**INITIAL DESIGN PARAMETERS – 3 PHASE INDUCTION MACHINE**

Machine parameters(RMxprt):

* Number of phases -3 phases
* Number of poles (P) - 12
* Frequency of operation (fS) – 50 Hz
* Reference/Synchronous speed - = 500 rpm = 8.34 rps
* Rated power factor – 0.7048
* Rated Power (Pout) - 5 kW
* Frictional losses – 7 W
* Windage losses – 213 W(stator) + 287 W (rotor)
* Stray losses – 25 W
* Efficiency – 87.61 %
* Output power – 5 kW
* Input power – 5.7 kW
* Rated Slip – 0.054
* Rated Torque – 100.996 Nm
* Total loss – 0.707 kW

Locked Rotor Parameters:

* Stator Resistance – 0.57 Ω
* Stator Reactance – 4.19 Ω
* Rotor Resistance – 1.29 Ω
* Rotor Reactance – 2.4 Ω

Stator parameters:

* Number of slots in stator core – 36
* Outer diameter – 0.327 m
* Inner diameter – 0.210 m
* Core length – 0.280 m
* Stacking factor – 0.92
* Steel type – Auto defined – M19\_24G
* Slot Type – Auto defined – Type 2
* Lamination Sectors – Auto defined = 0
* Press board thickness – Auto defined = 0 mm
* Skew Width – Auto defined = 0

Stator slot parameters:

* Hs0 – 0.8
* Hs1 – 0.52
* Hs2 – 39.48
* Bs0 - 3
* Bs1 – 4.8
* Bs2 – 8.2

Parameters of Stator Windings:

* Winding layers – Single windings
* Winding type – Whole coiled
* Parallel branch - 1
* Conductors per slot - 24
* Number of strands – 4 (Auto defined)
* Wire Wrap – 0.09 (Auto defined)
* Wire size – 1.12mm (Auto defined)

Rotor Parameters:

* Stacking factor – 0.92
* Number of conductor bars – 49
* Slot type – Type 2
* Outer diameter – 0.2095 m
* Inner diameter –0.075 m
* Core length – 0.280 m
* Steel type – M19\_24G (Auto defined)
* Skew Width – 0
* Cast rotor – Yes

Rotor Slot Parameters:

* Hs0 – 0.5
* Hs01 – 0
* Hs1 – 0.66
* Hs2 – 14.34
* Bs0 – 1
* Bs1 – 3.3
* Bs2 – 3.3

Parameters of rotor windings:

* Bar conductor – cast\_aluminium\_75C (Auto defined)
* End length – 0 mm
* End ring width & diameter – 40mm (about 2.36 in) and 16 mm (about 0.79 in)
* End ring type conductor – cast\_aluminium\_75C (Auto defined)