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

Calculated Motor Constants

nl: 1,901.4 [RPM]   Io: 2.8 [A]   kV: 32.3 [RPM/V]   kn: -11.78 [RPM/A] kT: 35.64 [Ncm/A]

Voltage	Current	Speed	Input Power	Output Power	Torque	Efficiency[1]
[V]	[A]	[RPM]	[W]	[W]	[Ncm]	[%]
59.9	5.0	1,917.9	299.5	230.0	114.5	76.78
59.9	6.0	1,901.3	359.4	289.1	145.2	80.44
59.9	7.0	1,885.0	419.3	347.8	176.2	82.95
59.9	8.0	1,868.9	479.2	406.1	207.5	84.75
59.9	9.0	1,853.0	539.1	464.0	239.1	86.06
59.9	10.0	1,837.4	599.0	521.4	271.0	87.05
59.9	11.0	1,822.0	658.9	578.7	303.3	87.83
59.9	12.0	1,806.8	718.8	635.4	335.8	88.39
59.9	13.0	1,791.8	778.7	691.4	368.5	88.79
59.9	14.0	1,777.1	838.6	747.4	401.6	89.12
59.9	15.0	1,762.5	898.5	802.7	434.9	89.34
59.9	16.0	1,748.2	958.4	857.7	468.5	89.49
59.9	17.0	1,734.1	1,018.3	912.0	502.2	89.56
59.9	18.0	1,720.2	1,078.2	966.1	536.3	89.60
59.9	19.0	1,706.5	1,138.1	1,019.5	570.5	89.58
59.9	20.0	1,693.0	1,198.0	1,072.4	604.9	89.52
59.9	21.0	1,679.7	1,257.9	1,125.0	639.6	89.44
59.8	22.0	1,666.5	1,315.6	1,176.9	674.4	89.46
59.8	23.0	1,653.6	1,375.4	1,228.4	709.4	89.31
59.8	24.0	1,640.8	1,435.2	1,279.4	744.6	89.14
59.8	25.0	1,628.2	1,495.0	1,329.9	780.0	88.96
59.8	26.0	1,615.8	1,554.8	1,379.9	815.5	88.75
59.8	27.0	1,603.5	1,614.6	1,429.2	851.1	88.51
59.8	28.0	1,591.5	1,674.4	1,478.1	886.9	88.28
59.8	29.0	1,579.5	1,734.2	1,526.4	922.8	88.01
59.8	30.0	1,567.7	1,794.0	1,574.1	958.8	87.74

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency[1] [%]
59.8	32.0	1,544.7	1,913.6	1,667.9	1,031.1	87.16
59.8	33.0	1,533.3	1,973.4	1,713.9	1,067.4	86.85
59.8	34.0	1,522.1	2,033.2	1,759.4	1,103.8	86.53
59.8	35.0	1,511.1	2,093.0	1,804.3	1,140.2	86.21
59.8	36.0	1,500.2	2,152.8	1,848.6	1,176.7	85.87
59.8	37.0	1,489.4	2,212.6	1,892.4	1,213.3	85.53
59.8	38.0	1,478.7	2,272.4	1,935.5	1,249.9	85.17
59.8	39.0	1,468.2	2,332.2	1,978.0	1,286.5	84.81
59.7	40.0	1,457.8	2,388.0	2,019.9	1,323.1	84.58
59.7	41.0	1,447.5	2,447.7	2,061.2	1,359.8	84.21
59.7	42.0	1,437.3	2,507.4	2,101.8	1,396.4	83.82
59.7	43.0	1,427.2	2,567.1	2,141.9	1,433.1	83.43
59.7	44.0	1,417.2	2,626.8	2,181.2	1,469.7	83.04
59.7	45.0	1,407.3	2,686.5	2,219.9	1,506.3	82.63
59.7	46.0	1,397.5	2,746.2	2,257.8	1,542.8	82.22
59.7	47.0	1,387.8	2,805.9	2,295.3	1,579.4	81.80
59.7	48.0	1,378.2	2,865.6	2,332.0	1,615.8	81.38
59.7	49.0	1,368.6	2,925.3	2,367.9	1,652.2	80.95
59.7	50.0	1,359.2	2,985.0	2,403.3	1,688.5	80.51
59.7	51.0	1,349.8	3,044.7	2,438.0	1,724.8	80.07
59.7	52.0	1,340.5	3,104.4	2,471.9	1,760.9	79.63
59.7	53.0	1,331.2	3,164.1	2,505.1	1,797.0	79.17
59.7	54.0	1,322.1	3,223.8	2,537.6	1,832.9	78.72
59.7	55.0	1,312.9	3,283.5	2,569.2	1,868.7	78.25
59.7	56.0	1,303.9	3,343.2	2,600.3	1,904.4	77.78
59.7	57.0	1,294.9	3,402.9	2,630.5	1,939.9	77.30
59.6	58.0	1,285.9	3,456.8	2,659.9	1,975.3	76.95
59.6	59.0	1,277.0	3,516.4	2,688.6	2,010.5	76.46
59.6	60.0	1,268.1	3,576.0	2,716.5	2,045.6	75.96
59.6	61.0	1,259.3	3,635.6	2,743.6	2,080.5	75.47
59.6	62.0	1,250.5	3,695.2	2,769.8	2,115.1	74.96
59.6	63.0	1,241.7	3,754.8	2,795.1	2,149.6	74.44
59.6	64.0	1,233.0	3,814.4	2,819.8	2,183.9	73.93
59.6	65.0	1,224.2	3,874.0	2,843.4	2,218.0	73.40
59.6	66.0	1,215.5	3,933.6	2,866.4	2,251.9	72.87
59.6	67.0	1,206.8	3,993.2	2,888.3	2,285.5	72.33
59.6	68.0	1,198.1	4,052.8	2,909.3	2,318.8	71.78
59.6	69.0	1,189.4	4,112.4	2,929.5	2,352.0	71.24
59.6	70.0	1,180.8	4,172.0	2,948.9	2,384.8	70.68

Voltage	Current	Speed	Input Power	Output Power	Torque	Efficiency[1]
[V]	[A]	[RPM]	[W]	[W]	[Ncm]	[%]
59.6	72.0	1,163.4	4,291.2	2,984.5	2,449.7	69.55
59.6	73.0	1,154.7	4,350.8	3,000.9	2,481.7	68.97
59.6	74.0	1,146.0	4,410.4	3,016.3	2,513.4	68.39
59.6	75.0	1,137.3	4,470.0	3,030.8	2,544.8	67.80

nl = rpm with no load

Io = current with no load

kV = specific rpm

kn = rpm drop per Amp

kT = torque constant

[1] incl. Controller