	3.08			87.5	63.6	0.314
UN3T2BC-HS35A					10.1 / 5						3.08					
UN5T2BC	5			8 / 4	14.2 / 7.1	139 / 70	14.80	363	522	0.46	1.84			90.2	74.5	0.472
UN5T2BC-HS35A					14.2 / 7.1						1.84					
UN7T2BC	7 1/2	1775		9 / 4.5	18.8 / 9.4	178 / 89	22.20	349	445	0.21	0.84			92.4	80.7	0.964
UN7T2BC-HS35A					18.8 / 9.4						0.84					
UN10T2BC	10			12.9 / 6.4	25.3 / 12.7	275 / 138	29.60	416	519	0.13	0.53			93.0	79.6	1.33
UN10T2BC-HS35A					25 / 12.7						0.53					
UN15T2BC	15	1785		14.3 / 7.2	36 / 17.8	345 / 172	44.20	394	381	0.08	0.33			94.5	83.4	3.43
UN15T2BC-HS35A					36 / 17.8						0.33					
UN20T2BC	20	1780		22.9 / 11.5	50 / 24.8	486 / 243	58.90	419	403	0.06	0.24			94.1	80.3	3.56
UN20T2BC-HS35A					50 / 24.8						0.24					
Rigid Base With C-face - 1200 RPM																
UN1T3BC	1	1150	230/460 VAC	7.1	3.7 / 1.8	21.1 / 10.5	4.60	298	390	3.59	14.35	5000:1	5000:1	80.0	63.8	0.122
UN2T3BC	2	1170		2.1 / 4.3	6.2 / 3.1	47.3 / 23.5	9.00	228	386	1.79	7.17			86.5	69.4	0.361
UN5T3BC	5	1175		10.9 / 5.5	15.9 / 7.9	127.7 / 63.9	22.30	383	445	0.35	1.42			89.5	65.9	0.928
UN7T3BC	7 1/2	1185		10.5 / 5.3	19.8 / 9.9	162.7 / 81.4	33.20	285	393	0.27	1.08			91.7	77.4	3.21
UN10T3BC	10			11.9 / 6	25 / 12.7	199.8 / 99.9	45.00	269	366	0.20	0.79			92.4	80.1	4.05

*See Motor Data Pack for additional specifications linked in specification table above

Avtron Encoder Kit

HS35A Encoder Kit Overview

Avtron™ HS35A Encoder kits come standard on US MOTORS ACCU-Torq® series encoder motors or can be purchased separately for installation on existing dual shaft motors such as Marathon Black Max. The HS35A encoders fit shafts from 1/2" to 1" easily, using durable shaft inserts. The encoders can be adapted to different shaft sizes by replacing or removing the included inserts, enabling customer stockrooms to swiftly meet any need. The shaft inserts and insulated bearings also provide isolation from motor shaft currents, while permitting case grounding to meet NEC requirements. Avtron encoders have superior shaft seals and bearings that stay sealed to keep out contamination caused by temperature cycling and liquid sprays. Encoder seals are protected by mechanical barriers to prevent flexing or failure, and Avtron's rugged bearings feature synthetic lubricants for even longer life. Avtron uses only unbreakable disks and a sensor-to-disk gap over eight times larger than the competition. The optical HS35A encoders use superior sensor, disk, bearing, and seal technology to give top performance in industrial conditions.

HS35AY1CDU1EA000

HS35A Features

- All digital, fully integrated design
- Easily mountable on US MOTORS ACCU-Torq series or Marathon Black Max Series vector duty motors
- No mechanical adjustments or trim potentiometers
- Innovative shaft ring retains collar during installation
- Advanced sensor technology
- Superior bearings with synthetic lubricant for longer life
- Encoder provides signal complements and marker pulse (A,A-, B,B-, Z,Z-)
- Insulated from motor shaft currents
- Models can be resized by interchanging inserts
- Included basket guard adds even more protection

HS35A Encoder Specifications	
Part Number	HS35AY1CDU1EA000
Price	$;06fh0:
Operating Power	Volts: 5-28 VDC Current: 50 mA, no load
Output Format	A Quad B with marker (A,/A, B,/B, Z,/Z)
Frequency Range	0 to 125 kHz
PPR	1024
Max Speed	6000 RPM
Temperature	-20° to 100°C*
Environmental	IP65
Vibration	5-2000 Hz
Shock	50G, 11ms duration
Weight	1.6 lbs [730g]
Drawing Link	PDF

***Consult Avtron for temperature/speed derating:**
https://www.nidec-avtronencoders.com/contact

Click image above for Encoder Installation:
https://www.youtube.com/watch?v=ZhX63xp7kOw