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:	**300.0 [V]**
Throttle setting:	100%

Calculated Motor Constants

nl: 9,288.4 [RPM]   Io: 3.4 [A]   kV: 31.4 [RPM/V]   kn: -39.85 [RPM/A] kT: 36.71 [Ncm/A]

Voltage	Current	Speed	Input Power	Output Power	Torque	Efficiency[1]
[V]	[A]	[RPM]	[W]	[W]	[Ncm]	[%]
300.0	5.0	9,364.0	1,500.0	963.9	98.3	64.26
300.0	6.0	9,305.5	1,800.0	1,257.1	129.0	69.84
300.0	7.0	9,247.9	2,100.0	1,549.5	160.0	73.79
300.0	8.0	9,191.2	2,400.0	1,843.2	191.5	76.80
300.0	9.0	9,135.4	2,700.0	2,136.2	223.3	79.12
300.0	10.0	9,080.6	3,000.0	2,428.6	255.4	80.95
300.0	11.0	9,026.6	3,300.0	2,721.4	287.9	82.47
300.0	12.0	8,973.5	3,600.0	3,014.6	320.8	83.74
300.0	13.0	8,921.2	3,900.0	3,306.2	353.9	84.78
300.0	14.0	8,869.9	4,200.0	3,598.4	387.4	85.68
300.0	15.0	8,819.3	4,500.0	3,890.0	421.2	86.44
300.0	16.0	8,769.7	4,800.0	4,181.3	455.3	87.11
300.0	17.0	8,720.8	5,100.0	4,472.1	489.7	87.69
300.0	18.0	8,672.8	5,400.0	4,762.7	524.4	88.20
299.9	19.0	8,625.6	5,698.1	5,052.0	559.3	88.66
299.9	20.0	8,579.2	5,998.0	5,341.1	594.5	89.05
299.9	21.0	8,533.5	6,297.9	5,629.8	630.0	89.39
299.9	22.0	8,488.7	6,597.8	5,917.6	665.7	89.69
299.9	23.0	8,444.7	6,897.7	6,205.3	701.7	89.96
299.9	24.0	8,401.4	7,197.6	6,492.0	737.9	90.20
299.9	25.0	8,358.8	7,497.5	6,777.7	774.3	90.40
299.9	26.0	8,317.0	7,797.4	7,062.6	810.9	90.58
299.9	27.0	8,276.0	8,097.3	7,346.7	847.7	90.73
299.9	28.0	8,235.7	8,397.2	7,630.0	884.7	90.86
299.9	29.0	8,196.1	8,697.1	7,912.6	921.9	90.98
299.9	30.0	8,157.2	8,997.0	8,193.7	959.2	91.07

Voltage	Current	Speed	Input Power	Output Power	Torque	Efficiency[1]
[V]	[A]	[RPM]	[W]	[W]	[Ncm]	[%]
299.9	32.0	8,081.5	9,596.8	8,754.1	1,034.4	91.22
299.9	33.0	8,044.7	9,896.7	9,032.6	1,072.2	91.27
299.9	34.0	8,008.5	10,196.6	9,310.7	1,110.2	91.31
299.8	35.0	7,973.0	10,493.0	9,587.5	1,148.3	91.37
299.8	36.0	7,938.2	10,792.8	9,863.2	1,186.5	91.39
299.8	37.0	7,904.0	11,092.6	10,137.7	1,224.8	91.39
299.8	38.0	7,870.4	11,392.4	10,411.1	1,263.2	91.39
299.8	39.0	7,837.5	11,692.2	10,683.6	1,301.7	91.37
299.8	40.0	7,805.2	11,992.0	10,954.2	1,340.2	91.35
299.8	41.0	7,773.5	12,291.8	11,224.8	1,378.9	91.32
299.8	42.0	7,742.3	12,591.6	11,493.5	1,417.6	91.28
299.8	43.0	7,711.8	12,891.4	11,761.6	1,456.4	91.24
299.8	44.0	7,681.9	13,191.2	12,028.1	1,495.2	91.18
299.8	45.0	7,652.5	13,491.0	12,293.0	1,534.0	91.12
299.8	46.0	7,623.6	13,790.8	12,557.1	1,572.9	91.05
299.8	47.0	7,595.4	14,090.6	12,820.1	1,611.8	90.98
299.8	48.0	7,567.6	14,390.4	13,081.4	1,650.7	90.90
299.8	49.0	7,540.4	14,690.2	13,340.8	1,689.5	90.81
299.8	50.0	7,513.7	14,990.0	13,599.6	1,728.4	90.72
299.8	51.0	7,487.5	15,289.8	13,857.2	1,767.3	90.63
299.7	52.0	7,461.9	15,584.4	14,113.0	1,806.1	90.56
299.7	53.0	7,436.7	15,884.1	14,367.5	1,844.9	90.45
299.7	54.0	7,412.0	16,183.8	14,621.0	1,883.7	90.34
299.7	55.0	7,387.7	16,483.5	14,871.6	1,922.3	90.22
299.7	56.0	7,364.0	16,783.2	15,122.4	1,961.0	90.10
299.7	57.0	7,340.7	17,082.9	15,370.5	1,999.5	89.98
299.7	58.0	7,317.8	17,382.6	15,617.6	2,038.0	89.85
299.7	59.0	7,295.4	17,682.3	15,862.4	2,076.3	89.71
299.7	60.0	7,273.4	17,982.0	16,106.2	2,114.6	89.57
299.7	61.0	7,251.8	18,281.7	16,348.5	2,152.8	89.43
299.7	62.0	7,230.6	18,581.4	16,588.4	2,190.8	89.27
299.7	63.0	7,209.8	18,881.1	16,826.9	2,228.7	89.12
299.7	64.0	7,189.4	19,180.8	17,063.8	2,266.5	88.96
299.7	65.0	7,169.4	19,480.5	17,298.7	2,304.1	88.80
299.7	66.0	7,149.7	19,780.2	17,531.2	2,341.5	88.63
299.7	67.0	7,130.5	20,079.9	17,762.6	2,378.8	88.46
299.6	68.0	7,111.5	20,372.8	17,991.6	2,415.9	88.31
299.6	69.0	7,092.9	20,672.4	18,219.3	2,452.9	88.13
299.6	70.0	7,074.7	20,972.0	18,444.5	2,489.6	87.95

Voltage	Current	Speed	Input Power	Output Power	Torque	Efficiency[1]
[V]	[A]	[RPM]	[W]	[W]	[Ncm]	[%]
299.6	72.0	7,039.1	21,571.2	18,888.3	2,562.4	87.56
299.6	73.0	7,021.8	21,870.8	19,107.3	2,598.5	87.36
299.6	74.0	7,004.7	22,170.4	19,324.1	2,634.4	87.16
299.6	75.0	6,988.0	22,470.0	19,538.6	2,670.0	86.95

nl = rpm with no load

Io = current with no load

kV = specific rpm

kn = rpm drop per Amp

kT = torque constant

[1] incl. Controller