List of Symbols

f_1, F, f_e	Supply frequency
N_s	Synchronous speed.
P	pole pair
S	Slip
f_2	Slip frequency
N_r	Rotor speed
K	Harmonic index
LSB	Lower side band
USB	Upper side band
P_{ag}	Air gap permeance
F_{ag}	Air gap M.M.F
Φ_s	Stator angular position
Θ_{rm}	Mechanical rotor position
V_{qs}, V_{ds}	Stator voltage
I_{qs}, i_{ds}, i_{qr},i_{dr}	Stator and rotor current
ω	Reference frame angular
N_W	Winding distribution
L_{ls}, L_{lr}	Leakage inductance
L_m	Mutual inductance
R_s, R_r	stator and rotor resistance.
λ_{qs}, λds,λqr,λdr	Stator and Rotor Flux linkages.
T	Developed Torque.
J	Motor inertia
$\Delta\omega_r$	Fluctuation in rotating speed.
f_v	Vibrational frequency.
F_r	Rotor speed frequency

f_{bng}	Frequencies in Stator Current due to bearing faults.
mf_{rm}	Multiple of rotational speed
f_o	outer race frequency
f_i	inner race frequency
Θ	angular Displacement.
R	Number of rotor pole bars.
BD	Ball Diameter.
PD	Pitch Diameter.
ΔT	Steady state torque.
I_{2s}	Rotor current component
I'_{2s}	generated current
I''_{2s}	corrected value of current
n_d	Dynamic eccentricity index
R	Number of rotor bar
i, j, k	integers
α	Angular displacement from the rotor datum
ω_r	Angular rotor speed.
f_{sc}	frequency component in stator current.
f_{rc}	frequency component in rotor current.
f_{ec}	frequency component due to air gap eccentricity
f_{sc}	frequency component due to stator faults
f_{b1}, f_{b2}	frequency components due to rotor faults