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: **260.0 [V]**

Throttle setting: 100%

Calculated Motor Constants

nl: 8,132.9 [RPM] Io: 3.3 [A] kV: 31.7 [RPM/V] kn: -36.23 [RPM/A] kT: 36.52 [Ncm/A]

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency[1] [%]
260.0	5.0	8,192.7	1,300.0	880.2	102.6	67.71
260.0	6.0	8,140.0	1,560.0	1,137.1	133.4	72.89
260.0	7.0	8,088.1	1,820.0	1,394.1	164.6	76.60
260.0	8.0	8,037.0	2,080.0	1,650.4	196.1	79.35
260.0	9.0	7,986.7	2,340.0	1,906.1	227.9	81.46
260.0	10.0	7,937.3	2,600.0	2,161.9	260.1	83.15
260.0	11.0	7,888.6	2,860.0	2,416.3	292.5	84.49
260.0	12.0	7,840.7	3,120.0	2,671.0	325.3	85.61
260.0	13.0	7,793.5	3,380.0	2,925.0	358.4	86.54
260.0	14.0	7,747.1	3,640.0	3,178.6	391.8	87.32
259.9	15.0	7,701.5	3,898.5	3,430.8	425.4	88.00
259.9	16.0	7,656.6	4,158.4	3,682.7	459.3	88.56
259.9	17.0	7,612.4	4,418.3	3,934.8	493.6	89.06
259.9	18.0	7,569.0	4,678.2	4,185.1	528.0	89.46
259.9	19.0	7,526.3	4,938.1	4,435.7	562.8	89.83
259.9	20.0	7,484.3	5,198.0	4,684.5	597.7	90.12
259.9	21.0	7,443.0	5,457.9	4,933.0	632.9	90.38
259.9	22.0	7,402.4	5,717.8	5,181.3	668.4	90.62
259.9	23.0	7,362.5	5,977.7	5,428.6	704.1	90.81
259.9	24.0	7,323.2	6,237.6	5,674.9	740.0	90.98
259.9	25.0	7,284.6	6,497.5	5,920.4	776.1	91.12
259.9	26.0	7,246.7	6,757.4	6,165.1	812.4	91.23
259.9	27.0	7,209.4	7,017.3	6,408.9	848.9	91.33
259.9	28.0	7,172.8	7,277.2	6,652.0	885.6	91.41
259.9	29.0	7,136.8	7,537.1	6,894.4	922.5	91.47
259.9	30.0	7,101.4	7,797.0	7,135.4	959.5	91.51

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency[1] [%]
259.9	32.0	7,032.5	8,316.8	7,615.5	1,034.1	91.57
259.8	33.0	6,998.9	8,573.4	7,854.7	1,071.7	91.62
259.8	34.0	6,966.0	8,833.2	8,092.1	1,109.3	91.61
259.8	35.0	6,933.6	9,093.0	8,328.9	1,147.1	91.60
259.8	36.0	6,901.7	9,352.8	8,565.2	1,185.1	91.58
259.8	37.0	6,870.5	9,612.6	8,800.6	1,223.2	91.55
259.8	38.0	6,839.8	9,872.4	9,034.2	1,261.3	91.51
259.8	39.0	6,809.6	10,132.2	9,267.4	1,299.6	91.47
259.8	40.0	6,780.0	10,392.0	9,499.8	1,338.0	91.41
259.8	41.0	6,750.9	10,651.8	9,731.2	1,376.5	91.36
259.8	42.0	6,722.4	10,911.6	9,961.9	1,415.1	91.30
259.8	43.0	6,694.3	11,171.4	10,191.5	1,453.8	91.23
259.8	44.0	6,666.7	11,431.2	10,419.7	1,492.5	91.15
259.8	45.0	6,639.7	11,691.0	10,647.2	1,531.3	91.07
259.8	46.0	6,613.1	11,950.8	10,873.3	1,570.1	90.98
259.8	47.0	6,587.0	12,210.6	11,098.7	1,609.0	90.89
259.8	48.0	6,561.4	12,470.4	11,322.9	1,647.9	90.80
259.8	49.0	6,536.2	12,730.2	11,546.3	1,686.9	90.70
259.7	50.0	6,511.5	12,985.0	11,768.6	1,725.9	90.63
259.7	51.0	6,487.2	13,244.7	11,989.6	1,764.9	90.52
259.7	52.0	6,463.4	13,504.4	12,209.6	1,803.9	90.41
259.7	53.0	6,440.0	13,764.1	12,429.1	1,843.0	90.30
259.7	54.0	6,417.0	14,023.8	12,646.8	1,882.0	90.18
259.7	55.0	6,394.4	14,283.5	12,863.4	1,921.0	90.06
259.7	56.0	6,372.2	14,543.2	13,079.0	1,960.0	89.93
259.7	57.0	6,350.4	14,802.9	13,293.6	1,999.0	89.80
259.7	58.0	6,329.0	15,062.6	13,506.6	2,037.9	89.67
259.7	59.0	6,308.0	15,322.3	13,718.8	2,076.8	89.53
259.7	60.0	6,287.3	15,582.0	13,929.9	2,115.7	89.40
259.7	61.0	6,267.0	15,841.7	14,139.5	2,154.5	89.26
259.7	62.0	6,247.1	16,101.4	14,348.5	2,193.3	89.11
259.7	63.0	6,227.4	16,361.1	14,554.9	2,231.9	88.96
259.7	64.0	6,208.1	16,620.8	14,760.8	2,270.5	88.81
259.7	65.0	6,189.2	16,880.5	14,965.4	2,309.0	88.65
259.7	66.0	6,170.5	17,140.2	15,168.3	2,347.4	88.50
259.7	67.0	6,152.2	17,399.9	15,370.7	2,385.8	88.34
259.6	68.0	6,134.1	17,652.8	15,570.8	2,424.0	88.21
259.6	69.0	6,116.4	17,912.4	15,769.9	2,462.1	88.04
259.6	70.0	6,098.9	18,172.0	15,967.5	2,500.1	87.87

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency[1] [%]
259.6	72.0	6,064.7	18,691.2	16,357.5	2,575.6	87.51
259.6	73.0	6,048.0	18,950.8	16,550.6	2,613.2	87.33
259.6	74.0	6,031.6	19,210.4	16,741.9	2,650.6	87.15
259.6	75.0	6,015.4	19,470.0	16,931.9	2,687.9	86.96

nl = rpm with no load

Io = current with no load

kV = specific rpm

kn = rpm drop per Amp

kT = torque constant

[1] incl. Controller