

marathon[®]

Motors

1000:1 Constant Torque (TENV)



Motor Shipping Schedule *

Same or one day *

Up to 7 days

Up to 10 days

Color indicates shipping lead time in business days. Check stock status online.

* Certain heavy and oversized items can be shipped only via LTL.

Check our website for current shipping method constraints by part number.

MAX+ AC Inverter-Duty Motors with Encoder

Features

- Integrated Dynapar HS20 1024 ppr encoder
- Optimized for operation with IGBT inverter
- Constant Torque operation from 0 to base speed on Vector Drive
- Constant Horsepower operation up to twice base RPM
- Class F insulation with CR200 corona resistant magnet wire
- Continuous duty at 40°C ambient
- C-Face with rigid base, except C-Face with removable rigid base as noted
- Service Factor: 1.0
- Ball bearings
- F1 mounting (except as noted)
- UL Recognized, CSA Certified, and CE Mark
- Three year warranty (through Marathon Electric)

Applications

- Replaces 90 volt and 180 volt PMDC motors (when used with AC variable frequency drives)
- Typical uses include: machine tools, conveyors, packaging machines, batching machines, printing equipment, pumps and fans.

Prices & Specifications

Motor Specifications – MAX+ (with encoder)

Part Number *	Price	HP	Base RPM	Volts	Encl.	NEMA Frame	Model No.	F.L Amps	Weight (lb) *	Footnotes	Drawing Links
Y280		1/2	1800	230/460	TENV	56C	56H17T15526A	1.6 / 0.8	25	6	PDF
Y281		3/4					56H17T15528A	2.4 / 1.2	35	6	PDF
Y282		1					56H17T15527A	3.0 / 1.5	42	6	PDF
Y284		1-1/2				145TC	145THTR15540AA	4.8 / 2.4	45	6	PDF
Y285		2					145HTN17034AA	6.0 / 3.0	68	13b	PDF
Y286A		3				182TC	182THTY17041AA	8.2 / 4.1	110	13b	PDF

* Refer to the Motor Shipping Schedule table for shipping information.

Certain heavy and oversized items can be shipped only via LTL. Check our web site for current shipping method constraints by part number.

Footnotes: 6 = Bolt-on, removable base for footless mounting option 13b = Field reversible from F1 to F2 mounting

Note: Please review the AutomationDirect Terms & Conditions for warranty and service on this product. Warranty service can be arranged through numerous Marathon Electric service centers. See list of service centers on our Web site at www.automationdirect.com.

MAX+ Motors Shaft-Mounted Encoder*

A Dynapar Model HS20 shaft-mounted encoder is supplied with the MAX+ motor. The 5/8-in hollow-shaft encoder requires a 5–26 VDC power source, provides a count of 1024 pulses per revolution (PPR), differential line driver output, and includes 10 screw-terminal wiring connections.

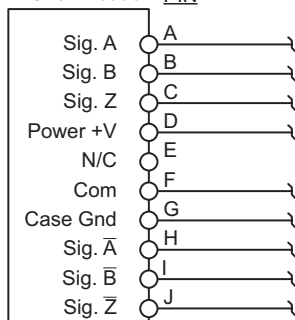
* The encoder cable gland accepts cable diameters from 0.187–0.30 in.

* There is no manufacturer's published tightening torque for the encoder screw terminals.

* If connecting the motor to a GS3 DURApulse AC drive, a [GS3-FB](#) Feedback Card is required for the drive.

Encoder Wiring Connections

Dynapar HS20 Encoder PIN



Connections to equipment determined by customer.

Wire size: minimum 24 AWG shielded cable

MAX+ AC Inverter-Duty Motors with Encoder

Performance Data

Performance Data (460 Volt) – MAX+													
Part Number	HP	NEMA Design	F.L. RPM	Min. RPM	F.L. AMPS @460V	N.L. AMPS @460V	F.L. Torque (lb·ft)	B.D. Torque (lb·ft)	Max. CHP RPM*	Max. Safe RPM	F.L. Effic.	F.L. Power Factor	Rotor Inertia (lb·ft ²)
Y280	1/2	A	1725	0	0.8	0.5	1.5	5.8	3510	5400	80.0	72.0	0.06
Y281	3/4	A	1725		1.2	0.8	2.3	10.2	3450		82.5	73.5	0.09
Y282	1	A	1725		1.5	1.0	3.0	15.0	3505		84.0	75.0	0.11
Y284	1-1/2	B	1755		2.4	1.6	4.5	29.0	3500		85.5	69.0	0.14
Y285	2	B	1750		3.0	1.7	6.0	28.5	3525		85.5	78.0	0.13
Y286A	3	B	1755		4.1	2.3	9.0	49.3	3510		87.5	78.5	0.42

* Maximum Constant HP RPM is for direct coupled loads.

Black Max® Vector Duty Motors

Motor Shipping Schedule *

Same or one day * Up to 7 days Up to 10 days

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Check our website for current shipping method constraints by part number.

Motor with Shaft-Mounted Encoder*

A Dynapar Model HS35 shaft-mounted encoder can be supplied pre-installed on the motors as shown in the price table below. The encoder requires a 5–26 VDC power source, provides a count of 1024 pulses per revolution (PPR) differential line driver output, and includes a 10-pin mating connector.

* If connecting the motor to a GS3 DURApulse AC drive, a [GS3-FB Feedback Card](#) is required for the drive.

Motor Accessories

Part Number	Price	Description *
A772		Encoder kit, replacement, for Black Max encoder motors. Dynapar HS35 encoder, 5–26 VDC input, Line Driver output, 1024 pulses per revolution, 5/8-in bore.

* Replacement/spare encoder kit for Black Max Yxxx-A772 motors; can also be field installed on Black Max Yxxx motors without encoders.

Motor with Pre-installed Shaft-Mounted Encoder

230/460V Motors					
Part Number	Price	HP	Part Number	Price	HP
Y592-A772		1/4	Y545-A772		7 1/2
Y534-A772		1/2	Y547-A772		10
Y535-A772		1	Y549-A772		15
Y536-A772		1			
Y538-A772		1 1/2			
Y551-A772		2			
Y541A-A772		3			
Y543A-A772		5			

Note: Please review the AutomationDirect Terms & Conditions for warranty and service on this product.

Warranty service can be arranged through numerous Marathon Electric service centers.

See list of service centers on our Web site at www.AutomationDirect.com.

Blue Max[®] 2000 Vector Duty Motor Accessories

Motor Accessories		
Part Number	Price	Description *
<u>A774</u>		Encoder kit, replacement, for Blue Max TEFC encoder motors. Dynapar HS35 encoder, 5–26 VDC input, Line Driver output, 1024 pulses per revolution, 1-in bore.
<u>A775</u>		Encoder kit, replacement, for Blue Max TEBC encoder motors. Dynapar HSD38 encoder, 5–26 VDC input, Line Driver output, 1024 pulses per revolution. 1-in bore.

* Replacement/spare encoder kit for Blue Max Y5xx-A774 and Y5xx-A775 motors; can also be field installed on Blue Max Y5xx motors; select appropriate encoder kit per motor fan type (TEFC or TEBC).

Encoder Connector Pinout

Note: A mating connector is supplied loose for the customer's wiring on encoder equipped TEFC motors and a mating connector pre-wired to a cable and pigtailed in a conduit box on encoder equipped TEBC motors.

Prewired cables TRDA-25CBL-VWD-xx (10, 20, & 30 ft) and replacement MS connectors

TRDA-25CON-VWD are available from AutomationDirect.

Dynapar HS35/HSD38 Encoder

PIN	TRDA-25CBL-VWD-xx Cable Wire Color for HS35 Encoders	(HSD38 colors may be different)
Sig. A	A BLACK	
Sig. B	B RED	
Sig. Z	C YELLOW	
Power +V	D PURPLE	
N/C	E n/c	
Com	F BLUE	
Case	G YELLOW/GREEN	
Sig. A	H BROWN	
Sig. B	I ORANGE	
Sig. Z	J GREEN	

Cable TRDA-25CBL-VWD-xx is available separately from AutomationDirect.

Connections to equipment determined by customer.