

# MOTOR STARTUP ANALYSIS

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## INPUT REQUIREMENT CHECKLIST

COMPILED BY

**PIER ENGINEERING SOLUTIONS**

AHMEDABAD, GUJARAT (INDIA)

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# PIER ENGINEERING SOLUTIONS – AHMEDABAD, GUJARAT (INDIA)

## Disclaimer:

This checklist is a guidance tool compiled from common electrical design practices and widely accepted industry standards. It outlines typical information required for electrical studies. Actual project requirements may vary based on the nature and scope of work.

## REQUIRED INPUT LIST

<i>Sr. No</i>	<i>Documents/Data</i>	<i>Known/ Available</i>	<i>Unknown/ Unavailable</i>
1.	Key Single Line Diagram	<input type="checkbox"/>	<input type="checkbox"/>
2.	Metering & Protection Diagram	<input type="checkbox"/>	<input type="checkbox"/>
3.	Plant Operating Philosophy (Normal / Critical / DG Mode) and cases for minimum & maximum power flow conditions	<input type="checkbox"/>	<input type="checkbox"/>
4.	NGR Detail	<input type="checkbox"/>	<input type="checkbox"/>
5.	Utility Supply Parameters (Voltage, Cable/Line)	<input type="checkbox"/>	<input type="checkbox"/>
6.	Minimum & maximum fault current with X/R ratio	<input type="checkbox"/>	<input type="checkbox"/>
7.	Circuit Breaker Min & Max Operating time Tolerance (Vendor Manual/Catalogue)	<input type="checkbox"/>	<input type="checkbox"/>
8.	Transformer Vendor Datasheet	<input type="checkbox"/>	<input type="checkbox"/>
9.	Transformer Tap Position	<input type="checkbox"/>	<input type="checkbox"/>
10.	<b><u>Generator:</u></b> Rated MVA/kVA, Negative reactance at fundamental frequency, resistance, Operating Mode (Swing, Voltage control, var control), winding connection and grounding type. X/R Ratio, Direct, Quadrature, Subtransient, transient reactance, armature resistance, Open Circuit time constant for round rotor & Salient Pole. Saturation Factor, Shaft damping factor, Prime mover, Coupling & Generator rated speed, Moment of Inertia. Exciter, Stabilizer & Governor model.	<input type="checkbox"/>	<input type="checkbox"/>
11.	UPS / Inverter Vendor Datasheet	<input type="checkbox"/>	<input type="checkbox"/>
12.	APFC Vendor Documents	<input type="checkbox"/>	<input type="checkbox"/>
13.	Filters / Harmonic Mitigation Equipment	<input type="checkbox"/>	<input type="checkbox"/>
14.	<b><u>Synchronous Motors:</u></b> Rated kW/HP, Rated kV, Power factor & efficiencies at various loading, Direct, Quadrature, Subtransient,	<input type="checkbox"/>	<input type="checkbox"/>

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<i>Sr. No</i>	<i>Documents/Data</i>	<i>Known/ Available</i>	<i>Unknown/ Unavailable</i>
	transient reactance, armature resistance, Open-circuit time constant for round rotor & Salient Pole. Mechanical load characteristic, Field current application time, Field winding discharge resistance. Motor, load & Coupling Inertia. Circuit model parameter (for starting motor only). Acceleration Time.		
15.	<b>Induction Motors:</b> Rated kW/HP, Rated kV, Power factor & efficiencies at various loading, Mechanical load characteristic. Motor, load & Coupling Inertia. Acceleration Time.	<input type="checkbox"/>	<input type="checkbox"/>
16.	Vendor Motor Operated Valve (MOV) Data	<input type="checkbox"/>	<input type="checkbox"/>
17.	Vendor Variable Frequency Drive (VFD) Data	<input type="checkbox"/>	<input type="checkbox"/>
18.	Circuit breaker / Switchgear ratings such as fault current carrying capacity, normal current capacity, and thermal withstand and opening time of LV and HV circuit breakers.	<input type="checkbox"/>	<input type="checkbox"/>
19.	Electrical Load List	<input type="checkbox"/>	<input type="checkbox"/>
20.	Any other data relevant for the study	<input type="checkbox"/>	<input type="checkbox"/>
21.	Electrical Cable Schedule	<input type="checkbox"/>	<input type="checkbox"/>
22.	Vendor Cable/Busduct Datasheet	<input type="checkbox"/>	<input type="checkbox"/>
23.	Template for Reports (Native File)	<input type="checkbox"/>	<input type="checkbox"/>

If any required data is not available, we will coordinate with your team to obtain it. In cases where information remains unknown, it will **not** be ignored. Instead, we will incorporate it using **conservative assumptions** grounded in **sound engineering judgement**, and clearly highlight these in our documentation wherever relevant