Dedication

To whom she is departed but still and will stay life inside me (my mother)...

To my father who care me when I was a child and still care me ...

To my brothers and sisters who taught me the meaning of love and sacrifice ...

To all who around me and supported me ...

To all who I forgot to mention ...
ACKNOWLEDGMENT

All thanks to Allah; who helps us to do what we couldn’t do without his assistance. Also I am grateful to my supervisor Dr. Abd Alrasoul Gabbar Zubidi for his accuracy and valuable comments that he has made in every single chapter in this research and for his advice, support and encouragement.

I would like to thank the Center of Engineering Studies (CETS) family.

My families have not only given me a good atmosphere but also valuable suggestions for improving this work.

Finally, I would like to thank every one who has helped me to make this research come out. And special thanks to some one.
ABSTRACT

The main purpose of this research is the studying of design services for the process of pumping petroleum, includes sensors and which operates to measure both pressure and temperature and flow rate in the pipelines, automatically in order to keep the tube from (explosions) which occur due to high pressure

In this research controllers logical programmable (PLC) was used, which play a key role in various industrial fields; that is because of the advantage of its high accuracy and speed of response next to the high performance making it well-suited to deal with signals and rapid signals of sensors, as well as applications of signal analogue which control of the rate flow of liquid.

The controllers are programmable logical the essential which are part of the formation of electrical circuits in the industry and to its ability to reduce the components of the circle, because they contain a large number of relays and counters in addition to the timers in the form of programs. They also have the ability to deal with all types of media files between man and machine screen.

There are many advantages of logical controllers can be connected to the computer where to get more accurate follow ins-up of the machines, which helps to detect faults quickly.
تجديد

الغرض الأساسي من هذا البحث هو دراسة تصميم الأجهزة لعملية ضخ البترول ويشمل اجهزة الاستشعار (الحساسات) التي تعمل لقياس كل من الضغط ودرجة الحرارة ومعدل التدفق في الانابيب اليا من أجل الحفاظ على الأنبوب من (الانفجارات) التي تحدث بسبب الضغط العالي.

وفي هذا البحث استخدمت المُتحكمات المنطقية القابلة للبرمجة (PLC) والتي تلعب دورًا أساسيًا في مُختلف المجالات الصناعية، وذلك لما تمتاز به من دقة عالية وسرعة إستجابة بجانب الأداء العالي مما يجعلها مناسبة تماما للتعامل مع الإشارات السريعة كإشارات المتحسسات وكذلك تطبيقات الإشارات التماثلية كالتحكم في معدل التدفق لسائل مثلاً.

وتعتبر المُتحكمات المنطقية القابلة للبرمجة جزءًا أساسيًا من تكوين الدوائر الكهربائية في الصناعة وذلك لقدرتها على تقليل مكونات الدائرة، وذلك لأنها تحتوي على عدد كبير من المرحلات والعدادات بالإضافة للموقتات في شكل برمجي كما لها القدرة على التعامل مع كافة أنواع الوسائط بين الإنسان والآلة كالشاشات مثلاً.

والتحكمات المنطقية محسن كثيرة حيث يمكن توصيلها بالكمبيوتر للحصول على متابعة أدق الآلاة مما يساعد على اكتشاف الأعطال سريعاً.

تاء

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<tr>
<td>PC</td>
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<td>SCADA</td>
<td>Supervisory Control And Data Acquisition</td>
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<td>HMI</td>
<td>Human Machine Interface</td>
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<td>MODICON</td>
<td>Modular Digital Controller</td>
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<td>QA</td>
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<td>CPU</td>
<td>Central Processing Unit</td>
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<td>N.C</td>
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<tr>
<td>MAP</td>
<td>Manufacturing Automation Protocol</td>
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<tr>
<td>PID</td>
<td>Proportional- Integral-Derivative</td>
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<td>IEC</td>
<td>International electronic commission</td>
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<td>ESD</td>
<td>Emergency Shutdown</td>
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<tr>
<td>A-B</td>
<td>Allen Bradly</td>
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<td>DC</td>
<td>Direct Current</td>
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<td>AC</td>
<td>Alternating Current</td>
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<td>LVDT</td>
<td>Linear Variable Differential Transformer</td>
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<tr>
<td>LCD</td>
<td>Liquid Crystal Display</td>
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<tr>
<td>NEMA</td>
<td>National Electrical Manufacturers Association</td>
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<tr>
<td>DTMF</td>
<td>Dual Tone Multi Frequency</td>
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<tr>
<td>CCITT</td>
<td>Consultative Committee for International Telephone and Telegraphy</td>
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<td>MF</td>
<td>Multi-Frequency</td>
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<td>PWM</td>
<td>Pulse Width Modulation</td>
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