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

Calculated Motor Constants

nl: 5,053.0 [RPM]   Io: 3.1 [A]   kV: 32.0 [RPM/V]   kn: -24.64 [RPM/A] kT: 36.41 [Ncm/A]

Voltage	Current	Speed	Input Power	Output Power	Torque	Efficiency[1]
[V]	[A]	[RPM]	[W]	[W]	[Ncm]	[%]
160.3	5.0	5,083.8	801.5	570.7	107.2	71.20
160.3	6.0	5,048.9	961.8	728.6	137.8	75.75
160.3	7.0	5,014.6	1,122.1	885.9	168.7	78.95
160.3	8.0	4,980.7	1,282.4	1,043.2	200.0	81.34
160.3	9.0	4,947.3	1,442.7	1,200.4	231.7	83.20
160.3	10.0	4,914.5	1,603.0	1,357.1	263.7	84.66
160.3	11.0	4,882.1	1,763.3	1,513.3	296.0	85.82
160.3	12.0	4,850.2	1,923.6	1,669.5	328.7	86.79
160.3	13.0	4,818.7	2,083.9	1,824.7	361.6	87.56
160.3	14.0	4,787.8	2,244.2	1,979.9	394.9	88.22
160.3	15.0	4,757.2	2,404.5	2,134.2	428.4	88.76
160.2	16.0	4,727.2	2,563.2	2,288.0	462.2	89.26
160.2	17.0	4,697.6	2,723.4	2,441.5	496.3	89.65
160.2	18.0	4,668.5	2,883.6	2,594.5	530.7	89.97
160.2	19.0	4,639.8	3,043.8	2,747.2	565.4	90.25
160.2	20.0	4,611.5	3,204.0	2,898.9	600.3	90.48
160.2	21.0	4,583.7	3,364.2	3,049.9	635.4	90.66
160.2	22.0	4,556.3	3,524.4	3,200.6	670.8	90.81
160.2	23.0	4,529.4	3,684.6	3,350.6	706.4	90.93
160.2	24.0	4,502.9	3,844.8	3,500.3	742.3	91.04
160.2	25.0	4,476.8	4,005.0	3,648.7	778.3	91.10
160.2	26.0	4,451.1	4,165.2	3,797.0	814.6	91.16
160.2	27.0	4,425.8	4,325.4	3,944.6	851.1	91.20
160.2	28.0	4,400.9	4,485.6	4,091.1	887.7	91.20
160.2	29.0	4,376.4	4,645.8	4,237.4	924.6	91.21
160.2	30.0	4,352.4	4,806.0	4,382.8	961.6	91.19

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency[1] [%]
160.2	32.0	4,305.4	5,126.4	4,671.4	1,036.1	91.12
160.2	33.0	4,282.5	5,286.6	4,814.7	1,073.6	91.07
160.2	34.0	4,259.9	5,446.8	4,957.0	1,111.2	91.01
160.2	35.0	4,237.8	5,607.0	5,099.0	1,149.0	90.94
160.1	36.0	4,216.0	5,763.6	5,240.1	1,186.9	90.92
160.1	37.0	4,194.6	5,923.7	5,380.5	1,224.9	90.83
160.1	38.0	4,173.5	6,083.8	5,519.9	1,263.0	90.73
160.1	39.0	4,152.8	6,243.9	5,658.7	1,301.2	90.63
160.1	40.0	4,132.5	6,404.0	5,796.7	1,339.5	90.52
160.1	41.0	4,112.5	6,564.1	5,934.1	1,377.9	90.40
160.1	42.0	4,092.8	6,724.2	6,070.6	1,416.4	90.28
160.1	43.0	4,073.5	6,884.3	6,206.7	1,455.0	90.16
160.1	44.0	4,054.5	7,044.4	6,341.6	1,493.6	90.02
160.1	45.0	4,035.9	7,204.5	6,476.1	1,532.3	89.89
160.1	46.0	4,017.6	7,364.6	6,609.5	1,571.0	89.75
160.1	47.0	3,999.6	7,524.7	6,742.0	1,609.7	89.60
160.1	48.0	3,981.9	7,684.8	6,874.0	1,648.5	89.45
160.1	49.0	3,964.5	7,844.9	7,005.0	1,687.3	89.29
160.1	50.0	3,947.4	8,005.0	7,135.6	1,726.2	89.14
160.1	51.0	3,930.7	8,165.1	7,265.1	1,765.0	88.98
160.1	52.0	3,914.2	8,325.2	7,393.7	1,803.8	88.81
160.1	53.0	3,898.0	8,485.3	7,521.9	1,842.7	88.65
160.1	54.0	3,882.1	8,645.4	7,648.9	1,881.5	88.47
160.1	55.0	3,866.5	8,805.5	7,774.9	1,920.2	88.30
160.0	56.0	3,851.2	8,960.0	7,900.6	1,959.0	88.18
160.0	57.0	3,836.2	9,120.0	8,025.3	1,997.7	88.00
160.0	58.0	3,821.4	9,280.0	8,148.8	2,036.3	87.81
160.0	59.0	3,806.9	9,440.0	8,271.7	2,074.9	87.62
160.0	60.0	3,792.7	9,600.0	8,394.2	2,113.5	87.44
160.0	61.0	3,778.7	9,760.0	8,515.2	2,151.9	87.25
160.0	62.0	3,765.0	9,920.0	8,635.7	2,190.3	87.05
160.0	63.0	3,751.5	10,080.0	8,755.2	2,228.6	86.86
160.0	64.0	3,738.3	10,240.0	8,873.9	2,266.8	86.66
160.0	65.0	3,725.3	10,400.0	8,991.3	2,304.8	86.45
160.0	66.0	3,712.5	10,560.0	9,108.2	2,342.8	86.25
160.0	67.0	3,700.0	10,720.0	9,223.9	2,380.6	86.04
160.0	68.0	3,687.7	10,880.0	9,339.3	2,418.4	85.84
160.0	69.0	3,675.7	11,040.0	9,453.2	2,455.9	85.63
160.0	70.0	3,663.8	11,200.0	9,566.5	2,493.4	85.42

Voltage	Current	Speed	Input Power	Output Power	Torque	Efficiency[1]
[V]	[A]	[RPM]	[W]	[W]	[Ncm]	[%]
160.0	72.0	3,640.7	11,520.0	9,789.8	2,567.8	84.98
160.0	73.0	3,629.5	11,680.0	9,900.0	2,604.7	84.76
160.0	74.0	3,618.5	11,840.0	10,009.4	2,641.5	84.54
159.9	75.0	3,607.7	11,992.5	10,117.8	2,678.1	84.37

nl = rpm with no load

Io = current with no load

kV = specific rpm

kn = rpm drop per Amp

kT = torque constant

[1] incl. Controller