Exhibits

1. COMPLAINT

1:11-cv-00405 Judge Robert M. Dow, Jr Magistrate Judge Arlander Keys

2. Summary of facts

The Book of PLC Classic 1785 PLC_5 Family Programmable Controllers was for business without any GSM mobile phone. Publication 1785_6.6.1 September 1995 PN 955122_47 Copyright 1995 Allen_Bradley Company, Inc. Printed in USA and at that time nobody of the team of Rockwell had an idea about the new technology of use PLC and GSM mobile phone.

Rockwell Automation product story with MicroLogix_1000 Programmable Logic Controllers without any GSM mobile phone Allen-Bradley Publication 1761-6.3 – July 1998 Supersedes Publication 1761-6.3 – December 1997 PN 955133-63 Copyright 1998 Rockwell International Corporation Printed in USA.

Here is My US Patent 6,552.654 for Security system with a mobile telephone & PLC programmable logic controller .PLC essentially are used to activate a mobile phone. Inventor. Gharb, Samy ... Foreign Application Priority Data. 1999-06-03 CH http://www.patentstorm.us/patents/6552654/description.html -

PLC Programmable Controllers MicroLogix 1500 and 1200 with GSM Mobile phone without any Patent Rights or trademark –copyrights in USA since the year 2001.

Rockwell Automation MicroLogix Family of PLC Programmable Logic Controllers and GSM mobile phone.

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Samy Gharb - Rockwell Automation Inc Document 1

12.13.2010 - 1 -

United States District Court for The Northern District of Illinois

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Defendants'

COMPLAINT STATEMENT OF THE CASE

Rockwell Automation has stolen my invention US Patent 6,552.654 and has sold it since 2001 as products with PLC Programmable Logic Controller MICROLOGIX and GSM mobile phone to all the mentioned costumers, over the United States. This is patent infringement and a huge damage because I use Windows stored process in PLC Programmable Logic Controller with GSM Mobile Phone in my US patent.

I use PC keyboard memory write/read to store my invention with the function blocks in PLC Programmable Logic Controller & GSM. The team of Rockwell Automation must understand that they are not allowed to do the same by using PC keyboard.

In addition the Rockwell Automation team has sold PLC programmable logic controller without any GSM mobile phone during the years 1984 to the year 2001 and this is the big point of summary of the facts

JURISDICTION AND VENUE

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This action arises under the Patent Laws of the United States, 28 U.S.C. § 1338. Patents, plant variety protection, copyrights, mask works, designs, trademarks, and unfair competition.

35 U.S.C. 271 Infringement of patent

(a) Except as otherwise provided in this title, whoever without authority makes, uses, offers to sell, or sells any patented invention, within the United States, or imports into the United States any patented invention during the term of the patent therefore, infringes the patent

Determination of the huge damages by using offering sale in USA

35 U.S.C. 284 Damages.

Upon finding for the claimant the court shall award the claimant damages adequate to compensate for the infringement but in no event less than a reasonable royalty for the use made of the invention by the infringer, together with interest and costs as fixed by the court.

Background

Story of Rockwell Automation from the year 1993 to the year 2010

Rockwell Automation, known until mid-2001 as Rockwell International Corporation, specializes in industrial automation products, software, systems, and services. Among the company's offerings are controllers PLC Programmable Controllers, input/output (I/O) systems, sensors, power transmission components, and network monitoring devices. Main brand names include Rockwell Automation, Allen-Bradley, Rockwell Software, Dodge, and Reliance Electric. Rockwell Automation serves a wide range of industries through a network of 5,600 distributors and agents in 80 countries. The company emerged in the early 21st century as the successor of Rockwell International—which was best known as a major defense and aerospace firm—after the latter made a series of strategic divestments starting in the mid-1990.

Story of Allen-Bradley with Rockwell Automation

Allen-Bradley is the brand-name of a line of Factory Automation Equipment manufactured by Rockwell Automation (NYSE ROK). The company, with revenues of approximately US\$4.5 billion in 2006, manufactures programmable automation controllers (PAC, PLC), human-machine interfaces, sensors, safety components and systems, software, drives and drive systems, contactors, motor control centers, and systems made of these and similar products. Rockwell Automation also provides asset management services including repair and consulting. Rockwell Automation's headquarters is based in Milwaukee, WI. As an interesting sidenote, the Allen-Bradley Clock Tower is a Milwaukee landmark featuring the second largest four-sided clock in the world.

Summary of the Facts

1. Rockwell Automation spun off from Rockwell International in 2001 and retained Entek. From there, Rockwell Automation went through a series of acquisitions, particularly Propack Data (now Rockwell Automation Solutions GmbH) in 2002, DataSweep in 2005, GEPA in 2006 and ICS Triplex and Pavilion Technologies in 2007. On January 31, 2007, Rockwell

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Automation sold off their PowerSystems Division which consists of Dodge mechanical and Reliance Electric motors with headquarters in Greenville, South Carolina to Baldor Electric .

1993

2. The company launches DeviceNet, an open device-level network that quickly becomes the de facto standard in North America.

1994

3. The Allen-Bradley line of software is merged with the ICOM lines to form Rockwell Software Inc., the world leader in development and support of software for the automation marketplace.

1995

4. In this Book of PLC Classic 1785 PLC 5 Family Programmable Controllers was for business without any GSM mobile phone.

Publication 1785 6.6.1 September 1995 PN 955122 47

Copyright 1995 Allen Bradley Company, Inc. Printed in USA and at that time no one from the team of Rockwell has no idea about the new technology of use PLC and GSM mobile phone (Summary No1).

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Cable Specification.

Allen_Bradley has been helping its customers improve productivity and quality for 90 years. A_B designs, manufactures and supports a broad range of control and automation products worldwide. They include logic processors, power and motion control devices, man_machine interfaces and sensors. Allen_Bradley is a subsidiary of Rockwell International, one of the world's leading technology companies.

1997

5. Rockwell Automation story with MicroLogix_1000 Programmable Logic Controllers without any GSM mobile phone (Bulletin 1761 Controllers) Allen-Bradley



BASIC

- MicroLogis 1000 10 I/O
- Programming Cable
- RSLogb: 500 Starter 10-point Programming SOFTWATE
- 24V DC Power Supply

Publication 1761-6.3 - July 1998

Supersedes Publication 1761-6.3 - December 1997 PN 955133-63

Copyright 1998 Rockwell International Corporation Printed in USA (Summary No.2).

Important User Information

Because of the variety of uses for the products described in this publication, those responsible for the application and use of this control equipment must satisfy themselves that all necessary steps have been taken to assure that each application and use meets all performance and safety requirements, including any applicable laws, regulations, codes, and standards.

The illustrations, charts, sample programs and layout examples shown in this guide are intended solely for purposes of example. Since there are many variables and requirements associated with any particular installation, Allen-Bradley does not assume responsibility or liability (to include intellectual property liability) for actual use based on the examples shown in this publication.

Allen-Bradley publication SGI-1.1, Safety Guidelines for the Application, Installation, and Maintenance of Solid-State Control (available from your local Allen-Bradley office), describes some important differences between solid-state equipment and electromechanical devices that should be taken into consideration when applying products such as those described in this publication. Reproduction of the contents of this copyrighted publication, in whole or in part, without written permission of Allen-Bradley Company, Inc., is prohibited. Throughout this manual, we use notes to make you aware of safety considerations:

Identifies information about practices or circumstances that can lead to personal injury or death, property damage, or economic loss.

Attention statements help you to:

identify a hazard

avoid the hazard

recognize the consequences

Note Identifies information that is critical for successful application and

understanding of the product.

SLC 500, SLC 5/01, SLC 5/02, SLC 5/03, SLC 5/04, MicroLogix, DTAM, DTAM Micro, PanelView,

RediPANEL, Dataliner, DH+, and

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PLC-2, PLC-5 are registered trademarks of Rockwell Automation.

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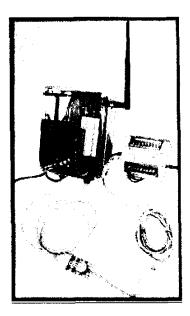
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12.13.2010 - 17 -Samy Gharb - Rockwell Automation Inc Document 1 6. In this Book of PLC Classic 1785 PLC 5 Family Programmable Controllers was for business without any GSM mobile phone that means it is quit clear that the team of Rockwell automation had no idea about my new technology of my US Patent No, 6,552.654 for the use PLC and GSM mobile phone (Summary No.3). 1999 7. Enterprise Technology Group is acquired. A Pittsburgh based software development and consulting company known for client-server Manufacturing Execution Systems (MES) applications. Rockwell purchases Anorad Corporation, a market-leader in linear motor based precision positioning equipment. Company acquires Dynapro, expanding human machine interface hardware and software Acquisition of EJA, a U.K. based firm brings the expertise of the Guardmaster brand to the safety product portfolio. 2000 8. Rockwell acquires Entek, adding predictive monitoring technology to its automation controls offerings. Acquires Systems Modeling Corporation, known for discrete event and process simulation software and for finite-capacity scheduling software. 2001 9. Rockwell Automation becomes an independent, publicly traded company using the New York Stock Exchange symbol ROK. Sequencia acquisition is completed, adding batch control software, services and support. 10. PLC Programmable Controllers MicroLogix 1500 and 1200 with GSM Mobile phone without any Patent rights or trademark -copyrights in USA since the year 2001

(Summary No. 4).

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2002

11. Tesch (Germany) is acquired, bolstering safety hardware lines. Propack Data (Germany) acquisition adds tracking and tracing software capabilities. Samsung Controller Division (Korea) acquisition adds world-class programmable logic controller design and development center in Asia.

2003

12. The Allen-Bradley brand celebrates its 100th anniversary. The celebration culminates with Rockwell Automation's annual customer trade show and education event, known as Automation Fair. The event is held for the first time in its 12 year history in Milwaukee, the home town of Rockwell Automation. Over 15,000 people attend.

2004

13. Rockwell Automation and Intel Corporation begin working together to expand the use of Intel's new high-performance network processor technology in industrial automation applications.

2005

14. Data Sweep acquisition adds more manufacturing systems information capabilities to software portfolio.

2006

14. Acquisition of GEPA, a leading provider of software in the change management marketplace, expands the capabilities of Rockwell Automation's Factory Talk integrated production and performance suite.

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Rockwell Automation Awarded U.S. Navy

Milwaukee, WI, July 17, 2006 -- Rockwell Automation Inc announced today that the U.S. Navy has awarded the company a \$16 million contract for engineering support and automation components for the Navy"s surface ships. The five-year contract will enable the Navy and other Dept of Defense agencies to quickly acquire engineered systems and services from Rockwell Automation that are vital for daily and strategic shipboard operations, domestically and globally. The contract is a milestone for Rockwell Automation as it marks the first time a long-term U.S. Navy contract has been directly awarded to Rockwell Automation as the prime contractor.

"Control systems designed for the Marine industry need to meet stringent requirements, especially those designed for the U.S. Navy, which operates world-class fleets 24/7 in locations throughout the world," said Joe Moffa, manager of the Rockwell Automation Marine Business. "Rockwell Automation is proud to have met those requirements and to be providing not only the machinery control system, but also the technical and engineering support both on-site and through our global network of employees and distributors."

The company will supply the U.S. Navy with a machinery control system engineered and certified for shipboard use. The system will manage the machinery control and auxiliary operations on <u>board U.S. aircraft carriers</u>, <u>mine warfare ships</u>, <u>and frigates</u>. The system is based on the Rockwell Automation Integrated Architecture, which features the Logix multidisciplined control platform and FactoryTalk plantwide information software. Together they deliver a seamless control and information environment that integrates with other onboard systems.

2007

16.Rockwell has helped promote the CSIA (Control System Integrators Association) to expand their capabilities as a system integrator association in the US end-customer community

Read more: http://www.processingtalk.com/news/roc/roc207.html#ixzz16O2zOrtd

2008

17. MILWAUKEE, June 12, 2008 - The Control System Integrators Association (CSIA) honored Rockwell Automation as its "Vendor Partner of the Year" in recognition for helping CSIA grow brand awareness and expand their capabilities as a system integrator association. CSIA is an organization designed to help system integrators improve how they do business activities, manage projects, and deliver solutions. The association recognized Rockwell Automation at its 15th annual Executive Conference May 1 to 4 in Savannah, Ga.

Rockwell Automation Products

18.MicoLogix, PLC programmable logic controller and GSM mobile phone without any patent rights in USA

Rockwell Automation's industrial automation offerings in terms of hardware and software are numerous. Some examples are:

Controllers: ControlLogix, CompactLogix, MicroLogix, PLC5, SLC500, PICO, etc. I/O: FlexIO, CompactIO, PointIO, etc. (Summary No, 5)

Industrial Safety Products: GuardLogix, SafetyIO, XM Vibration Monitors, etc Variable-Frequency Drive: PowerFlex Drives, Drive Systems.

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Software: Rockwell Software Brand: RSLogix, RSNetWorx, RSLinx, PMX, FactoryTalk etc.

FactoryTalk Brand: FactoryTalk View, FactoryTalk Historian, FactoryTalk AssetCentre, FactoryTalk ProductionCentre, FactoryTalk Metrics, FactoryTalk Scheduler, FactoryTalk Transaction Manager, etc.

Motor Controllers: MCCs (Allen-Bradley's Centerline MCC), industrial control (contactors, overloads, circuit breakers etc.) Condition Monitoring/Vibrational Analysis: Entek.

Rockwell Automation/Allen-Bradley systems are used for roller coaster control at every Six Flags and Disney theme park.

The Panama Canal control logic uses Logix family Controllers by Allen-Bradley. This is biggest project ever developed by Rockwell Automation.

Nov. 15, 2010 Release

19. Four Best-in-Class Product Suppliers Join Rockwell Automation Partner Network Program. Encompass third-party product referencing program offers Rockwell Automation customers' access to complementary products to help best solve application challenges

MILWAUKEE, Nov. 15, 2010 — Four leading product suppliers have recently joined the Rockwell Automation Encompass third-party product referencing program, which helps manufacturers quickly locate the products that best solve their application challenges. KUKA Robotics Corporation, the Schaffner Group, Yaskawa Motoman Robotics and MathWorks join the more than 100 Encompass member companies who supplement Rockwell Automation installations in one of three ways: provide built-in connectivity to the Rockwell Automation Integrated Architecture system, offer a critical component necessary to a manufacturer's application or provide industry or application expertise using specialized product technology.

The Encompass program is part of the Rockwell Automation <u>Partner Network framework</u>, which includes thousands of specialists in industries, applications, geographies, technologies and services around the world. As part of the Partner Network framework, Encompass members enjoy improved customer engagement through promotion and co-marketing opportunities. The Encompass program also helps member companies increase market awareness of products, attain access to new market sectors and improve technical and functional excellence. Following are additional details about each of the new Encompass partners:

<u>KUKA Robotics Corporation</u> – offering PA Series robotics utilizing Allen-Bradley ControlLogix programmable automation controllers (PACs) for applications in packaging, layer forming and palletizing.

<u>Schaffner Group</u> – designing active and passive harmonic filters for variable frequency drives to support energy efficiency.

<u>Yaskawa Motoman Robotics</u> – offering MLX100 robotics interfaces with ControlLogix PACs for packaging and palletizing robotic control.

<u>MathWorks</u> – developing Mathlab and Simulink virtual design and production software to accelerate the pace of discovery, innovation and development in industry.

In addition to the new Encompass program members, two current members have recently announced the expansion of their membership from North America into Europe.

<u>Specter Instruments</u> – designing remote alarm notification software that allows users to view and organize alarms over cellular networks.

<u>Marathon Technologies</u> – offering fault tolerant software that delivers simple, affordable and continuous uptime for Windows applications.

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20. Rockwell exec appointed to U.S. Manufacturing Council 08/10/2010

MILWAUKEE, --- In another step to focus on the revitalization of manufacturing in the <u>United States</u>, <u>U.S. Commerce Secretary Gary Locke</u> has appointed 24 manufacturing leaders to the 2010 Manufacturing Council. Among them is Michael Laszkiewicz, Rockwell Automation's vice president and general manager of the company's Power Control Business.

n

Locke also issued a call to action Thursday to revitalize the nation's manufacturing sector.

"A vibrant manufacturing sector isn't just critical for the millions of Americans whose jobs depend on it," Locke said as he appointed new members to the 2010 Manufacturing Council. "Manufacturing is absolutely central to driving the innovation that fuels the American economy."

Laszkiewicz said the Council's work comes at a critical moment for American manufacturers.

"Ten years from now global manufacturing will look nothing like it does today," Laszkiewicz said.
"We hope that the federal government will join forces with American manufacturers to foster the next round of technological innovation that will create highly efficient smart factories."

Locke said the Council will bring him ideas for ways the federal government can support manufacturing and exports.

21. Story of Rockwell Automation with Ford

Ford Motor Co. selected Rockwell's Global Manufacturing Solutions unit to completely upgrade two stamping press lines and various automation systems at Ford's Walton Hills, Ohio plant. The upgrade, scheduled for September 2003 completion, will improve productivity through faster product rollouts, reduced plant downtime and streamlined production schedules in the 2.2 million square-foot plant, Rockwell said. Terms of the contract were not disclosed.

As the project lead, Global Manufacturing Solutions said it will oversee the entire retooling process, including: "Stamping press control system integration; Refurbishment of existing robot control systems; Integration of robots into the line; Overall system coordination and integration, including existing equipment and new OEM equipment; Asset management of key project aspects; Procurement of all electrical devices sensors, actuators and other related instrumentation, including products within the Rockwell Automation Logix PLC architecture; and Electrical installation, including engineering, contractor selection and contractor management."

22. Rockwell Automation Completes Contracts for Toyota

Due to the established relationship with Toyota internationally, Rockwell Automation designed a solution aligned with Toyota's manufacturing philosophy

Challenge

Implementation of an assembly information system (AIS) for Toyota South Africa. The system comprises line control (Andon), assembly vehicle identification (AVI), Andon Reporting System (ARS) and Quality Information System (QIS).

Solutions

- Allen-Bradley ControlLogix PLC Programmable Logic Controllers
- Allen-Bradley Versa View touch screen industrial computer, which is connected to the plant network via Ethernet.
- A digital picking system was implemented, controlled by Rockwell Automation equipment
- The project also included a logistics system consisting of more than 100 SCADAs and PLCs Programmable Logic Controllers.

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Results

· Increased cost-benefit and reduced errors

- Better visibility of issues information such as parts requirements, stop reasons, running time and production targets
- Digital picking system helps eliminate time wastage and helps to improve the transportation lines through the plant.
- The successful commissioning has led Toyota to work closely with Rockwell Automation to find innovative ways to implement associated systems in other parts of the manufacturing operations in order to reinforce the manufacturing control strategy of "Pull Manufacturing"

Rockwell Automation has announced the completion of several projects for Toyota South Africa. The automation company has an established relationship with Toyota internationally and was able to design a solution aligned with Toyota's manufacturing philosophy. Similar projects were undertaken by Rockwell Automation internationally for Toyota plants in the U.S., Thailand and China.

The first project saw the company implementing an assembly information system (AIS) for Toyota in Prospecton, Durban. The system comprises line control (Andon), assembly vehicle identification (AVI), Andon Reporting System (ARS) and Quality Information System (QIS). The design and installation began during 2005. AIS has been applied to the Toyota Prospecton plant IMV production for Hilux and Fortuner sport utility vehicles, as well as to the new Corolla model. According to Rockwell Automation Project Manager, John Cound, AIS was developed internationally for Toyota. "This solution has now been implemented on numerous Toyota plants. We handed over the system for the Corolla line within six months while simultaneously extending the IMV line to include AVI."

23. Story of Rockwell Collins, Inc.

Rockwell Collins, Inc. engages in the design, production, and support of communications and aviation electronics worldwide. It operates in two segments, Commercial Systems and Government Systems. The Commercial Systems segment supplies integrated avionics systems and products; cabin electronics systems and products; communications systems and products, such as data link, frequency, and satellite communications systems; navigation systems and products; and situational awareness, and surveillance systems and products. It also provides flight deck systems and products; integrated information systems; and electro mechanical pilot controls and actuation systems; and simulation and training systems, including visual system products, training systems, and engineering services. This segment serves original equipment manufacturers of commercial air transport, and regional and business aircraft; commercial airlines; and fractional and other business aircraft operators. In addition, it offers maintenance, repair, and parts and after-sales support services. The Government Systems segment provides communications systems and products designed to help customers transfer information; military data link systems and related products; and navigation systems and products, including radio navigation systems, global positioning systems, handheld navigation systems, and multi-mode receivers. It also provides subsystems for the flight deck comprising flight controls and displays, information/data processing and communications, navigation, and/or safety and surveillance systems; cockpit display systems; and integrated computer systems. This segment serves the U.S. Department of Defense, other government agencies, civil agencies, defense contractors, and foreign ministries of defense. The company was founded in 1933 and is headquartered in Cedar Rapids, Iowa. Rockwell Collins, Inc. (NYSE:COL) operates independently of Rockwell Automation, Inc. as of June 29, 2001.

24. Story of Rockwell Automation with Boeing

Rockwell Automation announced today that they have signed a definitive agreement under which Boeing will acquire Rockwell's Aerospace and Defense businesses.

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In the merger, Boeing will issue approximately \$860 million of its common stock and retain \$2.165 billion of Rockwell debt and certain retiree obligations of Rockwell. Effective date is expected to be later this year.

Immediately prior to the merger, Rockwell will transfer its Automation, Avionics, Communications, Semiconductor Systems and Automotive Components Systems businesses to a new company, which will keep the Rockwell name. Shares of the new Rockwell will be distributed to Rockwell shareowners just prior to the effectiveness of the merger on a one-for-one basis. The new Rockwell will be listed on the New York Stock Exchange.

The new name of the acquired units will be Boeing North American, Inc., a wholly owned subsidiary of The Boeing Company. The Rockwell Aerospace and Defense units employ approximately 21,000. Boeing Defense & Space Group has approximately 30,000 employees.

The transaction, which is intended to be tax free, is subject to approval by Rockwell's shareowners and debtholders, certain regulatory approvals and other provisions generally required in similar transactions. A special Rockwell shareowners' meeting will be held in November and the transaction is expected to be completed shortly thereafter.

Phil Condit, Boeing president and chief executive officer, said, "The assets and capabilities we are acquiring are an extremely good strategic fit with our long-term objective of creating shareholder value. This merger accelerates us on our way to achieving our 20-year vision, which calls for Boeing to be a fully integrated aerospace company designing, producing and supporting commercial airplanes, defense systems, and defense and civil space systems.

He noted the intent is to grow the business base and expand opportunities. Although there will be some efficiencies that will be identified by combining the organizations, Boeing expects minor employment impact.

"My desire," Condit said, "is to absorb any necessary employment adjustments through normal attrition and by retraining employees to take advantage of new business or career opportunities within Boeing. Both of our organizations have records of strong performance and we expect to learn new best practices that will bring increased product value to our customers."

Donald R. Beall, Rockwell's chairman and chief executive officer, said, "This is an historic step in the continuing transformation of Rockwell, which has been shifting strategic focus to higher growth commercial and international businesses, with a particular focus on electronics. The new Rockwell will be essentially debt free and well positioned for significant investments in our strong franchises in Automation, Semiconductor Systems, Avionics, Communications and Automotive Components Systems businesses, including internal development and both large and small acquisitions." Beall added, "Our Aerospace and Defense businesses, with their strong franchises, solid management, excellent technologies and outstanding employees, have made strong contributions to Rockwell's success through their world class performance. The benefits to those businesses, their customers and their employees of the alliance with Boeing are compelling. The complementary strengths of Boeing and our Aerospace and Defense businesses create a leading global competitor in this industry." The major product groups of the acquired divisions are: ICBM systems; tactical missiles; sensors; B-1B bomber; commercial aerostructures; aircraft and helicopter modifications; rocket propulsion including the Space Shuttle main engine; Space Station electric power; airborne laser and electrooptics; Space Shuttle integration, logistics and operations; Global Positioning System satellites; space defense and advanced programs.

The Boeing Defense & Space Group encompasses virtually all of the company's business with the U.S. Department of Defense, NASA and international defense customers. Defense and space programs include: helicopters, military aircraft, advanced electronic systems, space transportation and the International Space Station. The Group is organized into five divisions; Information & Electronic Systems, Missiles & Space, Helicopters, Military Airplanes and Product Support.

The Boeing Defense & Space Group had 1995 sales of \$5.6 billion. The acquired Rockwell units had 1995 sales of \$3.2 billion.

The new Boeing North American will report to Jerry King, president of the Boeing Defense & Space Group. Boeing North American will be headed by John McLuckey, who is currently president and chief operating officer of Rockwell's Aerospace and Defense businesses.

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SEATTLE, Aug. 1 /PR Newswire/ — The Boeing Company (<u>NYSE</u>: BA) and Rockwell International Corporation (NYSE: ROK) announced today that they have signed a definitive agreement under which Boeing will acquire Rockwell's Aerospace and Defense businesses.

In the merger, Boeing will issue approximately \$860 million of its common stock and retain \$2.165 billion of Rockwell debt and certain retiree obligations of Rockwell. Effective date is expected to be later this year.

Immediately prior to the merger, <u>Rockwell will transfer its Automation</u>, <u>Avionics, Communications</u>, Semiconductor Systems and <u>Automotive Components Systems businesses</u> to a new company, which will keep the Rockwell name. Shares of the new Rockwell will be distributed to Rockwell shareowners just prior to the effectiveness of the merger on a one-for-one basis. The new Rockwell will be listed on the New York Stock Exchange.

25. ROCKWELL'S AEROSPACE PROFITS CUT BY END OF B-1B

Operating earnings of Rockwell International's aerospace segment dropped to \$418 million for fiscal 1989 from \$493 million last year. Rockwell said returns from the B-1B bomber program were down \$140 million (\$.35 per share) in 1989 due primarily to the completion of aircraft production in April 1988.

The company's B-1B sales were down \$500 million for the year from \$1.360 billion in FY '88. In addition, it said it had a higher profit rate in 1988.

RI's aerospace sales totaled \$3.909 billion for the year, including \$986 million in the fourth quarter

Boeing buying Rockwell units August 1, 1996: 11:32 a.m. ET

Aerospace giant to pay \$3.2B for Rockwell's defense and space units NEW YORK (CNNfn) The Boeing Co. on Thursday said it reached a definitive agreement to buy Rockwell International Corp.'s defense and aerospace units for about \$3.2 billion in stock and debt.

In the latest move toward consolidation in the aerospace and defense industry, Boeing agreed to issue \$860 million in common stock and retain \$2.165 billion in Rockwell's debt along with certain pension obligations. "The assets and capabilities we are acquiring are an extremely good strategic fit with our long-term objective of creating shareholder value," Boeing President and Chief Executive Officer Philip Condit said in a statement. "This merger accelerates us on our way to achieving our 20-year vision, which calls for Boeing to be a fully integrated aerospace company."

The Rockwell units will become a wholly- owned subsidiary of Seattle-based Boeing and will be called Boeing North American Inc., adding roughly 21,000 workers to Boeing's current defense and space workforce of 30,000.

Rockwell's defense and aerospace units are expected to add \$3.2 billion in annual sales to the Boeing Defense & Space Group's current annual sales of \$5.6 billion.

Condit said there would be some job reductions due to overlapping positions, but added he does not see a need for major cuts. His plan is to eventually expand the operations.

The remainder of Rockwell - including automation, avionics, communications, semiconductors systems and automotive components businesses - will be transferred to a new company that keeps the Rockwell name, and will remain in Seal Beach, Calif., Shares in the new Rockwell will be distributed on a one-for-one basis and listed on the New York Stock Exchange.

The deal requires shareholder and regulatory approval.

Rockwell Chairman and Chief executive Officer Donald R. Beall said the decision to sell the defense and aerospace businesses fit with a shift in his company's strategic focus to electronics manufacturing that provides higher growth.

Beall said the new Rockwell will be virtually debt-free and positioned to make investments in its remaining businesses. "This is an historic step in the continuing transformation of Rockwell.

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Boeing Corporate Offices: 100 North Riverside Chicago, Illinois 60606 Boeing Defense, Space and Security. O. Box 516 St. Louis, Missouri 63166 314-232-0232 562-797-2020 (Seal Beach, California

26. Story of Rockwell Automation with NASA October 2001

Software Safety Assurance of Programmable Logic Controller (PLC, FPGA, ASIC) devices are hybrids - hardware devices that are designed and programmed like software. As such, they fall in an assurance gray area. Programmable Logic is usually tested and verified as hardware, and the software aspects are ignored, potentially leading to safety or mission success concerns

NASA Technical Reports Server

Aug 1, 2003 ... By integrating a control system based on a Rockwell Automation's flexible and reliable PLC-5 controller, Stennis was able to implement ...

others searched for:

 $\frac{\text{http://ntrs.nasa.gov/search.jsp?R=875586\&id=6\&as=false\&or=false\&qs=No%3D70\%26N}}{\text{e}\%3D20\%2...}$

Back to Results - NASA Technical Reports Server

Jul 5, 2007 ... Rockwell Automation PLC-5 Lands Stennis Space Center with a Reliable, Flexible Control System Author(s): Epperson, Dave ... others searched for:

 $\frac{\text{http://ntrs.larc.nasa.gov/search.jsp?No=40\&Ne=41\&N=4294891601\&Ns=HarvestDate\%7}{\text{C1\&as=false}}$

RICHARDSON, Texas--(BUSINESS WIRE)--May 22, 1995—Rockwell (NYSE:ROK) has received a \$26.5-million add-on award for the production phase of the U.S. Navy's High Power Transmit Set (HPTS), a critical communications element for strategic forces.

The add-on contract was awarded by the Naval Air Systems Command, Washington, D.C., and follows a \$29.6-million add-on award in April 1994, and a \$17.7-million initial production contract in 1993.

The HPTS system consists of a very low frequency/low frequency (VLF/LF) 200 Kw solid-state power amplifier and dual trailing wire antenna system, which operates over a frequency range of 17 to 60 kilohertz.

"We are extremely pleased that the Navy is extending HPTS Low Rate Initial Production to include fiscal year (FY) 1995, which further solidifies Rockwell's leadership in the VLF market," said Ken Medlin, vice president and general manager of Rockwell's Communication Systems Division (CSD), which received the contract.

"Rockwell has been providing quality VLF systems to the Navy for over 30 years," Medlin added. HPTS improves the reliability of systems that provide survivable communication links from the Navy's E-6A TACAMO aircraft to the U.S. strategic forces. The improved reliability supports a reduction in the number of systems deployed, thereby reducing operating costs.

The scope of the HPTS FY-95 production provides for the fabrication and test of two 200 Kw HPTS systems for the TACAMO E-6A aircraft. The contract also includes the fabrication of two installation kits by Rockwell's North American Aircraft Modification Center at Shreveport, La., the building of a refurbishment kit for an Engineering Development Model, spares, data and continued logistics support. The HPTS will be built, assembled and tested by Rockwell's CSD operation in Richardson. Printed circuit boards will be assembled at Rockwell's manufacturing plant in El Paso, Texas.

The Navy's future plans call for the procurement of 11 additional HPTS systems in FY-96 through

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FY-98. Rockwell is a diversified, high technology company holding leadership market positions in automation, avionics, aerospace, defense electronics, telecommunications, automotive components and graphics systems, with annual worldwide sales of more than \$12 billion.

27.Story of Mr Nosbusch, Chairman CEO of Rockwell Automation

"Even in these troublefd times," began Keith Nosbusch, chairman and CEO of Rockwell Automation, "Rockwell Automation is on a very exciting path. We're well-positioned to both weather the storms of the current economic situation and prosper into the future."



What we have to do now is to continue our plans and keep our eye on the ball." Rockwell Automation CEO Keith Nosbusch is bullish on the company's ability to weather any economic downturn

Nosbusch updated a media-only crowd gathered in Nashville, Tenn., for the company's Manufacturing Perspectives event, which leads up to the Automation Fair event. "Rockwell Automation has the technology leadership," he added, "the intense customer focus, and the financial strength, together with a strong balance sheet and a seasoned management team." Nosbusch segmented an update on the company's financial picture into two parts based on the two overarching business units: Architecture and Software and Control Products and Solutions. Architecture and Software includes the Logix platform, FactoryTalk, Pavilion and Incuity. 2008 revenues from this business unit were \$2.4 billion, with \$3.3 billion coming from Control Products and Solutions.

"In 2004," Nosbusch said, referring to the year he became CEO, "our revenues were 61% in the United States. In 2008, they were a little under 50%, and 50% of our employees are outside the U.S. Our goal is to have 60% of revenues from outside the United States by 2013."

Nosbusch described the company's recent acquisitions as catalysts for continued growth: ICS Triplex, Proscon, the Irish life sciences system integrator, Pavilion Technologies, CEDES (a maker of safety light curtains), Incuity for enterprise manufacturing intelligence and visualization, and the most recent acquisition of all, Xi'an Hengsheng—a heavy-industry integrator with a strong customer base in central and western China.

Turning to the economic situation, Nosbusch noted that GDP has slowed down, and that some degradation is occurring. Even though this situation started in the mortgage and investment-banking arena, he said, it is likely that there will be reduced capital expenditures in the months ahead.

"Rockwell Automation has more resiliency than many of our competitors. What we have to do now is to continue our plans and keep our eye on the ball," he added.

There are new drivers in the market, Nosbusch continued, noting the importance of globalization, productivity, innovation and sustainability. But the most important megatrend,

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he said, is the convergence of control, communication, information and power on the manufacturing floor.

"Imagine a highly linked environment enabled by modern technology and global standards that can flexibly combine and leverage information," he said.

This manufacturing convergence and the connected enterprise, Nosbusch said, will drive greater productivity, integrate the global value chain, enable innovation and reduce time to market—and enable the shift to sustainable production and reduce business risk.

The Logix platform brings together multiple control disciplines, is scaleable, information-enabled and open, Nosbusch said. "This is game changing technology—our installed base now exceeds \$3 billion, and we expect to achieve \$8 billion by 2013. The Logix PLC platform is future-proof."

So what is Rockwell Automation's strategy? Nosbusch said that the process industries were the largest growth area for Rockwell Automation, and the strategy there is the displacement of the traditional DCS and the extension of Rockwell Automation's reach into process safety. "Process provided \$700 million revenues this past year," he said. Safety, too, is a key growth initiative centered around control. Rockwell, Nosbusch noted, is the only significant player in both machine safety and process safety.

As for network convergence, Nosbusch suggested that the future holds universal acceptance for Ethernet and a resolution to the age-old IT-versus-production culture clash. Here, too, Rockwell Automation partner Cisco Systems plays a critical role, with the companies' unified reference architecture for manufacturing and the co-branded Stratix series of network switches.

Nosbusch's vision for Rockwell Automation is the ability to use standard Ethernet for unified communications—voice, video, mobility and powerline. This, he said, would come from collaboration and provide speed, flexibility, leverage and a lower total cost of ownership. Rockwell Automation's contribution to sustainability in manufacturing includes its product line of Intelligent Motor Controls. These, Nosbusch said, provide increased energy efficiency. This segment is approximately 25% of Rockwell Automation's business, and the company enjoys a top-three global position with a highly differentiated intelligent motor control center product line.

In solutions and services, Rockwell Automation has repeatable solutions for industry that leverage knowledge, with re-usable engineering, tools and processes. Rockwell Automation also is concentrating on acquiring and retaining industry experts, as well as acquiring new businesses that will help fill gaps in the product portfolio.

In answer to a question, Nosbusch said that Rockwell Automation was going to "of course, align our cost structure with reality, but we're going to continue to invest, focus on emerging economies and fund our key new products and solutions. We may be forced," he went on, "to re-prioritize and align our priorities, but we have a very strong balance sheet and our free cash flow is very strong. That's why we're continuing to pay our dividend and re-purchase our stock.

28. Randall Hoth (left), president and CEO of the Wisconsin BBB, presents the 2009

International Torch Award for Marketplace Ethics to Keith Nosbusch, chairman and CEO of Rock



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Rockwell Automation was recently named a finalist in the Council of Better Business Bureau's (BBB) 2009 International Torch Award for Marketplace Ethics. The company is one of only four firms in the United States to receive such an honor. It was entered into the international competition after winning the 2008 Torch Award for Business Ethics from the Wisconsin BBB.

"Rockwell Automation is proof that an outstanding reputation in nthe marketplace leads to long-term success," said Randall Hoth, president and CEO of the Wisconsin BBB.

"Businesses that do the right thing have a competitive advantage. They elicit the steadfast loyalty of their customers, employees, suppliers and vendors and the global communities they serve, which in turn boostssales of their products or services

29. Story of Rockwell Automation with Mercedes-Benz U.S. International

Process transparency William C. Taylor, president and chief executive officer of Mercedes-Benz U.S. International Inc., a DaimlerChrysler company, addressed the Manufacturing Perspectives audience with comments on how Rockwell Automation helped his company achieve transparency into the manufacturing process

Mercedes selected Rockwell Automation as its automation partner for the plant because, said Taylor, the company "provides the expertise needed for the long haul." Software jointly developed by Rockwell Automation and DaimlerChrysler supports a library of standardized instructions and process transparency that has improved problem solving in the plant.

30. Story of Rockwell Automation with Security technology

Control system lifecycle services

- Manage network convergence
- · Security technology, policies and procedures services

Security implementation services help to foster manufacturing convergence by enabling secure conduct and help to reduce associated risks. These services apply security appliances, such as firewalls and implement security programs. Our security consultants will also train employees on security policy and awareness throughout the organization.

Security design and planning can help you to avoid negative impacts caused by a poorly designed system. While manufacturing convergence has many benefits, it can cause negative impacts due to environmental, architectural, maintenance and consequence of failure differences between manufacturing and IT enterprises.

Our converged Network and Security team has:

- Knowledge of manufacturing applications their dependency on the infrastructure and possible impact on the overall manufacturing process.
- · Awareness of manufacturing security consequences.
- Understanding the differences between bandwidth and latency.
- · Knowledge of how each layer of the OSI model affects the performance of your system
- Experience with all types of manufacturing networks EtherNet/IP, ControlNet, DeviceNet, DH+, Remote IO, Fieldbus, and other automation industry networks.
- Involvement in, and awareness of, national and global standards committees (e.g., Department of Homeland Security,Idaho National Labs, ISA 99 and NIST 800-82)
- · Awareness of traditional IT policies and the impact they can have on the plant floor
- Capabilities to provide wired and wireless network solutions.

31. Contracts from Dept. of Homeland Security (FY 2008)List of Individual Transaction

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Amount	Parent Company Name	Major Agency	<u>Product or</u> <u>Service</u>	<u>Date</u>
<u>\$3</u>	,124,283 ROCKWELL AUTOMATION	Dept. of Homeland Security	Maintenance, repair and rebuilding of equipment	2007-10-11
	\$60,298 ROCKWELL AUTOMATION	Dept. of Homeland Security	Maintenance, repair and rebuilding of equipment	2008-04-15
	\$14,750 ROCKWELL AUTOMATION	Dept. of Homeland Security	Automatic data processing equipment	2008-04-11
	\$6,614 ROCKWELL AUTOMATION	Dept. of Homeland Security	Maintenance, repair and rebuilding of equipment	2007-12-12
	\$5,550 ROCKWELL AUTOMATION	Dept. of Homeland Security	Invalid or blank code	2007-10-18
	\$3,760 ROCKWELL AUTOMATION	Dept. of Homeland Security	Invalid or blank code	2008-09-10
	\$3,010 ROCKWELL AUTOMATION	Dept. of Homeland Security	Automatic data processing equipment	2008-09-09
	\$277 ROCKWELL AUTOMATION	Dept. of Homeland Security	Electrical and electronic equipment components	2008-07-28
	\$248 ROCKWELL SUTOMATION	Dept. of Homeland Security	Maintenance, repair and rebuilding of equipment	2008-07-09
	\$0 ROCKWELL AUTOMATION	Dept. of Homeland Security	Maintenance, repair and rebuilding of equipment	2008-05-02
<u>\$-8</u>	36,017 ** ROCKWELL AUTOMATION	Dept. of Homeland Security	Maintenance, repair and rebuilding of equipment	2008-08-12
<u>4</u>	5-114,127 ROCKWELL AUTOMATION	Dept. of Homeland Security	Maintenance, repair and rebuilding	2007-10-11

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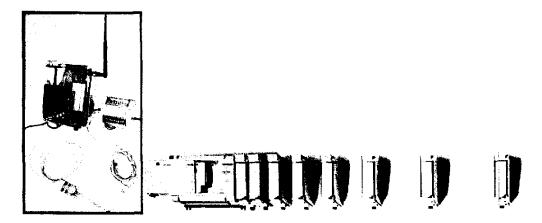
Samy Gharb - Rockwell Automation Inc Document 1

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32. The product of the year 2001 PLC Programmable Controllers MicroLogix 1500 and 1200 with GSM Mobile phone for Security system without any Patent rights or trademark—copyrights in USA from the year 2001.

<u>Using offering to Sale PLC programmable logic controller MicroLogix 1200 and 1500 Utilising GSM mobile phone...</u>

The PLC MicroLogix 1500 is programmed using the RSLogixTM 500 programming environment. The instruction set is compatible with all MicroLogix as well as SLC ... which sends a text message to the modem and to the SMS message service. Similar functionality is also available on several other Allen-Bradley PLC programmable logic controller platforms.



PLC Programmable Logic Controllers MicroLogix™ 1200 and 1 500 Utilizing GSM mobile phone RTU's White Paper

MicroLogix 1200 and 1500 Utilizing GSM RTU's Take Control with MicroLogix 1200 controllers are truly micro in size. With a footprint as small as 3.52" X 4.33" (90mm X 110mm), they are ideal for control projects where panel space is a challenge. The MicroLogix 1200 makes use of discrete and analog expansion I/O modules (providing up to 88 points) for a lot of application flexibility. Removable I/O labels with a write-on area make for easy field device identification to reduce valuable troubleshooting and maintenance time. The finger-safe terminal blocks for safe operation meet global safety standards. The MicroLogix 1200 boasts a large 6K memory, with 4K words available for user programs and configurable 2K words for user data. This feature of the MicroLogix 1200 expands application coverage by allowing data elements to be selected according to individual application requirements.

Expand Your Choices with MicroLogix 1500

The MicroLogix 1500 has more robust features for a controller this size. It supports up to 12K of onboard non-volatile user memory to accommodate complex application program, with additional memory for applications that require data logging. Additionally, the controller's terminal blocks are removable, "finger-safe" NEMA-style blocks. And because it can be either DIN rail or panel mounted, the MicroLogix 1500 takes up a fraction of the space of larger controllers while reducing overall application costs.

The installed controllers are being used to sense alarm and status information, which in turn, is transmitted to a cell phone number upon a pre-condition occurrence in memory. The text message transmitted appears on the receiver's cell phone display in a similar method to an alphanumeric pager. While not implemented in our current installations, the receiver could also enter text on their cell phone and transmit back to the controller.

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The controller upon receipt of this message could decode the sender's phone number and also the message and perform a string comparison to find an identical string of text in memory. Once found, the controller could take appropriate action within it's program, such as turning devices on or off. This would enable operators to respond to some low level alarms from a remote location via cell phone, and take appropriate action such as clearing or acknowledging low level alarms. If the SIM card contained within the GSM modem mobile phone (connected to the Micro) is data enabled, it could also log on and program the MicroLogix over the cell phone network at 9600 baud.

2001 Rockwell International. All Rights Publication 1764-WP002A-EN-E Reserved.Printed Here is the big point of the Summary of the fact to show the Judges that the people of Rockwell have stolen my invention and after two years of publication of my us patent(This has already been successfully demonstrated.) in the US PATENT from US inventor Samy Gharb in juni 3.1999 (SummaryNo,3).

33. Here is My US Patent 6,552.654 for Security system with a mobile telephone & PLC <u>programmable logic controllers</u> G, H, and I essentially are used to activate a mobile phone. Inventor. Gharb, Samy ... <u>Foreign Application Priority Data. 1999-06-03</u> CH http://www.patentstorm.us/patents/6552654/description.html -

What is claimed is:

A security system for monitoring objects, comprising:

- a digital recording device having at least one emergency message; and
- a mobile telephone having at least one preselected emergency number;
- a first Programmable Logic Controller (PLC) controller for initialing monitoring;
- a second PLC controller for repeating an alarm signal; and third, fourth, and fifth PLC controllers for activating a mobile telephone and a digital recording device; at least one sensor for generating an alarm state connected to the first PLC controller; a main relay for controlling the first PLC controller and which can be operated by a remote control; a computer having mobile lines connectable to the five PLC controllers for programming the five PLC controllers; and a data set for transmission to the mobile telephone including alarm information; wherein the second PLC controller repeats the alarm signal if the line dialed by the mobile telephone in case of an alarm, is busy; and wherein each time the second PLC controller repeats the alarm signal, the third, fourth and fifth PLC controllers activate the mobile telephone and the digital recording device.

A security system as claimed in claim 1, wherein the data set comprises a start signal, the at least one emergency number, and the at least one emergency message.

A security system as claimed in claim 1, wherein each of the controllers includes inputs and outputs, and wherein the outputs of the first PLC controller are connected to an input of the second PLC controller and of the fifth PLC controller, outputs of the second PLC controller are connected to inputs of the third, fourth, and fifth PLC controllers, outputs of the third and fourth PLC controllers are connected to an input of the mobile telephone, and outputs of the fifth PLC controller are connected to the recording device.

A security system as claimed in claim 1, wherein the fifth PLC controller is configured and arranged to control the ignition and the solenoid of the fuel pump of a vehicle.

A method of using a security system comprising the steps of:

providing a security system as claimed in claim 1;

positioning the security system inside a security case, the security case including

an underside having at least one switching element for triggering the alarm and at least one switching element for releasing the power supply;

a satellite communications device connected to the security system and having an antenna for communicating with a satellite locating system; and operating the security system for locating vehicles. The method of claim 5, wherein when the security case is not in contact with a surface, the at least one switching element for the triggering the alarm triggers the alarm and the at least one switching element for releasing the power supply connects the power supply to at least one of the PLC controllers.

A method for operating a security system comprising the steps of:

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providing a security system as claimed in claim 1; entering the alarm signal and the alarm information in the PLC controllers into the mobile telephone and digital recording device, which establishes a data set; activating the operating status via the main relay by means of the remote control; generating an alarm signal via the at least one sensor of the sensor unit; transmitting the alarm signal to the first PLC controller, and from the first PLC controller to the second PLC controller; transmitting the alarm signal at least once to the third, fourth, and fifth PLC controllers, the outputs of which are used to control the mobile telephone and the recording device; and transmitting the data set via the mobile telephone, wherein the data set is compiled from the at least one emergency number stored in the mobile telephone, the emergency message stored in the recording device, and start and initialization signals from the third and fourth PLC controllers.

34. The Function Blocks are summarized in the following table:

PLC Relay No.	Command	Time
G Q9	Mobile telephone ON	01.00 s-02.40 s
G Q10	Pin Code 1	06.00 s-01.50 s
G Q11	Pin Code 2	08.00 s-01.50 s
G Q12	Pin Code 3	10.00 s-01.50 s
H Q13	Pin Code 4	12.50 s-01.50 s
H Q14	ОК	14.00 s-01.50 s
H Q15	Emergency number	16.50 s-01.50 s
H Q16	OK	18.50 s-01.50 s
I Q17	Start emergency message	19.90 s-01.70 s
I Q18	Mobile telephone OFF	55.5s

35. Here is my invention of the new technology by use of three device

MEMORY OF PLC Programmable Logic Controller MEMORY OF PC MEMORY OF GSM MOBILE PHONE



(12) United States Patent Gharb

(10) Patent No.: US 6,552,654 B1 (45) Date of Patent: Apr. 22, 2003

(54) SECURITY SYSTEM WITH A MOBILE TELEPHONE

(76) Inventor: Samy Gharb, Bachtobelstrasse 30, CH-8045 Zurich (CH)

(*) Notice: Subject to any disclaimer, the term of this

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: 09/762,111
(22) PCT Filed: May 25, 2000

(86) PCT No.: PCT/CH00/00294 § 371 (c)(1),

(2), (4) Date: **Apr. 5, 2001** (87) PCT Pub. No.: **WO00/74983**

PCT Pub. Date: Dec. 14, 2000
(30) Foreign Application Priority Data

(56) References Cited

U.S. PATENT DOCUMENTS

5.497.149 A	oğr	3/1996	Fast
5,731,785 A	*	3/1998	Lemelson et al 340/825.49
5,805,055 A	*	9/1998	Colizza 340/426
5,898,391 A	*	4/1999	Jefferies et al 340/988
5,959,529 A	*	9/1999	Kail, IV 340/539

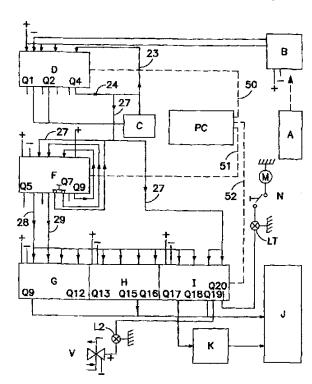
* cited by examiner

Primary Examiner—Daniel J. Wu Assistant Examiner—Hung Nguyen (74) Attorney, Agent, or Firm—Burus, Doane, Swecker & Mathis, L.L.P.

(57) ABSTRACT

A security system is activated by a remote control (A) via a main relay (B) and an alarm signal is generated by a sensor unit (C) with at least one sensor. The alarm signal is processed in the PLC control units (D, F, G, H, I) and with a recording device (K), and the alarm information is transmitted in the form of adata set via a mobile telephone. The PLC control units are client-specifically programmed with a computer (PC) during the start-up process and the information is transmitted to them via a mobile line (50, 51, 52). The invention is suitable for use in the monitoring of vehicles and security cases. In particular, the security device can be integrated into a satellite locating system with which the position can be represented on a monitor.

10 Claims, 8 Drawing Sheets



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36. The MicroLogix Family of Controllers. PLC Programmable Logic Controllers and GSM mobile phone

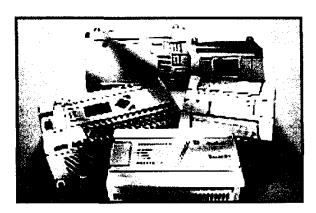
Today's marketplace is more competitive than ever.

Thriving in such an environment means using the best tools and technologies the world has to offer. All over the globe, companies requiring compact controllers look to the Allen-BradleyR MicroLogixTM family of controllers from Rockwell Automation With five controller versions to choose from, you'll find a wide variety of features to suit most applications

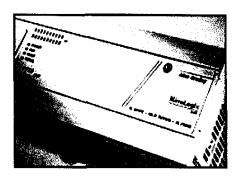
The products of PLC15 MicroLogix PROGRAMMABLE LOGIC CONTROLLERS MicroLogix 1100 Controllers

MicroLogix 1000 Controllers MicroLogix 1200 Controllers MicroLogix 1200R Controllers MicroLogix 1400 Controllers MicroLogix 1500 LRP Controllers MicroLogix 1500 LSP Controllers

Whether you're in the market for a cost-effective micro-control solution or a high performance, expandable micro controller that grows to fit your applications needs, the PLC MicroLogix family of small programmable controllers keeps you moving. With five controller types to choose from, you'll find a wide variety of features to suit most applications. The PLC MicroLogix 1000, 1100, 1200, 1400, and 1500 controllers share a common architecture, and are compatible with the PanelView family of Allen-Bradley operator interface devices.

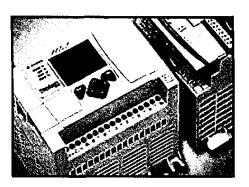


The PLC MicroLogix 1000 family provides small, economical programmable controllers. They are available in configurations of 10 digital I/O (6 inputs and 4 outputs), 16 digital I/O (10 inputs and 6 outputs), 25 I/O (12 digital inputs, 4 analog inputs, 8 digital outputs, and 1 analog output), or 32 digital I/O (20 inputs and 12 outputs) in multiple electrical configurations of digital I/O. The I/O options and electrical configurations make them ideal for many applications



37.PLC Programmable Logic Controllers MicroLogix 1000 without any GSM mobile phone technology

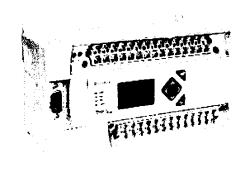
The PLC MicroLogix 1000 can handle a wide variety of big-time applications at 32 I/O or below, while using only a fraction of the space of a full-size controller — at a fraction of the price. And here IS quite clear that the team of Rockwell had no idea about my new technology of using PLC and GSM mobile phone



When you need control, communication and visualization in one compact controller, the PLC MicroLogix 1000 has you covered with greater connectivity and application coverage for the PLC MicroLogix family. . And here is quite clear the team of Rockwell had no idea about my new technology of using PLC and GSM mobile phone

38. PLC Programmable Logic Controllers MicroLogix 1200 - 1500 with GSM MOBILE PHONE WITHOUT ANY PATENT RIGHTS

More powerful and flexible than ever, the PLC MicroLogix 1200 can expand up to 136 I/O and 1200R versions provide you with even more control capabilities.





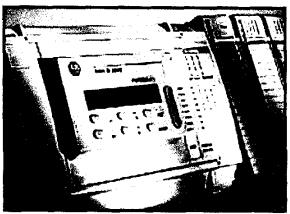
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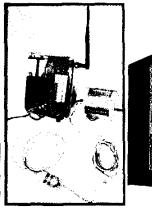
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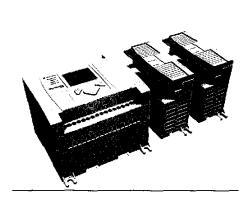
39. PLC Programmable Logic Controllers MicroLogix 1400

Take advantage of enhanced communication capabilities and a higher I/O count with the PLC MicroLogix 1400, while utilizing advanced visualization and control features.

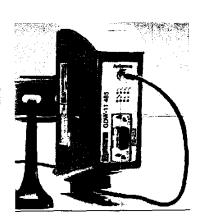






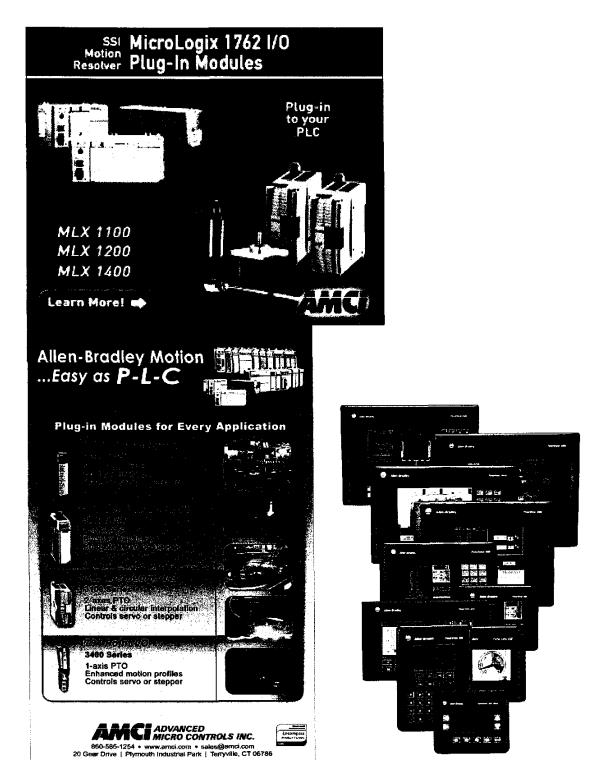


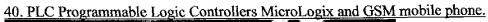




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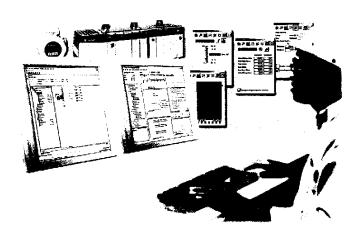
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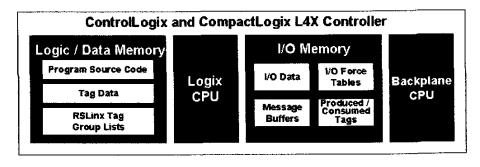
41.The PLC Programmable Logic Controllers MicroLogix Programmable Controllers from Rockwell Automation complements the existing MicroLogix family of small programmable logic controllers, by combining the features you demand from MicroLogix 1100, such as Ethernet/IP, online editing, and a built-in LCD, plus enhanced features, such as increased I/O, faster High Speed Counter/ PTO and communication capabilities. Utilize the built-in LCD with back lighting to set the Ethernet network configuration, display floating point values on user configurable display, display OEM logos and view and/or modify any binary or integer file element.

Program with RSLogix 500 programming software (Version 8.10 and above) as well as new RSLogix Micro programming software.

- 42. Logix5000 PLC Programmable Logic Controllers Function Block Diagram. The term Logix5000 controller refers to any controller that is based on the Logix5000 operating system, such as:
- CompactLogix controllers
- ControlLogix controllers
- DriveLogix controllers
- FlexLogix controllers
- SoftLogix5800 controllers



43. <u>Using PC keyboard Write-Read/ Store process with Windows in PLC Programmable Logic Controllers with function block.</u>



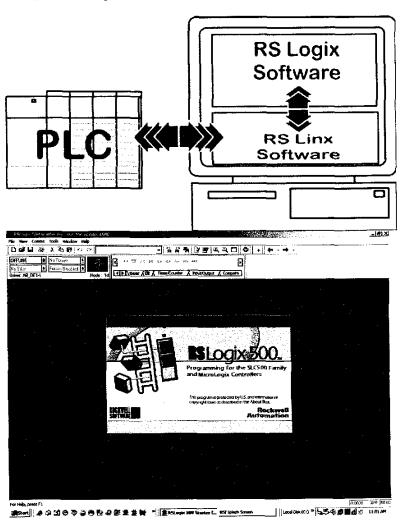
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44. the team of Rockwell has stolen my invention Store it, with function block in the PLC LOGIX CPU safety memory for using with GSM mobile phone ready for the costumers without any Patent rights in USA.

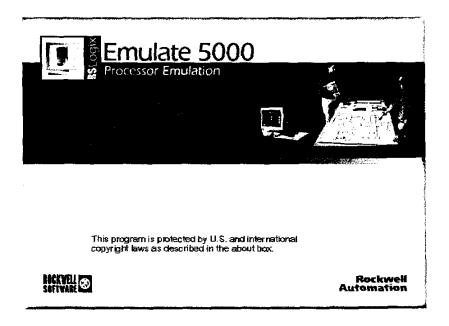
The Logix 5000 PLC Task Monitor tool shows the resource utilization of the Logix CPU Only. Backplane CPU operations.



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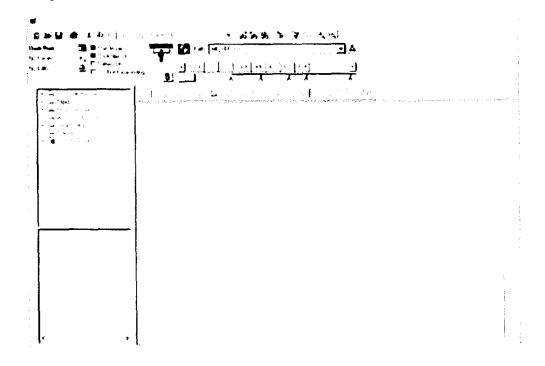
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Logix5000 PLC Programmable logic controller Program a function block diagram Introduction

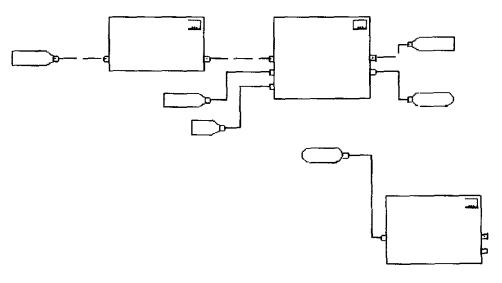
- 45. To make it easier to navigate through a function block routine, divide the routine into a series of sheets.
- Sheets help you organize and find your function blocks. They do not affect the order in which the function blocks execute.
- When the routine executes, all the sheets execute.
- In general, use one sheet for each device

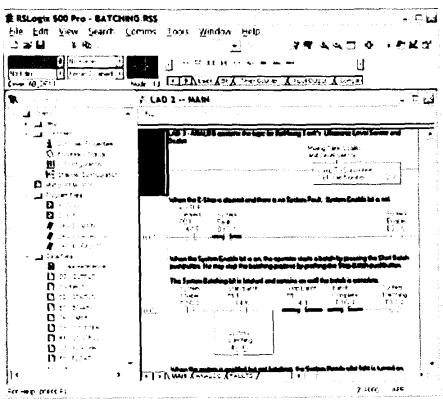


Case: 1:11-cv-00405 Document #: 8 Filed: 03/22/11 Page 42 of 90 PageID #:138

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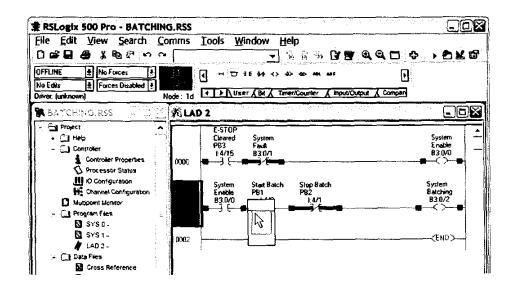




Case: 1:11-cv-00405 Document #: 8 Filed: 03/22/11 Page 43 of 90 PageID #:139

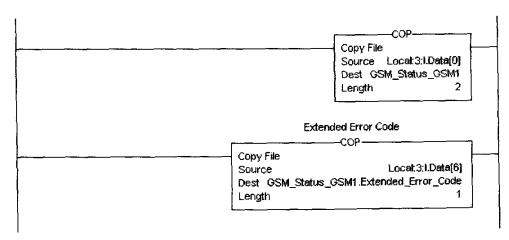
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46. Each function block uses a tag to store configuration and status information About the instruction.

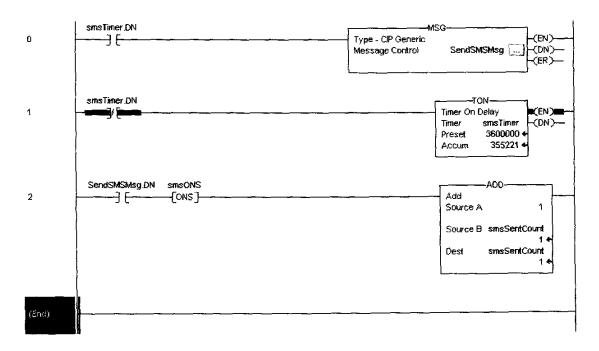
When you add function block instruction, RSLogix 5000 PLC software automatically creates a tag for the block. You can use this tag as is, rename the tag, or assign a different tag and here is quit clear the team of Rockwell Automation has no idea about the new technology of use PLC FUNCTION BLOCKWITH GSM MOBILE PHONE.



47. The following <u>ladder function block</u> is added to the program to copy the status over from the card's Input Image.

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SMS Send Routine

An SMS is sent by issuing a custom CIP message to the module. The ladder Function block in PLC below is the recommended procedure to send the SMS using a timer.

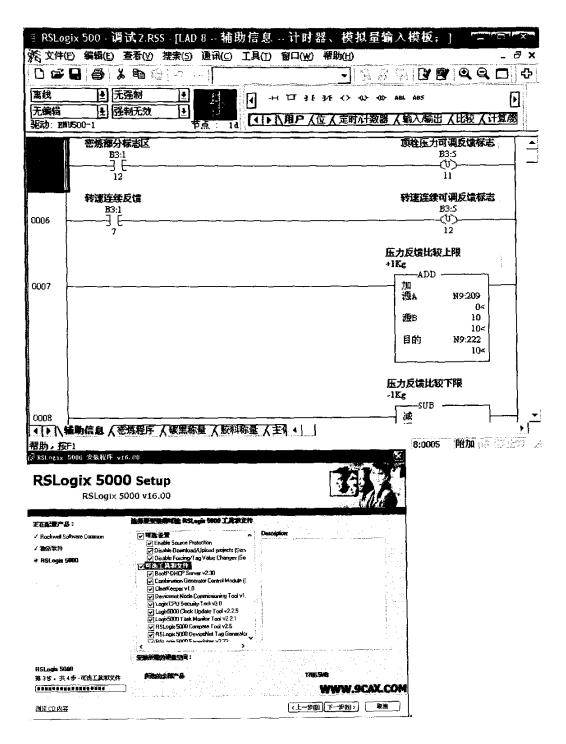
Downloads

48. MicroLogix PLC Programmable Logic Controllers and GSM Mobile phone.

Operating System Revision (FRN) 9 for PLC MicroLogix 1100 Controllers (Series B) [ZIP]. Operating System Revision (FRN) 12 for PLC MicroLogix 1200 Controllers [ZIP]. Operating System Revision (FRN) 12 for PLC MicroLogix 1200 R Controllers [ZIP]. Operating System Revision (FRN) 6 for Series a MicroLogix 1400 Controllers [ZIP] Operating System Revision (FRN) 11 for PLC MicroLogix 1500 LRP Controllers [ZIP]. Operating System Revision (FRN) 11 for PLC MicroLogix 1500 LSP Controllers [ZIP]. ENI & ENIW Upgrade Utility, Series B (upgrades Series B ENI & ENIW to FRN 2.31) [ZIP]. Free Starter Programming Software for PLC MicroLogix 1000 and 1100

43. The determination the excite volume of the huge damages to my US PATENT 6.552,645 BY OFFER USE SALE WITH PUBLICTION IN WEBSITE IN INTERNET TO THE CUSTOMERS WITHOUT ANY PATENT RIGHTS IN USA AND EVEN IN CHINA

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Summary of the facts

Rockwell Automation business from 1993 to 2000

49. <u>Rockwell Automation team has no idea about the new technology of using PLC Programmable Logic Controllers and GSM mobile phone before the year 2001.</u>

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1993

The company launches DeviceNet, an open device-level network that quickly becomes the de facto standard in North America.

1994

The Allen-Bradley line of software is merged with the ICOM lines to form Rockwell Software Inc., the world leader in development and support of software for the automation marketplace.

1995

In this Book of PLC Classic 1785 PLC 5 Family Programmable Controllers was without any GSM mobile phone.

Publication 1785 6.6.1 September 1995 PN 955122 47

Copyright 1995 Allen Bradley Company, Inc. Printed in USA and at that time no one from the team of Rockwell Automation had no idea about the new technology of using PLC and GSM mobile phone.

1997

Rockwell story with MicroLogix_1000 PLC Programmable Logic Controllers without any GSM mobile phone (Bulletin 1761 Controllers)

Allen-Bradley



BASIC

- MicroLogix 1000 10 PO
- Programming Cable
 RSLogis 500 Starter
- 10-point Programming
- . 74V OC Power Supply

\$299

1999

Enterprise Technology Group is acquired. A Pittsburgh based software development and consulting company known for client-server Manufacturing Execution Systems (MES) applications.

Rockwell purchases Anorad Corporation, a market-leader in linear motor based precision positioning equipment.

Company acquires Dynapro, expanding human machine interface hardware and software offering.

Acquisition of EJA, a U.K. based firm brings the expertise of the Guardmaster brand to the safety product portfolio.

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50. My US Patent No, 6,552.654 for using PLC and GSM mobile phone was published since June 3, 1999.

2000

Rockwell acquires Entek, adding predictive monitoring technology to its automation controls offerings. Acquires Systems Modeling Corporation, known for discrete event and process simulation software and for finite-capacity scheduling software.

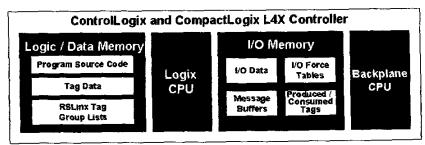
2001

Rockwell Automation becomes an independent, publicly traded company using the New York Stock Exchange symbol ROK.

Sequencia acquisition is completed, adding batch control software, services and support.

PLC Programmable Controllers MicroLogix 1500 and 1200 with GSM Mobile phone without any Patent rights or trademark—copyrights in USA from the year 2001

Rockwell Automation has stolen my invention and sold it since 2001 as products with PLC Programmable Logic Controller MICROLOGIX with GSM mobile phone to all the mentioned costumers, over the United States.



Store function block in the PLC LOGIX CPU safety memory for using with GSM mobile phone ready for the costumers without any Patent Rights in USA.

51. The international classification of my US patent determination as follows

An Internat CL 60R25/10 My US Patent B 60 R VEHICLES, B 60 B25/06.operating on transmission 25/10.actuating a signalling device PLC programmable logic controller - Gr

PLC programmable logic controller - GSM a data set for transmission to the mobile telephone Security system comprising

US CL 340/426 Vehicle.

52. Here is also the direct patent infringement.

I use PC keyboard memory write/read to store my invention with the function blocks in PLC Programmable Logic Controller and GSM mobile phone.

It is strictly not allowed to the team of Rockwell automation to do the same by using PC keyboard and the team of Rockwell Automation must have perception and realize this.



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12.13.2010 - 47 -

53. Huge damages were caused by using drawing sheets of function blocks - GSM Mobile phone and claims with pictures every where in the internet.

54. For determination the exact volume of infringement all over the united states because the team of Rockwell Automation are using all the claims and drawing Sheets and Function block sheets of my US Patent 6,552,654.

55.My US patent for Security system with PLC GSM – 10 claims & 8 drawing sheet for PLC programmable logic controller – GSM Mobile phone – function blocks in PLC Programmable Logic Controller to use with GSM Mobile Phone.

US Patent law

28 U.S.C. § 1338. Patents, plant variety protection, copyrights, mask works, designs, trademarks, and unfair competition

35 U.S.C. 271 Infringement of patent.

(a) Except as otherwise provided in this title, whoever without authority makes, uses, offers to sell, or sells any patented invention, within the United States, or imports into the United States any patented invention during the term of the patent therefore, infringes the patent

35 U.S.C. 284 Damages.

Upon finding for the claimant the court shall award the claimant damages adequate to compensate for the infringement but in no event less than a reasonable royalty for the use made of the invention by the infringer, together with interest and costs as fixed by the court.

When the damages are not found by a jury, the court shall assess them. In either event the court may increase the damages up to three times the amount found or assessed. Increased damages under this paragraph shall not apply to provisional rights under section 154(d) of this title.

56 The team of Rockwell automation has stolen my invention of PLC and GSM mobile and sold – offering using, Rockwell automation must pay for this hug damages.

57.In a polite request I ask United States District Court Northern District of Illinois to require an amount of compensation of **1.000.000.000 US \$** from Mr Keith Nosbusch General Manger Of Rockwell Automation because of infringement of my US Patent 6,554,654 during the period from (2000 – 2010) and for these huge damages to my US Patent.

US Patent holder & International Patent Holder

SAMY GHARB

Kalchbühlstrasse 161 8038 Zürich, Switzerland E.Mail samygharb@ymail.com Tel: 00410792951584 Fax: 00410444821323 Zurich 12.13.2010

SChart

Includes Summary Case: 1:11-cv-00405 Document #: 8 Filed: 03/22/11 Page 49 of 90 PageID #:145

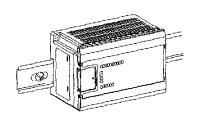
SUMMARY



Allen-Bradley

MicroLogix™ 1000 **Programmable Controllers**

(Bulletin 1761 Controllers)



User Manual

without any 65m mobile Phone



Case: 1:11-cv-00405 Document #: 8 Filed: 03/22/11 Page 51 of 90 PageID #:147

Important User Information

Because of the variety of uses for the products described in this publication, those responsible for the application and use of this control equipment must satisfy themselves that all necessary steps have been taken to assure that each application and use meets all performance and safety requirements, including any applicable laws, regulations, codes, and standards.

The illustrations, charts, sample programs and layout examples shown in this guide are intended solely for purposes of example. Since there are many variables and requirements associated with any particular installation, Allen-Bradley does not assume responsibility or liability (to include intellectual property liability) for actual use based on the examples shown in this publication.

Allen-Bradley publication SGI-1.1, Safety Guidelines for the Application, Installation, and Maintenance of Solid-State Control (available from your local Allen-Bradley office), describes some important differences between solid-state equipment and electromechanical devices that should be taken into consideration when applying products such as those described in this publication.

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Throughout this manual, we use notes to make you aware of safety considerations:



Identifies information about practices or circumstances that can lead to personal injury or death, property damage, or economic loss.

Attention statements help you to:

- · identify a hazard
- · avoid the hazard
- recognize the consequences

Note

Identifies information that is critical for successful application and understanding of the product.

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Allen-Bradley

Enhanced PLC-5 **Programmable** Controller

Quick Start

(Cat. No. 1785-L11B, -L20B, -L30B, -L40B, -L40L, -L60B, -L60L, -L80B)

without any GSm mobile Photop

Important User Information

Because of the variety of uses for the products described in this publication, those responsible for the application and use of this control equipment must satisfy themselves that all necessary steps have been taken to assure that each application and use meets all performance and safety requirements, including any applicable laws, regulations, codes and standards.

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ATTENTION: Identifies information about practices or circumstances that can lead to personal injury or death, property damage or economic loss.

Attention statements help you to:

- identify a hazard
- avoid the hazard
- recognize the consequences

Important: Identifies information that is critical for successful application and understanding of the product.

PLC, PLC-5/11, -5/20, -5/30, -5/40, -5/40L, -5/60, -5/80, PLC-5, and DH+ are trademarks of Allen-Bradley Company, Inc. -5/20,

Preface

Preface

Read this preface to familiarize yourself with the rest of the manual. This preface covers the following topics:

- who should use this manual
- the purpose of this manual
- how to use this manual
- · conventions used in this manual
- Rockwell Automation support

Who Should Use This Manual

To use this manual, you should understand programmable controllers and be able to interpret the ladder logic instructions required to control your application. For more information, see the documents listed on the following page or contact your local Rockwell Automation representative.

Purpose of This Manual

This manual is for users of the Enhanced PLC-5® processor. It:

- presents you with the basic information you need to get your system up and running
- provides "memory jogger" information, such as specific bit and switch settings for modules
- includes high-level procedures with cross-references to other manuals for more detail

How to Obtain a User Manual

There is a user manual associated with this product that contains detailed information about configuring, programming, and using a PLC-5 processor. To obtain a copy of the Enhanced and Ethernet PLC-5 Programmable Controllers User Manual, publication number 1785-6.5.12, you can either:

- view or download an electronic version from the internet: www.theautomationbookstore.com
- purchase a hardcopy from the internet: www.theautomationbookstore.com
- contact your local distributor or Rockwell Automation representative to place an order.

See the table on the next page for other related publications.

Related Documentation

The following documents contain additional information concerning the products discussed in this manual.

For more information about:	See this document:	Publication number:	
Enhanced PLC-5 programmable controllers	Enhanced and Ethernet PLC-5 Programmable Controllers User Manual	1785-6.5.12	
Universal 1771 I/O chassis	Universal I/O Chassis Installation Instructions	1771-2.210	
power supply	Power Supply Modules (1771-P4S, -P6S, -P4S1, -P6S1) Installation instructions	1771-2.135	
DH+® network	Enhanced and Ethernet PLC-5 Programmable Controllers User Manual	1785-6.5.12	
	Data Highway/Data Highway Plus/Data Highway II/Data Highway-485 Cable Installation Instructions	1770-6.2.2	
communication cards	1784-KTx Communication Interface Card User Manual	1784-6.5.22	
	Allen-Bradley Publication Index (for your specific communication card)	SD499	
cables	Enhanced and Ethernet PLC-5 Programmable Controllers User Manual	1785-6.5.12	
batteries	Allen-Bradley Guidelines for Lithium Battery Handling and Disposal	AG-5.4	
grounding and wiring Allen-Bradley programmable controllers	Allen-Bradley Programmable Controller Wiring and Grounding Guidelines	1770-4.1	
current Allen-Bradley documentation, including ordering instructions	Allen-Bradley Publication Index	SD499	
terms and definitions	Allen-Bradley Industrial Automation Glossary	AG-7.1	

Common Techniques Used in This Manual

We use the following conventions throughout this manual:

- Bulleted lists provide information, not procedural steps.
- Numbered lists provide sequential steps or hierarchical information.



We use this symbol to indicate additional references you can use when you need more information about a particular topic.

Preface

P-3

Rockwell Automation Support

Rockwell Automation offers support services worldwide, with over 75 sales/support offices, 512 authorized distributors, and 260 authorized systems integrators located throughout the United States alone, plus Rockwell Automation representatives in every major country in the world.

Local Product Support

Contact your local Rockwell Automation representative for:

- sales and order support
- product technical training
- warranty support
- support service agreements

Technical Product Assistance

If you need to contact Rockwell Automation for technical assistance, call your local Rockwell Automation representative.

Your Questions or Comments about This Manual

If you discover a problem with this manual, please notify us of it by completing and sending the enclosed Publication Problem Report (at the back of this manual).

If you have any suggestions about how we can make this manual more useful to you, please contact us at the address below:

Allen-Bradley Company, Inc. Automation Group Technical Communication 1 Allen-Bradley Drive Mayfield Heights, OH 44124-6118

Telephone: (440) 646-5000

FAX: (440) 646-4320

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Overview

This quick start is designed to provide you with the information you need to get your system up and running quickly. Use this document if you are knowledgeable about Enhanced PLC-5 products, but may not have used one or more of them recently. The information we provide is geared to "jog your memory".

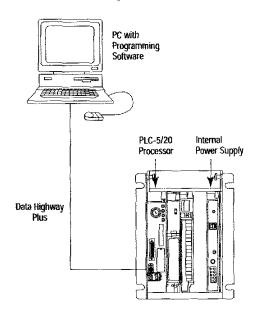
If you need more information, see the Enhanced and Ethernet PLC-5 Programmable Controllers User Manual, publication number 1785-6.5.12 (see page P-1 for information about how to obtain a copy of this manual).

What You Need to Do

Set up the Hardware (Chapter 2)

Set up the Software (Chapter 3)

Troubleshoot the Processor System (Chapter 4)

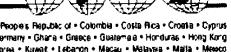


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Rockwell Automation helps its customers receive a superior return on their investment by bringing together leading brands in industrial automation, creating a broad spectrum of easy-to-integrals products. These are supported by local technical resources available worldwide, a global network of system solutions providers, and the advanced technology resources of Rockwell.

Worldwide representation. -



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Poctivial Automation Headquarters, 1201 South Second Street, Mitvauline, Wt 53204 USA, Tet (1) 414 382-2000, Fax (1) 414 382-4444 Pockwell Automation European Headquarters SA/NV, avenue Herrmann Debrouctaan, 45, 1100 Brussets, Belgium, Teir (32) 2,653,05,00, Fax. (32) 2,663,05,40. Rockwell Automation Asia Pacific Headquarters, 27/F Circorp Centre, 19 Whitelia Road, Causeway Bay, Hong Kong, Tet (852) 2987 4788, Fax: (852) 2508 1946.

Publication 1785-10.4 - November 1998 Supersedes Publication 1785-10.4 - December 1996

Case: 1:11-cv-00405 Document #: 8 Filed: 03/22/11 Page 64 of 90 PageID #:160

US006552654B1

(12) United States Patent Gharb

(10) Patent No.:

US 6,552,654 B1

(45) Date of Patent:

Apr. 22, 2003

SECURITY SYSTEM WITH A MOBILE TELEPHONE

Inventor: Samy Gharb, Bachtobelstrasse 30,

CH-8045 Zurich (CH)

Notice: Subject to any disclaimer, the term of this

patent is extended or adjusted under 35

U.S.C. 154(b) by 0 days.

(21) Appl. No.:

09/762,111

(22) PCT Filed:

May 25, 2000

(86) PCT No.:

PCT/CH00/00294

§ 371 (c)(1), (2), (4) Date:

Apr. 5, 2001

(87) PCT Pub. No.: WO00/74983

PCT Pub. Date: Dec. 14, 2000

(30)Foreign Application Priority Data

(CH) 1042/99

(51) Int. Cl.⁷ B60R 25/10

(52) U.S. Cl. 340/426; 340/998; 340/995; 340/573.1; 340/574; 340/539; 455/345;

(58) Field of Search 340/426, 988, 340/995, 573.1, 574, 539, 998; 455/345,

References Cited (56)

U.S. PATENT DOCUMENTS

5,497,149 A	*	3/1996	Fast 340/988
5,731,785 A	*	3/1998	Lemelson et al 340/825.49
5,805,055 A	*	9/1998	Colizza 340/426
5,898,391 A	#	4/1999	Jefferies et al 340/988
5,959,529 A	*	9/1999	Kail, (V 340/539

* cited by examiner

Primary Examiner-Daniel J. Wu Assistant Examiner-Hung Nguyen

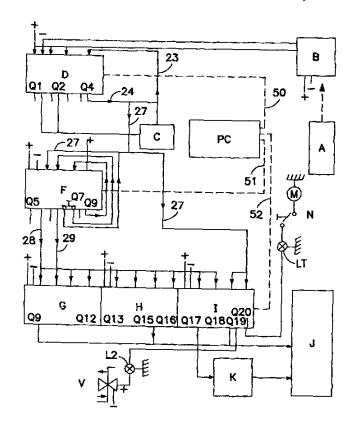
(74) Attorney, Agent, or Firm-Burns, Doane, Swecker &

Mathis, L.L.P.

ABSTRACT (57)

A security system is activated by a remote control (A) via a main relay (B) and an alarm signal is generated by a sensor unit (C) with at least one sensor. The alarm signal is processed in the PLC control units (D, F, G, H, I) and with a recording device (K), and the alarm information is transmitted in the form of adata set via a mobile telephone. The PLC control units are client-specifically programmed with a computer (PC) during the start-up process and the information is transmitted to them via a mobile line (50, 51, 52). The invention is suitable for use in the monitoring of vehicles and security cases. In particular, the security device can be integrated into a satellite locating system with which the position can be represented on a monitor.

10 Claims, 8 Drawing Sheets

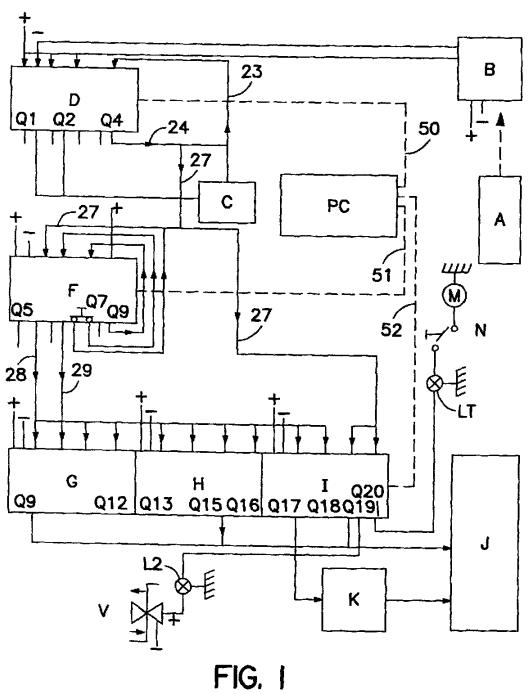


U.S. Patent

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Sheet 1 of 8

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U.S. Patent

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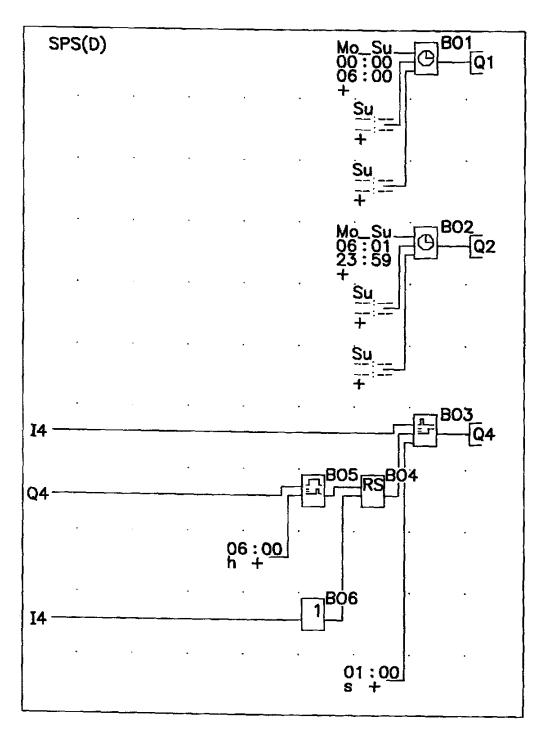


FIG. 2

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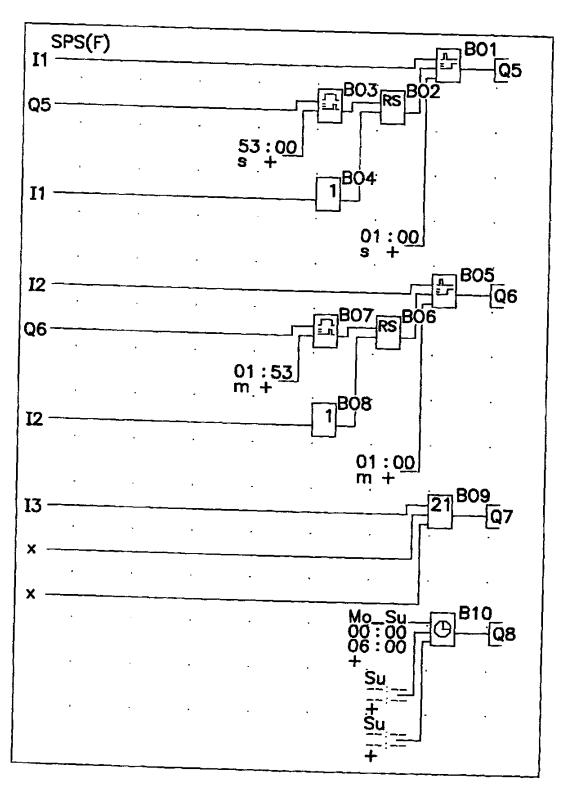


FIG. 3

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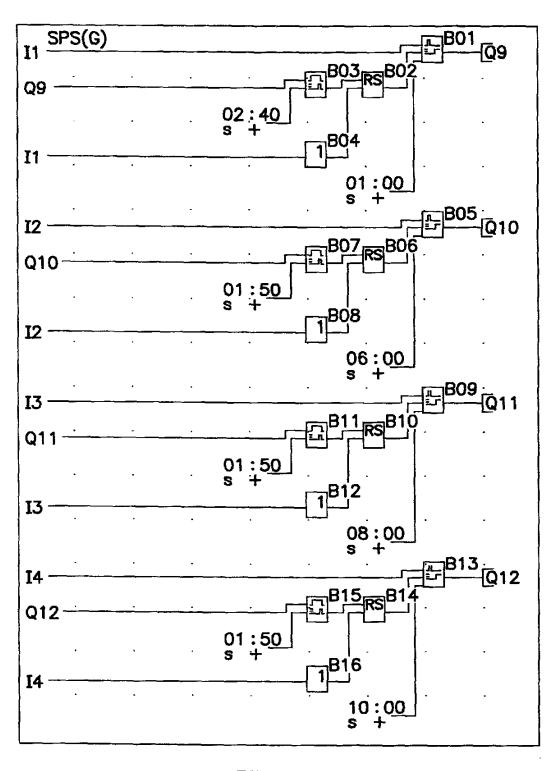


FIG. 4

U.S. Patent Apr. 22, 2003 Sheet 5 of 8 US 6,552,654 B1

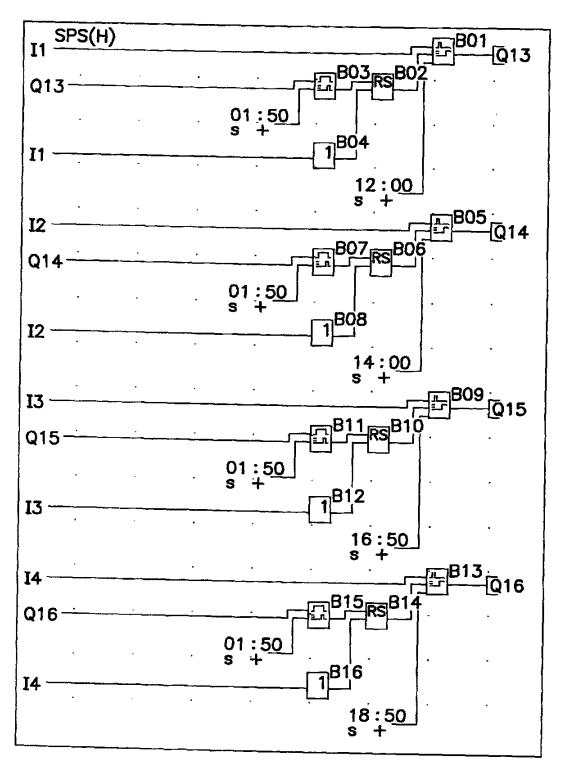


FIG. 5

U.S. Patent Apr. 22, 2003 Sheet 6 of 8 US 6,552,654 B1

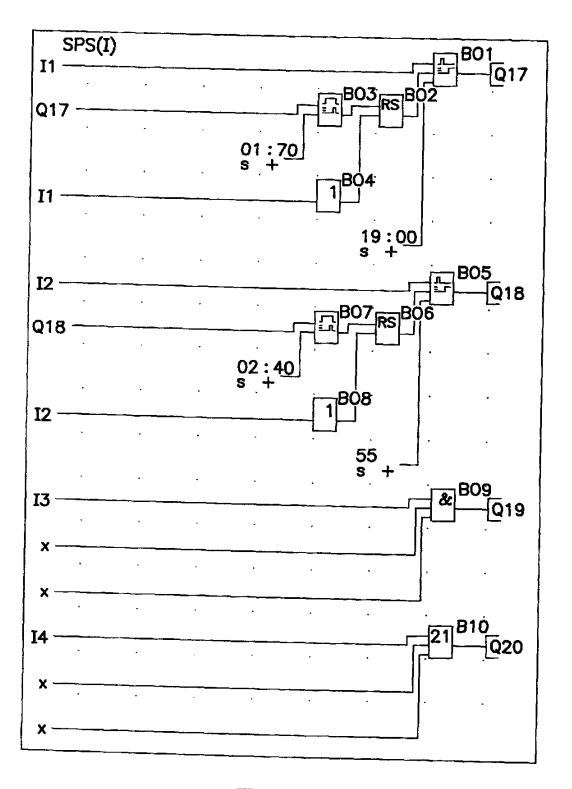


FIG. 6

U.S. Patent

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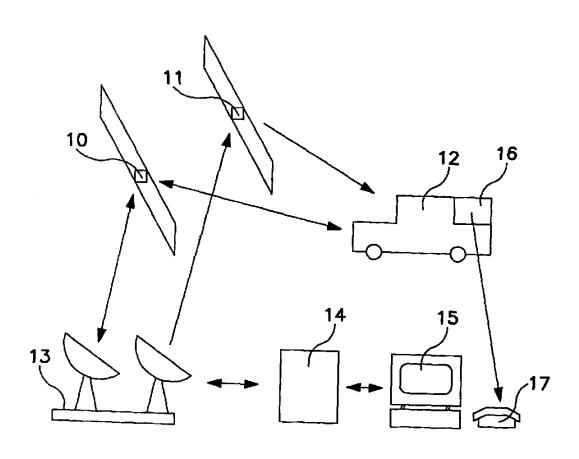


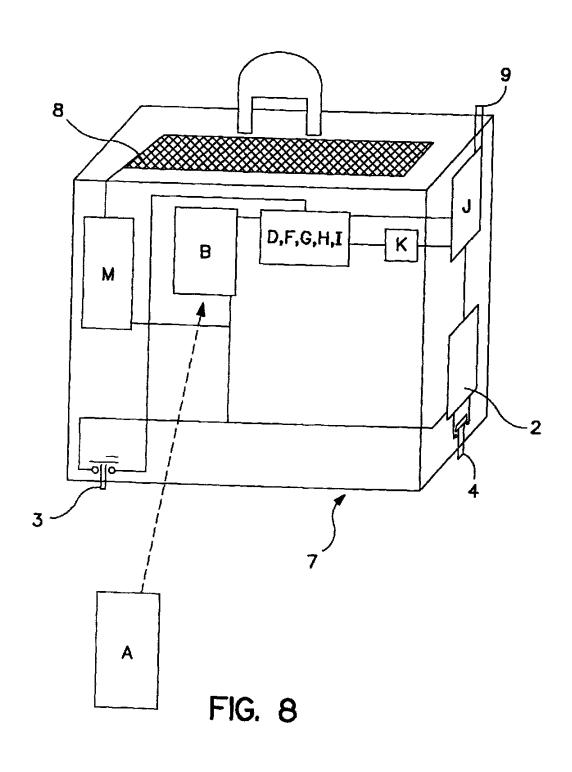
FIG. 7

U.S. Patent

Apr. 22, 2003

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US 6,552,654 B1

1

SECURITY SYSTEM WITH A MOBILE TELEPHONE

BACKGROUND OF THE INVENTION

1. Field of the Invention

The invention relates to a security system with a mobile telephone for monitoring objects, in particular vehicles and security cases, and a method for operating such a system.

2. Brief Description of the Related Art

The monitoring or protecting of objects, in particular vehicles and security cases, is becoming more and more important today.

Various security systems are known for protecting 15 vehicles, for example, alarm systems with automatic alarm triggering, at the onset of which a loud horn signal is heard if unauthorized persons attempt to enter the vehicle. But if an unauthorized person is successful in deactivating the alarm system, the vehicle may be stolen, and its recovery 20 frequently becomes an insurmountable problem.

SUMMARY OF THE INVENTION

It is the objective of the invention at hand to propose a security system in which the alarm is reported via a mobile 25 telephone connection.

A further objective is to describe a method for operating a system in which a satellite locating system is included for locating the vehicle.

Still other objects, features, and attendant advantages of the present invention will become apparent to those skilled in the art from a reading of the following detailed description of embodiments constructed in accordance therewith, taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention of the present application will now be described in more detail with reference to preferred embodiments of the apparatus and method, given only by way of example, and with reference to the accompanying drawings, in which:

- FIG. 1 is shows a schematic portrayal of a security system with a mobile telephone.
- FIG. 2 shows an overview circuit diagram of the PLC 45 (Programmable Logic Controller) controller D.
- FIG. 3 shows an overview circuit diagram of the PLC controller F.
- FIG. 4 shows an overview circuit diagram of the PLC controller G.
- FIG. 5 shows an overview circuit diagram of the PLC controller H.
- FIG. 6 shows an overview circuit diagram of the PLC controller 1.
- FIG. 7 shows a security system with mobile telephone, integrated into a satellite locating system.
- FIG. 8 shows a security system with mobile telephone, integrated into a security case.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to the drawing figures, like reference numerals designate identical or corresponding elements throughout the several figures.

FIG. 1 shows a schematic portrayal of a security system with a mobile telephone, for example, by Natel.

2

A main relay B is located on the input side at the 12 V power supply of a motor vehicle, while the outputs are connected with a first PLC (Programmable Logic Controller) controller D, transmit to it, and provide it with outputs Q1 to Q4. The main relay B is controlled by mean of a remote control A of a known type via an infrared interface, and is not described in detail.

The PLC controller D is used essentially to trigger the start of the alarm functions. For alarm detection, one or more of the sensors are combined into a sensor unit C. For this purpose, known proximity sensors (IR sensors) are provided as sensors and are located in the vehicle in such a way that they are able to emit an output signal as an alarm signal upon a door opening or window opening. As a rule, one sensor of this type is provided per door. For clarity, FIG. 1 shows only one sensor of this type. If several sensors are present, the outputs are switched in parallel.

Output Q1 is connected with the sensor unit C and emits the start signal for the operating readiness of the sensors.

Output Q2 is also connected with the control unit C and provides the start signal for the operating readiness of the sensors at night, which is accomplished via a timer and will be described later.

The time windows for operating readiness during the day and at night are individually freely selected by means of outputs Q1 and Q2; this results in high flexibility and is of great importance for low-cost system operation.

The sensor unit C is connected via lines 23 and 24 with the PLC controller D; i.e., the sensors are hereby kept active or passive within certain time windows. Line 23 transmits the start alarm signal of the sensor(s) of the sensor unit C for 30 seconds. Line 24, which connects output Q4 with the sensor unit, transmits the command alarm signal for 6 hours, so that an alarm signal can be actively transmitted within this time window.

The alarm signal that is supplied simultaneously via lines 24 and 27 to a second PLC controller F and a fifth PLC controller I is present at output Q4.

The PLC controller F with outputs Q5-Q8 is essentially used for alarm repetition or repeating the alarm signal. If, due to a busy mobile telephone connection, the alarm information cannot be transmitted, it is automatically repeated one or more times. Outputs Q5 and Q6 are provided, for example, for a first and second repetition, whereby the corresponding outputs are connected via lines 28 and 29 with a third PLC controller G, which is provided with outputs Q9-Q12.

Lines 28 and 29 are connected simultaneously with a fourth PLC controller H with outputs Q13-Q16 located parallel to PLC controller G and with a fifth PLC controller I with outputs Q17-Q20.

Outputs Q7 and Q8 provide the start signals for the repetition or respectively for the suppression of a repetition, i.e., Q7 for alarm signal No. 2 during the day and Q8 for suppressing alarm signal No. 2 at night.

PLC controllers G, H, and I essentially are used to activate a mobile telephone J and a digital recording device K as well as several other functions related to the vehicle, i.e., ignition and fuel pump.

Outputs Q9 to Q15 provide the four pieces of information necessary for starting the mobile telephone; i.e., at the output Q9 the command "mobile telephone ON," at output Q10 the command "1—code," at output Q11 the command "2—code," at output Q12 the command "3—OK," and at output Q15 the command "4—emergency number."

US 6,552,654 B1

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Output Q17 is connected with the digital recording device K, in which the emergency message is stored, retrieved, and can be transmitted to the mobile telephone J. Output Q18 transmits the command "mobile telephone OFF."

Outputs Q19 or Q20, respectively, are used in case of an alarm to interrupt the power supply to the fuel pump V or respectively to the ignition N, whereby the display lamps L2 (red) and L1 (green) arranged in the corresponding circuits are no longer illuminated.

Naturally, the PLC controllers F, G, H, and I, the mobile telephone J, and the recording device K are also supplied over the same 12 V supply, which is only partially indicated.

All components of the security system except for the remote control are located in the vehicle at inconspicuous, $_{15}$ barely visible places.

If, in case of an alarm, at least one of the sensors responds, the power supply to the fuel pump and ignition is interrupted, the emergency number is dialed in the mobile telephone, and the emergency text is transmitted. If the line 20 is busy, the alarm information is repeated once or several times in freely selectable intervals, for example, every two minutes.

FIG. 1 furthermore shows a computer PC (Personal Computer) that is connected via mobile lines 50, 51, and 52 with PLC controllers D, F, and G, H, I. All necessary information for programming the PLC controllers from the PC or PC database are read via these lines, and the PC system is then disconnected from the security system. In this manner, the security system is programmed at the initial startup, so that customer preferences can easily be taken into consideration.

FIG. 2 shows the overview circuit diagram of the PLC controller D. A first timer function B01 or the block No. B01 defines a time window from 00.00 to 06.00, in which output Q1 is on "HIGH." Analogously, output Q2 is on 'HIGH' for a second timer function B02 in a time window from 06.01 to 23.59. Blocks No. B03 to B06 contain on and off switching functions.

FIGS. 3 to 6 show the overview circuit diagrams of the PLC controllers F, G, H, and I. Analogously to FIG. 2, they contain already described known functions, such as time functions and on/off functions (relays), and are not described in more detail.

In an exemplary embodiment that corresponds to FIG. 1 in its construction and is provided as a security system for a vehicle, five PLC controllers, a mobile telephone, and a digital recording device are used as control units.

The control functions are summarized in the following 50 table:

PLC	Relay No.	Command	Time
D	Q1	System ON/OFF at night	00.00 H-05.59 H
D	Q2	System ON/OFF during the day	06.00 H-11.59 H
D	Q3	Reic	
D	Q4	Alarm signal for 6 h	01.00 s-06.00 H
F	Q5	Alarm signal No. 1	01.00 s-53.00 s
F	Q6	Alarm signal No. 2	01.00 m-01.53 m
F	Q7	Alarm signal No. 2 ON/OFF (NOR circuit)	
F	Q8	No alarm signal No. 2	00.00 H-05.59 H
G	Q9	Mobile telephone ON	01.00 s-02.40 s
G	Q10	Pin Code 1	06.00 s-01.50 s
G	Q11	Pin Code 2	08.00 s-01.50 s
G	Q12	Pin Code 3	10.00 s-01.50 s

•

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	PLC	Relay No.	Command	Time
5	н	Q13	Pin Code 4	12.50 s-01.50 s
	H	Q14	OK	14.00 s-01.50 s
	н	O15	Emergency number	16.50 s-01.50 s
	H	Q16	OK ,	18.50 s-01.50 s
	I	Q17	Start emergency message	19,90 s-01.70 s
	1	Q18	Mobile telephone OFF	55.50 s-02.50 s
10	I	Q19	Solenoid ON (AND circuit)	
	I	Q20	Ignition OFF (NOR circuit)	

One use of the security system with a mobile telephone according to the invention is in the localization of vehicles via a satellite locating system. A known system of this type is offered by Eutelsat under the name "EUTELTRACS-SYSTEM" and permits the determination of the location of vehicles with an accuracy of 100 meters (Ref. QTRACKS/400 system software for AS/400 computer systems by IBM).

FIG. 7 shows the security system with mobile telephone integrated into a satellite locating system.

A system for mobile satellite communications for vehicles is known under the name EUTELTRACS. Two geostationary EUTEL satellites, i.e., a communications satellite 10 and a positioning satellite 11 with a coverage of all of Western and Eastern Europe, the Mediterranean region, and the Middle East continuously send and receive messages sent by the mobile devices 12 and the terrestrial station 13 to the respective recipient. The positions of vehicles are thereby determined with an accuracy of 100 m. The terrestrial station is in communication with a service provider 14 who transmits all messages and positioning messages via terrestrial networks or satellite networks to the end customer. The latter has a Dispo-PC 15, i.e., a computer with screen on which a position can be displayed. This EUTELTRACS system is not described here in any more detail.

According to the invention, the security system 16 with mobile telephone is now built into the mobile device 12, which, as a rule, is a road vehicle, but also may be, for example, a motor yacht.

Should an alarm occur, the end customer is notified by mobile telephone on a telephone 17. He then turns on his PC 15, selects the position display, and is then able to initiate the tracking.

This makes it possible after an alarm to locate a stolen vehicle via the service provider on the screen of a PC, for example, in the street grid of a major city, and to track it.

FIG. 8 shows a security system with mobile telephone integrated into a security case for monitoring in a satellite locating system.

The components of the security system already described for FIG. 1, such as the main relay B, the PLC controllers D, F, G, H, I, the recording device K, and the mobile telephone J are built into a security case 1. A power supply 2 is connected on one side to the mobile telephone, the main relay, and a satellite communications device M, and on the other side via a switching element 3 to the PLC controllers. The switching element is attached inconspicuously on the underside of the security case and is constructed in such a way as a switch that the contact is closed when the security case is off the floor. Also on the underside of the security case is another switching element 4 that is connected to the power supply and activates it when it is picked up, thus starting the entire security system. For redundancy, several

5

switching elements 3 and 4 may be provided. The security case is activated with a remote control A. All components are integrated in a side, the top, or the bottom of the case in a low-profile construction style, so that sufficient room for documents or similar items is left in the case itself.

From the satellite communications device M, an antenna cable leads to the antenna 8 that is provided for the reception of satellite signals. The antenna is mounted below the case top and not visible from the outside. A short antenna 9 of the mobile telephone J which is integrated, for example, into an edge element of the case, also is barely visible. The location of the case is continuously monitored on an IBM AS/400 computer system via the satellite communications device M and the already mentioned QTRACKS/400 system software (location display).

This fulfills a central condition for re-locating a security case.

While the invention has been described in detail with reference to preferred embodiments thereof, it will be apparent to one skilled in the art that various changes can be made, 20 and equivalents employed, without departing from the scope of the invention. Each of the aforementioned documents is incorporated by reference herein in its entirety.

What is claimed is:

- 1. A security system for monitoring objects, comprising: 25
- a digital recording device having at least one emergency message; and
- a mobile telephone having at least one preselected emergency number;
- a first Programmable Logic Controller (PLC) controller ³⁰ for initialing monitoring;
- a second PLC controller for repeating an alarm signal; and third, fourth, and fifth PLC controllers for activating a mobile telephone and a digital recording device;
- at least one sensor for generating an alarm state connected to the first PLC controller;
- a main relay for controlling the first PLC controller and which can be operated by a remote control;
- a computer having mobile lines connectable to the five PLC controllers for programming the five PLC controllers; and
- a data set for transmission to the mobile telephone including alarm information;
- wherein the second PLC controller repeats the alarm 45 signal if the line dialed by the mobile telephone in case of an alarm, is busy; and
- wherein each time the second PLC controller repeats the alarm signal, the third, fourth and fifth PLC controllers activate the mobile telephone and the digital recording 50 device.
- 2. A security system as claimed in claim 1, wherein the data set comprises a start signal, the at least one emergency number, and the at least one emergency message.
- 3. A security system as claimed in claim 1, wherein each 55 of the controllers includes inputs and outputs, and wherein the outputs of the first PLC controller are connected to an input of the second PLC controller and of the fifth PLC controller, outputs of the second PLC controller are connected to inputs of the third, fourth, and fifth PLC controllers, outputs of the third and fourth PLC controllers are connected to an input of the mobile telephone, and outputs of the fifth PLC controller are connected to the recording device.
- 4. A security system as claimed in claim 1, wherein the 65 fifth PLC controller is configured and arranged to control the ignition and the solenoid of the fuel pump of a vehicle.

5. A method of using a security system comprising the

providing a security system as claimed in claim 1;

- positioning the security system inside a security case, the security case including
 - an underside having at least one switching element for triggering the alarm and at least one switching element for releasing the power supply;
 - a satellite communications device connected to the security system and having an antenna for communicating with a satellite locating system; and

operating the security system for locating vehicles.

- 6. The method of claim 5, wherein when the security case is not in contact with a surface, the at least one switching element for the triggering the alarm triggers the alarm and the at least one switching element for releasing the power supply connects the power supply to at least one of the PLC controllers.
 - 7. A method for operating a security system comprising the steps of:
 - providing a security system as claimed in claim 1;
 - entering the alarm signal and the alarm information in the PLC controllers into the mobile telephone and digital recording device, which establishes a data set;
 - activating the operating status via the main relay by means of the remote control;
 - generating an alarm signal via the at least one sensor of the sensor unit;
 - transmitting the alarm signal to the first PLC controller, and from the first PLC controller to the second PLC controller;
 - transmitting the alarm signal at least once to the third, fourth, and fifth PLC controllers, the outputs of which are used to control the mobile telephone and the recording device; and
 - transmitting the data set via the mobile telephone, wherein the data set is compiled from the at least one emergency number stored in the mobile telephone, the emergency message stored in the recording device, and start and initialization signals from the third and fourth PLC controllers.
 - 8. A method as claimed in claim 7, further comprising the steps of:
 - operably connecting the security system to a vehicle having an ignition power supply and a fuel pump solenoid;

interrupting the vehicle ignition power supply; and blocking the fuel pump solenoid.

- 9. A method as claimed in claim 7, further comprising the step of:
- repeating the alarm signal in the second PLC controller at least once if the line dialed in case of an alarm by the mobile telephone is busy, to cause the line to be redialed.
- 10. A method as claimed in claim 7, further comprising the steps of:
 - operably connecting the security system to a vehicle having a power supply;
 - supplying the security system with power via the vehicle power supply, except for the remote control that is operated externally and with a battery.

* * * * *



White Paper

PLe

MicroLogix[™] 1200 and 1500
Utilizing GSM RTU's

mobile Phone



Gringing Engelber Loading Brands in Industrial Automation

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MicroLogix 1200 and 1500 Utilizing GSM RTU's



Take Control with MicroLogix 1200

The MicroLogix 1200 controllers are truly micro in size. With a footprint as small as 3.52" X 4.33" (90mm X 110mm), they are ideal for control projects where panel space is a challenge. The MicroLogix 1200 makes use of discrete and analog expansion I/O modules (providing up to 88 points) for a lot of application flexibility. Removable I/O labels with a write-on area make for easy field device identification to reduce valuable troubleshooting and maintenance time. The finger-safe terminal blocks for safe operation meet global safety standards. The MicroLogix 1200 boasts a large 6K memory, with 4K words available for user programs and configurable 2K words for user data. This feature of the MicroLogix 1200 expands application coverage by allowing data elements to be selected according to individual application requirements.

Expand Your Choices with MicroLogix 1500

The MicroLogix 1500 has more robust features for a controller this size. It supports up to 12K of onboard non-volatile user memory to accommodate complex application program, with additional memory for applications that require data logging. Additionally, the controller's terminal blocks are removable, "finger-safe" NEMA-style blocks. And because it can be either DIN rail or panel mounted, the MicroLogix 1500 takes up a fraction of the space of larger controllers while reducing overall application costs.

Communications are flexible for the MicroLogix 1500 as well. DH-485 and DeviceNetTM capability are available via add-on communication modules, and DF1TM Full-Duplex and Half-Duplex Slave is perfect for SCADA applications. Ethernet® and ControlNetTM connectivity are available via a wide range of bridge products. Modbus RTU Slave capability simplifies integration into SCADA/RTU installations with the use ModBus.

The MicroLogix 1500 is programmed using the RSLogix™ 500 programming environment. The instruction set is compatible with all MicroLogix as well as SLC controllers.

MicroLogix 1200 and 1500 Utilizing GSM RTU's

MicroLogix 1500 and 1200 utilized as GSM RTU's

The advanced ASCII communication capabilities available in MicroLogix 1200 and 1500 controllers can be utilized in various applications. MicroLogix systems have been implemented in Australia communicating via GSM Modems over standard cell phone networks.

The 900/1800MHZ band GSM, (and now CDMA) cell phone network in Australia supports SMS (Short Message Service) text messaging. By configuring MicroLogix 1200 and 1500 units to a GSM Modem, the ASCII Read/Write and String Compare functions can send and receive text messages from Mobile phones anywhere in Australia within the GSM/CDMA network.

The installed controllers are being used to sense alarm and status information, which in turn, is transmitted to a cell phone number upon a pre-condition occurrence in memory. The text message transmitted appears on the receiver's cell phone display in a similar method to an alphanumeric pager.

While not implemented in our current installations, the receiver could also enter text on their cell phone and transmit back to the controller. The controller upon receipt of this message could decode the sender's phone number and also the message and perform a string comparison to find an identical string of text in memory. Once found, the controller could take appropriate action within it's program, such as turning devices on or off.

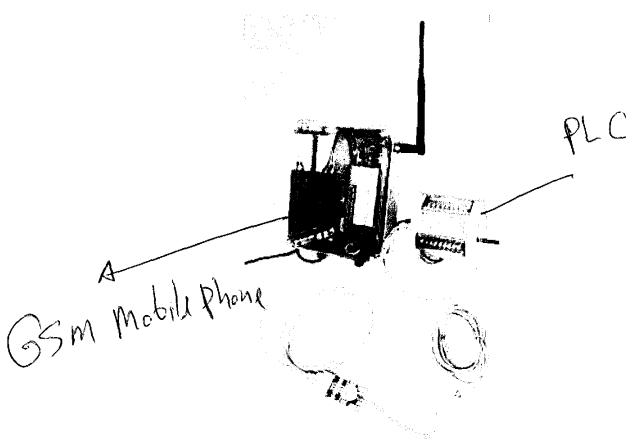
This would enable operators to respond to some low level alarms from a remote location via cell phone, and take appropriate action such as clearing or acknowledging low level alarms.

If the SIM card contained within the GSM modem (connected to the Micro) is data enabled, it could also log on and program the MicroLogix over the cell phone network at 9600 baud. (This has already been successfully demonstrated.)

There are current successful installations of both MicroLogix 1500 and 1200 units implemented as RTU's running off of GSM modems transmitting text to operator's cell phones.



Figure 1. A basic MicroLogix configuration.



The system displayed would recognize a fault and initiate a text message to the modem and to the SMS message service. The modem currently being used can also be powered via solar cells in remote areas, and also supports voice lines as well. Similar functionality is also available on several other Allen-Bradley PLC platforms.

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Automation

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Asia Pacific Headquarters, 27/F Citicorp Centre, 18 Whitfield Road, Causeway Bay, Hong Kong, Tel: (852) 2887 4788, Fax: (852) 2508 1846

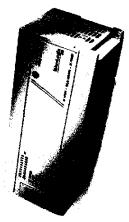
simple connectivity to a personal computer for program upload, downlead and monitoring using

RS-252 communication channel allows for

meltiple protocols, including DFI Bill-Dugley

· RTU share protected support using DF3 Half-

Duplex Slave allows up to 25a nudes to



Pootprints as small as 120 rnm × 80 mm × 40 mm get achigh-speed controller with advanced 1000 controllers are ideal for tight spaces that require up to 32 points of I/O. You'll networking capabilities and a full suite of MicroLogix 1000 controllers. These small, affer several 1/0 configurations and are inexpensive micro controller? You'll find (4.72" x 3.15" x 1.57"), the MicroLogix economical programmable controllers available in 17 different models. With Are you looking for a compact and what you're looking for with the control solutions.

wide variety of hig aime applications at 52.1/O or below, while using only a fraction of the space of there are a few reasons why you can choose them a full-size controller - at a fraction of the price. The MeroLogiv 1000 micro-PTA can handle a with confidence

rejection to meet your application needs

Division 2 Bazardous Location) Flexible I/O technology

 Adjustable DC input filters allow you to built-in high-speed counter (6.6 kHz)

- Preconfigured 1K programming and data numbery to case configuration dsi, integer,
- power, efficienting the need for buttery buck-up bidder higher and data if the controller lesses

(ke)) AC and DC powered controllers are assignle.

isolation in multi-voltage output applications.



DeviceNet and UtherNet/IP through the

(using a P64-NEL-AR, module)

1000 is alkel for a member of applications from water/trasterrates and SCADA, to packaging production problems. You II find the WirroLogix provide factory from networking and reduce Use your Microbogix 1000 coats of system to and material banding.

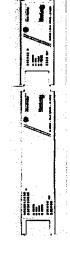
· Injuit options, AC, DC and analog (carrent or

flexible control solution.

Ontput options: relay, FRIAC, MOSFET and

analog (current ne voltage)





- finers, counters, etc.
- Fast processing allows for lypical throughput tion of 1,5 ms for a 500-instruction program
- Beill-in Bill-ROM memory retains all of your or separate memory module
- devices and multiple output commons provide Audiple input commons allow you to use the controller for either sinking or someing input



MICROLOGIX COMPOL VISUALIZE.



integer manipulation; and offers digital trim coverage to the MicroLogix family. The next simple operator messages; enables bit and With online editing and a built-in 10/100 messaging, the MicroLogix 1100 controller adds greater connectivity and application generation controller's built-in LCD screen displays controller status, I/O status, and Mbps EtherNet/IP port for peer-to-peer pat functionality.

Key Features and Benefits

- connectivity between controllers, with the ability Built-to 10/100 Abps BiberNet/IP peak for poor to access, monitor and program from anywhiten to-peer messaging - offers users high speed an lithernet connection is available
- Opline ediling functionality inhabitements can he made to a program while it is running, making possible, including PDD loops. Not only does this reduce development time, but it aids in fine tuning of an operating confied system grithmalkeddung
- custom configure data from the constraine to be binbeckted Web server - allows a user to displayed as a web page
 - Bolated RS-232/RS-485 combine port provides a host of different point to point and network
- controller functions, and ags as a pair of digital allows user to monitor that data, and interact with the control program. trim pots to allow a nere to iweak and tran-a-Displays status of embedded digital I/O and data within the controller, optionally modify · Embeddind LCD screen



used by the Microtogix 1200 and 1400 controllery may be added to the conheckled FO, providing 1/O. Up to hair of the 1762 I/O modules (also application flexibility and suppost of up to 80 the viscologic 1100 also supposts expansion digital LO.

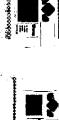
Applications

Microbogix 1500, the Microbogin 3100 is great for The Micrologia 1000 is ideal for a wide survety of applications, it is particularly well suited to meet senote nuntioring and for applications that are material handling applications. With even move memory for data logging and recipe thats the the needs of SCADA RUT, paykaging, and memory intensive, but require limited i/O.









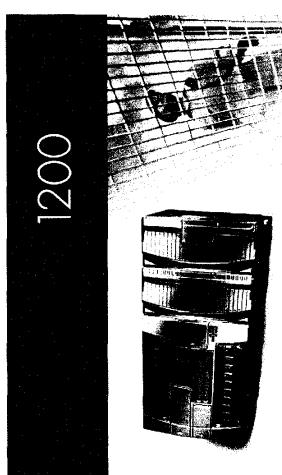
Additional Features

- One 40kHz embedded high-speed counter con controllers with DC inputs)
- Two embedded analog taputs (0-10 s DC) Two foldtz high-speed PTO/PW.M (on controllers with DC outputs)
- To fet resolution:
- A simple operator interface for messages and hit/integes imput
- · ik words user program memory and ik words user data memory
 - · Up to 128K bytes for data lugging and 6 iK betes for recipie

I/O Capabilities

androller for your application. On the versions of For small applications, the embedded 3/O in this outputs, and 2 analog inputs on every controller with the abstry to artel digital, analog, K1D, and required. There are 10 digital inputs, 6 digital controller may a present all of the courted heratocouple modules to customize the





The MicroLogix 1200 is filled with features and options designed to handle an extensive range of opplications.

Available in 24- and 40-point versions, the 1/O count can be expanded using rackless 1/O modulos. This results in larger control systems, greater application flexibility and expandiality at a lower cost and reduced parts inventory.

A field-upgradeable flash operating system ensures you will always be up-to-date with the latest features, without having to replace hardware. The controller can be easily updated with the latest firmware via a web site download.

Key Features and Benefits

Four latching or pulse-catch inputs—Extering inputs let the controller capture and hold-see baid (microsvecond) signals for input princessing.

- 20 kHz high-speed counter with build-in independent high-speed counter uses \$2-bit integers for extended range, features 8 mudes of operation, and supports direct control of outputs independent of program som.
- Programmably, Limit Nivitch Paretion -> Phic fourthan allows you to coofigure the high-speed coonier to operate as a programmable limit worth or rotary cam will th.
- Trin potentioneters—Two builds M/4-unn analog frin patentioneters with a digital entiput Gauge from 0 to 2500 allow queck and easy adjustments of timers, counters, sequins, and more.
- Program data security Data Sie dow niverd proceedion allows a program to be reloaded into the controller without overwriting protected data.
- Parting Point Data 74cs. You can create data tiles that can contain up to 256 BBB-754 Rooting point values.

Keep your I/O options open





With the Microtogyy 1200, you'll be vaid) to tackle applications in fadusivies such us plannacediral, printing, foot and bereage, packaging and unaread banding with employees.

Memary, real-time clock, or memory/real time clack medides. Memory lackup provides protection and transportability for programs and dara. The real time clock lets you easily solve funcyfate scheduling applications, and cas he synchronised with an external source (in program instruction).

 Foro interrupt inpurs—tracumpi anpurs let the controller scan a specific program file (subcautine) when an input condition is elected from a season or field device.

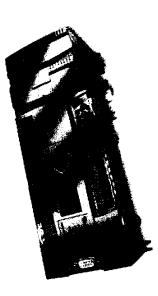
With the 1200R controller you gain even more control capabilities.

- A programming Alarmen Machine Interface (IRM) port in addition to the Chamel 0 partialless as incepenate means of porviding an extra port that can be used for programming using a personal computer or councing an openior necessary devices to your confeding an
- Increased application Beginding
- Reduced system cost, enables users to detreily connect a local HAU, allowing list other port to be used for retworking, surdem connection.

programming and other devices

- Requires to configuration: DFF full Duplex part that has the same parameters as Characel 0 when in the "Default Comms" configuration
- Respond Only Alessaging is not available; it communicates by responding to communications initiated from the device attached to it





Micrologix 1400 from Rockwell Automation of small pragrammable logic controllers, by complements the existing MicroLogix family enhanced features, such as increased I/O, combining the features you demand from online editing, and a built-in LCD, plus MicroLogix 1100, such as Ethernet/IP, laster High Speed Counter/PIO and communication capabilities

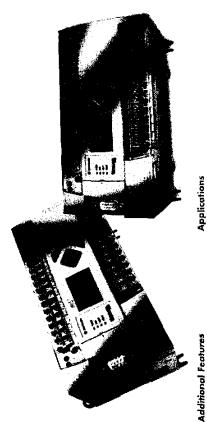
Utilize the built-in LCD with back lighting configurable display, display OEM logos to set the Ethernet network configuration, and view and/or modify any binary or display floating point values on user integer file element.

software (Version 8.1 and above) as well as Program with RSLogix" 500 programming new RSLogix Micro programming softwere.

Key Features and Benefits

- Etherme, jase provides you with preveto-preve messeging. Web server and banail capability
 - modifications to the fadder logic while the Online editing allows you to make gringin is magning
- Suitere LCD with backlight aftews you to siew simple interluce for messages, bit / integer controller and I/O stalus, and provides a monthering and manipalation
- Expand year application capabilities through support of up to 7 expansion L/O modules 0.762 1/0) with 143 discrete 1/O
- counters (on controllers with de inputs) · Up to 6 embedded 100 kHz bigh-speed
- * 2 Serial ports with DFI/DH/85/Modfous RUL/DNPS/ASCII proteatel support

2. 大変動



Applications

- · General Industrial Machinery (Material Bunfling, Packaging, Assembly, etc.)
 - Blocking Automation
- SCADA (Oil and Gas, Water/Wastewarer, and Electrical Power)
- Fond and Beverage

Program with RSLogix 500 or RSLogix Mern

Up to 128K bytes for data logging and 64K

bytes for recipe

UIK words user program memory and 100K

words user data memory

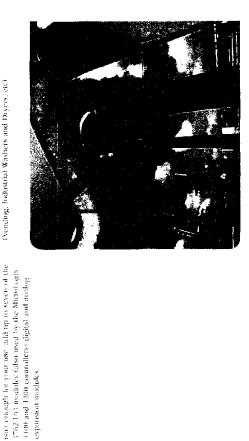
- Pharmaceutical
- (Vending, Industrial Washers and Divers, etc.) Commercial Machinery

1100 and 1200 controllers) digital and analog

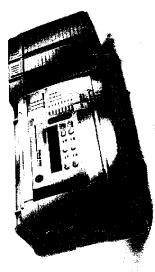
expansion modules.

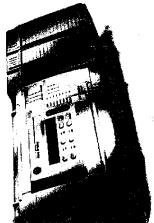
If the embedded I/O in the MeroLogis Fint

I/O Capabilites



OCOLX MORE FOWERFUL, MORE EXPANDABLE.





what's behind the next door, in the world of automation, the MicroLogix 1500 controller can help you apen up new possibilities and get you to where you want to go with ease. In a perfect world you would always know

As the most powerful member of the Micrologia for larger, more expensive controllers. With features of a modular system into a lov-cost power and flexibility. In fact, it can handle many applications that traditionally called the MicroLogix 1500 packs all of the best family you'll get unmotched performance, embedded I/O and power supply - and its removable processor, base units with expansion through 1769 Compact I/O" small footprint

You'll be able to monitor and easily change data without the need for a computer or the added expense of an TMI device. with the Data Access Tool (DAT) plugele device. Get a better view into your control application

If you need advanced communication, the 1709-SDN Deorecket searner allows a Merol right 1506 confroller to become a DeviesNet master, hericaled master fencionally with enhanced stave, or poer device. It eventines standard performance teatures

Features:

- Three base options, including a choice of electrical configurations featuring:
- 120V ac or 21V de inpuls
- Relay and bigh-speed MOSFET cusputs
- 120 230N ac or 23V dc power
- user memory, for complex application programs Supports up to lift of orfourd non-volabile
- ik of user program

· Dypical scan gine is less than 4 millisecond per

- · Expandable to over \$12 points of 1/O
- Innonative, rackless, torgite-and-growe design reduces system cast and inventory

Besad application coverage through enhedded

 Terminal blocks are finger-safe, removable Voland up to 16 Compact I/O modules

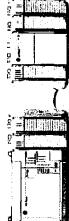
NEMA-rayle blacks

Features a field-appgradable flash operating

ourgus that can by configured as either 20 kHz eight modes of operation, and two high-speed Two 20 kHz high-speed counters, each with Pulse Wain Ouquus (PTO) or Pulse Width









52 AND 1769 I/C

and 1400 has a modular, rackless design. system enhances dost savings and reduces replacement parts inventory. The package and screw mounting holes are an integral design allows modules to be either DIN rail or panel mounted. The DIN latches 1762 1/O for MicroLogix 1100, 1200 Elimination of the I/O rack from the part of the package design.

Features:

- Rackless design, efteringing added system costs and inventory
- Sorall to otprine, shrinking panel space
- Suftware keying to prevent incorrect Integral high-performance I/O bus positioning within the system
- Peature-rich FO functionably addresses a wide enige of applications
- AC/DC relay, A3V dc, and 120V ac voltages



1769 Compact" I/O is an I/O platform that MicroLogix 1500 controller's capabilities by maximizing flexibility of the I/O count and modules, they complement and extend the their application needs grow It utilizes the platform for future enhancements, so you type. Compact I/O provides an excellent performance, excellent functionality and can easily choose the level of control as performance. With a wide range of latest design technology for superior offers industry-leading price and ease of use, including:

- Innotative rackless design, which reduces system cost and inventory
- · Modular, high-density 1/O temphation to reduce pand space requirements
- huegrated high-performance serial 1/63 bus

Feature-rich I/O functionality to address a wide

- range of applications
- for foilal system assembly and product aplacement Front removablinsertion, which reduces time
- sinfe/source and 120/240V at 1/O, relay, and Broad application coverage firrough 24V de-

all of these network interface devices can be DIN-rail or panel mounted, and all are industrially 1761-NET-AIC Advanced Interface Converter (AIC+1), you can connect Micrologix controllers to Ethernet, DeviceNet, or DH-485 multi-drop networks. Just like the MicroLogix pracessors, hardened to meet virtually any installation requirement

With the 1761-NET-ENI EtherNet/IP interface, the 1761-NET-DNI DeviceNet Interface, and the

NETWORK INTERFACE D. COMMUNICATE WITH COPPED

1761-NET-ENLAND 1761-NET-ENIW ETHERNET INTERFACE

bath the EM and the EMA provide EtherNet@compatibility, Effected controllers on a peer-trepiet relationably, climinating afforing exchange a information with other Albo bradlet

SENEFITS OF ENI OR ENIW the model for a misser type device

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BENEFITS OF ENIW ONLY

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- network continuationing.

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SENEFITS

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1761-NET-DNI DEVICENET INTERFACE

1761- NET-AIC ADVANCED INTERFACE CONVEXTER

Okars two bachard 88-252 connections - one 9-pm D sitell and

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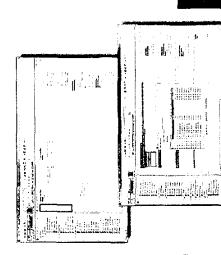
- Provides OH: 35 network access from any OH: 35 protocol
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- BENEFITS
- Provides a simple, cost effective actions for connecuting INS-252. rigeriggs on a 101-485 metadomic
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- Alexa Shiking of coerce ders using the Half-Brigher

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OGRAMMING SOFTV POWERFUL, REXIBLE PROGRAMMING

bring you the best application development save project development time, and reduce Rockwell Automation continually strives to the total cast of ownership of your system. products to help maximize performance,

programming products allow you to gain the controllers. Designed with features to help most value from our controllers, drives and RSLogix Micro programming software are modify and monitor application programs for the Alten-Bradley MicroLogix family of save time and increase productivity, these RSLogix 500 and the newly developed two products that allow you to create, operator interface product lines.



RSEDGIX 500/RSEOGIX MICRO

convenient and system integration easier. Specifically, RSLogix 500 and RSLogix Micro packages offer: RSiogix programming packages help make program maintenance across hardware platforms

INCREASED PRODUCTIVITY

- Graft application programs without woreging about syntax errors
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- Share continue code via library support
- Únický cogy or maké invendony válbán a project az frem che project to anorbur

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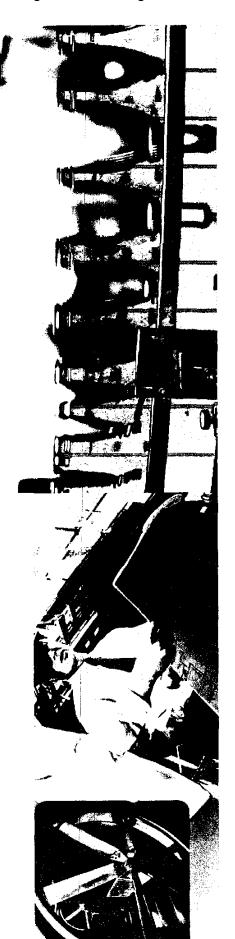
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- INCREASED DIAGNOSTICS & TROUBLESHOOTING CAPABILITIES Mels while controller is operating for quick lesting againmultiple formula.
 - Detect inserted, duleted, unward or modified differences from adging, program
 - Examine the states of intentependent data simultaneously in one window Lacate problem arters guiddly and replace addresses and reviewily
 - Access 150 configurations through edsy point and clicks

INCREASED INVESTMENT VALUE

- Import or expect projects exists from any Rochwell Software 58-4008 programming product.
 Readily resize outle technism for Alexadogis.
- Castomize Astogis and integrate with Menosch office and other applications

RSLogix 500 programming software is ideal for both MicroLogix and SLC controllers. RSLogix Micro is a new cost-effective software package for MicroLogix programming, Both software programs are feature rich and designed to streamline your overall development and deployment processes.

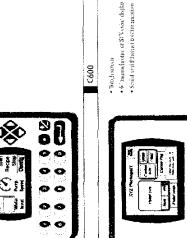


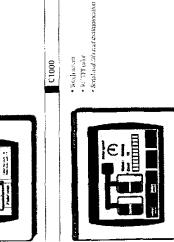


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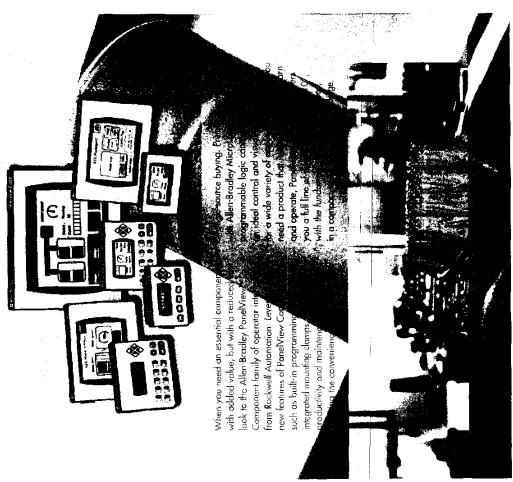






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in addition, the MicroFogix 1100, 1200, 1400

and 1500 provide:

· Endocoded Morbus RTU Masser and

Slave protocols

· OFF Half-Duplex Master and DFF

Radio Modem protocols

The MicroLogix Family of Controllers.

loday's marketplace is more competitive than ever. All over he globe, companies requiring compact controllers look to the Allen-Bradley' Microllogix "bamity of controllers from Rockwell Automation." best tooks and technologies the world has to offer Thriving in such an environment means using the











Communicate with Ease applications

our MicroLogix 1100 and 1400 controllers with controller to fit your communication need is easy reguliements are, we've got you covered. Beam network interface devices, finding the eight contectded fiftee Net/1P to a wide range of No maffer what your communication

All Mignel ogiv controllers provide:

Stave, and DU-485 protocols

supporting DPT full-Duplex, DFT Helf-Duplex At least one beilt-in enhanced RS-2520 port

through DeviceNet and Effectual, as well as Communication with personal compaters, operates inferfaces, other PLUs and more through upon point-to-point and SCADA protocols



The Migratuge 1100 and 1500 provides

Pull ASQII (send/write) capability

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The Microbogs 12008, Microbogs 1:400

Get world-class service and

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Dou't torget, these controllers bear the Alten-Beadley name - a trusted brand name in

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Rockwell Automation you'll benefit from:

Strict quality standards

 Global capability, head supply · Latest technological advances

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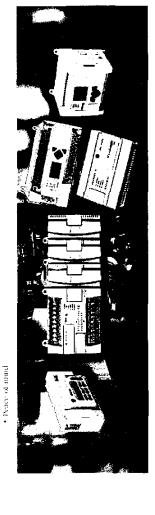
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Castomer satisfaction is built into every product larger selection of global products and services.





ONE FAMILY OF MICRO CONTROLLERS FOR EVERY APPLICATION AND BUDGET



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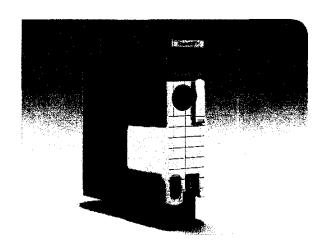
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ControlLogix Programmable **Automation Controllers**

1756-L73, -L75

The latest addition to the ControlLogix® family of controllers is designed for improved performance. The new controllers, the L73 and -L75, provide the memory, speed and processing capabilities to meet the demands of basic plant floor applications to high performance process and motion applications.

As part of the Rockwell Automation Integrated Architecture™ system, these new controllers use the same programming software, network protocol and information capabilities as ControlLogix L6x controllers, providing a common control engine with a common development environment for all control disciplines.



Improved Performance

Depending on your application, you evaluate performance using different criteria. ControlLogix 1756-L73 and -L75 controllers offer specific improvements for specific applications.

For process applications, the new ControlLogix controllers significantly improve the amount of information that can be exchanged between the control and supervisory layers, and offer a significant improvement in the performance of redundant control applications. The 1756-L73 and -75 also offer increased capacity, allowing more control strategies to be executed in each task.

For motion applications, the 1756-L73 and -L75 provide highspeed motion command and axis trajectory planner execution making it the right solution for complex, high performance motion applications. The controllers have been optimized for control of high performance motion drives on EtherNet/IP or SERCOS™ interface and are capable of supporting as many as

For discrete applications, the new ControlLogix controllers significantly improve controller scan times using a new faster dual core custom CPU. They offer improved communication rates for new Rockwell Automation® Ethernet communication modules and provide faster cross-loading for redundancy systems.

Memory Options

The new ControlLogix controllers use enhanced SDRAM memory technology and are available in two fixed memory sizes, 8MB (1756-L73) and 32MB (1756-L75).

The optional and removable Secure Digital non-volatile memory provides faster reads and writes and better data integrity than the previous CompactFlash technology and is now rated for use in SIL 2 applications.

Power and Diagnostic Capabilities

With the launch of these new controllers, we also introduce the Energy Storage Module (ESM) which ships with each controller. The ESM eliminates the need for lithium batteries as well as the maintenance and environmental issues associated with the transport and disposal of lithium batteries.

The new controllers also feature an on-board display providing enhanced controller diagnostics and run-time information.

Environmental Specifications and Certifications

Temperature - Operating: 0-60°C, 33-140°F -Storage:-40-80°C-185°F Relative Humidity 5-95% non-condensing 2g at 10-500Hz Vibration

Shock - Operating: 30g

- Non-operating: 50g Certifications

UL, c-UL-us, CE, ULH, CSA, C-Tick, FM, ATEX, TÜV, CULH. See the Product Certification link at www.ab.com for Declarations of Conformity, Certificates, and other

certification details.



