

Report calculated on Test Bench Results

Motor type: **ORBIT 15-37-B6 P20**

Date: 14.03.2024

Bearing type: regular

Controller: Common ESC

Measuring Parameter

Voltage: **20.0 [V]**

Throttle setting: 100%

Calculated Motor Constants

nl: 3,039.1 [RPM] lo: 5.3 [A] kv: 152.8 [RPM/V] kn: -3.37 [RPM/A] kT: 6.38 [Ncm/A]

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency ¹ [%]
19.9	40.0	2,922.1	796.0	677.2	221.3	85.07
19.9	45.0	2,905.3	895.5	770.3	253.2	86.02
19.9	50.0	2,888.4	995.0	862.3	285.1	86.67
19.9	55.0	2,871.6	1,094.5	953.3	317.0	87.10
19.9	60.0	2,854.7	1,194.0	1,042.7	348.8	87.33
19.9	65.0	2,837.9	1,293.5	1,131.4	380.7	87.47
19.9	70.0	2,821.1	1,393.0	1,218.9	412.6	87.50
19.9	75.0	2,804.2	1,492.5	1,305.3	444.5	87.46
19.9	80.0	2,787.4	1,592.0	1,390.3	476.3	87.33
19.9	85.0	2,770.5	1,691.5	1,474.4	508.2	87.17
19.9	90.0	2,753.7	1,791.0	1,557.5	540.1	86.96
19.9	95.0	2,736.8	1,890.5	1,639.3	572.0	86.71
19.9	100.0	2,720.0	1,990.0	1,719.9	603.8	86.42
19.9	105.0	2,703.2	2,089.5	1,799.5	635.7	86.12
19.9	110.0	2,686.3	2,189.0	1,878.0	667.6	85.79
19.9	115.0	2,669.5	2,288.5	1,955.4	699.5	85.45
19.8	120.0	2,652.6	2,376.0	2,031.4	731.3	85.50
19.8	125.0	2,635.8	2,475.0	2,106.6	763.2	85.11
19.8	130.0	2,618.9	2,574.0	2,180.6	795.1	84.72
19.8	135.0	2,602.1	2,673.0	2,253.5	827.0	84.31
19.8	140.0	2,585.2	2,772.0	2,325.0	858.8	83.87
19.8	145.0	2,568.4	2,871.0	2,395.6	890.7	83.44
19.8	150.0	2,551.6	2,970.0	2,465.2	922.6	83.00
19.8	155.0	2,534.7	3,069.0	2,533.6	954.5	82.55
19.8	160.0	2,517.9	3,168.0	2,600.6	986.3	82.09
19.8	165.0	2,501.0	3,267.0	2,666.7	1,018.2	81.63

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency ¹ [%]
19.8	170.0	2,484.2	3,366.0	2,731.8	1,050.1	81.16
19.8	175.0	2,467.3	3,465.0	2,795.6	1,082.0	80.68
19.8	180.0	2,450.5	3,564.0	2,858.2	1,113.8	80.20
19.8	185.0	2,433.6	3,663.0	2,919.8	1,145.7	79.71
19.8	190.0	2,416.8	3,762.0	2,980.3	1,177.6	79.22
19.8	195.0	2,400.0	3,861.0	3,039.8	1,209.5	78.73
19.7	200.0	2,383.1	3,940.0	3,097.8	1,241.3	78.62
19.7	205.0	2,366.3	4,038.5	3,155.0	1,273.2	78.12
19.7	210.0	2,349.4	4,137.0	3,210.9	1,305.1	77.61
19.7	215.0	2,332.6	4,235.5	3,265.9	1,337.0	77.11
19.7	220.0	2,315.7	4,334.0	3,319.3	1,368.8	76.59
19.7	225.0	2,298.9	4,432.5	3,372.0	1,400.7	76.08
19.7	230.0	2,282.0	4,531.0	3,423.5	1,432.6	75.56
19.7	235.0	2,265.2	4,629.5	3,474.0	1,464.5	75.04
19.7	240.0	2,248.4	4,728.0	3,523.1	1,496.3	74.51
19.7	245.0	2,231.5	4,826.5	3,571.1	1,528.2	73.99
19.7	250.0	2,214.7	4,925.0	3,618.2	1,560.1	73.47
19.7	255.0	2,197.8	5,023.5	3,664.0	1,592.0	72.94
19.7	260.0	2,181.0	5,122.0	3,708.7	1,623.8	72.41
19.7	265.0	2,164.1	5,220.5	3,752.2	1,655.7	71.87
19.7	270.0	2,147.3	5,319.0	3,794.8	1,687.6	71.34
19.7	275.0	2,130.5	5,417.5	3,836.3	1,719.5	70.81
19.6	280.0	2,113.6	5,488.0	3,876.3	1,751.3	70.63
19.6	285.0	2,096.8	5,586.0	3,915.5	1,783.2	70.09
19.6	290.0	2,079.9	5,684.0	3,953.4	1,815.1	69.55
19.6	295.0	2,063.1	5,782.0	3,990.4	1,847.0	69.01
19.6	300.0	2,046.2	5,880.0	4,025.8	1,878.8	68.47
19.6	305.0	2,029.4	5,978.0	4,060.6	1,910.7	67.93
19.6	310.0	2,012.5	6,076.0	4,094.0	1,942.6	67.38
19.6	315.0	1,995.7	6,174.0	4,126.5	1,974.5	66.84
19.6	320.0	1,978.9	6,272.0	4,157.7	2,006.3	66.29

nl = rpm with no load

lo = current with no load

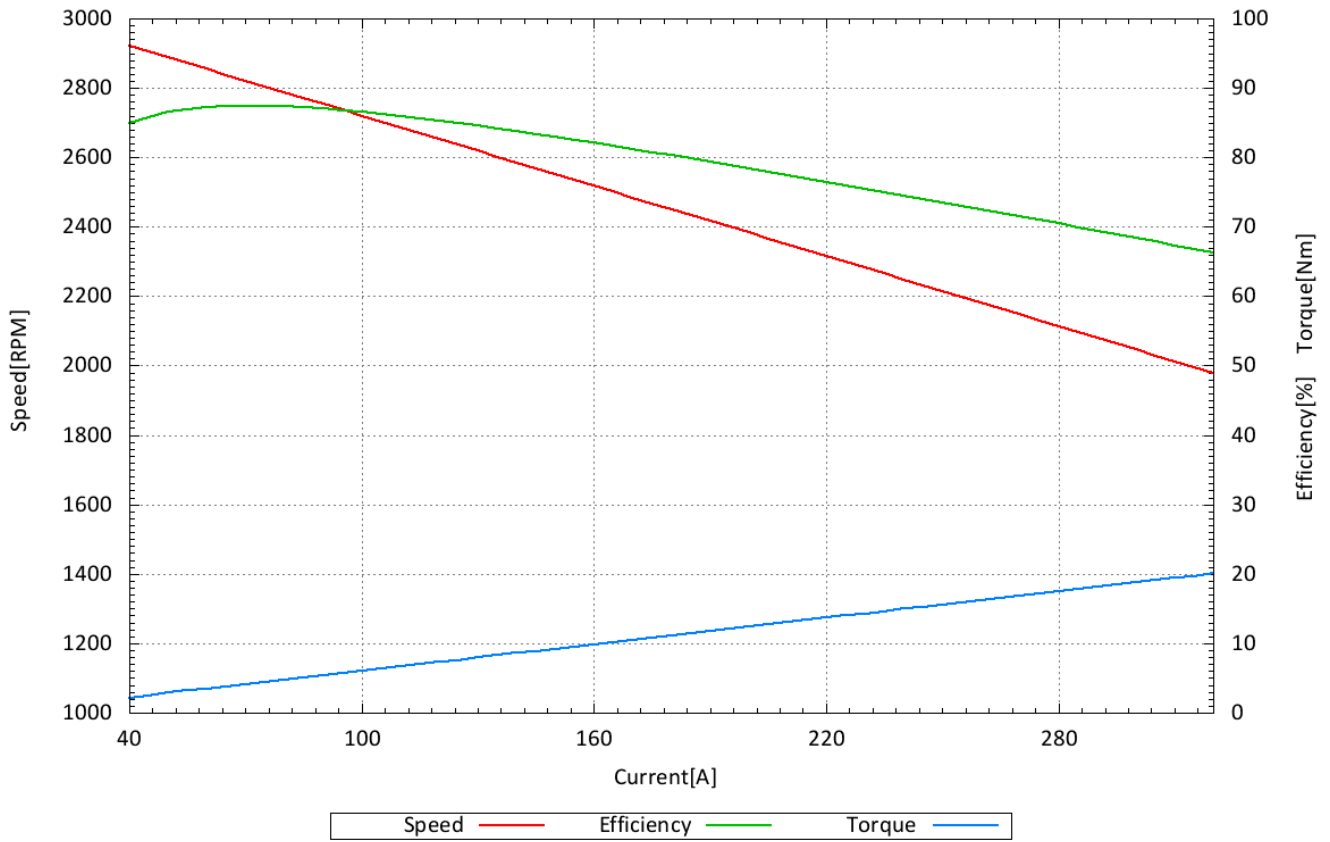
kV = specific rpm

kn = rpm drop per Amp

kT = torque constant

¹ incl. Controller

HP940_37_B6_P20_20V_14032024



Report calculated on Test Bench Results

Motor type: **ORBIT 15-37-B6 P20**

Date: 14.03.2024

Bearing type: regular

Controller: Common ESC

Measuring Parameter

Voltage: **25.0 [V]**

Throttle setting: 100%

Calculated Motor Constants

nl: 3,807.7 [RPM] lo: 5.7 [A] kv: 153.2 [RPM/V] kn: -3.90 [RPM/A] kT: 6.46 [Ncm/A]

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency ¹ [%]
24.9	40.0	3,673.9	996.0	852.6	221.6	85.60
24.9	45.0	3,654.4	1,120.5	971.6	253.9	86.72
24.9	50.0	3,634.9	1,245.0	1,089.4	286.2	87.50
24.9	55.0	3,615.4	1,369.5	1,205.9	318.5	88.05
24.9	60.0	3,595.9	1,494.0	1,321.0	350.8	88.42
24.9	65.0	3,576.4	1,618.5	1,434.8	383.1	88.65
24.9	70.0	3,556.8	1,743.0	1,547.2	415.4	88.77
24.9	75.0	3,537.3	1,867.5	1,658.4	447.7	88.80
24.9	80.0	3,517.8	1,992.0	1,768.2	480.0	88.77
24.8	85.0	3,498.3	2,108.0	1,876.8	512.3	89.03
24.8	90.0	3,478.8	2,232.0	1,984.3	544.7	88.90
24.8	95.0	3,459.3	2,356.0	2,090.2	577.0	88.72
24.8	100.0	3,439.8	2,480.0	2,194.8	609.3	88.50
24.8	105.0	3,420.3	2,604.0	2,298.0	641.6	88.25
24.8	110.0	3,400.8	2,728.0	2,400.0	673.9	87.98
24.8	115.0	3,381.3	2,852.0	2,500.6	706.2	87.68
24.8	120.0	3,361.8	2,976.0	2,599.9	738.5	87.36
24.8	125.0	3,342.3	3,100.0	2,697.8	770.8	87.03
24.8	130.0	3,322.8	3,224.0	2,794.5	803.1	86.68
24.8	135.0	3,303.3	3,348.0	2,889.8	835.4	86.31
24.7	140.0	3,283.8	3,458.0	2,983.8	867.7	86.29
24.7	145.0	3,264.3	3,581.5	3,076.5	900.0	85.90
24.7	150.0	3,244.8	3,705.0	3,167.9	932.3	85.50
24.7	155.0	3,225.3	3,828.5	3,258.3	964.7	85.11
24.7	160.0	3,205.8	3,952.0	3,347.0	997.0	84.69
24.7	165.0	3,186.3	4,075.5	3,434.5	1,029.3	84.27

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency ¹ [%]
24.7	170.0	3,166.7	4,199.0	3,520.4	1,061.6	83.84
24.7	175.0	3,147.2	4,322.5	3,605.2	1,093.9	83.41
24.7	180.0	3,127.7	4,446.0	3,688.7	1,126.2	82.97
24.7	185.0	3,108.2	4,569.5	3,770.8	1,158.5	82.52
24.7	190.0	3,088.7	4,693.0	3,851.6	1,190.8	82.07
24.6	195.0	3,069.2	4,797.0	3,931.1	1,223.1	81.95
24.6	200.0	3,049.7	4,920.0	4,009.3	1,255.4	81.49
24.6	205.0	3,030.2	5,043.0	4,086.2	1,287.7	81.03
24.6	210.0	3,010.7	5,166.0	4,161.7	1,320.0	80.56
24.6	215.0	2,991.2	5,289.0	4,235.9	1,352.3	80.09
24.6	220.0	2,971.7	5,412.0	4,309.1	1,384.7	79.62
24.6	225.0	2,952.2	5,535.0	4,380.7	1,417.0	79.15
24.6	230.0	2,932.7	5,658.0	4,451.0	1,449.3	78.67
24.6	235.0	2,913.2	5,781.0	4,519.9	1,481.6	78.19
24.6	240.0	2,893.7	5,904.0	4,587.5	1,513.9	77.70
24.6	245.0	2,874.2	6,027.0	4,653.8	1,546.2	77.22
24.5	250.0	2,854.7	6,125.0	4,718.8	1,578.5	77.04
24.5	255.0	2,835.2	6,247.5	4,782.5	1,610.8	76.55
24.5	260.0	2,815.7	6,370.0	4,844.8	1,643.1	76.06
24.5	265.0	2,796.2	6,492.5	4,905.9	1,675.4	75.56
24.5	270.0	2,776.6	6,615.0	4,965.4	1,707.7	75.06
24.5	275.0	2,757.1	6,737.5	5,023.8	1,740.0	74.56
24.5	280.0	2,737.6	6,860.0	5,080.8	1,772.3	74.06
24.5	285.0	2,718.1	6,982.5	5,136.6	1,804.6	73.56
24.5	290.0	2,698.6	7,105.0	5,191.3	1,837.0	73.07
24.5	295.0	2,679.1	7,227.5	5,244.4	1,869.3	72.56
24.5	300.0	2,659.6	7,350.0	5,296.2	1,901.6	72.06
24.4	305.0	2,640.1	7,442.0	5,346.7	1,933.9	71.84
24.4	310.0	2,620.6	7,564.0	5,395.8	1,966.2	71.34
24.4	315.0	2,601.1	7,686.0	5,443.6	1,998.5	70.83
24.4	320.0	2,581.6	7,808.0	5,490.2	2,030.8	70.31

nl = rpm with no load

lo = current with no load

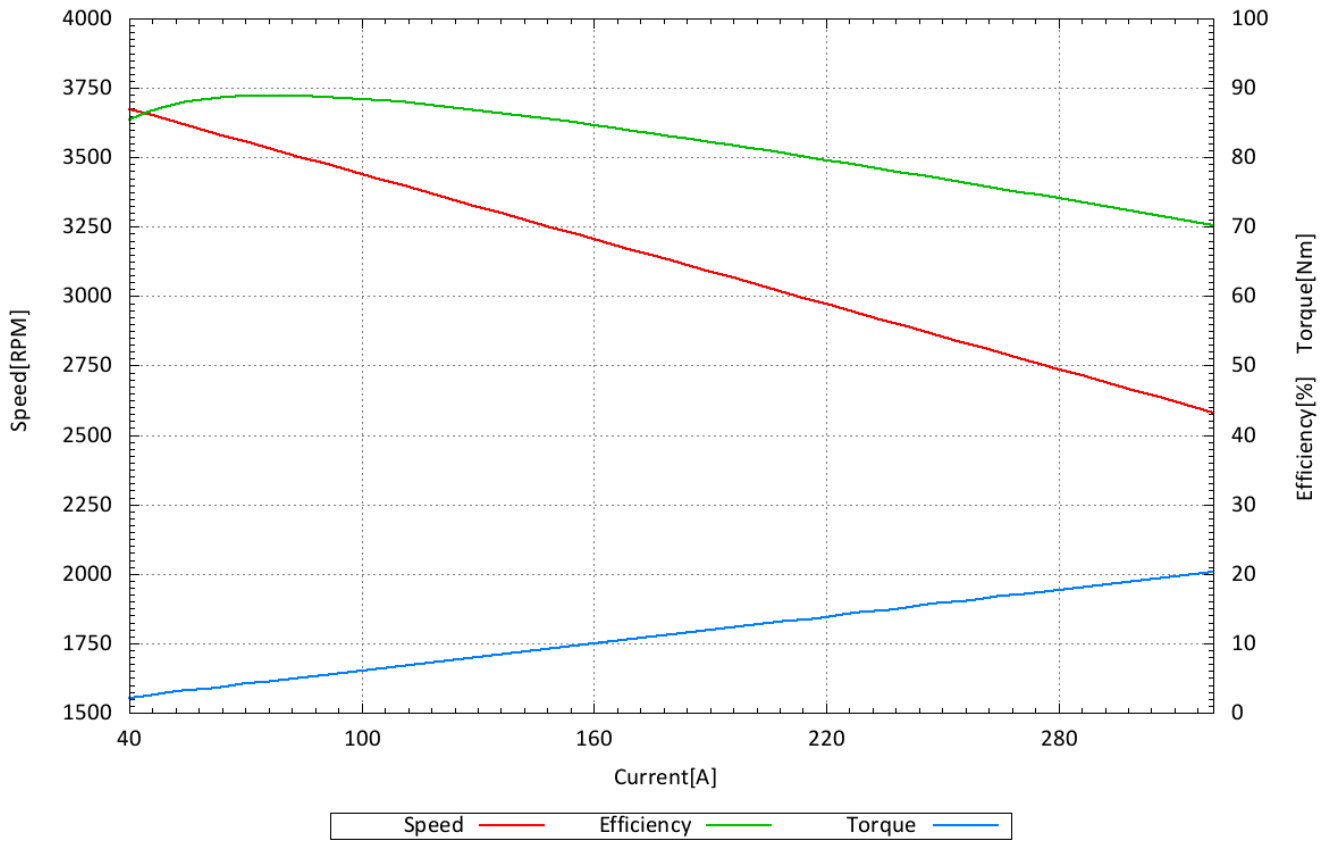
kV = specific rpm

kn = rpm drop per Amp

kT = torque constant

¹ incl. Controller

HP940_37_B6_P20_25V_14032024



Report calculated on Test Bench Results

Motor type: **ORBIT 15-37-B6 P20**

Date: 14.03.2024

Bearing type: regular

Controller: Common ESC

Measuring Parameter

Voltage: **30.0 [V]**

Throttle setting: 100%

Calculated Motor Constants

nl: 4,538.9 [RPM] lo: 7.9 [A] kv: 152.5 [RPM/V] kn: -4.43 [RPM/A] kT: 6.62 [Ncm/A]

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency ¹ [%]
29.9	40.0	4,396.7	1,196.0	979.3	212.7	81.88
29.9	45.0	4,374.5	1,345.5	1,126.0	245.8	83.69
29.9	50.0	4,352.4	1,495.0	1,271.2	278.9	85.03
29.9	55.0	4,330.3	1,644.5	1,414.8	312.0	86.03
29.9	60.0	4,308.1	1,794.0	1,556.9	345.1	86.78
29.9	65.0	4,286.0	1,943.5	1,697.5	378.2	87.34
29.9	70.0	4,263.9	2,093.0	1,836.5	411.3	87.75
29.9	75.0	4,241.8	2,242.5	1,974.0	444.4	88.03
29.9	80.0	4,219.6	2,392.0	2,109.5	477.4	88.19
29.9	85.0	4,197.5	2,541.5	2,244.0	510.5	88.29
29.9	90.0	4,175.4	2,691.0	2,376.9	543.6	88.33
29.8	95.0	4,153.3	2,831.0	2,508.3	576.7	88.60
29.8	100.0	4,131.1	2,980.0	2,638.0	609.8	88.52
29.8	105.0	4,109.0	3,129.0	2,766.4	642.9	88.41
29.8	110.0	4,086.9	3,278.0	2,893.1	676.0	88.26
29.8	115.0	4,064.7	3,427.0	3,018.3	709.1	88.07
29.8	120.0	4,042.6	3,576.0	3,142.0	742.2	87.86
29.8	125.0	4,020.5	3,725.0	3,264.2	775.3	87.63
29.8	130.0	3,998.4	3,874.0	3,384.9	808.4	87.37
29.8	135.0	3,976.2	4,023.0	3,503.9	841.5	87.10
29.8	140.0	3,954.1	4,172.0	3,621.5	874.6	86.80
29.8	145.0	3,932.0	4,321.0	3,737.1	907.6	86.49
29.8	150.0	3,909.8	4,470.0	3,851.5	940.7	86.16
29.7	155.0	3,887.7	4,603.5	3,964.5	973.8	86.12
29.7	160.0	3,865.6	4,752.0	4,076.0	1,006.9	85.77
29.7	165.0	3,843.5	4,900.5	4,185.9	1,040.0	85.42

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency ¹ [%]
29.7	170.0	3,821.3	5,049.0	4,294.2	1,073.1	85.05
29.7	175.0	3,799.2	5,197.5	4,401.0	1,106.2	84.68
29.7	180.0	3,777.1	5,346.0	4,506.4	1,139.3	84.29
29.7	185.0	3,755.0	5,494.5	4,610.1	1,172.4	83.90
29.7	190.0	3,732.8	5,643.0	4,712.3	1,205.5	83.51
29.7	195.0	3,710.7	5,791.5	4,813.0	1,238.6	83.10
29.7	200.0	3,688.6	5,940.0	4,912.2	1,271.7	82.70
29.7	205.0	3,666.4	6,088.5	5,009.7	1,304.8	82.28
29.7	210.0	3,644.3	6,237.0	5,105.4	1,337.8	81.86
29.6	215.0	3,622.2	6,364.0	5,200.0	1,370.9	81.71
29.6	220.0	3,600.1	6,512.0	5,293.1	1,404.0	81.28
29.6	225.0	3,577.9	6,660.0	5,384.5	1,437.1	80.85
29.6	230.0	3,555.8	6,808.0	5,474.5	1,470.2	80.41
29.6	235.0	3,533.7	6,956.0	5,562.9	1,503.3	79.97
29.6	240.0	3,511.6	7,104.0	5,649.9	1,536.4	79.53
29.6	245.0	3,489.4	7,252.0	5,735.1	1,569.5	79.08
29.6	250.0	3,467.3	7,400.0	5,819.0	1,602.6	78.63
29.6	255.0	3,445.2	7,548.0	5,901.3	1,635.7	78.18
29.6	260.0	3,423.0	7,696.0	5,981.9	1,668.8	77.73
29.6	265.0	3,400.9	7,844.0	6,061.2	1,701.9	77.27
29.6	270.0	3,378.8	7,992.0	6,138.9	1,735.0	76.81
29.5	275.0	3,356.7	8,112.5	6,214.7	1,768.0	76.61
29.5	280.0	3,334.5	8,260.0	6,289.2	1,801.1	76.14
29.5	285.0	3,312.4	8,407.5	6,362.4	1,834.2	75.67
29.5	290.0	3,290.3	8,555.0	6,434.0	1,867.3	75.21
29.5	295.0	3,268.1	8,702.5	6,503.8	1,900.4	74.74
29.5	300.0	3,246.0	8,850.0	6,572.4	1,933.5	74.26
29.5	305.0	3,223.9	8,997.5	6,639.4	1,966.6	73.79
29.5	310.0	3,201.8	9,145.0	6,704.8	1,999.7	73.32
29.5	315.0	3,179.6	9,292.5	6,768.6	2,032.8	72.84
29.5	320.0	3,157.5	9,440.0	6,831.0	2,065.9	72.36

nl = rpm with no load

lo = current with no load

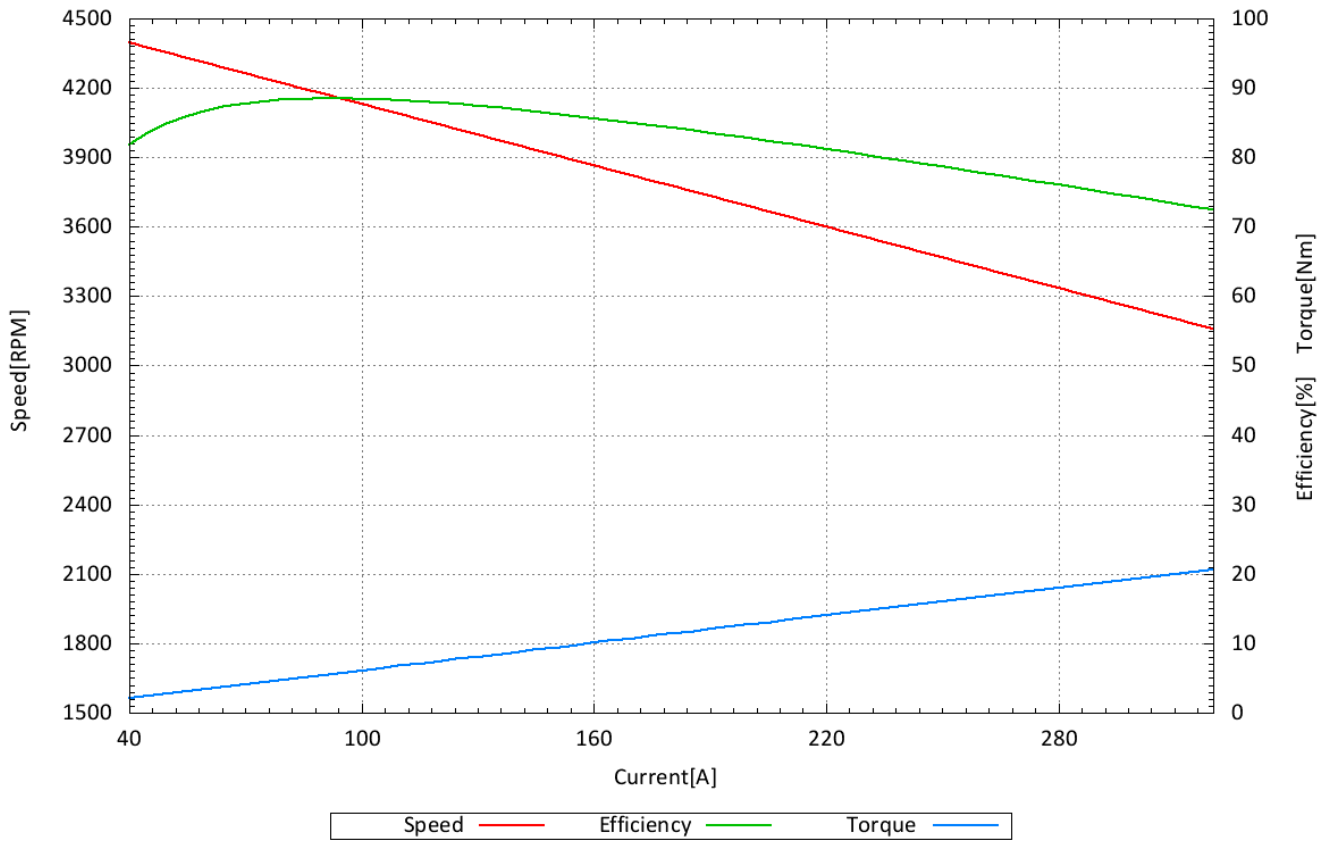
kV = specific rpm

kn = rpm drop per Amp

kT = torque constant

¹ incl. Controller

HP940_37_B6_P20_30V_14032024



Report calculated on Test Bench Results

Motor type: **ORBIT 15-37-B6 P20**

Date: 14.03.2024

Bearing type: regular

Controller: Common ESC

Measuring Parameter

Voltage: **35.0 [V]**

Throttle setting: 100%

Calculated Motor Constants

nl: 5,285.3 [RPM] lo: 8.8 [A] kv: 152.2 [RPM/V] kn: -4.93 [RPM/A] kT: 6.74 [Ncm/A]

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency ¹ [%]
35.0	40.0	5,131.5	1,400.0	1,130.1	210.3	80.72
35.0	45.0	5,106.9	1,575.0	1,304.9	244.0	82.85
34.9	50.0	5,082.3	1,745.0	1,478.0	277.7	84.70
34.9	55.0	5,057.6	1,919.5	1,648.7	311.3	85.89
34.9	60.0	5,033.0	2,094.0	1,818.3	345.0	86.84
34.9	65.0	5,008.4	2,268.5	1,986.2	378.7	87.56
34.9	70.0	4,983.7	2,443.0	2,152.3	412.4	88.10
34.9	75.0	4,959.1	2,617.5	2,316.7	446.1	88.51
34.9	80.0	4,934.5	2,792.0	2,479.3	479.8	88.80
34.9	85.0	4,909.8	2,966.5	2,640.2	513.5	89.00
34.9	90.0	4,885.2	3,141.0	2,799.3	547.2	89.12
34.9	95.0	4,860.6	3,315.5	2,956.8	580.9	89.18
34.9	100.0	4,835.9	3,490.0	3,111.9	614.5	89.17
34.9	105.0	4,811.3	3,664.5	3,265.9	648.2	89.12
34.9	110.0	4,786.7	3,839.0	3,418.1	681.9	89.04
34.9	115.0	4,762.1	4,013.5	3,568.6	715.6	88.91
34.9	120.0	4,737.4	4,188.0	3,717.3	749.3	88.76
34.9	125.0	4,712.8	4,362.5	3,864.3	783.0	88.58
34.9	130.0	4,688.2	4,537.0	4,009.6	816.7	88.37
34.9	135.0	4,663.5	4,711.5	4,153.0	850.4	88.15
34.8	140.0	4,638.9	4,872.0	4,294.8	884.1	88.15
34.8	145.0	4,614.3	5,046.0	4,434.9	917.8	87.89
34.8	150.0	4,589.6	5,220.0	4,572.6	951.4	87.60
34.8	155.0	4,565.0	5,394.0	4,709.2	985.1	87.30
34.8	160.0	4,540.4	5,568.0	4,844.1	1,018.8	87.00
34.8	165.0	4,515.7	5,742.0	4,977.1	1,052.5	86.68

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency ¹ [%]
34.8	170.0	4,491.1	5,916.0	5,108.5	1,086.2	86.35
34.8	175.0	4,466.5	6,090.0	5,238.1	1,119.9	86.01
34.8	180.0	4,441.8	6,264.0	5,365.9	1,153.6	85.66
34.8	185.0	4,417.2	6,438.0	5,492.1	1,187.3	85.31
34.8	190.0	4,392.6	6,612.0	5,616.5	1,221.0	84.94
34.8	195.0	4,367.9	6,786.0	5,738.6	1,254.6	84.57
34.8	200.0	4,343.3	6,960.0	5,859.6	1,288.3	84.19
34.8	205.0	4,318.7	7,134.0	5,978.8	1,322.0	83.81
34.8	210.0	4,294.0	7,308.0	6,096.1	1,355.7	83.42
34.8	215.0	4,269.4	7,482.0	6,211.9	1,389.4	83.02
34.8	220.0	4,244.8	7,656.0	6,325.9	1,423.1	82.63
34.8	225.0	4,220.1	7,830.0	6,438.0	1,456.8	82.22
34.7	230.0	4,195.5	7,981.0	6,548.5	1,490.5	82.05
34.7	235.0	4,170.9	8,154.5	6,657.3	1,524.2	81.64
34.7	240.0	4,146.2	8,328.0	6,763.8	1,557.8	81.22
34.7	245.0	4,121.6	8,501.5	6,869.1	1,591.5	80.80
34.7	250.0	4,097.0	8,675.0	6,972.7	1,625.2	80.38
34.7	255.0	4,072.3	8,848.5	7,074.4	1,658.9	79.95
34.7	260.0	4,047.7	9,022.0	7,174.5	1,692.6	79.52
34.7	265.0	4,023.1	9,195.5	7,272.9	1,726.3	79.09
34.7	270.0	3,998.4	9,369.0	7,369.3	1,760.0	78.66
34.7	275.0	3,973.8	9,542.5	7,464.2	1,793.7	78.22
34.7	280.0	3,949.2	9,716.0	7,557.4	1,827.4	77.78
34.7	285.0	3,924.5	9,889.5	7,648.6	1,861.1	77.34
34.7	290.0	3,899.9	10,063.0	7,737.9	1,894.7	76.89
34.7	295.0	3,875.3	10,236.5	7,825.8	1,928.4	76.45
34.7	300.0	3,850.6	10,410.0	7,911.9	1,962.1	76.00
34.7	305.0	3,826.0	10,583.5	7,996.3	1,995.8	75.55
34.7	310.0	3,801.4	10,757.0	8,079.1	2,029.5	75.11
34.7	315.0	3,776.7	10,930.5	8,159.9	2,063.2	74.65
34.6	320.0	3,752.1	11,072.0	8,239.1	2,096.9	74.41

nl = rpm with no load

lo = current with no load

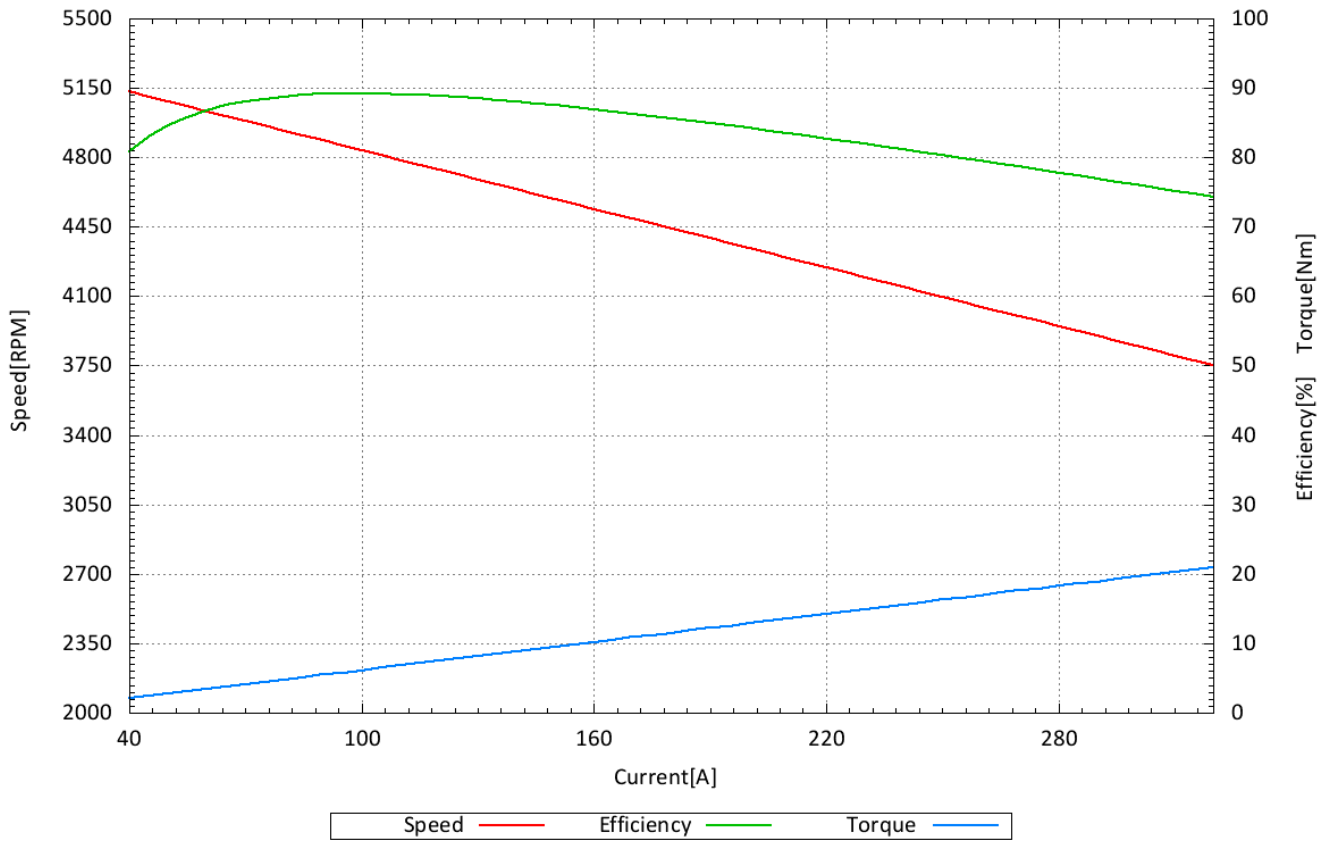
kV = specific rpm

kn = rpm drop per Amp

kT = torque constant

¹ incl. Controller

HP940_37_B6_P20_35V_14032024



Report calculated on Test Bench Results

Motor type: **ORBIT 15-37-B6 P20**

Date: 14.03.2024

Bearing type: regular

Controller: Common ESC

Measuring Parameter

Voltage: **40.0 [V]**

Throttle setting: 100%

Calculated Motor Constants

nl: 6,041.4 [RPM] lo: 9.2 [A] kv: 152.2 [RPM/V] kn: -5.27 [RPM/A] kT: 6.74 [Ncm/A]

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency ¹ [%]
40.0	40.0	5,879.2	1,600.0	1,278.1	207.6	79.88
40.0	45.0	5,852.8	1,800.0	1,478.3	241.2	82.13
39.9	50.0	5,826.5	1,995.0	1,677.3	274.9	84.08
39.9	55.0	5,800.2	2,194.5	1,874.4	308.6	85.41
39.9	60.0	5,773.8	2,394.0	2,069.7	342.3	86.45
39.9	65.0	5,747.5	2,593.5	2,263.1	376.0	87.26
39.9	70.0	5,721.2	2,793.0	2,454.6	409.7	87.88
39.9	75.0	5,694.8	2,992.5	2,644.3	443.4	88.36
39.9	80.0	5,668.5	3,192.0	2,832.1	477.1	88.72
39.9	85.0	5,642.2	3,391.5	3,018.1	510.8	88.99
39.9	90.0	5,615.8	3,591.0	3,201.5	544.4	89.15
39.9	95.0	5,589.5	3,790.5	3,383.8	578.1	89.27
39.9	100.0	5,563.2	3,990.0	3,564.2	611.8	89.33
39.9	105.0	5,536.8	4,189.5	3,742.7	645.5	89.33
39.9	110.0	5,510.5	4,389.0	3,919.4	679.2	89.30
39.9	115.0	5,484.2	4,588.5	4,094.2	712.9	89.23
39.9	120.0	5,457.8	4,788.0	4,267.1	746.6	89.12
39.9	125.0	5,431.5	4,987.5	4,438.2	780.3	88.99
39.9	130.0	5,405.2	5,187.0	4,607.5	814.0	88.83
39.9	135.0	5,378.8	5,386.5	4,774.2	847.6	88.63
39.8	140.0	5,352.5	5,572.0	4,939.8	881.3	88.65
39.8	145.0	5,326.2	5,771.0	5,103.5	915.0	88.43
39.8	150.0	5,299.8	5,970.0	5,265.2	948.7	88.19
39.8	155.0	5,273.5	6,169.0	5,425.2	982.4	87.94
39.8	160.0	5,247.2	6,368.0	5,583.3	1,016.1	87.68
39.8	165.0	5,220.8	6,567.0	5,739.5	1,049.8	87.40

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency ¹ [%]
39.8	170.0	5,194.5	6,766.0	5,893.9	1,083.5	87.11
39.8	175.0	5,168.2	6,965.0	6,046.4	1,117.2	86.81
39.8	180.0	5,141.8	7,164.0	6,197.0	1,150.9	86.50
39.8	185.0	5,115.5	7,363.0	6,345.3	1,184.5	86.18
39.8	190.0	5,089.2	7,562.0	6,492.3	1,218.2	85.85
39.8	195.0	5,062.8	7,761.0	6,637.3	1,251.9	85.52
39.8	200.0	5,036.5	7,960.0	6,780.5	1,285.6	85.18
39.8	205.0	5,010.2	8,159.0	6,921.9	1,319.3	84.84
39.8	210.0	4,983.8	8,358.0	7,061.3	1,353.0	84.49
39.8	215.0	4,957.5	8,557.0	7,199.0	1,386.7	84.13
39.8	220.0	4,931.2	8,756.0	7,334.9	1,420.4	83.77
39.8	225.0	4,904.8	8,955.0	7,468.7	1,454.1	83.40
39.7	230.0	4,878.5	9,131.0	7,600.3	1,487.7	83.24
39.7	235.0	4,852.2	9,329.5	7,730.6	1,521.4	82.86
39.7	240.0	4,825.8	9,528.0	7,858.8	1,555.1	82.48
39.7	245.0	4,799.5	9,726.5	7,985.3	1,588.8	82.10
39.7	250.0	4,773.2	9,925.0	8,110.0	1,622.5	81.71
39.7	255.0	4,746.8	10,123.5	8,232.7	1,656.2	81.32
39.7	260.0	4,720.5	10,322.0	8,353.7	1,689.9	80.93
39.7	265.0	4,694.2	10,520.5	8,472.8	1,723.6	80.54
39.7	270.0	4,667.8	10,719.0	8,589.9	1,757.3	80.14
39.7	275.0	4,641.5	10,917.5	8,704.8	1,790.9	79.73
39.7	280.0	4,615.2	11,116.0	8,818.3	1,824.6	79.33
39.7	285.0	4,588.8	11,314.5	8,929.8	1,858.3	78.92
39.7	290.0	4,562.5	11,513.0	9,039.7	1,892.0	78.52
39.7	295.0	4,536.2	11,711.5	9,147.6	1,925.7	78.11
39.7	300.0	4,509.8	11,910.0	9,253.6	1,959.4	77.70
39.7	305.0	4,483.5	12,108.5	9,357.8	1,993.1	77.28
39.7	310.0	4,457.2	12,307.0	9,460.2	2,026.8	76.87
39.7	315.0	4,430.8	12,505.5	9,560.6	2,060.5	76.45
39.6	320.0	4,404.5	12,672.0	9,658.8	2,094.1	76.22

nl = rpm with no load

lo = current with no load

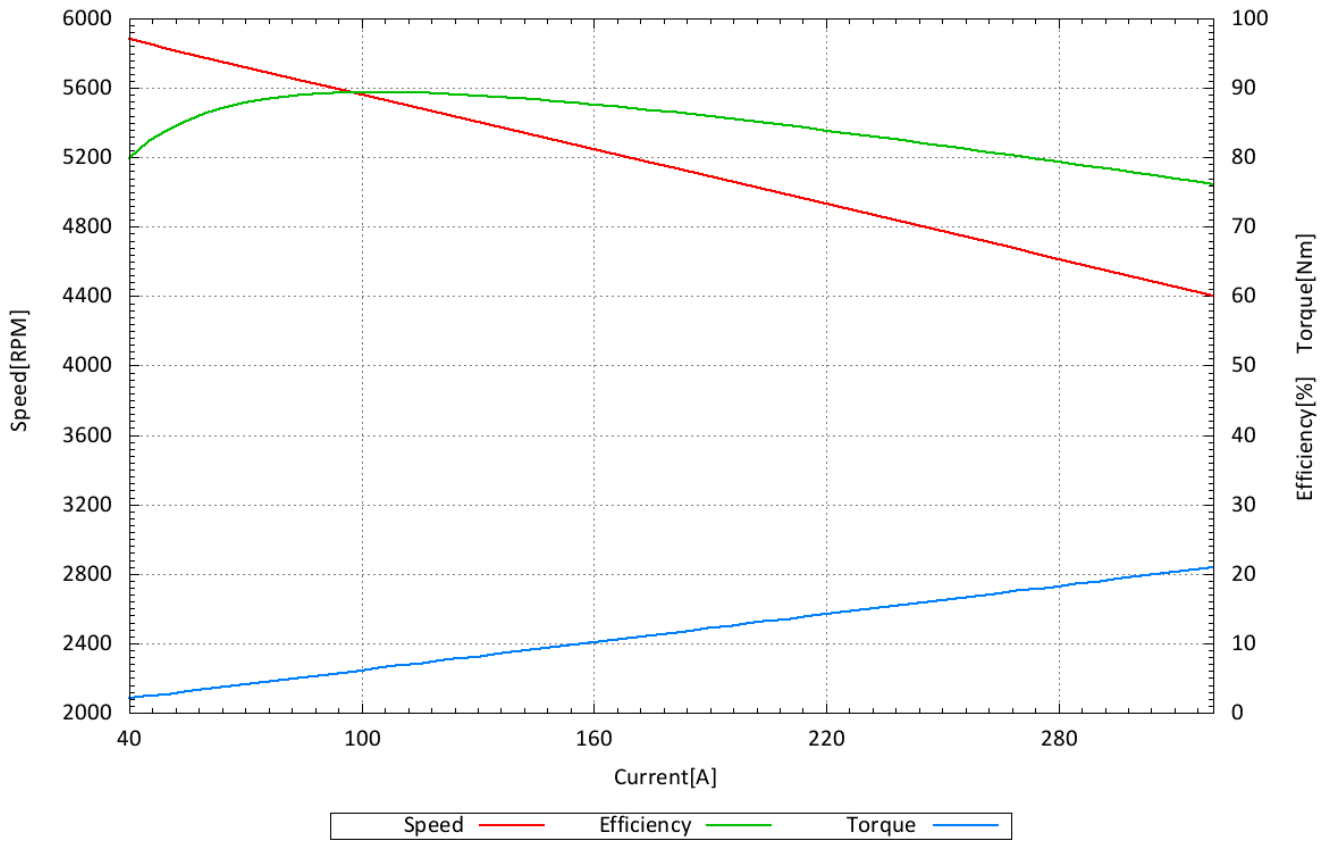
kV = specific rpm

kn = rpm drop per Amp

kT = torque constant

¹ incl. Controller

HP940_37_B6_P20_40V_14032024



Report calculated on Test Bench Results

Motor type: **ORBIT 15-37-B6 P20**

Date: 14.03.2024

Bearing type: regular

Controller: Common ESC

Measuring Parameter

Voltage: **45.0 [V]**

Throttle setting: 100%

Calculated Motor Constants

nl: 6,743.7 [RPM] lo: 9.1 [A] kv: 151.0 [RPM/V] kn: -5.51 [RPM/A] kT: 6.74 [Ncm/A]

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency ¹ [%]
45.0	40.0	6,573.5	1,800.0	1,433.9	208.3	79.66
45.0	45.0	6,545.9	2,025.0	1,658.9	242.0	81.92
44.9	50.0	6,518.3	2,245.0	1,881.9	275.7	83.83
44.9	55.0	6,490.8	2,469.5	2,103.0	309.4	85.16
44.9	60.0	6,463.2	2,694.0	2,322.2	343.1	86.20
44.9	65.0	6,435.7	2,918.5	2,540.1	376.9	87.03
44.9	70.0	6,408.1	3,143.0	2,755.4	410.6	87.67
44.9	75.0	6,380.6	3,367.5	2,968.7	444.3	88.16
44.9	80.0	6,353.0	3,592.0	3,180.1	478.0	88.53
44.9	85.0	6,325.5	3,816.5	3,389.5	511.7	88.81
44.9	90.0	6,297.9	4,041.0	3,597.0	545.4	89.01
44.9	95.0	6,270.4	4,265.5	3,803.2	579.2	89.16
44.9	100.0	6,242.8	4,490.0	4,006.8	612.9	89.24
44.9	105.0	6,215.2	4,714.5	4,208.4	646.6	89.27
44.9	110.0	6,187.7	4,939.0	4,408.2	680.3	89.25
44.9	115.0	6,160.1	5,163.5	4,605.9	714.0	89.20
44.9	120.0	6,132.6	5,388.0	4,801.8	747.7	89.12
44.9	125.0	6,105.0	5,612.5	4,996.2	781.5	89.02
44.9	130.0	6,077.5	5,837.0	5,188.2	815.2	88.88
44.9	135.0	6,049.9	6,061.5	5,378.2	848.9	88.73
44.8	140.0	6,022.4	6,272.0	5,566.2	882.6	88.75
44.8	145.0	5,994.8	6,496.0	5,752.3	916.3	88.55
44.8	150.0	5,967.2	6,720.0	5,936.4	950.0	88.34
44.8	155.0	5,939.7	6,944.0	6,119.3	983.8	88.12
44.8	160.0	5,912.1	7,168.0	6,299.5	1,017.5	87.88
44.8	165.0	5,884.6	7,392.0	6,477.9	1,051.2	87.63

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency ¹ [%]
44.8	170.0	5,857.0	7,616.0	6,654.2	1,084.9	87.37
44.8	175.0	5,829.5	7,840.0	6,828.6	1,118.6	87.10
44.8	180.0	5,801.9	8,064.0	7,001.1	1,152.3	86.82
44.8	185.0	5,774.4	8,288.0	7,171.7	1,186.0	86.53
44.8	190.0	5,746.8	8,512.0	7,340.8	1,219.8	86.24
44.8	195.0	5,719.3	8,736.0	7,507.5	1,253.5	85.94
44.8	200.0	5,691.7	8,960.0	7,672.1	1,287.2	85.63
44.8	205.0	5,664.1	9,184.0	7,834.8	1,320.9	85.31
44.8	210.0	5,636.6	9,408.0	7,995.7	1,354.6	84.99
44.8	215.0	5,609.0	9,632.0	8,154.5	1,388.3	84.66
44.8	220.0	5,581.5	9,856.0	8,312.1	1,422.1	84.34
44.8	225.0	5,553.9	10,080.0	8,467.0	1,455.8	84.00
44.7	230.0	5,526.4	10,281.0	8,620.1	1,489.5	83.84
44.7	235.0	5,498.8	10,504.5	8,771.1	1,523.2	83.50
44.7	240.0	5,471.3	10,728.0	8,920.3	1,556.9	83.15
44.7	245.0	5,443.7	10,951.5	9,067.4	1,590.6	82.80
44.7	250.0	5,416.1	11,175.0	9,213.2	1,624.4	82.44
44.7	255.0	5,388.6	11,398.5	9,356.5	1,658.1	82.09
44.7	260.0	5,361.0	11,622.0	9,497.8	1,691.8	81.72
44.7	265.0	5,333.5	11,845.5	9,637.3	1,725.5	81.36
44.7	270.0	5,305.9	12,069.0	9,774.7	1,759.2	80.99
44.7	275.0	5,278.4	12,292.5	9,910.3	1,792.9	80.62
44.7	280.0	5,250.8	12,516.0	10,044.3	1,826.7	80.25
44.7	285.0	5,223.3	12,739.5	10,176.1	1,860.4	79.88
44.7	290.0	5,195.7	12,963.0	10,305.7	1,894.1	79.50
44.7	295.0	5,168.2	13,186.5	10,433.5	1,927.8	79.12
44.7	300.0	5,140.6	13,410.0	10,559.2	1,961.5	78.74
44.7	305.0	5,113.0	13,633.5	10,682.9	1,995.2	78.36
44.7	310.0	5,085.5	13,857.0	10,805.5	2,029.0	77.98
44.7	315.0	5,057.9	14,080.5	10,925.3	2,062.7	77.59
44.6	320.0	5,030.4	14,272.0	11,043.5	2,096.4	77.38

nl = rpm with no load

lo = current with no load

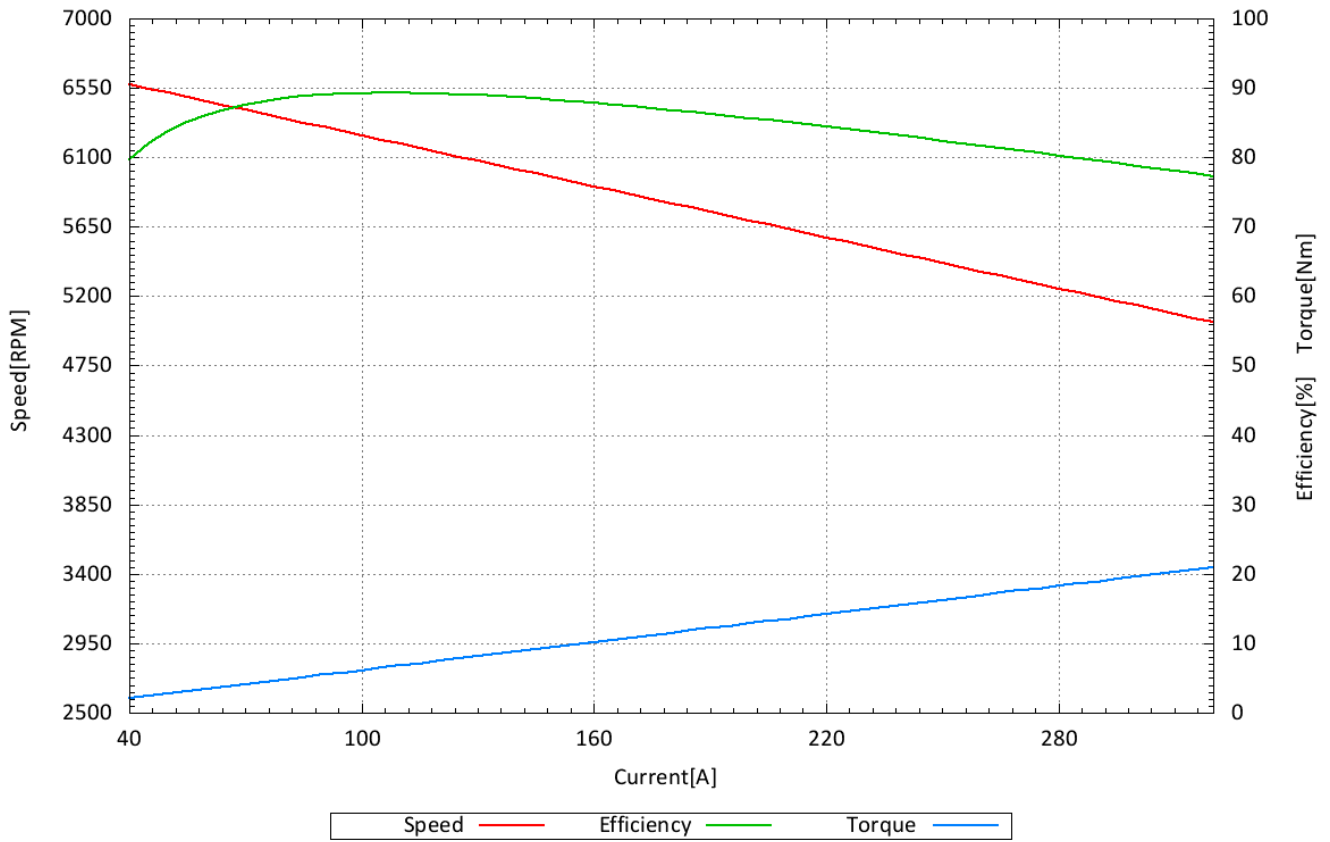
kV = specific rpm

kn = rpm drop per Amp

kT = torque constant

¹ incl. Controller

HP940_37_B6_P20_45V_14032024



Report calculated on Test Bench Results

Motor type: **ORBIT 15-37-B6 P20**

Date: 14.03.2024

Bearing type: regular

Controller: Common ESC

Measuring Parameter

Voltage: **50.0 [V]**

Throttle setting: 100%

Calculated Motor Constants

nl: 7,440.1 [RPM] lo: 10.8 [A] kv: 150.1 [RPM/V] kn: -5.81 [RPM/A] kT: 6.77 [Ncm/A]

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency ¹ [%]
49.9	40.0	7,270.4	1,996.0	1,506.0	197.8	75.45
49.9	45.0	7,241.3	2,245.5	1,756.2	231.6	78.21
49.9	50.0	7,212.3	2,495.0	2,005.2	265.5	80.37
49.9	55.0	7,183.2	2,744.5	2,251.4	299.3	82.03
49.9	60.0	7,154.2	2,994.0	2,496.3	333.2	83.38
49.9	65.0	7,125.1	3,243.5	2,738.3	367.0	84.43
49.9	70.0	7,096.0	3,493.0	2,979.1	400.9	85.29
49.9	75.0	7,067.0	3,742.5	3,217.8	434.8	85.98
49.9	80.0	7,037.9	3,992.0	3,453.6	468.6	86.51
49.8	85.0	7,008.9	4,233.0	3,688.2	502.5	87.13
49.8	90.0	6,979.8	4,482.0	3,919.9	536.3	87.46
49.8	95.0	6,950.8	4,731.0	4,150.4	570.2	87.73
49.8	100.0	6,921.7	4,980.0	4,378.0	604.0	87.91
49.8	105.0	6,892.6	5,229.0	4,604.3	637.9	88.05
49.8	110.0	6,863.6	5,478.0	4,828.6	671.8	88.15
49.8	115.0	6,834.5	5,727.0	5,050.0	705.6	88.18
49.8	120.0	6,805.5	5,976.0	5,270.2	739.5	88.19
49.8	125.0	6,776.4	6,225.0	5,487.5	773.3	88.15
49.8	130.0	6,747.4	6,474.0	5,703.6	807.2	88.10
49.8	135.0	6,718.3	6,723.0	5,916.8	841.0	88.01
49.7	140.0	6,689.3	6,958.0	6,128.7	874.9	88.08
49.7	145.0	6,660.2	7,206.5	6,338.5	908.8	87.95
49.7	150.0	6,631.1	7,455.0	6,545.5	942.6	87.80
49.7	155.0	6,602.1	7,703.5	6,751.2	976.5	87.64
49.7	160.0	6,573.0	7,952.0	6,954.1	1,010.3	87.45
49.7	165.0	6,544.0	8,200.5	7,155.8	1,044.2	87.26

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency ¹ [%]
49.7	170.0	6,514.9	8,449.0	7,354.5	1,078.0	87.05
49.7	175.0	6,485.9	8,697.5	7,552.0	1,111.9	86.83
49.7	180.0	6,456.8	8,946.0	7,747.4	1,145.8	86.60
49.7	185.0	6,427.8	9,194.5	7,940.1	1,179.6	86.36
49.7	190.0	6,398.7	9,443.0	8,131.3	1,213.5	86.11
49.6	195.0	6,369.6	9,672.0	8,319.8	1,247.3	86.02
49.6	200.0	6,340.6	9,920.0	8,507.0	1,281.2	85.76
49.6	205.0	6,311.5	10,168.0	8,691.3	1,315.0	85.48
49.6	210.0	6,282.5	10,416.0	8,874.4	1,348.9	85.20
49.6	215.0	6,253.4	10,664.0	9,055.3	1,382.8	84.91
49.6	220.0	6,224.4	10,912.0	9,233.6	1,416.6	84.62
49.6	225.0	6,195.3	11,160.0	9,410.4	1,450.5	84.32
49.6	230.0	6,166.2	11,408.0	9,584.5	1,484.3	84.02
49.6	235.0	6,137.2	11,656.0	9,757.3	1,518.2	83.71
49.6	240.0	6,108.1	11,904.0	9,927.2	1,552.0	83.39
49.6	245.0	6,079.1	12,152.0	10,095.9	1,585.9	83.08
49.5	250.0	6,050.0	12,375.0	10,262.3	1,619.8	82.93
49.5	255.0	6,021.0	12,622.5	10,426.2	1,653.6	82.60
49.5	260.0	5,991.9	12,870.0	10,588.6	1,687.5	82.27
49.5	265.0	5,962.9	13,117.5	10,748.4	1,721.3	81.94
49.5	270.0	5,933.8	13,365.0	10,906.6	1,755.2	81.61
49.5	275.0	5,904.7	13,612.5	11,062.1	1,789.0	81.26
49.5	280.0	5,875.7	13,860.0	11,216.3	1,822.9	80.93
49.5	285.0	5,846.6	14,107.5	11,368.3	1,856.8	80.58
49.5	290.0	5,817.6	14,355.0	11,517.9	1,890.6	80.24
49.5	295.0	5,788.5	14,602.5	11,665.7	1,924.5	79.89
49.5	300.0	5,759.5	14,850.0	11,811.2	1,958.3	79.54
49.4	305.0	5,730.4	15,067.0	11,954.9	1,992.2	79.35
49.4	310.0	5,701.3	15,314.0	12,096.0	2,026.0	78.99
49.4	315.0	5,672.3	15,561.0	12,235.8	2,059.9	78.63
49.4	320.0	5,643.2	15,808.0	12,373.4	2,093.8	78.27

nl = rpm with no load

lo = current with no load

kV = specific rpm

kn = rpm drop per Amp

kT = torque constant

¹ incl. Controller

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