

Test Bench Measurement

Motor type: **HP 875-50-A8 S P30**

Date: 17.02.2021

Bearing type: RS

Controller: MST 400-133

Measuring Parameter

Voltage: **80.0 [V]**

Throttle setting: 100%

Calculated Motor Constants

nl: 2,545.5 [RPM] lo: 2.9 [A] kV: 32.3 [RPM/V] kn: -14.60 [RPM/A] kT: 35.80 [Ncm/A]

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency ¹ [%]
80.1	5.0	2,554.1	400.5	297.2	111.1	74.20
80.1	6.0	2,534.1	480.6	375.2	141.4	78.08
80.1	7.0	2,514.5	560.7	453.2	172.1	80.82
80.1	8.0	2,495.1	640.8	530.7	203.1	82.81
80.0	9.0	2,476.0	720.0	608.0	234.5	84.45
80.0	10.0	2,457.1	800.0	685.0	266.2	85.62
80.0	11.0	2,438.5	880.0	761.7	298.3	86.56
80.0	12.0	2,420.2	960.0	838.1	330.7	87.31
80.0	13.0	2,402.1	1,040.0	913.9	363.3	87.87
80.0	14.0	2,384.3	1,120.0	989.5	396.3	88.35
80.0	15.0	2,366.7	1,200.0	1,064.7	429.6	88.73
80.0	16.0	2,349.3	1,280.0	1,139.3	463.1	89.01
80.0	17.0	2,332.2	1,360.0	1,213.8	497.0	89.25
80.0	18.0	2,315.3	1,440.0	1,287.5	531.0	89.41
80.0	19.0	2,298.7	1,520.0	1,361.0	565.4	89.54
80.0	20.0	2,282.2	1,600.0	1,433.9	600.0	89.62
80.0	21.0	2,266.0	1,680.0	1,506.3	634.8	89.66
80.0	22.0	2,250.1	1,760.0	1,578.2	669.8	89.67
80.0	23.0	2,234.3	1,840.0	1,649.5	705.0	89.65
80.0	24.0	2,218.8	1,920.0	1,720.6	740.5	89.61
80.0	25.0	2,203.4	2,000.0	1,790.8	776.1	89.54
80.0	26.0	2,188.3	2,080.0	1,860.5	811.9	89.45
80.0	27.0	2,173.4	2,160.0	1,929.8	847.9	89.34
80.0	28.0	2,158.7	2,240.0	1,998.6	884.1	89.22
79.9	29.0	2,144.2	2,317.1	2,066.7	920.4	89.19
79.9	30.0	2,129.9	2,397.0	2,134.1	956.8	89.03

Voltage	Current	Speed	Input Power	Output Power	Torque	Efficiency ¹
[V]	[A]	[RPM]	[W]	[W]	[Ncm]	[%]
79.9	32.0	2,101.8	2,556.8	2,267.2	1,030.1	88.68
79.9	33.0	2,088.1	2,636.7	2,333.2	1,067.0	88.49
79.9	34.0	2,074.5	2,716.6	2,398.1	1,103.9	88.28
79.9	35.0	2,061.1	2,796.5	2,462.5	1,140.9	88.06
79.9	36.0	2,047.9	2,876.4	2,526.3	1,178.0	87.83
79.9	37.0	2,034.9	2,956.3	2,589.5	1,215.2	87.59
79.9	38.0	2,022.1	3,036.2	2,652.2	1,252.5	87.35
79.9	39.0	2,009.4	3,116.1	2,714.0	1,289.8	87.10
79.9	40.0	1,996.8	3,196.0	2,775.0	1,327.1	86.83
79.9	41.0	1,984.5	3,275.9	2,835.7	1,364.5	86.56
79.9	42.0	1,972.3	3,355.8	2,895.7	1,402.0	86.29
79.9	43.0	1,960.2	3,435.7	2,954.7	1,439.4	86.00
79.9	44.0	1,948.3	3,515.6	3,013.3	1,476.9	85.71
79.9	45.0	1,936.5	3,595.5	3,070.8	1,514.3	85.41
79.9	46.0	1,924.9	3,675.4	3,127.8	1,551.7	85.10
79.9	47.0	1,913.5	3,755.3	3,184.5	1,589.2	84.80
79.9	48.0	1,902.1	3,835.2	3,239.8	1,626.5	84.47
79.8	49.0	1,890.9	3,910.2	3,294.8	1,663.9	84.26
79.8	50.0	1,879.9	3,990.0	3,349.0	1,701.2	83.94
79.8	51.0	1,868.9	4,069.8	3,402.2	1,738.4	83.60
79.8	52.0	1,858.1	4,149.6	3,455.0	1,775.6	83.26
79.8	53.0	1,847.4	4,229.4	3,506.6	1,812.6	82.91
79.8	54.0	1,836.9	4,309.2	3,557.9	1,849.6	82.56
79.8	55.0	1,826.4	4,389.0	3,608.1	1,886.5	82.21
79.8	56.0	1,816.1	4,468.8	3,657.8	1,923.3	81.85
79.8	57.0	1,805.8	4,548.6	3,706.4	1,960.0	81.48
79.8	58.0	1,795.7	4,628.4	3,754.3	1,996.5	81.11
79.8	59.0	1,785.7	4,708.2	3,801.5	2,032.9	80.74
79.8	60.0	1,775.7	4,788.0	3,847.7	2,069.2	80.36
79.8	61.0	1,765.9	4,867.8	3,893.2	2,105.3	79.98
79.8	62.0	1,756.2	4,947.6	3,937.9	2,141.2	79.59
79.8	63.0	1,746.5	5,027.4	3,981.6	2,177.0	79.20
79.8	64.0	1,737.0	5,107.2	4,024.5	2,212.5	78.80
79.8	65.0	1,727.5	5,187.0	4,066.5	2,247.9	78.40
79.8	66.0	1,718.1	5,266.8	4,107.7	2,283.1	77.99
79.8	67.0	1,708.8	5,346.6	4,147.9	2,318.0	77.58
79.8	68.0	1,699.5	5,426.4	4,187.1	2,352.7	77.16
79.7	69.0	1,690.3	5,499.3	4,225.5	2,387.2	76.84
79.7	70.0	1,681.2	5,579.0	4,263.2	2,421.5	76.41

Voltage	Current	Speed	Input Power	Output Power	Torque	Efficiency ¹
[V]	[A]	[RPM]	[W]	[W]	[Ncm]	[%]
79.7	72.0	1,663.2	5,738.4	4,335.4	2,489.2	75.55
79.7	73.0	1,654.3	5,818.1	4,370.1	2,522.6	75.11
79.7	74.0	1,645.4	5,897.8	4,403.8	2,555.8	74.67
79.7	75.0	1,636.6	5,977.5	4,436.6	2,588.7	74.22

nl = rpm with no load

lo = current with no load

kV = specific rpm

kn = rpm drop per Amp

kT = torque constant

¹ incl. Controller