|  |  |  |  |
| --- | --- | --- | --- |
| **Title:** | Design and Implementation of a PLC Based Screw Air Compressor for Industrial Applications | | |
| **Author(s) Name:** | Poresh Kanti Das and Muhibul Haque Bhuyan | | |
| **Contact Email(s):** | muhibulhb@aiub.edu | | |
| **Published Journal Name:** | Proceedings of the Conference on Engineering Research, Innovation and Education (CERIE) | | |
| **Type of Publication:** | Conference Proceedings | | |
| **Volume:** | - | Issue | - |
| **Publisher:** | Faculty of Applied Science and Engineering, Shahjalal University of Science and Technology, Sylhet, Bangladesh | | |
| **Publication Date:** | 11 January 2011 | | |
| **ISSN:** | ISBN: 978-984-33-2140-4 | | |
| **DOI:** | - | | |
| **URL:** | https://www.researchgate.net/publication/286676488\_DESIGN\_AND\_IMPLEMENTATION\_OF\_A\_PLC\_BASED\_SCREW\_AIR\_COMPRESSOR\_FOR\_INDUSTRIAL\_APPLICATIONS | | |
| **Other Related Info.:** | Place: SUST, Sylhet, Bangladesh, Date: 11-13 January 2011, pp. pp. 512-516. | | |
|  | | | |

|  |  |
| --- | --- |
| **Abstract:** |  |
| Abstract— Programmable Logic Controllers (PLCs) have been used in various control systems to increase efficiency, reduce the initial investment and minimize the long-term maintenance costs. Every industrial plant requires compressed air to perform various operations. This can be obtained by an air compressor. A screw air compressor has high capacity and stable flow in varying conditions. But this requires a sophisticated control algorithm. In this work, we have designed and implemented a PLC-based screw air compressor for industrial applications. LEDs are used to indicate different conditions of the air compressor, such as overload, no load, full load, cooling fan's on/off, vent valve's open/close or oil level low/high conditions, etc. Besides, to show different error messages, such as oil level error signal, over temperature error, over air pressure error, over motor current error signals, etc. few more LEDs are used. Manual and automatic modes of operations have been incorporated into the system. Besides, a reset system has been included in case of an emergency. In practice, it is found that the developed control system works very well for different types of input signals from the sensors and provides appropriate output. | |