

## الآية

قَالَ تَعَالَى :

" يَا مَعْشَرَ الْجِنَّ وَالْإِنْسِ إِنِ اسْتَطَعْتُمْ أَنْ تَنْفُذُوا مِنْ أَقْطَارِ السَّمَاوَاتِ وَالْأَرْضِ فَانفُذُوا لَا تَنْفُذُونَ إِلَّا بِسُلْطَانٍ "

(الرحمن:33)

# *Dedication*

**I dedicate this work to ....**

**My parents**

**My brothers**

**My sisters**

**My wife**

**And to all those I love**

## **Acknowledgement**

To my supervisor, to all those who had been of great help to me through my study, whatever kind of helps I would like here to express my gratitude and appreciation for their aid and guidance.

## **Abstract**

This research is about generator protection via Programmable Logic Controller. A field device such as, sensors, current transformer, voltage transformer equipped to used as input signal supply to the PLC input modules, when the generator facing an abnormal condition in one or more of it's subsystem ,an interface devices send signal to the PLC to proceed, diagnosing steps as programmed and change the output status accordingly. By using LOGO simulator software to protect the generator from the up normal conditions, the program has been tested by simulation and it works properly and gives the desired results.

## مستخلص

يتطرق هذا البحث لِحماية المولّد من الحالات الغير طبيعيه باستخدام المتحكمات المنطقيه القابله للبرمجه كجهاز حمايه. الاشارات الماخوذه من المولد مثل اشاره محولات التيار والجهد والحساسات تجهز لاستخدامها كاشاره دخل لوحده التحكم المنطقى وعليه تتغير اشاره الخرج اعتمادا على قيمه اشاره الدخل.

استخدم برنامج LOGO التمثيلى لحمايه المولد من الحالات العارضه وتم اختباره تمثليا وكانت النتائج مرضيه وفعاله.

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## List of Abbreviations

A.C	Alternating Current
CTs	Current Transformers
CPU	Central Processing Unit
CRO	Crude Oil
DC	Direct Current
XIC	Examine If Close
FIS	Flexible Industry System
Grafcet	Graphe Fonctionnel de Commande Etape Transition
I/O	Input/Output
LO	Lube Oil
OTE	Output Energize
PTs	Potential Transformers
PID	Proportional Integral Derivative
PLCs	Programmable Logic Controllers
PT100	Potential Transducer Temperature
RPM	Revolutions Per Minute
SFCs	Sequential Function Charts
VTs	Voltage Transformers