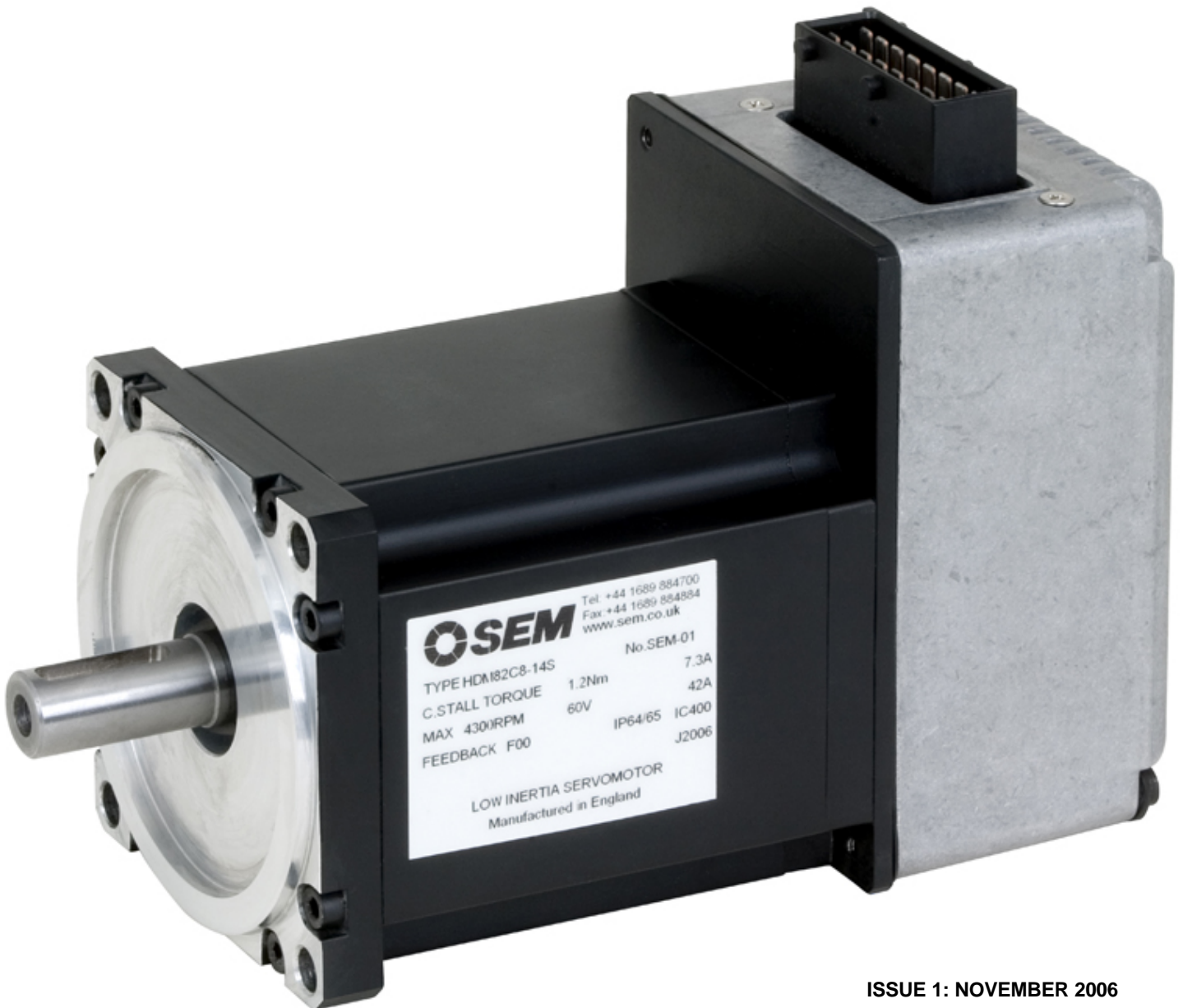


# SERVOMOTOR TYPE HDM82 WITH INTEGRATED SERVO DRIVE



ISSUE 1: NOVEMBER 2006

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# **1. General Features**

- Brushless servomotor and servo drive in one compact and cost effective unit
- Stall Torque from 0.59Nm to 2.3Nm
- Peak Torque from 2.0Nm to 8.4Nm
- Low inertia for high dynamic performance
- Integral Resolver or Encoder Feedback

## **DIS-2 48/10 Decentralised Intelligent Servo Drive 48VDC 10A**

- The DIS can be used as a torque, speed or position controller with synchronization.
- The DIS-2 48/10 is a fully digital AC servo controller for three-phase permanent magnet synchronous servo motors with a supply voltage of 24 to 48 V DC
- Compact design with one PCB
- Direct mounting on the motor
- Operation in industrial area without external EMC components
- Integrated CAN-Bus Interface with DSP402
- Easy coupling to PLC via I/O or fieldbus
- Programming and diagnostics are possible via an RS232 or CAN bus interface
- The Windows software “DIS-2 ServoCommander” can be used to quickly and easily parameterise the DIS
- In positioning operation, 64 position sets (4 groups of 16 position) can be stored as absolute or relative point-to-point positioning. It is also possible to use the “Interpolated position mode” via the integrated CAN bus
- Further technology or fieldbus modules can be plugged into an additional slot

## 2. Technical Data

Parameter:	Units:	Motor type – voltage gradient V/1000 rpm (+15% - 5%):				
		HDM82A8-7S	HDM82A8-11.5S	HDM82C8-14S	HDM82E8-19S	HDM82J8-30S
Nett Weight (no brake fitted)	kg	1.7	1.7	2.3	2.9	4.0
Total weight incl. DIS-2	kg	2.2	2.2	2.8	3.4	4.5
Cont Stall Torque	Nm	<b>0.59</b>	<b>0.72</b>	<b>1.2</b>	<b>1.5</b>	<b>2.3</b>
Cont stall current	A rms	<b>7.2</b>	<b>5.4</b>	<b>7.3</b>	<b>6.9</b>	<b>6.6</b>
Ktrms	Nm/A	0.081	1.135	0.17	0.22	0.35
Peak torque	Nm	2.0	2.2	3.9	5.3	8.4
Max. peak current	A	<b>42</b>	<b>29</b>	<b>42</b>	<b>42</b>	<b>42</b>
Max. speed	Rpm	5000	3000	2400	2000	1000
Inertia	kgcm <sup>2</sup>	<b>0.35</b>	<b>0.35</b>	<b>0.61</b>	<b>0.88</b>	<b>1.4</b>
Cogging torque	Nm	0.028	0.028	0.05	0.075	0.11
Resistance	Ohms	0.26	0.68	0.35	0.29	0.52
Inductance	mH	0.43	1.18	0.74	0.68	1.21
Thermal time constant	min	20	20	23	26	30
Thermal resistance	K/W	1.8	1.8	1.24	1.18	0.95

### MOTOR TYPE DEFINITION

For example:

**HDM82C8-14S**

**HDM** Low inertia compact brushless servomotor.

**82** 82mm square frame

**C** Motor length with A as shortest

**8** Number of motor poles

**-14** Voltage gradient (peak voltage per 1000 rpm between two phases)

**S** Sinusoidal waveform

### PERFORMANCE DATA

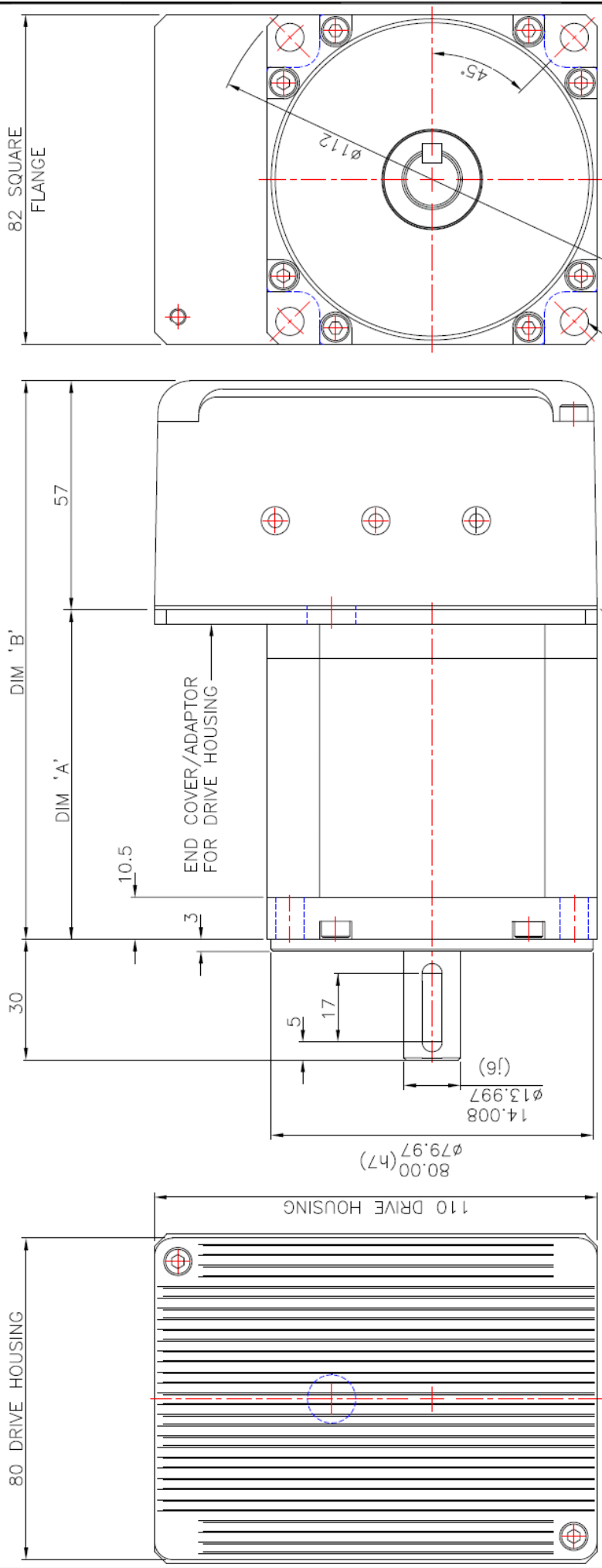
- Inertia values include fitted resolver.
- TENV (IC400) = Totally Enclosed Non Ventilated.
- Tolerance : ±10%  
(Except for voltage gradient (V/1000rpm) and torque constant (Nm/A) values which are to +15%/-5% tolerance.)

### STANDARD FEATURES

- Sinusoidal three phase back EMF waveform.
- Neodymium Iron Boron magnets
- Integral Resolver feedback
- Industry standard shaft and flange sizes
- IP65 enclosure protection. IP64 at shaft with seal fitted
- Shaft with enclosed keyway
- Temperature sensor mounted in motor winding
- Class F insulation

In accordance with our policy of continual product improvement, SEM reserves the right to amend the specification of these products without prior notification.

FIRST ANGLE PROJECTION



1mm THICK NITRILE RUBBER GASKET

4-FIXING HOLES  $\phi 7$  EQUI-SPACED ON 100 PCD

MOTOR SUPPLIED WITH DRIVE HOUSING ADAPTOR, GASKET & FLYING LEADS 150 LONG. DRIVE HOUSING TO BE FITTED BY CUSTOMER

FRAME	DIM 'A'		DIM 'B'	
	NO BRAKE	WITH BRAKE	NO BRAKE	WITH BRAKE
HDM82A	82	122	139	179
HDM82C	100	140	157	197
HDM82E	118	158	175	215
HDM82J	154	194	211	251

**TITLE :** OUTLINE HDM82 STD METRIC WITH REAR MOUNTED DRIVE

**DRAWING NO.** 664-7-06416

**SCALE** 1:1

**MATERIAL** AS STATED

**SPEC**

**FINISH**

**CODE**

**FORM**

**PATTERN No.**

**ISSUE No.** 1

**DR.** SIH

**DATE** 11JAN05

**SEM**  
LONDON ENGLAND

**A06416A1**

ALL DIMENSIONS IN MILLIMETRES  
TOLERANCES UNLESS ANG:  $\pm 0.5^\circ$   
OTHERWISE STATED DIM:  $\pm 0.25\text{mm}$

8000

7000

6000

5000

4000

3000

2000

1000

RPM

HDM82A8-7S  
DIS-2 ON 48V  
WITHOUT SHAFT SEAL

DOTTED LINE SHOWS CURVE  
FOR STANDARD MOTOR

CONTINUOUS  
RATING

INTERMITTENT  
RATING

*in. lbs*

5

10

15

20

25

0.5

1

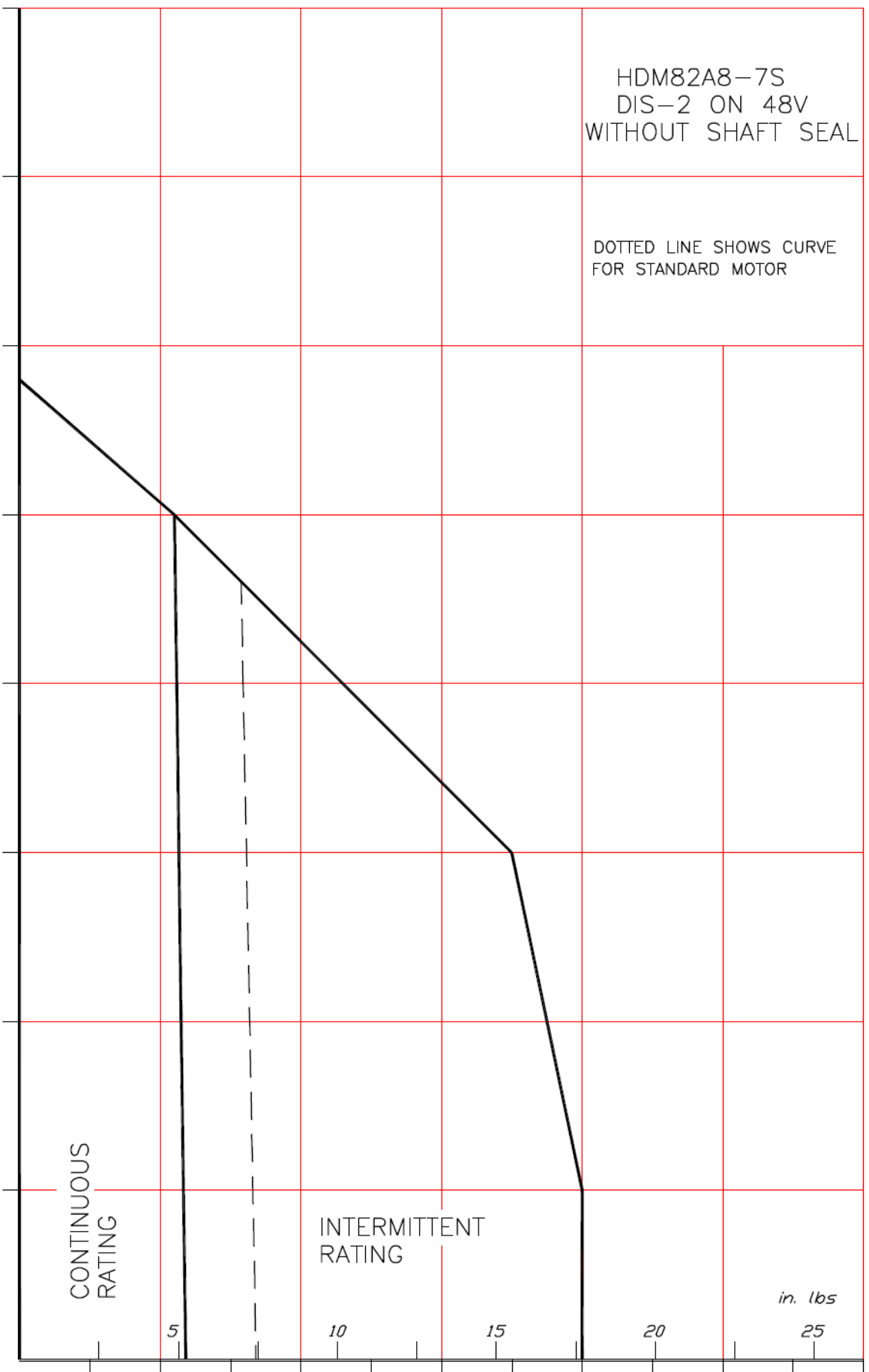
1.5

2

2.5

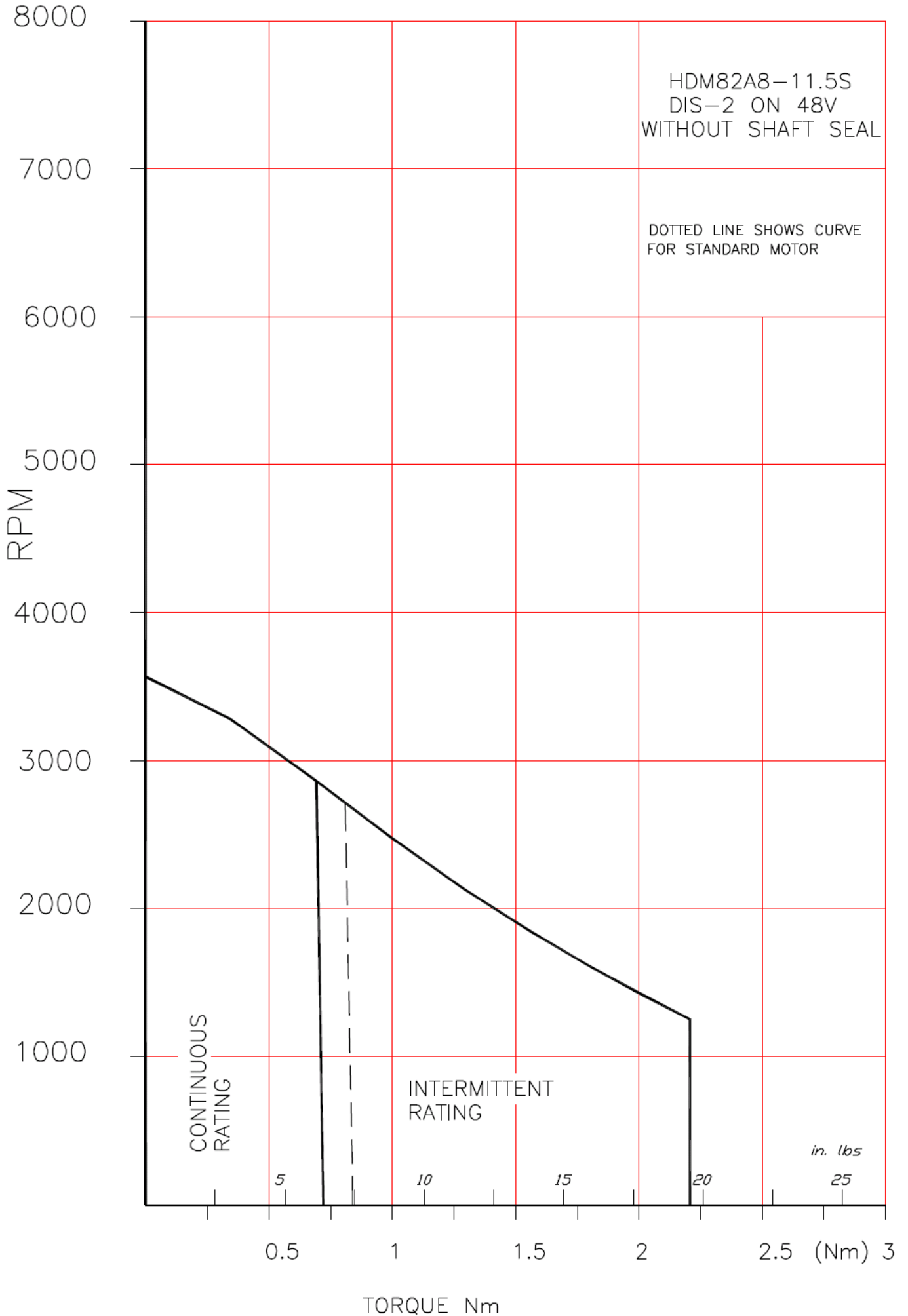
(Nm) 3

TORQUE Nm



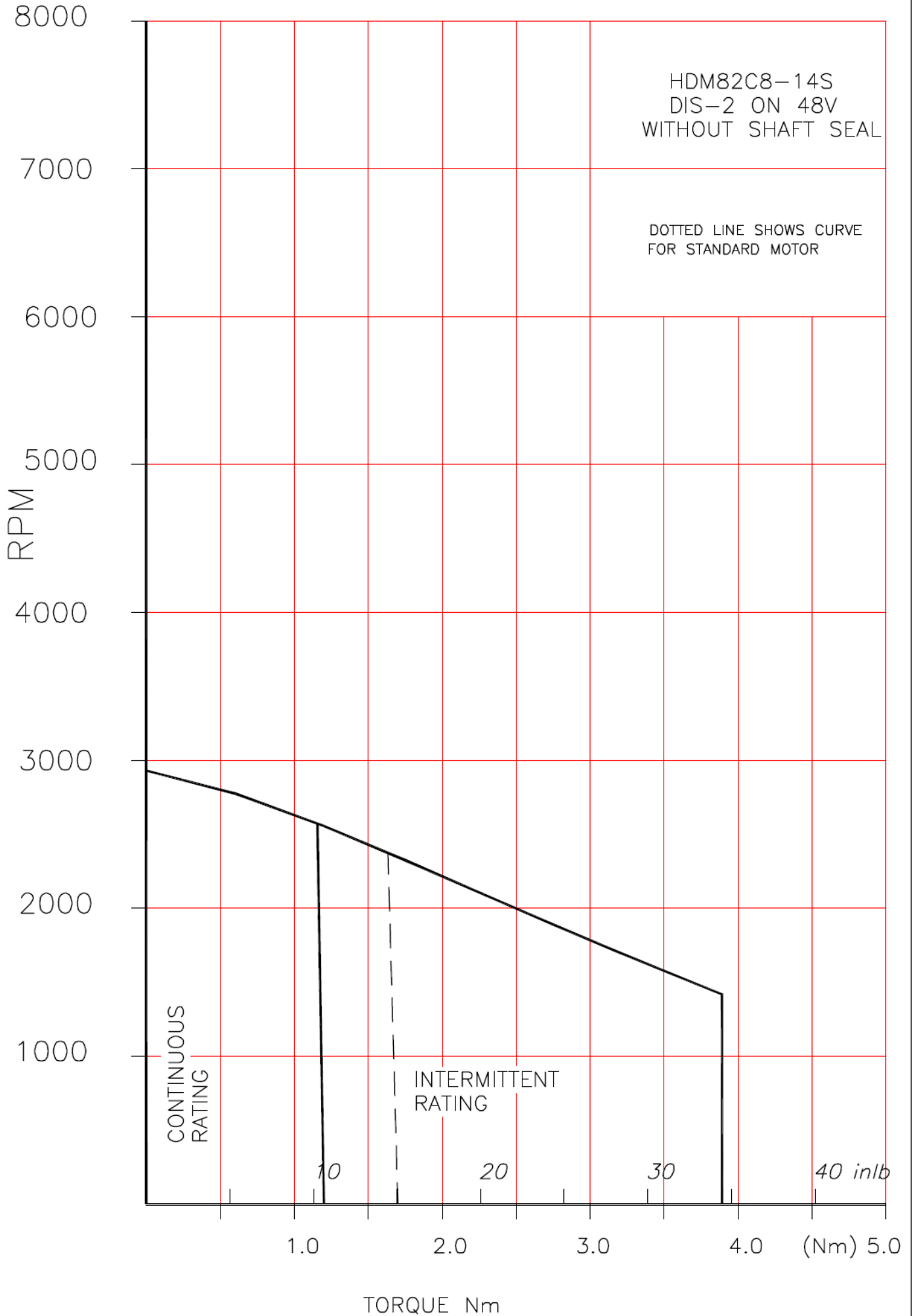
HDM82A8-11.5S  
DIS-2 ON 48V  
WITHOUT SHAFT SEAL

DOTTED LINE SHOWS CURVE  
FOR STANDARD MOTOR



HDM82C8-14S  
DIS-2 ON 48V  
WITHOUT SHAFT SEAL

DOTTED LINE SHOWS CURVE  
FOR STANDARD MOTOR





8000

7000

6000

5000

4000

3000

2000

1000

RPM

HDM82E8-19S  
DIS-2 ON 48V  
WITHOUT SHAFT SEAL

DOTTED LINE SHOWS CURVE  
FOR STANDARD MOTOR

CONTINUOUS  
RATING

INTERMITTENT  
RATING

20

40

60

80 in.lb

2

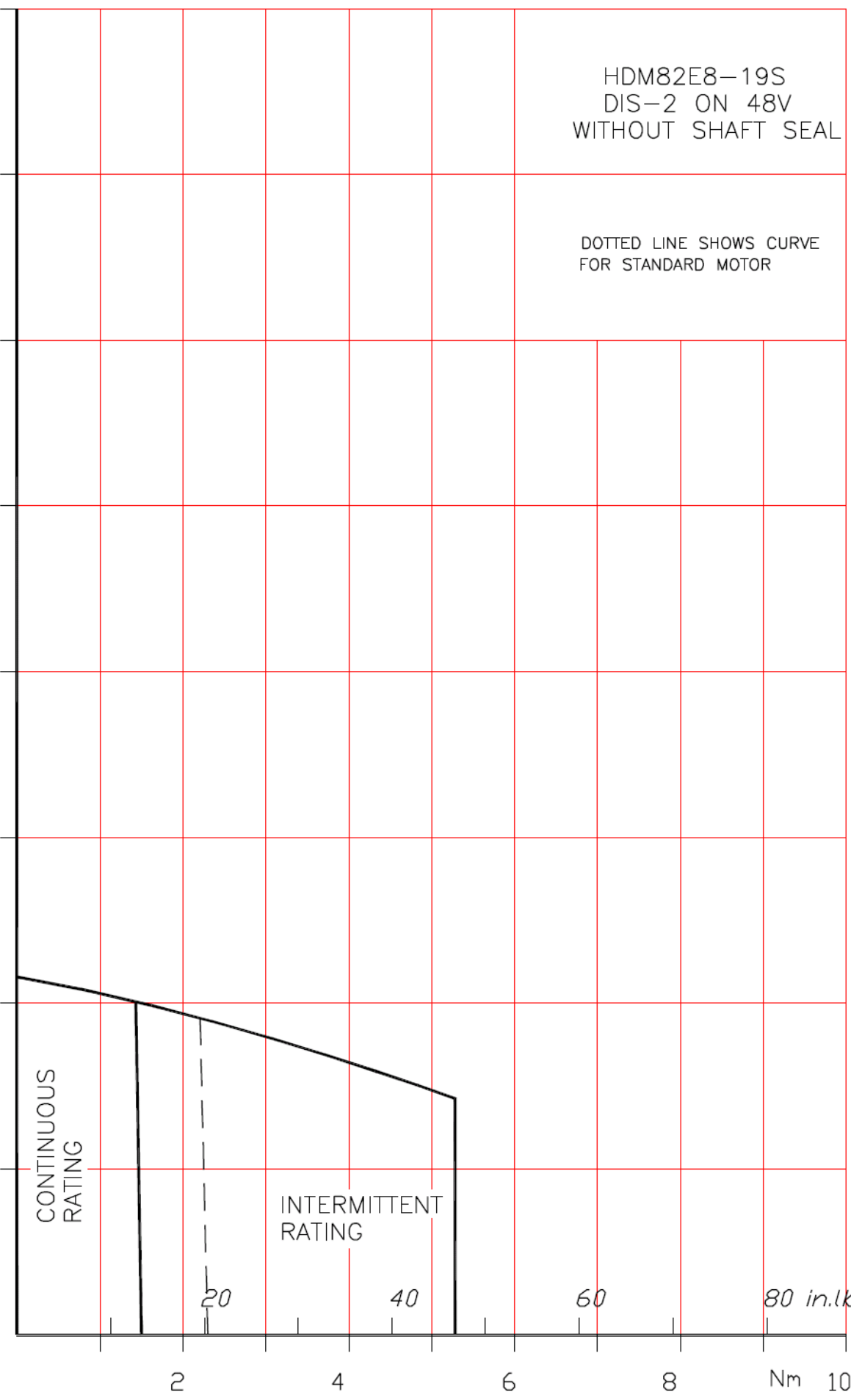
4

6

8

Nm 10

TORQUE Nm



8000

7000

6000

5000

4000

3000

2000

1000

RPM

HDM82J8-30S  
DIS-2 ON 48V  
WITHOUT SHAFT SEAL

DOTTED LINE SHOWS CURVE  
FOR STANDARD MOTOR

CONTINUOUS  
RATING

INTERMITTENT  
RATING

2.0

4.0

6.0

8.0

10.0

12.0

14.0

20

40

60

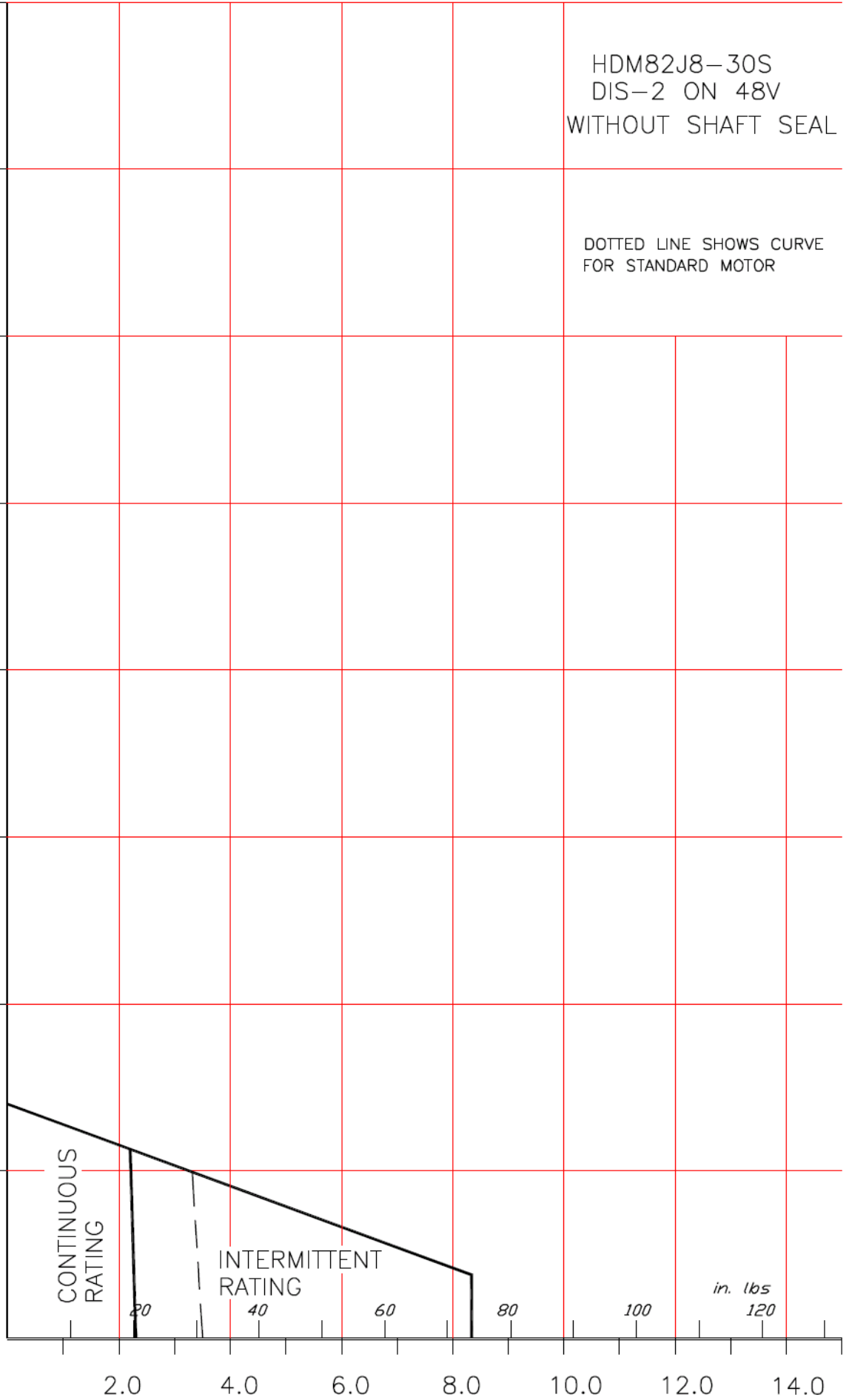
80

100

120

*in. lbs*

TORQUE Nm



## 5. Optional Motor Features

- 24V 4.5Nm holding brake (spring applied)
- Stegmann SRM50 absolute encoder, multi-turn
- Stegmann SRS50 absolute encoder, single-turn
- Renco R35i incremental encoder with commutation tracks. Following PPR's are available: 1000,1024, 2048, 4000, 4096, 8192 ppr

For further details regarding DIS-2 drive options, please refer to the drive brochure or our website: [www.controlinmotion.com](http://www.controlinmotion.com)